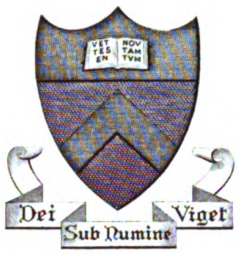
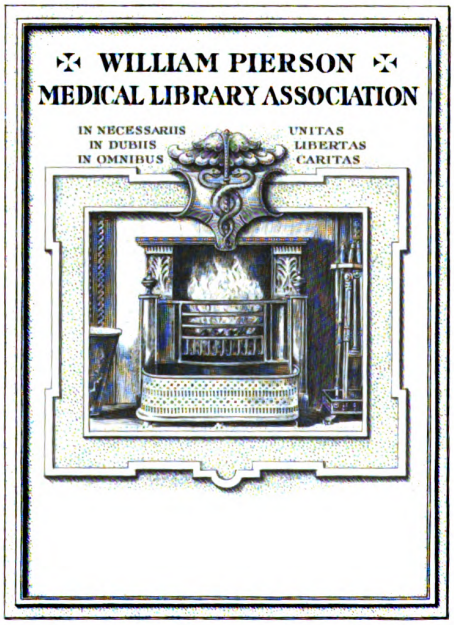
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INDEX TO VOLUME I., 1900.

☞ *Readers in search of a given subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral, Heart and Cardiac, Liver and Hepatic, Bicycle and Cycle, Child and Infant, Enteric and Typhoid, Bronchocele, Goitre, and Thyroid, Diabetes, Glycosuria, and Sugar, Eye, Ophthalmic, and Vision, &c., &c.*

A

Abbott, Mr. C. E., apomorphine, 1635
Abdomen, bullet (or gunshot) wound of the, 310, 704; contusions of the, operations for, 1469
Abdominal pregnancy, 31; hysterectomy, cases of, 99, 613; teratoma, 170; cavity, opening the, 315; aneurysm, 1071; distension as an indication for laparotomy, 1205; injuries without external wound treated by laparotomy, 1277; section, the selection of cases for, 1446
Abdomino-vaginal hysterectomy, 781
Abercorn, the Duke of, Sick and Wounded Officers Surgical and Medical Aid Fund, 133
Aberdeen: the London Scottish Rifle Volunteers, 347; Congress of the Royal Institute of Public Health, 425, 1327; whooping-cough, 1297; new maternity hospital, 1404; hospital Saturday, 1404; bequests to hospitals, 1760
Aberdeen University: various items of news, 203, 888; death of the Principal, 555; honorary and ordinary degrees, 734, 1034; appointment and induction of Principal, 888, 1035; award of the Lizars gold medal, 968; age of King's College, 1035; the anthropological museum, 1327; meeting of the Athletic Association, 1760
Aberdeen University Club (London) dinner, 1225
Aberdeen Royal Hospital for Sick Children, 347; Royal Infirmary, 501; Royal Asylum, 501; City Hospital, 968, 1327; Volunteer Medical Staff Corps, 968, 1760
Aberdeenshire, sanitary work in, 1097, 1682, 1907
Abney, Sir William, knighthood for, 43
Abortion, quacks and, 356, 510, 1297
Abraham, Dr. P., dermatographia, 710
Abrahams, Dr. B., chorea, 384
Abscess: of the heart, 315; of the brain (or cerebral), 388, 929, 1277; of the liver, 534, 556, 853, 1285; in connexion with the appendix, 541; cerebellar, 543; of the spleen, 710; in the pubic region, 710; gaseous, 1021; cerebral, threatened, 1277; of the pericardium, 1434; spinal, 1805
Absent-minded Beggar (review), 1663
Absorption, intestinal, 1084
Accidents, medical attendance for, 1336
Accouchements, La Pratique des (review), 711
Acetylene lamps for bicycles, 1482, 1566
Achondroplasia, 618
Acidity, 1, 393
Acne necrotica or varioliformis, 27; varioliformis, 238; vulgaris, combined with eczema, 385
Acromegaly (review), 1592
Acroparæsthesia, 1795
Actinomycosis of the kidney, 68; of the neck, 1210
Actions-at-law brought by medical men, 141, 341, 510, 635, 982, 1080, 1176, 1413, 1452; by an osteopathist against a board of health, 275; by a schoolmaster against a pupil, 632; against the Plumbers' Company, 638; against an unregistered dentist, 791; against the Prussian Treasury, 970; for breach of promise, 972; against a hotel company, 1017; against the *British Medical Journal*, 1296; for damages for antenatal injuries, 1336; against medical men, 1809, 1812; against a district council, 1877; against a hospital, 1916
Adams, Lieut.-Col. A., The Western Rajputana States (review), 171
Adams, Mr. W., the late, 402; obituary, 812
Adams *versus* the *British Medical Journal*, 1296
Addenbrooke, Dr. B., abscess in the pubic region, 710
Addison's disease with leucoderma, 453; following enteric fever, 1665
Adelaide, alleged cases of plague in, 657, 810; drainage of, 891
Adelaide Hospital, 1099
Aden, plague in, 639
Adenitis, chronic, of various glands, 1009
Adeno-carcinoma of the ear, 543
Adiposis dolorosa, 1803
Adulteration, when it is good, 177
Adulteration of golden syrup, 177
Adulteration (see also Food)
Advertisement, a suspicious, 212; puffing, by an unqualified practitioner, 743
Advertisements, improper, 355, 432, 744, 899, 900, 950; medical, in newspapers and popular periodicals, 744, 899, 1042; pernicious, 1042
Advertising mural, 1180
Æsculapius and his sanctuary, 1221
Africa, South, endemic hæmaturia in, 249; public health in, 581; tsetse fly in, 593; enteric fever in, 1740
Africa, South, war in, 56, 117, 182, 258, 334, 402, 483, 560, 639, 723, 794, 873, 956, 1026, 1088, 1151, 1237, 1308, 1382, 1460, 1535, 1606, 1676, 1742, 1818, 1899 (see also Army, Boers, Rhodesia Royal Army Medical Corps, Services, Sick and Wounded, Soldiers, Troops, War in South Africa, South African Zulus)
Africa, West, blackwater fever in, 11; floating hospitals for, 178; malaria expedition to, 871; the effects of service in, 952
Africa, West (see also Ashanti, Gold Coast, West African)
African horse sickness, virus of the, 1441
African travellers (see Livingstone)
After-care Association, 1131
Ages (see Middle Ages, Old age)
Agglutination of red corpuscles, the use of, for diagnostic purposes, 1210
Agglutination (see also Typhoid bacillus and typhoid fever)
Agraphia, 1446
Aid (see First-aid, Medical aid)
Ainley, Mr. D., obituary, 1331
Air (see Fresh air, Liquid air, Open-air)
Aitken, Dr. D. W., tuberculosis, 1447; tonsil clamp, 1664
Aix-la-Chapelle, the treatment of syphilis at, 542
Akenside, Mark, 1378
Alabone, the General Medical Council *versus*, 715
Albino, 543
Albuminuria in pregnancy, 169; the proteids excreted in, 853; Physiological (review), 1011
Albumosuria, 540
Alcohol, the prescribing of, *versus* our own interests, 89, 198; and the respiration, 478; as an antidote in carbolic acid poisoning, 481; the effect of, on the human brain, 956, 1271
Alcohol (see also Anti-alcoholic, Drink, Inebriates, Intoxicating liquors, Licensing laws, Spirit-bars, Temperance)
Alcoholic stimulants and life assurance, 630; diathesis, 861; neuritis, perforating ulcer of the foot in, 1224
Alcoholism, varieties and treatment of, 891; the "gold-cure" of, death of the author of, 971; and suicide, 1081; treatment of, 1473; acute, cortical hyperæsthesia in, 1739
Aldershot, deaths from heat at, 1842, 1920
Aldershot field day, 1737, 1812
Alderson, Dr. W. E., contraction of the hands, 388
Aldgate High-street, the slaughter-houses in, 431
Alexander, Mr. W. F., carbolic disinfectants, 158
Alexander, Maj. A. C. A., the late, 334; obituary, 351
Alexander, Dr. W., coal and pebbles in the vagina, 620; ophthalmia, 579, 940
Alexander, Mr. P. Y., Darwin and Darwinism (review), 944
Alexandria, the plague in, in 1899, 1534
Alford, Mr. H. T. M., presentation to, 278
Alive under the coffin lid, 661
Allan, Dr. C. M., lead poisoning, 966
Allbutt, Prof. T. C., A System of Medicine (review), 466
Allchin, Dr. W. H., A Manual of Medicine (review), 1887
Allen, Dr. W. J., embolism, 1074
Allingham, Mr. H., opening the pericardial sac, 693
Almanac (see British Almanac)
Alopecia areata, cases of, 386
Althaus, Dr. Julius, obituary, 1763
Althorp, Mr. C. F. M., sarcoma, 941; aneurysm, 1010; the liver, 1446
Ambulance, the use of the, in civil practice, 475; horse, in Manchester, 1034
Ambulance corps, Sir J. Sivewright's, 653; vehicles, military, 495, 728; wagons, 814; competition at Crewe, 1145; class, instructor for an, appeal for an, 1381
Ambulances, horse, 1604, 1768, 1816, 1836, 1907
Amenorrhœa, pathological, 939
America, the United States of, legal control of prostitution in, 328; marine hospital service of, 477; cancer in, 717; expedition of the Liverpool School of Tropical Medicine to, 1893
America, the United States of, and American (see also NEW YORK, CORRESPONDENCE FROM, Anglo-American, Spanish-American)
America, South, plague in, 69
America, South (see also Argentine Republic, River Plate, Paraguay)
American methods of dealing with plague, 629; medical degrees, valueless, 715; small-calibre bullets, 789; congress of tuberculosis, 1083; Neurological Association, 1605
Amido-butyric acid (β), injections of, the production of coma by, 706
Amyloform, 470
Amyloid sections, the mounting of, 381, 384; disease, the experimental production of, in animals, 384
Anæmia, splenic, 115; splenic, and diabetes, 401
Anæmia, pernicious, a chronic infective disease, 221, 296, 371; relapsing, 709; case of, 780; treated by antistreptococcic serum, 1198; and its pathology, 1602
Anæmia, case of, 239; oxygen in, 1003; the treatment of, by iron and arsenic, 1146
Anæsthesia, failure of respiration under, 1518, 1656
Anæsthesia, local, produced by eucaine, 928; the production of, in the ear, 1125
Anæsthesias, ether and other, sequelæ of, 29
Anæsthetic, "gas and oxygen" as an, 1435; management of the, in cases of respiratory impediment, 1714
Anæsthetics (review), 1661
Anæsthetics, the giving of, by unqualified persons, 283; for young children, the administration and choice of, 1211; persons dying under, coroners' inquests on, 1811, 1908
Anæsthetics, deaths under (see Chloroform, Ether)
Anæsthetist's position towards quack dentistry, 283
Analgesia, local, produced by eucaine β, 156, 1106
Analysis of Food and Drugs (review), 468
Analysts, public, qualifications of, 866

ANALYTICAL RECORDS FROM THE LANCET LABORATORY.—Diabetic marmalade; Gerolstein natural mineral water; Bynoglycerophosphates; Saarburg Moselle; Urotropine; "Fino Puro" sherry; Mistura ferri salina; Fine old brandy (Spanish); Citrophen;

Cascara chocolettes; Maltzyme, 35—Various selected wines; London stout; Chloretone; Gluten bread and biscuits; New tabloids and Soloids; Oxydel, 105, 106—Malted marmalade; Amyloform; Keystone Burgundy (ferruginous); Special drugs (Merrell); "I and I" food; Kola Astier; Baking flour for making brown bread; Reeve's cocoa essence; Fluid extract of malt and glycerophosphates; Table jellies; Baking powder; "Mafuta" preserved bananas; Patent custards, 470, 471—Soloids of protargol; Valtine globules (medicated); Milkine food; Anti-asthmatic powder; V.V.O. Scotch whisky; Montague rose cream soap; Antikamnia codeine tablets; Tropon preparations and oatmeal cocoa; Invalid foods; Digestive food and biscuits, 1290, 1291—Tabloids quinine hydrobromide; Vibif fluid beef; Clarence fruit juice crystals; Mercurol; Champagne cider; Hyrgolum; Sacrette sugar; Lagrima, 1449, 1450—China tea; Drumalban whisky; Nao food preparations, 1522

Anatomy, Surgical (review), 1138
Anatomy and Physiology, Journal of (review), 241, 1289
Anatomy (see also Myology)
Anchovies, adulteration of, 49
Anders, Dr. J. M., Practice of Medicine (review), 782
Anderson, Dr. A. J., antistreptococcic serum, 315
Anderson, Mr. A. R., boric acid, 574; suprapubic prostatectomy, 1075
Anderson, Dr. J., Trousseau's wine, 898
Anderson, Mr. G. R., hernia, 940
Anderson, Mr. R., gastric ulcer, 944
Anderson, Dr. F., placenta prævia, 1660
Anderson, Dr. T. McCall, tuberculin, 1703
Anderson, Mr. R. B., midwives registration, 1088; corporate and medical reform, 1304
Anderson, Miss May, presentation to, 1102
Anderson and Fenner *versus* Moeller, 1413, 1452
Aneurysm, femoral, 461, 1074; subclavio-axillary, 463; popliteal, 463; of the aorta, 623, 710, 858, 1584; of the neck, 707; arteriovenous, of the cavernous sinus, 1010; abdominal, 1071; innominate, 1209, 1443; subclavian, 1285, 1284; axillary, 1365; thoracic, 1730
Aneurysmal varix, 622
Angina, the pronunciation of, 180
Anglo-American Insurance Company, 72, 271, 956 (see also Hopwood)
Angus, Mr. H. B., cases exhibited, 388
Angus, Dr., embolism, 1010
Anilin oil in aural surgery, 1125
Animals, Kindness to, Church Society for the Promotion of, 322; Experiments on (review), 391; Comparative Physiology and Morphology of (review), 1288
Animals, unsexing, the after-effects of, 866; living, experiments on, 1842
Ankle-joint, disease of, 1365
Annett, Dr. H. E., tubercle bacilli, 159; bacillus of pink-eye, 201; Malaria Expedition, &c. (review), 1010
Anophthalmos, 940
Antenatal life, the chronology of, 938; injuries, damages claimed for, 1336
Anthrax, the dissemination of, 44
Anthrax (or malignant pustule), cases of 136, 164, 1005
Anthropology (see Man, Races of)
Anti-alcoholic serum, 44
Anti-asthmatic powder, 1290
Anti-enteric vaccine, 665
Antikamnia codeine tablets, 1290
Anti-plague inoculation, 567, 713
Anti-pneumotoxin, 460
Anti-rabic Institute in Cairo, work of the, 503; in India, 1911
Antiseptic, a urinary, urotropine as, 1876
Antiseptics in food, the effect of, on digestion and dyspepsia, 507
Antistreptococcic serum in septic lymphangitis, 303; in puerperal septicæmia, 315; in pernicious anæmia, 1198; in septicæmia, 1591; in cerebro-spinal meningitis, 1897
Antitobacco league, 424
Antitoxin of cobra venom, 384
Antitoxin treatment of diphtheria, 138, 326, 943, 1030, 1093, 1167
Antityphoid inoculations, 150, 245, 338, 429, 504, 565, 967, 1477, 1478
Antivaccination, 1886
Antivaccination League and Dr. W. J. Collins, 134, 266, 332; propaganda, 423; tactics, 868
Antivaccinationists as vaccination officers, 740
Antivenomous serum, the standardisation of, 1433
Antivivisection, 1886
Antivivisection Bill in the United States, 583
Antivivisectionists and Mr. R. E. Lloyd, 665
Antral suppuration, 636
Antrum (see Mastoid antrum)
Aorta, aneurysm of the, 623, 710, 858, 1584
Aortas, atheromatous and dilated, 1209
Aortic valves, atheromatous endocarditis of the, 707; regurgitant murmur heard in the pulmonary area, 1282
Aphasia, motor, 940; sensory, 1446
Aphasic paralysis, the use of raised letters in, 1699, 1767
Apomorphine as a hypnotic, 1083, 1481, 1635
Apoplexy, heat, in the Argentine Republic, 868
Apostoli, Dr., the late, 1329
Apothecaries, Society of (see Society of, &c.)
Apothecaries' Hall, Ireland, pass list, 505; the examinations, the General Medical Council and, 1688, 1760
Appendicitis, a mode of operating in, 87; acute, operations for, 197, 264; pathology and treatment of, 225, 235, 557, 615; reflections upon, 294; prognosis in, 378; levurine in, 619; treatment of, without operation, 645, 1010; in pregnancy, 809; suppurative, 852; in a hernial sac, 1085
Appendix, abscess in connexion with the, 541
Appointments, weekly lists of, 70, 141, 209, 281, 353, 430, 508, 587, 665, 741, 815, 896, 979, 1040, 1104, 1177, 1254, 1333, 1412, 1479, 1563 1632, 1697, 1765, 1843, 1923
Appointments, various, some non-medical, 247, 402, 502, 579, 658, 664, 868, 882, 888, 893, 895, 954, 968, 1035, 1899
Appointments (see also Medical Appointments, Medical Magistrates, Services)
Archambault, Dr. J. L., empyema, 719
Archbold, Mr. W. A. J., Cambridge Appointments Association, 1543
Architectural Hygiene (review), 626
Area condemnation under the Housing Acts, 943
Argentine Republic, plague in the, 721, 737, 1022; heat apoplexy in the, 868
Argyle, Dr. S. S., milk, 891
Arithmetical triangle in ophthalmology, 1801
Arm, deformity of the, from fracture, 101
Armstrong, Mr. W., Buxton water, 1651
Army estimates, 729
Army in South Africa, dental surgeons for the, 486
Army medical corps, New South Wales, 811
Army, medical establishment of the, vote for the, 740, 894, 948
Army medical officer, reported murder of an, 572, the retired, the position of, 732, 886; a German, on the war in South Africa, 970
Army medical report for 1898, 1384, 1675, 1827
Army, medical organisation for the, 586
Army Medical School, Netley: pass lists, 62, 1320; the Indian Medical Service, 130; close of the session, 334; commencement of the session, 653; list of nominated surgeons, 729; surgeons on probation, 882, 964, 1029; an appointment, 882; close of the session, 1831
Army medical service in the field, lecture on, 205
Army medical service, the strength of the, 429
Army medical services, the Canadian, 1914
Army ration, the American, 137
Army recruits, the teeth of, 894
Army surgeons, Italian, memorial to, 889
Army veterinary department, report of the, 1532
Army, the United States, medical department of, reforms in the, 276; the French, conscripts for, 882; the Swiss, 970; the Italian, tuberculosis in, 1082; the French, typhoid fever in, 1172; the French, temperance measures in, 1472
Army (see also Frontier force, Reservists, Royal Army Medical Corps, Sick and wounded, Soldiers, Troops, War, Wounded)
Arnold, Mr. G. J., aneurysm, 1584
Arsenic, poisoning by, 407; hypodermic injection of, 899; in anæmia, 1146
Arsenic (see also Cacodyle)
Arterio-sclerosis, cardiac failure due to, mercury in, 1519, 1881
Arthritis, gonorrhœal, treatment of, 387; rheumatic, in a child, 457; rheumatoid, the excretion of nitrogen in, 706
Arthrodesis, 30
Arum maculatum, poisoning by, 1176
Ascites, hæmorrhagic, 17, 131; produced by fibroid tumour of the uterus, 30; lactescent, 869; chylous, 938, 1791; treatment of, 1045, 1262
Aseptic Surgery (review), 469
Ashanti, the situation in, 1397; colonial surgeons in, 1814
Ashby-de-la-Zouch Cottage Hospital, 1476
Ashford, Mr. W., presentation to, 1253
Ashmead, Dr. A. S., leprosy, 890
Assam, the unhealthiness of, 1321
Assistance Publique, the budget of the, 348
Assistant, the indoor, the accommodation of, 72
Assistants, qualified (or medical), the dearth of, 212, 355, 1293; unqualified, the employment of, 668
Associations, annual meetings (not including British Medical Association): Scottish Poor-law Medical Officers', 135; Manchester and Salford Sanitary, 578; Irish Workhouse, 808; Australian, for the Advancement of Science, 891; Western Counties Veterinary Medical, 893; Cornwall Nursing, 944; Dublin Sanitary, 1035; Asylum Workers', 1301; British Dental, 1749; British Medical Temperance, 1765
Asthmatic (see Anti-asthmatic)
Asylum reports, 123, 415, 1291, 1537, 1828; Workers' Association, 730, 1301, 1476; attendants up to date, 1250; pathology, 1444; workers, pensions for, 1527; superintendent, duties of a, 1672
Asylums, deficiencies in our, 806; modern, the construction of, 899; the Scottish, pathology at, 1020
Ataxy, Friedreich's, case of, 168
Athenæum Club, admission of Dr. W. S. Church, 871
Athletic Club, Bristol Medical, 428
Athletics, the effect of, on the heart and circulation, 174
Atkinson, Prof. J., and the cure of cripples, 211, 283
Atkinson, Dr. F. R. B., Acromegaly (review), 1592
Atkinson, Dr. J. M., carbolic acid in plague (see Erratum on p. 614)
Atmokausis, 1074 (see also Vaporisation)
Atmosphere, gases of the, 1813
Atropine in sea-sickness, 781; in plague, 1445
Atropine solutions, sterilisation of, 1173
Atropine (see also Homatropine)
Attwell, Mr. H., the Boers, 496
Auditory meatus, insects in the, 283; sensations in epilepsy, 1119
Auld, Dr. A., toxins of pneumococcus, 166
Aural surgery, the present position of, 359
Austen, Mr. E. E., Malaria Expedition, &c. (review), 1010

AUSTRALIA, CORRESPONDENCE FROM.—Health of Sydney, 138, 811—The standard of milk, 138—Small-pox on s.s. *Ninereh*, 138—Beriberi on board ship, 138—Appointments, 139—Plague, 427, 810, 1099, 1685—Annual meeting of the Victorian Branch of the British Medical Association, 427—New South Wales Nurses' Association, 427—Fever hospital at Sydney, 427—Surgeons for South Africa, 427—Primary sarcoma of the liver in a child, 427—Medical Society of Victoria, 811—New South Wales Army Medical Corps sent to South Africa, 811—Australasian Association for the Advancement of Science, 891—Adelaide Hospital, 1099—Prince Alfred Hospital, Sydney, 1099—Alleged breach of ethics, resignation of the council of the Victorian Branch of the British Medical Association, 1554, 1686—Sydney and Prince Alfred Hospitals, 1686—Memorial portrait of the late Sir Anthony Brownless, M.D., 1686

Australia, plague in, 427, 657, 810, 1023, 1081, 1099, 1223, 1297, 1377, 1459, 1470, 1548, 1679, 1685, 1758, 1836, 1908
Austria or Austrian (see VIENNA, CORRESPONDENCE FROM)
Austro-Hungarian war of 1848-1849 and the Boer war, 1604
Auto-intoxication, 1601
Axillary aneurysm, 1365
Ayr, typhoid fever in, 66, 202, 272, 347

B

Babtie, Maj. W., Victoria Cross awarded to, 1220, 1246, 1320
Baccelli, Dr. Guido, illness of, 503
Bacilli of diphtheria, non-typical, 942
Bacilluria, typhoid, 915, 1061
Bacillus proteus vulgaris, coli communis, and pyocyaneus in venous thrombi, 165; dysentericus, 323; gangrænæ pulpæ, 386; icteroides, 477; Eberth's, 480; the tubercle, in urine, 605; perfringens, 1021; the diphtheria and the pseudo-diphtheria, 1441; capsulatus aerogenes, 1441
Bacillus, the typhoid, the effect of urotropine on, 707; and typhoid fever, 821, 910, 1050, 1079; effect of the nutrient medium on, 939
Backache as a symptom of rectal disorder, 1128
Bacteria, the influence of the temperature of liquid air on, 849, 1130
Bacteria (see also Bacillus, Diplococcus)
Bacterial treatment of crude sewage, 649
Bacteriological examinations, the value of, 401; research, dangers of, 506; laboratory at Cronstadt, 506; Institute, the Ceylon, 557; specimens, the sending of, through the Post Office, 1014
Bacteriologist for the Irish Local Government Board, 269, 480, 501; Liverpool municipal, 579

Bacteriology of typhus fever, 113; of pink-eye in horses, 201; and public health, 311; of pneumonia, 460, 544; of rheumatism, 761, 920, 964; of ophthalmia, 940; of typhoid fever, 1163; of burial and of the soil, 1372; of cerebro-spinal meningitis, 1805
Bacteriology, Laboratory Work in (review), 31; Atlas of (review), 33; Manual of (review), 34; Outlines of (review), 1288
Baden-Powell, General, a medical tribute to, 1846
Baigent, Dr. W., an appeal, 1467, 1566
Bailey's Index to the *Times* (review), 1139
Bain, Dr. W., arteritis, 706; gout, 931, 1444
Bakers' and confectioners' exhibition, 886
Baking flour, 470; powder, 471
Bakteriologie, Atlas und Grundriss der (review), 33
Baldwin, Mr. F. B. J., meningitis, 772
Ballance, Mr. C. A., mastoid operation, 234
Ballantyne, Dr. J. W., specimens exhibited, 170, 618; ante-natal life, 938; vulvar hæmatoma, 1517
Ballin, Mrs. A. S., an "authority on health," 1335
Balneology, literature of, 1566
Bananas, preserved, 471
Bandelet, the sanitary, 818
Bangor, University College at, 352
Banks, Sir W. M., cancer of the breast, 684, 843, 990, 1094
Barber's chair, head-rest for a, 862
Barbers, barber-surgeons, and the Lord's Day Observance Act, 394
Barbour, Dr. A. H. F., the pelvis, 1885
Bardswell, Dr. N. D., phthisis, 388
Bark, Mr. J., cysts in the glosso-epiglottic fossa, 1285
Barker, Mr. W. J. T., a seventeenth century physician on phthisis, 1845
Barker, Prof. A. E., eucaine β, 156; cases exhibited, 168, 169; dislocation of the hip, 456; macroglossia, 618; hip-joint disease, 1499
Barling, Mr. H. G. intestinal obstruction, 314; nephrectomy, 623; an appeal, 1679
Barnstaple and North Devon Dispensary, 377
Baron, Dr. B., naso-pharyngeal case, 314
Barr, Dr. J., pulsus paradoxus, 1285
Barrs, Mr. J. B., an appeal, 818
Barry, small-pox at, 70; proposed municipal hospital for, 428
Barry accident hospital, 206, 1332; public hospital, 1510
Bartley, Mr., M.P., and the Shoreditch vestry, 1668
Barton, Mr. J. K., Records from General Practice (review), 1889
Barwise, Dr. S., Analysis of Water (review), 392
Bassett-Smith, Staff-Surg. P. W., a parasitic crustacean, 1467
Basilysis, 619
Bastianelli, Dr. G., malaria, 79, 111
Bat, fœtus and decidua of a, 466
Bath: Royal United Hospital, 206, 411; Eastern Dispensary, 278; Western Dispensary, 318; Eye Infirmary, 576; Nurses' home, 639; St. John Ambulance Association, 1273; Royal Mineral Water Hospital, 1344; the hot springs, 1467
Bath rural district, medical report for, 1215
Baths, new, at Helouan, 252; public, 636; saline, 709; electric light and heat, 1075
Baths and climate in diseases of the nervous system, 387, 943
Batley, typhoid fever at, 397
Batten, Dr. F. E., encephalitis, 1441
Batten, Dr. R. D., a crustacean on the cornea, 1002
Battersea and Clapham medical service, 497
Battery (see Storage battery)
Battle of the Clubs at Cork, 501; at Cowes, 1031
Battle, Mr. W. H., tumour of the femur, 457; dislocation of the knee, 617; malignant growth of the skull, 1282; choledochotomy, 1442
Baxter-Tyrie, Dr. C. C., aneurysm, 1730
Baynes, Bishop, My Diocese during the War (review), 1888
Bazaar, the National, 1465, 1601
Beale, Dr. C., consumption, 102
Beaman, Mr. E. H., The Experiment of Dr. Nevill (review), 1449
Beaumont, Mr. W. M., ophthalmoplegia, 854
Beddard, Mr. F. E., A Book of Whales (review), 1449
Beistead, invalid, with lifting arrangement, 1450
Bee, the sting of a, death from, 1697
Beef (see Vitbo)
Beer yeast, dried extract of, in furunculosis and appendicitis, 619
Beer (see also Stout, "Long pull")
Beevor, Sir H., cardiac disease 456; lipomata, 1283
Beevor, Dr. C. E., paralysis of cranial nerves, 618
Begg, Dr. C., small-pox, 238
Belcher, Mr. H. E., fracture of the femur, 24; typhoid fever, 1004
Belcher, Mr. W. J., the late, 67
Belfast: influenza, 67, 135; public health, 135, 348, 501, 735, 1035, 1405; Samaritan Hospital, 348, 1616; Forster Green Hospital for Consumption, 425; the city analyst, 425; nursing question in the Royal Victoria Hospital, 580; adulteration of milk, 659; proposed new infectious hospital, 735, 808, 1035, 1171, 1405, 1472; Mater Infirmorum Hospital, 888, 1328; Queen's College, 969, 1477, 1616; close of the medical session, 939; typhoid fever, 1551, 1616, 1682, 1760, 1912; milk-supply, 1682
Belfast Workhouse, 135, 659; Maternity Hospital, 348; Hospital for Sick Children, 348; Port Sanitary Authority, 888; Royal Hospital, 1035; Ophthalmic Institution, 1035
Belfast and District Lunatic Asylum, 501
Belgian ambulance with the Boers, 1237
Bell, Mr. J., malignant pustule, 1005; plague, 1513
Bell, Mr. W. K., presentation to, 1253
Belladonna plaster controversy, 114
Ben Nevis, the meteorology of, 718
Benevolent (see British Medical Benevolent)
Bennett, Mr. W. H., the knee-joint, 6; massage, 1569, 1640
Bennett, Mr. W. E., coxa vara, 781
Bennett, Mr. W. B., aphasia, 940
Benson, Mr. J. R., hydrocele, 771
Benson, Mr. A. H., dermoid tumour, 939; polycoria, 1210
Benthall, Mr. A., personal injury claims, 769; loss of eyes, 927
Bequests (see Charitable, Hospitals)
Bergel, Dr., ciliary motion, 325
Beri-beri on shipboard, 138, 1082; in the Dutch navy, 255; in Falmouth, 278; in Hong-Kong, 585; in the Straits Settlements, 720; in the Japanese navy, 722

BERLIN, CORRESPONDENCE FROM.—Statistics of the medical profession, 68—The Institution for Infectious Diseases, 68—Actinomycosis of the kidney, 68—Midwives in Berlin, 68—Ladies as members of the Berlin Medical Society, 273—Legislation with respect to private laboratories, 273—Precautions against the plague, 274—Artificial gout in birds, 274—Simultaneous intra-uterine and extra-uterine pregnancy, 274—The sale of secret preparations, 349—Medical journals in Germany, 349—Prof. Koch on malaria, 581—Public health in South Africa, 581—A university for Hamburg, 582—Strophanthus as a sedative, 660—Collective investigation on carcinoma, 660—A radical cure for erysipelas, 660—Medical congresses, 660—The late Prof. Meyer, 660—The late Prof. Leichtenstern, 661—An army medical officer on the war in South Africa, 970—The title of "Sanitätsrath," 970—The case of Prof. Neisser, 970—Foreign medical men in Italy, 1098—The war in South Africa, 1099—Legislation as to infectious diseases, 1251—The German ambulances with the Boers, 1251—Collective investigation on venereal diseases, 1251—Military surgery in the Boer army, 1406—The courts of honour, 1406—Malingering by military recruits, 1406—Researches on carcinoma and syphilis, 1551—Researches on vaccine lymph and foot-and-mouth disease, 1552

Bernard, Matilda, Embryology of Invertebrates (review), 33
Bernard, Mr. W., insanity, 857
Berry, Mr. J., appendicitis, 197
Berry, Mr. W., chloroform, 1543
Bethnal Green Infirmary, the nursing staff of the, 740
Bibliographia Medica, 636, 660
Bickerton, Dr. R., proptosed eye, 1362
Bickle, Mr. L. W., the kidney, 608
Bicknell, Mr. R. H., Bolton waterworks, 493
Bicycles, acetylene lamps for, 1482, 1566
Bicycles (see also Cycle)
Bidwell, Mr. L. A., dilated stomach, 103, 999
Biedermann, Dr. W., Electro-physiology (review), 1366
Biernacki, Dr. J., diphtheria, 623
Bignami, Dr. A., malaria, 79, 111
Bile-duct, the common, removal of a gall-stone from the, 1885
Bilharzia disease, 249, 461
Billington, Dr., hysterical mutism, 1009
Biography, National, Dictionary of (review), 1012, 1519
Biological science, the degree of doctor of, 888
Biology (see Life's Mechanism)
Bird, Dr. G., the late, 1381; obituary, 1619
Birds, artificial gout in, 274

BIRMINGHAM, CORRESPONDENCE FROM.—Christmas festivities, 134—Deaths under chloroform, 134—Typhoid fever, 134, 1034—The Anglo-American Insurance Company, 271—Assault on a medical man, 271—The degradation of consulting, 271—Medical charities and war funds, 271—Health of the city, 577—Birmingham and the medical arrangements for the war, 578—The workhouse infirmary, 578—War notes, 657—The fight with tubercle, 658—The Consultative Institute (or Institution), 807, 1680—Training Institution for Nurses, 807—Needless deaths of children, 807—The General Hospital, 1033—The Medical Institute, 1033—The Women's Hospital, 1248—Lying-in Charity, 1248—Food and Drugs Act, 1248—Alleged adulteration of sugar, 1470—The University of Birmingham, 1471, 1680—"The long pull," 1471—Medical Benevolent Society, 1680

Birmingham, Hospital Sunday at, 207; Consultative Medical and Surgical Institution, 271, 807, 1595, 1633; the new university of, 328, 658, 1222, 1471, 1899; Mason University College, the Ingleby Lectures, 1742, 1859
Birmingham and District General Medical Practitioners' Union, 278
Birmingham, Prof., the stomach, 620
Birthday honours, 1526, 1539, 1601, 1911
Biscuits, gluten, 106; digestive, 1291
Bishop, Mr. E. S., ovarian cyst, 30; fetishism in surgery, 363; peritonitis, 1648, 1836
Bismuth hydrastia, 470
Black instruments in the examination of interiors, 883
Blacker, Dr. B., treatment by ultra-violet rays, 1447
Blacker, Dr. G. F., feeding of infants, 540
Blackmore, Dr. G. J., plague, 1789
Blackwater fever, histology and prevention of, 11; cases of, 952
Blackwood on the Royal Army Medical Corps, 803
Bladder, papilloma of the, cystotomy for, 239; hernia of the, 596, 731, 806; operations for the removal of stone from the, 964
Bladder atony, vasectomy in, 1275
Blake, Dr. H., otitis, 929
Bland-Sutton, Mr. J., enterectomy, 1437; Diseases of Women (review), 1887
Bletchingley, convalescent home at, 1019
Blindness (see Colour blindness, Word blindness)
Blisters in rheumatic heart disease, 776, 923; in rheumatic arthritis, 776
Blood, malarial, the staining of, 64; in rheumatism, 921; changes of the, in disease, 1006, 1360; agglutination of the red corpuscles, 1210; peculiar corpuscles in the, in syphilis, 1762
Blood parasites in malaria, 333; examinations, the clinical value of, 544; vessels, the relation of, to lymphatic vessels, 606, 636; pressure in sleeplessness and sleep, 1804
Blyth, Mr. W., annual report for St. Marylebone, 1027
Board of Trade tests for colour-blindness, 1511, 1523
Board school children, the eyesight of, 1022
Bodies (see Dead bodies)
Body (see Brain and Body)
Boer wounded at Orange River, 487; army, military surgery in the, 1406; war and the Austro-Hungarian war of 1848-1849, 1604; trenches, 1609
Boers, the physique of the, 410, 496, 574, 732; pedigree and racial conditions of the, 743; German ambulances with the, 1165, 1251, 1762; Belgian ambulance for the, 1237
Bolton waterworks, 493
Bombay, sewerage in, 732
Bond, Dr. F. T., antivaccination propaganda, 423
Bone, reproduction of, after subperiosteal resection, 167; the interparietal, 326
Bones, alteration of the, in anæmia, 239; of the insane, 347; with non-united or partially united epiphyses, 620
Books inquired for, 1634, 1768, 1926
Books received, 209, 353, 587, 895, 1177, 1411, 1631, 1922
Books recommended, 355, 668, 900, 1336, 1566
Boots for soldiers, 974; for volunteers, 1020
Borax in milk, 637
Boric acid in food (or preserved foods), 13, 131, 181, 207, 279, 574, 730; in fish, 50, in milk, 50, 229, 429, 586; in butter, 430, 586; in dyspepsia, 507
Borland, Dr. H. H., imperforate hymen, 1799
Bosanquet, Dr. W. C., rheumatic fever, 1581
Botanical laboratory for University College, Liverpool, 201
Bourke, Dr. W. H., a sad and urgent case, 143, 982
Bourne, Mr. A., the late, the case of, 1467, 1566, 1700
Bournemouth, medical attendance at, 589, 667

Bourneville, Dr., Epilepsie, Hystérie, Idiotie (review), 241
Boville, Mr. W., an appeal, 1467
Bowel, extensive resection of the, 217, 248; rupture of the, without external wound, laparotomy for, 1277
Bowles, Dr. R. L., rupture of the œsophagus, 930
Bowman, Dr. F. H., milk, 887
Box, Dr. C. R., tumour of the eyeball, 855
Boyd, Dr. F. D., cases exhibited, 28
Boyd, Mrs. S., intestinal suture, 1586
Boy, the bad, the liability of, 632
Boyle (see Ventilation)
Boys, hysteria in, 1213
Boys, Professions for (review), 625
Boyton, Mr. E. T. A., the Boers, 496
Brachial plexus, rupture of the, 692
Bradford Eye and Ear Hospital, 585; Sanitary Association, 1253
Bradford and West Riding Medical Union and Mr. V. Horsley, 557
Bradford, Dr. J. R., rabies, 593, 758
Bradshaw, Dr. T. R., muscular atrophy, 460; albumosuria, 540; scleroderma, 1074
Bradycardia, 710, 944, 1208, 1591
Braemar, scavenging in, 1682, 1907
Brain, syphilitic disease of the, 101; abscess of the, 388; pons of the, unilateral lesion of, 618; the human, the effect of alcohol on, 956, 1271; gunshot wound of the, 1068; cyst in the, 1210
Brain, &c., topographical relations of the, to the walls of the skull, 525
Brain and Body (review), 1139
Brain injury, cases of, 1719
Brain (see also Neurone)
Braine, Mr. C., anæsthesia, 1518
Braithwaite, Dr. J., section of the uterus, 237; ventrofixation, 1444
Brander, Dr. R. L., presentation to, 584
Brandy, 36
Brass poisoning, chronic, 623
Brazil, expedition of the Liverpool School of Topical Medicine to, 1893
Bread, gluten, 106; brown, flour for, 470
Breast, needles inserted in the, by an hysterical girl, 388, 1447; cancer of the, 684, 843, 990; operations on the, anæmia after, 844; cysts of the, 1201, 1206; amputation of the, for scirrhus, 1276
Breasts, the development of the, in the male, 475
Brentry, Royal Victoria Homes for Inebriates, 207, 718, 1884
Bressa prize, award of the, 205
Bright's disease, skin affections in, 773; recovery from, 780
Brisbane, Intercolonial medical congress at, 1878
Briscoe, Mr. J. C., leukæmia, 1906
Bristol: collections for medical charities, 207, 231; homes for inebriates at Brentry, 207, 718, 1884; drainage scheme, 377; medical athletic club, 428; Hospital Sunday, 428, 1031; Royal Victoria Convalescent Home, 505; public health, 505; medical dramatic club, 893, 1282; Medical Missionary Society, 893; Royal Hospital for Women and Children, 946; University College, 1697, 1733
Bristol Dispensary, 95; Royal Infirmary, 303, 1038; General Hospital, 893; Eye Dispensary, 1066; Eye Hospital, 1102; Lunatic Asylum, 1468
British Almanac (review), 469
British Association, meetings of the, 1250, 1839
British Census (1901), 1141
British Dental Association, Metropolitan Branch of the, dinner, 576; annual meeting, 1749
British Guiana, public medical service of, 636
British Medical Association: the Midwives Bill, 1458; medical ethics and the annual meeting, 1543
British Medical Association: Victorian Branch (annual meeting), 427 (resignation of the council), 1529, 1554, 1686; Metropolitan Branch (annual dinner), 720; New Zealand Branch (annual meeting), 1268, 1317, 1393; Gloucestershire Branch (annual meeting), 1420; South-western Branch (annual meeting), 1889
British Medical Benevolent Fund, 505, 1030
British Medical Journal, Adams *versus* the, 1296
British Medical Temperance Association, 1765
British Pharmacopœia, the General Medical Council and the, 1692, 1694
British Pharmacopœia (1898), Synopsis of the (review), 469
British Viavi Company, 742, 899
Brixham (Devon) Hospital, 141
Broadbent, Sir W. H., sleeplessness, 215; Neale's Digest, 420
Broadbent, Sir W. H., and Dr. J. F. H., Heart Disease (review), 1731
Broadbent, Dr. W., myoidema, 575; peritonitis, 1836
Broadbent, Mr. G. H., railway medical officers' union, 1907
Brockbank, Dr. E. M., mitral stenosis, 196
Brocklehurst, Mr. F., medical charities of Manchester, 400
Brodhurst, Mr. B. E., obituary, 415
Brodie, Dr. T. G., action of drugs, 706; diphtheria toxin, 707
Brogden, Mr. R. W., nervous symptoms, 543
Bromaurum in rheumatism, 72
Bromides in epilepsy, 554
Bronchial cyst, 239; muscles, the action of certain drugs on the, 706
Bronchitis, heroin in, 180
Bronchus, the left, pressure on, a case of, 1438
Broom, Dr. J., the late, 739
Broomfield, Mr. H. J., the late, 66
Brown, Mr. G., registration of midwives, 1086, 1163; Midwives Bill, 1095; medical charities, 1304
Brown, Mr. H., the midwifery question, 63, 197, 420
Brown, Mr. W. H., rupture of the femoral artery, 539
Brown, Dr. H. H., dislocated clavicle, 544
Brown Institution, work of the, 593
Browne, Mr. L., presentation to, 428; tuberculosis, 859
Browne, Sir J. C., tubercle, 658, 1376
Bruce, Dr. A., cases exhibited, 27; insular sclerosis, 461
Bruce, Dr. L. C., blood-pressure, 1804
Bruce, Dr. J. M., Principles of Treatment (review), 623
Bruce, Lord F. B., a muzzle, 628
Brunetti, Prof. Ludovico, the late, 137
Bruno, Prof. Lorenzo, the late, 810
Bruns, Mr. J. J., a new font for holy water, 252
Brushfield, Dr. T. N., aids to the poor, 45
Brussels University, pass list, 1562, 1917; Medical Graduates' Association, 1918
Bryant, Mr. T., Neale's Digest, 420; cysts of the breast, 1201, 1206
Buchanan, Dr. G. S., Bolton waterworks, 493; enteric fever in Falmouth, 1090
Buckland Fish Museum, 398
Bulbar paralysis, 618, 1074
Bulbar (see also Pseudo-bulbar)
Bullet removed from the nose, 24
Bullet, explosive, what is an? 1400
Bullet wound of the abdomen, 310; of the orbit, 460, 1363; of the neck and thorax, 1213
Bullet wounds, modern, 111; as represented by news compositors, 283; involving the lung, 1820
Bullet wounds (see also under War, *passim*, Small-arm)
Bullets, various, the weight of, 212; American small calibre, 789; the alleged poisonous copper-coated Mauser, 1741
Bulloch, Dr. W., pyocyanic toxin, 1441
Bullous eruption, fatal, 1007
Bunions, a splint for, 1042
Burdett, Sir H., The Nursing Profession (review), 1077; Burdett's Hospitals and Charities (review), 1888
Burdett's Official Nursing Directory (review), 1369; Hospitals and Charities (review), 1888
Burdett-Coutts, Mr. W., treatment of sick soldiers, 1893
Burgess, Mr. A. H., enterectomy, 381; disinfectants, 1797
Burghard, Mr. F. F., Manual of Surgical Treatment (review), 1138
Burial, premature, 582, 638, 661
Burial, bacteriology of, 1372
Burnie, Mr. W. G., cancer, 965
Burns, Dr. D., drink, 717
Burroughs, Mr. E. F. H., presentation to, 813
Burt, Dr. S. S., the liver, 1438
Burton, Mr. W., Lead Compounds in Pottery (review), 391
Bury, vaccination fees at, 1253, 1326, 1897
Bury, Dr. J. S., Clinical Medicine (review), 1137
Bush, Mr. J. P., presentation to, 664
Bushnell, Dr. F., tuberculosis, 1614, 1673
Buszard, Dr. F., Addison's disease, 453
Butlin, Mr. H. T., pathology, 1856
Butter, excess of salt in, 49; tubercle bacilli in, 159; boric acid in, 430, 586; the sale of margarine for, 1018
Butyric (see Amido-butyric)
Buxton thermal water and uric acid, 1651
Buxton, Dr. D. W., Anæsthetics (review), 1661; management of the anæsthetic, 1714
Bynoe, Mr. C. A., the strange case of, 1817, 1891
Bynoglycerophosphates, 35

C

Cacodylate of soda in chlorosis, 1037
Cacodyle, the therapeutics of, 736
Cadman, Mr. A. W., cranial nerves, 706
Cæcum, excision of the, 461
Cæsarean section, case of, 170
Caffeine, the use of, by malingering soldiers, 1406
Caffeine (see also Kola)
Caiger, Dr. F. F., presentation to, 352
Caird, Mr. F., case and specimens exhibited, 461
Calculi, vesical, 26, 198, 264, 780, 1134; renal, 503, 1134, 1147; biliary, 544
Calculus, a large, passage of, through the ureter and urethra, 1585
Caledonian Medical Journal (review), 1139
Calendar, the Russian, 351
Caley, Dr. H. A., appendicitis, 378; aneurysm, 1071
Calvarium, the whole, sequestrum of, 461
Calves, the unsexing of, 866
Cambridge Natural History (see Insects)
Cambridge Summer School of Medicine, 328, 1602, 1816; Appointments Association, 1543
Cambridge University: pass lists and degrees conferred, 277, 428, 584, 739, 812, 946, 1331, 1408, 1630, 1764, 1840, 1917; various items of news, 352, 474, 664, 739, 812, 1253, 1477, 1562, 1655, 1764, 1917
Cameron, Dr. S., phthisis, 386
Cameron, Sir C. A., presidential address, 856; pepsin, 1444; sanitation of Dublin, 1544
Cameron, Dr. Hector C., knighthood for, 1526, 1557
Cameron, Dr. J., adiposis, 1803
Cammidge, Mr. P. J., urotropine, 707; proteids, 966
Campbell, Dr. H., baths and climates, 387; Recklinghausen's disease, 1283; monogamy, 1654
Campbell, Dr. H. J., mediastinal growths, 1069, 1145
Camphorated oil, inferior, 550, 804

CANADA, CORRESPONDENCE FROM.—Canadian militia medical service, 1473—The crusade against tuberculosis, 1473—Dominion registration, 1473—Gynæcology among the insane, 1474—The University of Toronto and the medical colleges of Ontario, 1474—Montreal General Hospital, 1914—Canadian army medical services, 1914—Prepared for the plague, 1914

Canada, tuberculous cattle in, 954
Canadian surgeons, the position of, at the war, 507
Cancer of the penis, 75; resection of the large intestine for, cases of, 465; of the rectum, 502, 1075, 1135, 1401; parasite of, 541; of the breast, 684, 843, 990, 1094; the increase of, 685, 1024; local distribution of, 685; constitution and heredity in, 688; of the stomach, 836; the causation of, 848; the probability of death from, in Australia and Great Britain, 892; feeding and, the connexion between, 965; the parasitic and infective views of, 990; the etiology of, 1085; the treatment of, based on the parasitic theory, 1212; the genesis of, the social factor in, 1246; excision of both mammæ for, 1356, 1513; in the aged, operations for, 1583; of the stomach in the young, 1600
Cancer in Chelmsford and Maldon, 332; in the United States, 717
Cancer (review), 626
Cannon-street Hotel, meeting at, 953, 1025, 1089, 1095, 1755
Cape Colony, hospitals in, 506
Carbolic acid, poisoning by, 67: in equine tetanus, 538; in plague, 614; recommended by a clergyman, 143, 509, 667; in malignant pustule, 164, 1005; large doses of, 1030; proposed scheduling of, 1333; a mishap with, 1356
Carbolic acid poisoning, alcohol as an antidote in, 481
Carbolic disinfecting fluid (miscible black) and carbolic disinfecting powder, 158, 340
Carbon dioxide, poisoning by, 928
Carbon monoxide, poisoning by, 1009 (see also Water-gas)
Carcinoma, collective investigation on, 660; uterine, early diagnosis of, 944; of the rectum, resection for, 1004; of the sigmoid flexure, 1075; of the stomach and œsophagus after gastrostomy, 1364; inoperable, the treatment of, 1401
Carcinoma, spontaneous, of the uterus in a rabbit, 166
Carcinoma (see also Adeno-carcinoma)
Card-playing by hospital patients, 589
Cardiac disease, congenital, 456, 457; failure due to arterio-sclerosis, mercury in, 1519, 1881
Cardiff: Seamen's Hospital, 38, 704; public health, 207; home for inebriates, 318, 585; University College, 798; report of the medical officer of health to the port sanitary authority, 972; new lunatic asylum, 1447; meat-supply, 1756

Cardiff Infirmary: new rules, 278; annual meeting, 712; financial position, 792; the management committee, 1144; appointments, 1477; unfounded charges, 1813
Cardio-vascular system in typhoid fever, 914
Caries, dental, the experimental reproduction of, 1459
Carless, Mr. A., Manual of Surgery (review), 391; hernia, 1357
Carlisle, medical report for, 1027
Carlisle, Mr. J., presentation to, 352
Carlsbad Treatment for Tropical and Digestive Ailments, and How to Carry it out Anywhere (review), 173
Carmarthen Infirmary, 1252
Carotid artery, the common, ligature of, 707
Carpus, the scaphoid bone of the, fracture of, 1364
Carrasquilla, Dr., his treatment of leprosy, 476
Carter, Dr. G., electric light and heat-baths, 1075
Carter, Mr. T. S., the inferior maxilla, 1722
Carter, Dr. W., digestives, 30; various cases described, 780
Carter, Mr. W. F., the late, 1322
Cartilage, slipped, 6
Cartilage (see also Achondroplasia)
Cartilages, loose, in the knee-joint, 463
Carvell, Mr. J. M., presentation to, 1253
Carver, Dr. J. R., diphtheria bacilli, 942
Carwardine, Mr. T., the liver, 1355; equinovarus, 1805
Cascara chocolettes, 36
Case, a sad and urgent, 143, 982
Castrate (see Unsexing)
Casualty cases in Glasgow, 586
Cataract, operations for, 721, 1362
Cataract extraction, a patient after, an exhibitor at the Royal Academy, 940, 1802
Cathcart, Mr. C. W., excision of the cæcum, 461
Caton, Dr. R., rheumatism, 776, 934
Cattle, tuberculosis in, tuberculin as a test for, 400, 954 diseased, the jettisoning of, 1455; tick fever in, 1898
Cats, alleged plague in, 180; the unsexing of, 866
Cauda equina, tumours of the, 398
Cautley, Dr. E., aortic stenosis, 457; cases exhibited, 942
Cave, 899
Cavernous sinus, aneurysm of the, 1010; septic thrombosis of the, 1298, 1467
Cayenne pepper, adulteration of, 49
Celery, typhoid fever caused by, 790
Cell, the animal, plastic activity of, 251
Cellar dwellings in Stockport, 47
Celsus, his description of rabies, 593
Census, the British, 1141
"Centaur, a living," 250
Centenarians, 203, 813, 1102
Central London Railway considered from a sanitary standpoint, 1373; and the level of the subsoil water, 1385
Cerebellar abscess, 543; disease, the localisation of, 708
Cerebral hæmorrhage presenting unusual features, 97; cortex, action of tetanus toxin on the, 98; embolism, 543; symptoms of typhoid fever, 867; abscess, 929, 1277; diplegia, 942; complications due to intestinal infection, 971; hæmorrhage, strychnine as a factor in causing, 1204; abscess, threatened, trephining for, 1277; degenerations and the use of opium in infancy, 1737
Cerebro-spinal fluid, discharge of, from the nose, 1222, 1285
Cerebro-spinal meningitis, epidemic, in Dublin, 1404, 1805; at Jerusalem, antistreptococcic serum in, 1897
Certificate (see Hospital certificate)
Certificates, technical, the value of, 638; death, 894, 1207, 1481; lunacy, 900
Certificates, medical, in the Post Office service, 429, 1409; for the London School Board, 667; for the use of school boards, 743; false, 1526, 1697
Cervello, Prof., his treatment of tuberculosis, 275
Cervical vertebra, bullet wound of a, 1213
Ceylon, erroneous announcement of plague in, by the Colonial Office, in mistake for Hong-Kong, 1817
Ceylon bacteriological institute, 557
Chair, a barber's, head-rest for, 862
Chairman's Handbook, 355
Chalmers, Dr. A. J., "henpuye," 20
Chambers, Mr. W. F., operative midwifery, 1296
Champagne cider, 1450
Champneys, Dr. F. H., uterine fibroids, 147, 174
Chance, Mr. A., aneurysm, 463
Chancre of the eyelid, 288
Chancres, syphilitic, primary, 1575, 1637
Channel Fleet, food of the, 894
Chapman, Dr. C. W., cyanosis, 456; deformity of the hands, 618
Charbon, immunisation against, 1322
Charcot-Marie muscular atrophy, 27
Chard, drainage of, 206; water-supply of, 389
Chard union, pauperism in the, 50
Charing-cross Hospital exhibits at Earl's Court, 1607, 1697
Charing Cross Hospital Medical School, an appointment at, 1086; the Huxley lecture, 1742; distribution of prizes, 1817, 1917
Charing Cross Hotel, meeting at, 1086, 1163
Charitable bequests and donations in 1899, 48
Charities (see Hospitals and Charities)
Charity organisation and pauperism, 1296
Charlatan, medical man practising as a, 981, 1042
Charteris, Dr. M., the late, and Dr. F. J., Practice of Medicine (review), 1138
Chat with a celebrity, 1335
Chaulmoogra oil in leprosy, 315, 1283
Chaumier, Dr. Edmond, the influence of weather on vaccine lymph, 264; à propos du rapport de la Commission de THE LANCET sur la pulpe "vaccinale" glycerinée, 1831, 1926
Chavasse, Mr. T. F., specimens exhibited, 623; pyloroplasty, 1009
Cheadle, Dr. W. B., the liver, 903, 985, 1045, 1217
Cheatle, Mr. A. H., middle-ear suppuration, 96; cases exhibited, 543
Cheatle, Mr. G. L., dinner to, and departure of, for South Africa, 114
Cheesman, Mr. G., obituary, 140
Chelmsford and Maldon, medical report for, 332; cancer in, 332
Cheltenham, medical report for, 1318
Cheltenham General Hospital, 1038
Cheltine foods, 1908
Chemist, a distinguished French, death of, 1377
Chemistry of the new halfpenny postage stamp, 1299, 1457
Chemistry, Organic (review), 317; Analytical, An Introduction to (review), 392; Physiological, Laboratory Manual of (review), 626; Manual of (review), 1662
Chemistry, Institute of, and public analysts, 866
Chemistry (see also Analysis, Clinical Diagnosis)
Chertsey board of guardians, Hope *versus* the, 1080
Cheshire, asylum accommodation in, 887
Chesterfield, medical report for, 1027
Chesterfield, the Earl of, presentation to, 557
Cheyne, Mr. W. W., dinner to, and departure of, for South Africa, 114; Neale's Digest, 420; Manual of Surgical Treatment (review), 1138
Cheyne-Stokes respiration, ocular phenomena connected with, 537
Child, dermoid cyst of the ovary in a, 47; rheumatic arthritis in a, 457; ichthyosis in a, 543; femoral hernia in a, 929
Child, The Nervous System of the (review), 1662
Child-bed, a woman in, legal rights of, 1036
Childhood, the commoner neuroses of, 1742, 1859
Children, day-terrors in, 292; tuberculous disease of the knee-joint, infective osteomyelitis, osteitis, and periostitis in, 618; the sale of intoxicating liquors to, 788, 814, 1085; needless deaths of, 807; in textile factories, 814; physically afflicted or mentally impaired, education of, 891; at nurse, septicæmia among, 969; board school, the eyesight of, 1022; in coal mines, 1039; the lives of, insurance of, 1075; fresh air for the, 1083; purulent ophthalmia in, 1135; young, anæsthetics for, 1211; young, diagnosis of imbecility in, 1378; newly-born, the effect of nitrate of silver solution on the eyes of, 1741
Children, Cruelty to, Society for the Prevention of, 248, 1020, 1102, 1188, 1603, 1651
Children, Diseses of (review), 1520
Children's diseases, the study of, 1605
Children (see also Sick Children, State Children's, Bristol (Royal Hospital), Liverpool Country Hospital, Royal Edinburgh Hospital, Aberdeen Royal Hospital, Belfast Hospital, Juveniles)
Chimney cowl, a new, 862
China, the crisis in, 1830, 1905
Chinese Maritime Customs, medical reports of the, 480; crisis, medical aspects of the, 1890
Chirurgicale, L'Année (review), 1521
Chirurgie, Jahresbericht über die Fortschritte auf dem Gebiete der (review), 626
Chloral, drugging with, 66
Chloretone, 106
Chlorides, restricted ingestion of, in epilepsy, 554
Chloroform, deaths under, 132, 134, 197, 227, 339, 421, 496, 576, 632, 731, 884, 1467, 1543, 1614, 1679, 1767, 1846, 1925; paralysis of the respiratory centre under, 1210; administration of, to dogs, 1377
Chloroform administration, a contrivance for, 29; respiratory and cardiac failure during, 29
Chloroform apparatus, paper inhaler for, 29; inhalers, new, 29, 318; anæsthesia, strophanthus as an adjuvant in, 660
Chlorosis, cacodylate of soda in, 1037
Chocolettes, cascara, 36
Cholecystitis and cholelithiasis in typhoid fever, 918
Choledochotomy, 1442
Cholera in India, 1630, 1842, 1899, 1911
Cholesteatoma, removal of, through the auditory meatus, 543; operation for, 1208
Chorea, senile, 27, 780; Huntington's, supposed, 27; acute, cortical changes in, 384; etiology of, 871; Sydenham's, the mental changes in, 1145; the heart wall in, 1352; a study of, 1897
Chorea (see also Hemichorea)
Chown, Dr. F., diphtheria, 543
Christine, M. (an editress), popular medicine, 899
Christmas festivities in the Birmingham hospitals, 134; feast, a fatal, 202
Chromates, the manufacture of, precautions in, 353
Church militant for sanitation, 817
Church societies, three, 322; sanitary association, 1918
Church of Scotland Deaconess Hospital, 967
Church, Dr. W. S., Neale's Digest, 420; re-elected Pres. R.C.P. Lond., 1086, 1161
Churton, Dr. T., gonorrhœal arthritis, 387
Chylous ascites, 938, 1791
Chyluria, tænia nana a cause of, 637
Cicatrix horn growing from the cornea, 311
Cider, champagne, 1450
Cigarettes in the United States, 276
Ciliary motion, 325
Circular, a discreditable, 431, 510
Circulation, the effect of athletics on the, 174
Cirrhoses of the liver, 903, 985, 1045, 1217
Cirrhosis of the liver, case of, 1213
Cities, American, death-rates in, 662
Citrophen, 36
City, a garden, 574, 732
City of London Hospital for Mental Diseases, annual report, 1291
City Orthopædic Hospital, 663, 1023
Civil practice, the use of the ambulance in, 475
Clapham (see Battersea)
Clark, Dr. F. W., annual report for Hong-Kong, 585
Clarke, Mr. J. J., fracture of the leg, 101; ankylosis, 168; spinal caries, 385; hallux valgus and hallux varus, 609, 621; lateral curvature, 617
Clarke, Dr. J. M., epileptic attacks, 1119
Clavicle, comminuted fracture of the, 465; dislocated, apparatus for, 544; removal of the, 1283
Clayton, Dr. W. K., presentation to, 1476
Clegg, Mr. W., obituary, 1151
Cleland, Dr. W. L., anatomy of mind, 891
Clemow, Dr. F. G., plague, 1508
Clergyman and the medical man, 143, 509, 667, 743
Clerical, Medical, and General Life Assurance Society, 851, 1075
Clevedon convalescent home, 352
Climate in the treatment of nervous disease, 387, 943
Climatic resources of Italy, 809
Clinical Diagnosis, Chemical and Microscopical Aids to (review), 34
Clinique Médicale, Leçons de (review), 1448
Clonus, adductor, in insular sclerosis, 461
Clothing for the troops, 507
Clouston, Dr. T. S., lunatic asylum report, 734
Club-foot, the treatment of, 623
Club-foot (see also Equino-varus)
Club methods, 654
Club (see Aberdeen University, Athenæum, Athletic, Battle of the clubs, Dramatic, Friendly societies, Glasgow University, Organisation, Reform Club)
Coakley, Dr. C. G., Diseases of the Nose and Throat (review), 712
Coal Smoke Abatement Society, 722, 1084, 1146; mines, children in, 1039
Cobbett, Dr. L., steam, 299
Coblentz, Mr. Virgil, The Newer Remedies (review), 317
Cobra venom, the neutralisation of, 384
Cocaine in aural surgery, 1125
Cocaine solutions, sterilisation of, 1173
Coccygeal teratoma, 101
Coccygodynia, 1724
Cockle-borne enteric fever, 397
Cockles, contaminated, 421; and typhoid fever, 506, 799
Cocoa essence, 470

Cocoa (see also Oatmeal cocoa)
Coeliotomy, vaginal, 28
Coffin lid, alive under the, 661
Cold (see Liquid air)
Cole, Dr. W. R. N., presentation to, 1253
Cole-Baker, Dr., Porro's operation, 1517
Colectomy, 1075
Coleraine cottage hospital, 203
Coleridge, Mr. S., diphtheria, 1094, 1167
Coley, Dr. F. C., alcohol, 89
Collier, Mr. M., brachial plexus, 692
Colliery surgeons in Durham, 870; surgery, 1887
Collingridge, Dr. W., an appeal, 48, 62; the port of London, 1019
Collins, Dr. W. J., and London University, 134, 266, 342, 482
Collins, Mr. E. Tenison, hysterectomy, 466
Collins, Mr. E. Treacher, the eye, 435, 521
Collins, Dr. H. D., Physiology (review), 861
Collum, Dr. R., the late, 195; obituary, 277
Colman, Dr. W. S., Æsculapius, 1221
Colne Jubilee Cottage Hospital, 1249; infectious hospital, 1799
Colon, packing-needle in the, 96; the ascending, fatty tumour of, 1437
Colonial Nursing Association, 178; Fellowship in connexion with the Liverpool School of Tropical Medicine, 967; practitioners and the public, 1268, 1371; surgeons in Ashanti, 1814
Colonies and the war, 787
Colotomy, cases of, 304
Colour-blindness, acquired, 112; the inefficiency of the Board of Trade tests for, 1511, 1523
Colouring matters in food, 48, 207, 279, 429, 507, 586, 1301, 1409, 1478
Coma, diabetic, the production of, 706

COMMISSIONS ISSUED BY "THE LANCET," SPECIAL, ANALYTICAL, SANITARY, &c.

Preservatives and Colouring Matters in Food, according to the inquiries of the Analytical Sanitary Commission from 1851 to the present time, 48; Commission on Glycerinated Calf Vaccine Lymphs, 1216, 1227, 1398, 1540, 1831, 1926

Company law, amendment of, 506, 1841
Compositors, bullet wounds as represented by, 283
Compton, Rev. S. J., the clergyman and the medical man, 509
Comte, Auguste, a study in mental pathology, 399, 573
Conciliation board, 1306, 1391, 1699
Confectioners (see Bakers)
Confectionery, poisonous colours used in, 49
Congress, conference, &c.: international, in Paris, on medical ethics (or professional medicine and medical deontology), 176, 325, 792, 1160, 1457; international, in Paris, of medicine, 398, 479, 490, 660, 1160, 1162, 1220, 1381, 1601, 1670, 1821, 1897; international, in Paris, of medical electrology and radiology, 398, 1807; Royal Institute of Public Health, in Aberdeen, 425, 1327; internal medicine, in Wiesbaden, 556, 660, 1325, 1544; German surgical, in Berlin, 660, 1401, 1469; various German, 660; on tuberculosis, at Naples, 661, 723, 1225, 1329, 1388; of dermatology and syphilography, in Paris, 1023, 1160; American, of tuberculosis, 1083; of the medical press, in Paris, 1160, 1324, various, in Paris, 1160; international, of hygiene and demography, in Paris, 1161, 1463, 1566; at Manchester on medical organisation, 1168, 1302, 1372, 1379, 1382, 1389, 1471, 1543, 1613; international, in London, of gynæcology and obstetrics, 1389, 1466; various, at Washington, 1474; intercolonial, in Brisbane, 1878; malaria, in Liverpool, 1899
Congresses and hotels in Paris, 325
Conjoint Board (see Royal Colleges)
Conjunctiva, diphtheria of the, 451; dermoid tumour of the, 1135
Conn, Mr. H. W., Life's Mechanism (review), 546
Connective tissue, the differentiation of, in the human fœtus, 170
Connell, Mr. A. M., cases exhibited, 465
Consanguineous marriage and deaf-mutism, 367
Constipation, surgical aspects of, 1720
Consultation, on taking patients into, 1, 393
Consultative Institute at Birmingham (or Degradation of consulting), 271, 807, 1595, 1633
Consulting medical officer of health, 950
Consumption, open-air treatment of, 102; at the patient's home, 162
Consumption, the Prevention and Cure of, County of Durham Society for, 1741
Consumption and other Forms of Tuberculosis, National Association for the Prevention of, 460, 787, 900, 967, 1102, 1236, 1376, 1409
Consumption Sanatoria of Scotland, 791
Consumptives, a sanatorium for, 347
Contagion in modern times, 170
Conte (see Le Conte)
Contractor and the volunteers, 1020
Convalescent home at Bletchingley, 1019
Cooper, Mr. A., syphilis, 253, 463
Coördinated movements, the restoration of, after nerve section, 448
Copestake, Mr. W. G., a new inhaler, 29
Copper in preserved fruit and vegetables, 49
Copper-coated (see Bullets)
Corben, Mr. C., aseptic vaccination case, 1808
Cork: Battle of the Clubs, 342, 501; apathy of the sanitary authorities, 425; Queen's College, 580, 814, 1328; Louth Charitable Infirmary, 659
Cork Medical Profession Association, 342
Cornea, a parasitic crustacean on the, 1002, 1095, 1467; metallic deposit on the, 1363
Corneal ulcers, inflamed, 464
Corngreaves Hall retreat for inebriates, 704
Cornwall Nursing Association, 944
Cornwall (see also West Cornwall)
Coroner, a medical, election of, 1459
Coroners' Society of England and Wales, 805, 883; inquests on persons dying under anæsthetics, 1811, 1908
Corporal punishment in prisons, 974, 975
Corporate and Medical Reform Association, 278, 1086
Corporations, the medical, 639
Correct or friendly? 356
Corrosive sublimate, poisoning by, 95, 859
Cory, Dr. R., the late, 872; obituary, 972
Cotterill, Mr. J. M., a simple trephine, 461; laminectomy, 1363
Cottew, Mr. A. A., typhoid fever, 1481; drug habits, 1634
Cotton cloth factories, regulations affecting, 407
Cough, heroin in, 180
County medical officers of health, 479, 949
Courtenay, Fleet-Surg. J. P., the late, 1165, 1320
Coventry public medical service, 1542
Cowan, Mr. R. H., surgery, 1887
Cowen, Dr. M., general paralysis, 942
Cowen, Dr. T. P., the hip, 1716
Cowes, battle of the clubs at, 1031
Cows, the inspection of, 740; disease among, in Carlisle, 1027
Cox, Dr., friendly society work, 1306
Coxa vara, 623, 775, 781, 859, 1115
Cracow bacteriological laboratory, death of the assistant at, 506
Craggs Research Scholarship, award of the, 1381
Cranial nerves, several, paralysis of, 618, 710, 1283; the rootlets of, experiments on, 706
Cranio-thorax relation, an uncommon, 1213
Cranium, percussion of the, 1036; development of the, 1669
Crawshaw, Dr. S., conference at Manchester, 1168, 1543
Cream, standard of quality of, 328
Credé's delivery of the placenta, 1730
Creighton, Dr. C., Researches on Glycogen (review), 711
Cretinism, mongolism and, 23
Crewe, ambulance competition at, 1145; the medical officers of health of, 1225
Crime, insanity, and sexual function, 169
Crime, tendency to, temperament and, 1022
Criminal insanity, 1036
Criminology from a medical standpoint, 892
Cripples, the cure of, 211, 283
Cripps, Mr. H., uterine fibroids, 573
Critchett, Mr. G. A., disclaimer, 1614
Crivelli, Dr. M., alcoholism, 891
Crocker, Dr. R., leprosy, 315
Croghan, Mr. E. H., the late, 1332
Croly, Mr. H. G., diphtheria, 462; epithelioma, 463
Cromer, Lord, his annual report on Egypt, 1462
Cronstadt, bacteriological laboratory at, 506
Crook *versus* Crook and Horrocks, 786, 793, 805, 882
Crooke, Dr. G. F., the widow of, appeal on behalf of, 1679
Crookshank, Prof. E. M., protozoa, 1441
Croom, Dr. H., ascites, 938, 1791; ovariotomy, 938
Cropper, Dr. J., empyema, 771
Cross infection, so-called, in fever hospitals, 1364
Crosse, Mr. W. H., blackwater fever, 11
Croup, 1284
Crowley, Dr. R. H., uræmia, 1730
Crowley and Bolger, Messrs., a discreditable circular, 510
Crustacean, a parasitic, on the cornea, 1002, 1095, 1467
Cuba, the military governor of, a medical man, 137, 722; yellow fever in, 180; a disinfecting steamer for, 1174
Cuban patriot, skull of a, 326; campaign, bullet wounds in the, 1667
Cuff-fastener, an improved, 628
Cuff, Dr. H. E., Practical Nursing (review), 1139
Cullen, Dep.-Surg.-Gen. D., the late, 129; obituary, 140
Cullinan, Dr. N., diphtheria, 1168
Cultures, plague, novel medium for, 270
Cumberbatch, Mr. A. E., mastoid operation, 235
Cunningham, Maj. J. A., removal of stone from the bladder, 964; a large calculus, 1585
Curates, assistant, the dearth of, 1898
Currie powder, adulterations of, 49
Curtain ring in the pharynx, 1207
Curtis, Mrs. M. S. (a centenarian), the late, 813
Custard, what is a? 1298
Custards, patent, 471
Cut throat, murder and suicide by, 238
Cutaneous reflexes, 927
Cyanosis, 456
Cycle saddle, the Esmond, 667; tool-bag, 1482
Cycling danger, 1673
Cystic epithelial tumour of the jaw, 17; molar pregnancy, intra-uterine hæmorrhage from, 163
Cystine in water supplies, 1098
Cystitis, acute hæmorrhagic, 1443
Cystocele, 596, 731
Cystotomy, suprapubic, 928
Cysts, ovarian, 30, 47, 274, 710, 780, 938, 941, 1132, 1365; bronchial, 239; intraligamentous, 315; dermoid, 315, 388, 932; hepatic mucoid, 453, 590; papillomatous, 466; hydronephrotic, 623; of the neck, 859; of the breast, 1201, 1206; cerebral, 1210; in the glosso-epiglottic fossa, 1285; of the liver, 1446

D

Dadyselt, Mr. H. J., ear-drums, 623
Dairies, the inspection of, 740
Dalby, Sir W., aural surgery, 359
Dales, Mr. J. J., union hospital, Middlesbrough, 1401
Dalton, Dr. J. H. C., steam, 299
Dalton, Dr. N., aortic murmur, 1282; tuberculous glands, 1283; pressure on bronchus, 1438
Dalzell, Dr. W. R., general paralysis, 943
Dalziel, Dr. T. K., cases and specimens exhibited, 544
Damania, Mr. P. J., antityphoid inoculation, 421
Dana, Dr. C. L., meningitis, 178
Dangerous machinery, 407; trades, 407
Dante, the study of, 136
Darjeeling, landslips at, 64
Darke, Mr. E., vaccine lymphs, 1540
Darling, Mr. Justice, on newspaper reports of criminal trials, and hostile criticism of him by a newspaper, 950
Darwin, a fact for, 1106
Darwin and Darwinism, Pure and Mixed (review), 944
Dauber, Dr. J. H., malaria, 1834
Davenport, Dr. A. F., origin of sex, 321
Davey, Mr. S., gastric ulcer, 155
Davies, Mr. H. R., resection of the radius and ulna, 168
Davies, Dr. L. G., Middlesbrough Union Hospital, 1247
Davies, Mr. W., ichthyosis, 543
Davies-Colley, Mr. J. N. C., packing-needle in colon, 96; death of, 1381; obituary, 1475; memorial to, 1906
Davis, Mr. J. R. A., The Flowering Plant (review), 945
Dawson, Dr. W. R., insanity, 883; asylum pathology, 1444
Day-terrors in children, 292
Dead bodies, the transportation of, 1738
Deaf, Teachers of the, Society for Training, and for the Diffusion of the German System, festival dinner, 482, 663
Deaf-mutism, consanguineous marriage and, 367
Deafness, post-influenzal, oxygen in, 510
Dean, Dr. G., tetanus toxin, 1441
Deane, Mr. F., hydrocele outfit, 1370
Death, apparent, and premature burial, 582
Death certification, 894, 1481; certificates in general practice, 1207
Death-rates in American cities and States, 662
Deaths, weekly summary of, 71, 142, 210, 282, 354, 431, 509, 588, 666, 742, 817, 898, 980, 1040, 1105, 1179, 1255, 1335, 1415, 1480, 1565, 1633, 1699, 1767, 1845, 1924
Deaths of eminent foreign medical men, 140, 415, 584, 738, 973, 1151, 1331, 1562, 1763, 1841
Deaths announced elsewhere than either under the foregoing or under Services or under OBITUARY, 65, 66, 67, 113, 135, 137, 203, 264, 272, 347, 348, 402, 506, 555, 580, 639, 689, 660, 661, 723, 739, 791, 808, 810, 813, 872, 908, 971, 1023, 1097, 1742, 1815, 1916

Deaver, Dr. J. B., Surgical Anatomy (review), 1138
Deciduoma malignum, 238
Deer, the embryo of the, 939
Degradation of consulting, 271
De Martel, Madame, a practical joker's abduction of, 1809
Dementia, precocious, 397
De Méric, Mr. H., Dictionnaire des Termes de Médecine (review), 34
Demography (see Hygiene and Demography)
Deniker, Dr. J., Races of Man (review), 390
Dent, Mr. C. T., the wounded, 1515
Dental appointments at general hospitals, 62, 115; conditions in pernicious anæmia, 222, 296; surgeons for the army in South Africa, 486; students with the army in South Africa, 487, 490, 800; cases, the x rays in, 939; caries, the experimental reproduction of, 1459
Dental Association (see British, &c.)
Dentist, an unregistered, action against, 791
Dentists and anæsthetists, a question of fees, 899
Dentistry, quack, the anæsthetist's position towards, 283
Dentistry, research in, grants in aid of, 555
Deontology, medical (see Medical ethics)
Depilation by the Roentgen rays, 231
Dermatitis, focus tube, 465; repens, 1074
Dermatitis Multiformis Exfoliativa (review), 712
Dermatographia, 710
Dermato-histologische Technik (review), 241
Dermatologie und Syphilis, Archiv für (review), 171
Dermatology and Syphilography, Congress of, 1023
Dermoid cyst of the ovary, 47, 938; expelled from the rectum, 315; of the neck, 388; within the spinal canal, 932
Dermoid tumour of the eye, 938; of the conjunctiva, 1135
De Schweinitz, Dr. G. E., Diseases of the Eye (review), 172
Devey, Dr., murder of, 348
Devon and Exeter Hospital, 278
Devon (see also South Devon)
Devonport, the military hospital at, 1038
Dewar, Prof. James, liquid air, 849; solid hydrogen, 1093
Dextro-cardia, 457
Dholakia, Keshavlal J., absence of the cars, 1106
Diabetes and splenic anæmia, 401; the kidneys in, infected with staphylococci, 544; the excretion of sugar in, 709; phosphatic, 850; treatment of, 1420, 1543, 1596; differentiation in, 1706, 1787, 1863
Diabetic marmalade, 35; subjects, the diet of, 72; coma, the production of, 706
Diachylon, the internal use of, the danger of, 1075
Diagnosis wanted, 1482
Diagnosis, Clinical, Chemical, and Microscopical Aids to (review), 34
Diamond Jubilee, commemoration of the, 272, 402, 557, 1890, 1902
Diaphragm, remarks on the, 231
Diarrhœa, epidemic, the study of, 107; Milroy lectures on, 865, 1344, 1426, 1494
Diarrhœa, momenclature of, 320, 331, 1024
Dickinson, Dr. V., gynæcological therapeutics, 709
Dickson, Dr. E. D., obituary, 1037
Dictionary, Pocket Medical (Review), 241; of National Biography (review), 1012, 1519
Dictionnaire des Termes de Médecine (Français-Anglais), (review), 34
Diet of diabetic subjects, 72; in typhoid fever, 90
Dietary, prison, 1039
Dietary scales, workhouse, 740
Dietetics, medical, white and dark meats in, 791
Digestion, the process of, after resection of about six feet of the small intestine, 217, 248; the effect of antiseptics on, 507
Digestion, Difficult, due to Displacements (review), 1011, 1096
Digestives, 30
Dinner to Mr. W. Cheyne and Mr. G. L. Cheatle, 114; to Mr. F. J. Marshall, 867; to Mr. F. Page, 967; to Mr. E. McMillan, 1034; to Mr. N. McIntire Falkiner, 1253; to Sir William MacCormac and Mr. F. Treves, 1293, 1301, 1313; to Dr. A. Jacobi, 1619; to Sir William Gairdner, 1669, 1899; to Dr. D. Dougal, 1918
Dinners.—Cardiff Medical Society, 171; Edinburgh Company Volunteer Medical Staff Corps, 347; Medical Society of London, 402, 789; King's College, London, 481, 491; West London Medico-Chirurgical Society, 481; Society for Training Teachers of the Deaf, 482, 663; Wigan Medical Society, 544; British Dental Association, 576; Royal Medical Society, Edinburgh, 639, 808; Irish Medical Schools and Graduates Association, 639, 862; Leicester Medical Society, 650; Metropolitan Branch of the British Medical Association, 720; Aberdeen University Club (London), 1225; Medical Graduates College and Polyclinic, 1301, 1671; Glasgow University Club (London), 1301; King's College, London (old students), 1301; West London Hospital, 1301, 1532; Pharmaceutical Society, 1455; Sanitary Institute, 1528; Indian Medical Service, 1532, 1826; British Postal Medical Officers, 1534, 1902; Windsor and District Medical Society, 1592; Yorkshire Branch of the Society of Medical Officers of Health, 1671; Guy's Hospital, 1899
Diphtheria and milk-supply, 132, 198; school epidemics of, bacteriological diagnosis in, 236; and the eye, 287; bacteriology of, 311; of the vulva, 382; of the conjunctiva, 451; tracheotomy in, 462; prevention and treatment of, 543; address on, 623; antitoxin in, 943, 1030, 1093, 1167; prevalence and mortality of, 1023; heart wall in, 1352
Diphtheria, pneumonia, and typhoid fever, concurrent, 1003
Diphtheria in New York, before and after the antitoxin treatment, 138, 326; in Russia, 350; in Pontypridd, 699; in Melbourne, 891
Diphtheria (review), 1288
Diphtheria toxin, the action of, on the spleen, 707; bacilli, non-typical, 942; bacillus, the indol-like reaction of the, 1441; bacillus, cultivation of the, from a handkerchief, 1443
Diphtheria (see also Pseudo-diphtheria)
Diplegia facialis, 167; cerebral, 942
Diplococcus, Fraenkel's, in an abscess of the heart, 315
Disclaimers, 509, 1614
Disease, heredity in, 808, 855; dust, flies, and, 1613
Disease, Essentials of Modern Treatment of (review), 710
Disease (see also Not the disease)
Diseases, general, the diagnosis of, eye symptoms in, 287
Disinfectants, comparative germicidal power of, 1797
Disinfecting steamer for Havana, 1174
Disinfection in London, 256
Disinfectants, carbolic, 158, 340
Dispensary, a municipal, in Paris, resignation of medical staff of, 204
Dislocations, recent, the treatment of, 1756
Dispensary medical officers and nurses in Ireland, 507; cases, extra professional assistance in, 580; medical officers, Irish, holidays of, 1256, 1451
Dispensers' (Public and Poor-law) Association, 284
Divorce Court, medical men in the, 786, 793; a case in the, 1078
Diver's paralysis, 1072
Dixon, Dr. W. E., action of drugs, 706
Dobson, Dr. L. C., the Mackay Fund, 72, 144, 431
Dobson, Mr. W., an appeal, 1467
Doctor of Biological Science, the degree of, 888
Doctor, the autocratic, 1042, 1106
"Doctor, described as a," 667; "not a real," 1042
Doctor, The Family (see British Almanac)
Doctor (see also Women doctors)
Doctor's point of view, the dwelling-house from the, 566; Dream (a poem), 1105, 1180
Dodd, Mr. H. W., green vision, 855
Dodgson, Dr. S., fœtid expectoration, 237
Dod's Parliamentary Companion (review), 469
Dods, Dowling *versus*, 1812
Dog, rabies in the, diagnosis of, 1250
Dog nose, 20
Dogs, a new use for, 1180; administration of chloroform to, 1377
Dogs Regulation Bill, 894
Doig, Dr. W., dislocations, 1756
Dolamore, Mr. W. H., necrosis of the mandible, 327
Donald, Dr. A., gynæcology, 31; extra-uterine pregnancy, 708
Door-plate of an old member of a firm, 743
Doran, Mr. A., Neale's Digest, 420; a presidential address, 465; extra-uterine gestation, 1729
Dorland, Mr. W. A. N., Pocket Medical Dictionary (review), 241
Dorsetshire, lunacy in, 893
Dougal, Dr. D., dinner and presentation to, 1918
Douglas, Dr. C. C., Clinical Diagnosis (review), 34; uric acid, 326
Douglas-Crawford, Mr. D., fibro-cystic tumour, 1514
Dover, influenza in, 181
Dowling *versus* Dods, 1812
Doyen, Dr. E., gynæcological operations, 30, 1211
Doyle, Dr. C., on the war, 249
Drage, Dr. L., Midwives Bill, 883
Drainage of Chard, 206; of Melbourne, Sydney, and Adelaide, 891; of Newtownards, 969; of Plymouth, 973; of Egg-Buckland, 1877
Drainage scheme, the Bristol, 377
Drake-Brockman, Capt. H. E., urotropin, 1876
Dramatic Club, Bristol Medical, 893, 1282
Dream, The Doctor's, 1105, 1180
Drink bill, the national, 717
Droitwich, geographical position of, 899
Drug, the compounded, the law of, 550
Drug habits, 1634, 1700
Drugs, certain, the action of, on the pulmonary circulation, 706; which colour the urine, 982
Drugs (see also Food and Drugs)
Drury, Dr. H. C., pemphigus, 1284; cerebro-spinal meningitis, 1805
Drysdale, Dr. C. R., syphilis, 341; venereal diseases, 574, 1414
Drysdale, Dr. J. H., bacillus capsulatus aerogenes, 1441
Dublin: hospital abuse, 129; death-rate, 135; public health, 199, 203, 268, 347, 425, 659, 888, 968, 974; Mater Misericordiæ Hospital, 203; City of Dublin Hospital, 272; Hardwicke Hospital, 425; Royal Victoria Eye and Ear Hospital, 580; Rotunda Lying-in Hospital, 707, 1074; Department of the Registrar-General, 895, 1035; gas-lighting, 968, 974, 1035, 1760; Queen Victoria cots in the hospitals, 1035; the Queen's visit, 1327; cerebro-spinal meningitis, 1404, 1805; sanitation, 1457, 1544; nationalisation of Trinity College, 1815, 1908
Dublin University Biological Association, 888; Sanitary Association, 1035; Journal of Medical Science (review), 1215, 1889; method of effecting delivery of the placenta, 1730
Dublin, health of (see also Vital statistics, weekly)
Duck with webless feet, 1589
Duckworth, Sir D., life assurance, 630; Royal Navy medical department, 982
Dührssen, Dr. A., Gynecological Practice (review), 1287
Duke, Mr. A., spitting in the streets, 981; vaginal douche tube, 1522
Dukes, Dr. C., orchitis of mumps, 25
Duncan, Dr. W., an appeal, 48, 62; hysterectomy, 613; Crook *versus* Crook and Horrocks, 805; uterine fibroids, 1109
Dundee: Hospital for Incurables, 272; sanatorium for consumptives, 347; maternity hospital, 968; typhus fever, 1213
Dunlop, Dr. W. M., thrombosis, 1800
Dunn, Mr. P., ophthalmia, 1135
Duodenal ulcer, perforated, 306, 458, 1895; incision for the removal of a gall-stone, 1885
Duodenum (see Ulcer of the Stomach, &c.)
Dupuytren's contraction of the hands, 388
Dura mater, the venous sinuses of the, the topographical relations of, 525
Dura mater (see also Sub-dural)
Durham, county of, Society for the Prevention and Cure of Consumption, 1740
Durham University, 739, 884, 967, 1175, 1331, 1468
Durham Medical Union, 870; Medical Graduates' Association, 1909
Durran, Surg.-Capt. D., gunshot wound, 1068
Dust in food and in the dissemination of disease, 1613
Dutch East Indies, distribution of quinine in the, 581, 635; vaccination and Pasteurism in, the, 635
Dutch navy, vital statistics of the, 255
Dwarfism, 1867
Dwelling-house from the doctor's point of view, 566
Dwyer, Mr. C., resection of the jejunum, 1007
Dyer, Dr. E. E., brain injury, 1719
Dyer, Dr. H. G., the four thousandth number of THE LANCET, 1321
Dynamometers, 1838
Dysentery, epidemic, in Japan, 323
Dysmenorrhœa, intermenstrual, 1670
Dyson, Dr., W., tetanus, 538; Graves's disease, 781
Dyspepsia, treatment of, 502; antiseptics in, 507; orexin in, 1019
Dysphonia spastica, 1285

E

Eady, Dr. G. J., an appeal, 982
Eady *versus* Elsden, 632
Eager, Mr. T. C., an appeal, 900
Eales, Mr. G. Y., ocular phenomena, 537
Ear bitten off by a horse, 25; the meatus of the, antiseptic purification of, 543; the auricle and meatus of the, adeno-carcinoma of, 543; the cochlea of the, sequestration of, 543; local anæsthesia in the, the production of, 1125; removal of a foreign body from the, 1586
Ear disease causing diplegia facialis, 167; drums, improved, 628
Ear Hospital, the Royal, 559
Ear hospital or infirmary (see also Dublin, Bradford, Liverpool)

Ear (see also Auditory, Aural, Middle-ear, Otitis, Otorrhœa, Otological Society (under MEDICAL SOCIETIES))
Earl, Dr. H. C., dermoid tumour, 939
Earle, Dr. E. R. C., prolapse of the rectum, 1657
Earle, Capt. H. M., ectopic gestation, 234
Earl's Court, Charing-cross Hospital exhibits at, 1607, 1697
Early Closing Association, 1180
Ears, congenital absence of the, 1106
Earth-shocks at Pendleton, 1170
Easmon, Dr. J. F., the late, 1742
East Preston workhouse (Sussex), dissensions at, 1893
East Suburban Medical Protection and Medico-Ethical Society, 278
East, Mr. E., British Medical Benevolent Fund, 1030
Easter holidays extension, 952
Easterbrook, Dr. C. C., Excretion of Urea by the Skin (review), 945
Eastes, Dr. G. L., bacteriology, 30
Eastman, Mr. C. R., Palæontology (review), 624
Eccles, Mr. McAdam, hernia, 457
Eccles, Dr. A. S., Difficult Digestion (review), 1011
Eclampsia, cases of, 619, 709, 938, 1717
Eclampsia, Puerperal, The Treatment of, by Saline Infusions (review), 105
Ectopic gestation, 234, 464; pregnancy, 466
Eczema, seborrhœic, acne combined with, 385
Eczema at cottage homes, 893; treatment of, 1614
Eddowes, Dr. A., cases exhibited, 386; psoriasis, 1072
Eder, Mr. M. D., poisoning by corrosive sublimate, 95
Edge, Dr. F., Gynecological Practice (review), 1287
Edgeworth, Dr. F. H., acroparæsthesia, 1795
Edinburgh: women sanitary inspectors, 347; Royal Association for Incurables, 424; influenza, 500, 658; notification of infectious diseases, 500; dietary and food-supply of the poor, 580; lecture on bacteriology, 658; public health, 808; annual report of the medical officer of health, 1249
Edinburgh Royal Infirmary, annual report, 65; death of Mr. David Ramage, 66; donation, 272; new pavilions, 346
Edinburgh University: annual report, 134; the chair of practice of physic (or medicine), 554, 789, 871, 956, 1224, 1250, 1380; recital at the Students' Union, 888; graduation, 1170; (and St. Andrews University) the representation of, 1249, 1300, 1333, 1380, 1409; various items of news, 1250; pass list, 1252; financial report, 1327
Edinburgh District Lunacy Board, 66; Medical Missionary Society, 347; Company Volunteer Medical Staff Corps, 347; Royal Medical Society, 639, 808; Medico-Chirurgical Society 808; Medical Journal (review), 1215, 1889
Edinburgh and East of Scotland South African Hospital, 425, 495, 500, 658, 887, 968
Edinburgh (see also Royal College, Royal Edinburgh, Royal Society)
Edmunds, Mr. Walter, an inhaler, 29; intestinal suture, 1067
Edmunds, Dr. Walter, exophthalmos, 310
Edmunds, Dr. J., deaths under chloroform, 227, 421, 576, 1614, 1925; aphasic paralysis, 1767
Edridge-Green, Dr. F. W., colour-blindness, 1511
Education, anatomy of mind as bearing on, 891; of children physically afflicted or mentally impaired, 891
Edwards, Mr. V., carbolic disinfectants, 340
Egg-Buckland, drainage of, 1877

EGYPT, CORRESPONDENCE FROM. — Antirabic Institute, 503—Foot-and-mouth disease, 504—The war, 504—The low Nile, 504—Lunatic asylums, 1406—The winter season, 1407—Infectious diseases, 1407—Plague, 1407, 1552, 1617, 1685—The Assouan reservoir, 1552—The Aird Hospital, 1552—Hotels at Assouan, 1617—Mosquitoes and malaria in Arabia, 1685—Plague in 1853 and in 1900, 1685—Bulletin Quarantenaire de la Semaine, 1685—Vaccination Institute, 1685

Egypt, medical appointments in, 954; small-pox and vaccination in, 1379; Lord Cromer's annual report on, 1462
Egypt (see also Helouan)
Egyptian vital statistics, 1295
Ehrmann, Mr. A., syphilis, 542
Elbow, irreducible dislocation at the, 851
Elbow-joint, injuries about the, 290
Elder, Dr. G., the late, 135
Elder, Dr. W., anæmia, 1198
Electric current as a cause of fire, 112; of explosions, 201
Electric heat and light baths, 1075
Electrical Engineers, Institution of, 695
Electrical machine, the Wimshurst, 1212
Electricité en Physiologie (review), 317
Electricity, the application of, in medical and surgical science, 695; in lead poisoning, 879, 966, 1031; in rheumatism, 925; in uterine fibroids, 1110
Electricity (see also Storage battery)
Electrology and Radiology, Medical, Congress of, 398, 1808
Electro-motor in surgery, 1722
Electro-physiology (review), 1366
Elgood, Dr. C. R., carbon monoxide, 1009
Eliot, Mr. E. F., presentation to, 428; measles, 533
Elliott, Dr. F. P., pyo-pneumothorax, 1924
Ellis, Mr. G. V., the late, 1301; obituary, 1707
Ellis, Mr. Havelock, the writings of, 250
Embolism in the fundus oculi, 18; cerebral, 543; of the mesenteric artery, 1074
Embryology of Invertebrates (review), 33
Embryos, human, the primitive gut in, 170
Emmenagogue, thyroid extract as an, 1075
Emmerson, Dr. J. B., The Doctor's Dream, 1180
Emphysema of the orbit, 314; pulmonary, apparatus for the relief of, 457
Empyema, pulsating, 719, 806; unusual ending of a case of, 771, 982; double, 1212; pyo-pneumothorax, due to, 1724
Encephalitis following influenza, 1441
Encyclopædia Medica (review), 31, 1286
Endocarditis, atheromatous, of the aortic valves, 707; subacute, 859; ulcerative, 1010; rheumatic, the prevention of, 1169
Endometrium, vaporisation of the, 1074, 1516
Endoscopy of the œsophagus and stomach, 1189, 1222
Enfield isolation hospital, opening of, 482
English public schools, the health of, 1482
English-speaking practitioner in Italy, 582, 792
Enophthalmos, experimental, 310; traumatic, 771
Enterectomy for gangrenous (or possibly gangrenous) hernia, 381, 1357
Enteric fever, cockle-borne, 397; with negative serum diagnosis, in a tuberculous subject, 553; oyster-borne, 638; and the South African campaign, 1218; infectivity of, 1284; Addison's disease following, 1655
Enteric fever at South Witham, 493; at Falmouth, 1090; in South Africa, 1740
Enteric (see also Anti-enteric)
Enterostomy (see Gastro-enterostomy)
Epididymectomy, 781
Epilepsie, &c., Recherches sur l' (review), 241
Epilepsy, the treatment of, 554
Epileptic, mastoid disease in an, 1355
Epileptic attacks with crude sensations of smell, 477; preceded by auditory and taste sensations, 1119
Epileptics, home for, 1096, 1839
Epistaxis from the ethmoidal veins, 314, 531
Epithelial tumour, cystic, of the jaw, 17
Epithelioma of the glottis and larynx, 463; of the stomach, 707; of the sigmoid flexure, 1004; of the rectum, 1007
Epsom College (see Royal Medical, &c.)
Equine tetanus, carbolic acid in, 538
Equino-varus, treatment of, 1805
Equitable Life Assurance Society, 1477
Errata, 72, 144, 576, 710, 900, 990, 1106, 1482, 1543, 1926
Erythema and pemphigus, concurrent, 1284
Erythro-melalgia, 168
Eserine drops, toxic effects of, 790
Estuaries, polluted, shell-fish and, 1599
Ether, death under, 45; the after-effects of, on the respiratory system, 389, 557, 710, 779
Ether inhaler, a new, 29
Ethics of operations, 174; Medical, International Congress on, 176, 325, 792, 1160, 1457; of direct representation, 1162, 1243; professional, 1172; medical, and the Brit. Med. Assoc., 1543
Ethmoidal veins, epistaxis from the, 314, 531
Ethyl-chloride, apparatus for the local application of, 1139
Etiquette, medical, a question of, 356; points in, 1926
Eton rural district, medical reports on, 493
Eucaine β, local analgesia produced by, operations under, 156, 1106
Eucaine, hydrochloride of, local anæsthesia produced by, an operation under, 928
Europe, The Health Resorts of (review), 1014
Evans, Dr. O. C. P., hernia, 1212
Evans, Mr. H. W., Addison's disease, 1655
Evatt, Surg.-Gen. G. J. H., ambulance work, 205
Eve, Mr. F. S., gastric ulcer, 155; cases exhibited, 168
Evolution, Organic, A First Book in (review), 1368
Ewart, Dr. W., tachypnœa, 385; respiratory jacket, 457; anæmia, 709; rheumatism, 761, 778
Ewart, Dr. Hoggan, patent remedies, 466
Ewart, Prof. Cossar, hybrids, 888
Exeter dispensary, 684
Exeter (see also Royal Devon, &c.)
Exophthalmos, experimental, 310
Exostosis, orbital, 101
Expectoration, fœtid, case of, 237
Explosions, street, 201
Extra-uterine pregnancy, 708; gestation, 778, 1729
Extra-uterine and intra-uterine pregnancy, simultaneous, 274
Eye, cornea of the, cicatrix horn growing from the, 311; orbit of the, emphysema of the, 314; anatomy and pathology of the, 435, 521; retina of the, foreign body in the, 460; dermoid tumour of the, 939; opaque nerve fibres in the, 1362
Eye symptoms in the diagnosis of general diseases, 287; in tabes dorsalis, 1009
Eye measurement, an improved method of, 627
Eye, Diseases of the, System of (review), 104; Diseases of the: a Handbook of Ophthalmic Practice (review), 172
Eye (see also Fundus oculi, Pink-eye, Ocular, Hyalitis, Ptosis, Cataract, Ophthalmological Society (under MEDICAL SOCIETIES), Polycoria)
Eye hospital or infirmary (see Bath, Dublin, Bradford, Plymouth, Liverpool)
Eye-ball, enucleation of the, meningitis following, 772; primary pigmented tumour of the, 855; suppuration of the, the abortive treatment of, 925
Eyelids, lice of the, 466
Eyes, the loss of both, from similar accidents, 927; of newly-born children, catarrh produced in, by solution of nitrate of silver, 1741
Eyesight of board school children, 1022

F

Face, phagedæna of the, 942
Face (see also "Henpuye")
Facial and hypoglossal nerves, paralysis of the, 556; paralysis, 781
Factories and workshops, the chief inspector of, annual report of, 406
Factories, textile, women and children in, 814
Factory girls' country holiday fund, 956
Factory legislation, 635, 664
Fads of an Old Physician (review), 1076
Fæces of typhoid fever, cultures from, 46
Falkiner, Mr. N. McIntire, dinner to, 1253
Falmouth, beri-beri at, 278; typhoid (or enteric) fever at, 628, 1090
Family Doctor (see British Almanac)
Famine in India, 270, 420, 548, 657, 665, 732, 884, 967, 1031, 1096, 1247, 1842, 1899, 1911
Farm colonies for the insane, 971
Favus, the Roentgen rays in, 27; case of, 623
Fawssett, Mr. F., intestinal obstruction, 1585
Favrer, Sir Joseph, hill stations, 1659
F.C.S.M., 284
Feeding and cancer, the connexion between, 965
Feeding the Invalid, The Art of (review), 1139
Fife miners and, 347; actions for the recovery of, 510, 982, 1080, 1176
Fees, medical, under the Poor-law, 117; the Fees, vaccination, 131, 1253; liability for the payment of, 510, 667, 743, 899; lunacy, 589, 790, 1080; of friendly society clubs, 898; hospital certificate, 1544
Feet, gangrene of the, symmetrical, 388
Fellow, a funny, 590
Female students at Heidelberg University, 141
Femoral aneurysm, 461, 1074; artery, rupture of the, 539; hernia, cases of, 929, 1726; fractures in the infant, 1130
Femur, the neck of the, fracture of, 24; the lower epiphysis of the, compound separation of, 233; tumour of the, 457
Fenwick, Dr. Samuel and Dr. W. Soltau, Ulcer of the Stomach, &c. (review), 1806
Féré, Dr. Charles, sexual evolution, 396
Ferguson, Dr. A. R., valvular disease of heart, 315
Ferri salina mistura, 36
"Ferro salicylata," 470
Fertility and sterility of nations, 551
Fetishism in surgery, 363
Fever, continued, an anomalous case of, 534
Fever hospitals, the administration of, difficulties in, 1208; cross infection in, 1364
Fibroids, uterine, treatment of, 1109
Fibrosis, interstitial, of various organs, 985
Fibula, Pott's fracture of the, 622
Fiction, surgery in, 981
Fiddian, Dr. A. P., pediculi, 466
Fielding-Ould, Dr. R., Malaria Expedition, &c. (review), 1010
Fife miners and medical fees, 347
Fingers, partial severance and subsequent reunion of, 465
Finlayson, Dr. J., Hodgkin's disease, 1135
Finsbury Dispensary, appointment at, 558
Fire, electric current as a cause of, 112; outbreaks of, the vicissitudes of weather and, 1223

Fire-raising by a schoolboy, 632
First-aid to the injured, 1145; school lectures on, 1532
First-aid dressing in modern warfare, 714
Fish preserved with boric acid, 50; with formalin, 281
Fish, undersized, the sale of, 974
Fish museum, the Buckland, 398
Fish (see also Fried fish, Shell-fish)
Fisher, Dr. T., ascites, 17, 131; mitral stenosis, 196
Fisher, Mr. H., tumour of the eyeball, 855
Fistula, vesico-vaginal, 465, 743; gastric, 749
Fitz-Gerald, Sir T., to join the army in South Africa, 730, 787, 1040; Medical Society of Victoria, 811
Fitzgibbon, Dr. H., Myles *versus* Fitzgibbon, 1614
Fitz-Patrick, Dr. T., obituary, 1762
Flash-lights, 866
Fleas, the bites of, plague conveyed by, 811, 1836, 1837
Fleas, the destruction of, 1925
Flemming, Mr. C. E. S., the midwifery question, 133, 338, 575
Flemming, Mr. P., enophthalmos, 771
Fletcher, Mr. B. F. and Mr. H. P., Architectural Hygiene (review), 626
Fletcher, Dr. M., specimens exhibited, 1589
Flies in the contamination of food and in the dissemination of disease, 1613; carriage of small-pox by, 1761
Flooding of basements from sewers, 256
Flour for brown bread, 470
Flowering Plant (review), 945
Flux, Dr. G. B., chloroform, 29, 318
Fly (see Tsetse fly)
Focus tube (see ROENTGEN RAYS)
Fœtus, anencephalic, 28, 619; papyraceous, 169; the human, the differentiation of connective tissue in, 170; with absence of the radii, 618; typhoid fever in the, 911; cyclopean, 940
Fœtuses, dropsical parasitic, the anatomy of, 777
Food, preserved, in 1852, 49; preservatives in, 181, 228; unwholesome, prosecutions for possessing, 395; preservatives and colouring matter in, 48, 207, 279, 429, 507, 586; 1301, 1409, 1478; unwholesome, seizure of, 733; of the Royal Navy, 814; definition of, 866; of the Channel Fleet, 894; illness caused by, at an hotel, 1017; tainted, animal scurvy caused by, 1184; horseflesh as, 1598
Food and Drugs (Sale of) Acts, 328, 1378, 1919
Food and Drugs, Analysis of (review), 468
Food, I and I, 470
Food standards, proposed, 740; adulteration and the means to prevent it, 1018; stuffs, diseased, the destruction of, 1531
Foods, various, 1290, 1291, 1522, 1908
Foods, preserved, boric acid in, 13, 131, 181, 207, 574, 730
Foot, perforating ulcer of the, in alcoholic neuritis, 1224
Foot-and-mouth disease in Egypt, 504
Foot (see also Club-foot, Os calcis)
Football match, medical, 428
Forceps, midwifery, the use of, 466; tonsil, a new, 1291
Foreign bodies in the vagina and male urethra, 620; in the brachial artery, 622; in the stomach, 675; in a hydrocele sac, 771; in the œsophagus, 788; on the cornea, 1002, 1095, 1467; in the pharynx, 1207; in the ear, 1585
Foreign practitioners in Italy, 955, 1086, 1098, 1626
Formaldehyde (or formalin) in food, 207, 279, 429; in milk, 967
Forster, Mr. G. P., Dispensers' Association, 284
Foster, Sir Michael, elected M.P. for London University, 244, 474, 482, 497, 585; a tribute to, 951; Physiology (review), 1214
Fothergill, Dr. W. E., specimens exhibited, 315; infantile diarrhœa, 544; hepatic toxæmia, 622
Foulerton, Mr. A. G. R., nerve cells and tetanus toxin, 98; mycotic tumour, 165; typhoid fever, 1121, 1578
Foulis, Dr. J., embryo of the deer, 939; umbilical cord, 1804
Foxwell, Dr. A., an appeal, 1679
Foy, Mr. G., hernia, 731; empyema, 806; time between pregnancies, 1481
Fractures of the upper limb, splints applied to, injurious effects produced by, 83; femoral, in the infant, 1130; simple, the operative treatment of, 1489, 1532; recent, massage in, 1589, 1640
France, birth-rates and death-rates in, 551
France or French (see also PARIS, CORRESPONDENCE FROM)
Frankland, Mr. P. F., Our Secret Friends and Foes (review), 392
Freeland, Mr. E. H., backache, 1128; cancer, 1583
Freemasonry, 206, 506, 585, 900, 962, 1220, 1256
Frémont, Dr., dyspepsia, 502
French military and naval officers, promotion in the Legion of Honour for, 334, 495, 654; view of the medical profession in England, 431; frontier, Italian sanitary precautions at the, 503; assistance for the wounded in South Africa, 814; army, conscripts for the, 882
French Academy of Medicine (see MEDICAL SOCIETIES)
French-English Dictionary of Medical Terms (review), 34
"French letters," the sale of, 1565
Fresh air for children, 1083
Freyer, Mr. P. J., prostatectomy, 774
Fried fish seller, action against a, 635
Friedreich's ataxy, 168
Friend of humanity, 743
Friendly societies, a medical lock-out decreed by, 576, 655
Friendly societies' medical alliance, 1255
Friendly society club fees, 898
Friendly society work, 1306
Friends, save us from our, 509, 1614
Friends and Foes, Our Secret (review), 392
Fripp, Mr. A. D., dermoid cyst, 932; Imperial Yeomanry Hospital, 1309, 1383, 1536, 1606, 1743, 1819
Frontal sinus, topographical relations of the, 525
Frontal sinus empyema, operation for, 385
Frontier force, the West African, 952
Frost, precautions in time of, 211
Fruit, preserved, copper in, and green glass bottles for, 49
Fruit juice crystals, 1450
Fundus oculi, embolism in the, 18
Funeral Reform Association, 322
Fungus (see Mycotic)
Fürth, Dr. Karl, advertisement, 355, 432
Furunculosis, levurine in, 619

G

Gadd, Mr. H. W., Synopsis of the British Pharmacopœia (review), 469
Gairdner, Sir William, resignation of his chair at Glasgow University, 872, 956; dinner to, 1669, 1899
Galen, a Greek text by, recovery of, 1666
Gallantry, the reward of, 1220, 1246, 1320
Gallaudet, Dr. B. B., Diseases of Children (review), 1520; Practice of Medicine (review), 1521
Gall-bladder, ovarian cyst communicating with the, 1132
Gall-stone, the jejunum obstructed by a, 544; removal of a, from the common bile-duct, 1885
Gall-stone crepitus and friction in diagnosis, 251
Gall-stones, symptoms of, produced by moveable kidney, 15; removed from the bile-ducts, 544; clinical behaviour of, 1135; intestinal obstruction due to, 1356
Ganglion, the Gasserian, excision of, 1440
Gangrene of the feet, symmetrical, 388; hospital, the bacillus of, 1762
Garbage-mongers, 395
Garden city, 574, 732
Gardiner, Mr. J. H., Roentgen rays, 1212
Gardner, Dr. H. G., the army medical officer, 806
Gardner, Mr. T. F., surgical cases, 1276
"Gas and oxygen" as an anæsthetic, 1436
Gas (see also Water-gas)
Gaseous abscesses following hypodermic injections, 1021
Gases of the atmosphere, 1813
Gas-lighting in Dublin, 968, 974, 1035
Gasserian ganglion, excision of the, 1440
Gastralgia, 1075
Gastrectomy, 841, 948
Gastric ulcer, perforated, operations for, 155, 944; case simulating a, 1007
Gastric conditions in pernicious anæmia, 222, 297; juice, natural, in dyspepsia, 502; dilatation, tetany and, 834
Gastric (see also Intra-gastric)
Gastro-enterostomy, 832, 841, 1590
Gastroscopes, various, 1189
Gastroscopy, 1189, 1922
Gastrostomy, 839, 941
Gastrotomy, 675
Gateshead Medical Association, 1205
Gauze dressing rolled up into balls, 461
Geburtsakt und der operativen Geburtshilfe, Atlas und Grundriss der Lehre vom (review), 1807
Geburtshilfliches Taschenphantom (review), 782
Geddes, Sir W. D., the late, 555
Gelatin envelopes for surgical dressings, 1042
Gemmell, Dr. J. E., abdominal pregnancy, 31
General Medical Council: charge made against Mr. R. T. Williams, 38; and the medical profession, 39; disciplinary action, 40; preliminary medical education, 42; election of a representative of the Society of Apothecaries of London, 253; the committees, 554; unqualified assistants, 668; the Council *versus* Alabone, 715; the executive committee, 863; Midwives Bill committee, 872; Midwives Bill, 873, 1015, 1082, 1906; accounts, 894; Medical Students Register, 955; penal cases committee, 1147; nomination of Mr. W. H. Power, 1459; legal application against the Council by Mr. C. A. Bynoe, 1817, 1891
General Medical Council: the approaching meeting, 1451; opening of the session, 1555; introductory comments, 1555, 1620; new members, 1555; President's address, 1555; business committee, 1556; results of examinations, 1556; amendment of standing orders, 1556; Public Health Committee, 1556; penal and disciplinary powers, 1557; restorations to the Medical and Dental Registers, 1557, 1558, 1562, 1620, 1694; congratulations to Sir Hector Cameron, 1557; the midwives question, 1558; fraudulent personation, 1561; prevention of personation, 1561, 1625; appointment of a solicitor to the Council, 1561, 1669, 1694; method of appointing representatives, 1561; the proposed Conjoint Board in London, 1561; appointment of assistant examiner, 1562; the case of Mr. W. M. Joyce, 1620; the case of Mr. J. A. Graydon, 1620; inspection of documents, 1620; the case of Dr. R. H. Foot, 1620; the case of Mr. A. Forbes, 1621; the case of Mr. A. Oglesby, 1621; the case of Mr. O. McBreen, 1622; the case of Mr. C. L. Lumley, 1622; the case of Mr. A. Alexander, 1623; proceedings *in camerâ*, 1625, 1628; foreign practitioners in Italy, 1626; financial aid to the Irish Branch Council, 1628; the length of the session, 1628; the memorandum on reciprocity, 1628; the Dental Board of Victoria, 1628; the Royal College of Dental Surgeons, Ontario, 1629; Dentists Act for Western Australia, 1629; the case of Mr. E. L. Oldfield, 1629; medical aid associations, 1629; advertising by medical aid associations, 1688; the examinations of the Apothecaries' Hall of Dublin, 1688; inspection of the final examinations, 1688; admission of foreign students to examinations, 1689; diplomas in public health, 1689; registration of students, 1689; Companies Act Amendment Bill, 1689; an application for registration, 1689; penal clauses of Medical and Dentists Acts, 1689; advertising by dentists, 1689; the standard of preliminary examinations, 1690; the Pharmacopœia, 1692, 1694; the English Royal Colleges, 1693; University of Birmingham, 1694; the Society of Apothecaries title, 1694; acknowledgment of Mr. Farrer's services, 1695; appointment of registrar, 1695; appointment of committees, 1695; finances of the Council, 1695; close of the session, 1696; disciplinary action, 1735
General Medical Practitioners' Union, Birmingham and District, 278
General practice, death certificates in, 1207; Records from (review), 1889
Geneva cross, the size of the, 1563
Genu recurvatum, 250; valgum and coxa vara, 775
Geography, a story of, 899
German military medical attachés with the British army in South Africa, 404, 970, 1099; congress of internal medicine, 556, 660, 1325, 1544; surgical congress, 660, 1401, 1469; committee for the International Medical Congress at Paris, 560; military medical officers, the position of, 881; ambulances with the Boers, 1165, 1251, 1762
Germany or German (see also BERLIN, CORRESPONDENCE FROM, Deaf, Teachers of the)
Germicidal power of disinfectants, 1797
Gestation, protracted, 94; ectopic, 234, 464; extra-uterine, 778, 1729; protracted and legitimacy, 1078
Giantism, 1867
Gibbes, Dr. C. C., mitral stenosis, 340
Gibbon, the thoracic and abdominal organs of the, 620
Gibbon the historian, the medical history of, 1731
Gibbons, Elizabeth, the case of, 1529
Gibraltar, sanitation of, 429; health of, 1672
Gibson, Dr. G., pseudo-bulbar paralysis, 28
Gibson, Dr. C. G., annual report for Launceston, 974
Gibson and Young, Soper *versus*, 1809
Gidley, Mr. G. G., cuff-fastener, 628
Giles, Dr. A. E., myomatous uterus, 464; congress of gynæcology, &c., 1466; Diseases of Women (review), 1887
Giles, Dr. L. T., tonsillitis, 781
Giles, Maj. G. M., Malaria Expedition, &c. (review), 1010
Gilford, Mr. H., disorders of growth, 1643, 1866
Gimlette, Mr. J. D., leprosy, 611

Giving nature a chance, 211, 283
Gladstone, Mrs., the late, 1815
Glanders, recovery from, and immunity, 1224
Glands, various, chronic adenitis of, 1009
Glasgow: annual meeting of the Scottish Poor-law Medical Officers' Association, 135; casualty cases, 586; tercentenary of the Faculty of Physicians and Surgeons, 734; Scottish National Red Cross Hospital in South Africa, 739, 968; unfounded rumour of plague in, 1379
Glasgow University: resignation of Sir William Gairdner, 842, 956, 1669, 1899; pass list, 1175
Glasgow University Club (London), dinner, 1301
Glasgow District Asylum, Gartloch, 124; International Exhibition, 1024
Glasgow, the Faculty of Physicians and Surgeons of (see also under Royal Colleges,
Glaucoma and homatropine, 311
Glossitis, acute, in typhoid fever, 1798
Glosso-epiglottic fossa, cysts in the, 1235
Glottis, epithelioma of the, 463
Gloucester City Council and the medical officer of health, 973; Infirmary, 1042
Glover, Dr. J. G., Midwives Bill, 872, 964, 1026, 1089, 1755; ethics of direct representation, 1162; medical politics, 1306, 1389; vote of thanks to, 1379
Glover, Dr. Jules, topographical relations of the brain, &c., 525
Glover, Dr. T. A., Midwifery Notes (review), 1368
Glucose, maize, as an adulterant of golden syrup, 177
Gluten bread and biscuits, 106
Glycerinated calf vaccine lymphs, 1216, 1227-36, 1398, 1540, 1831, 1926
Glycerophosphates, extract of malt and, 470
Glycogen, Microscopic Researches on (review), 711
Glycosuria, myomatous uterus and, 464; the production of, by phlorizin and by exalted respiration, 706
Glynn, Dr. T. R., bulbar paralysis, 1074; thyroid extract, 1075
Goadby, Mr. K. W., diphtheria, 236
Godlee, Mr. R. J., pyorrhœa, 1728
Goitre, malignant, case of, 167
Goitre, partial removal of a, 463; thyroiodin in, 1213
Gold, a compound of, in rheumatism, 72
"Gold cure" of alcoholism, death of the author of the, 971
Gold Coast Colony, "henpuye" in the, 20
Golden Rules of Physiology (review), 469; of Ophthalmic Practice (review), 1662
Goldie, Mr. G. F., dental cases, 939
Golf tournament, medical, 1039, 1325, 1918
Gombault, Dr., the late, 502
Gonorrhœa and the eye, 287; the influence of, on the puerperium, 1731
Gonorrhœal arthritis, treatment of, 387
Goodall, Dr. E. W., measles, 654; fever hospitals, 1208; enteric fever, 1284
Gooddy, Mr. E., carbolic acid, 1030
Goodhart, Dr. J. F., acidity, 1, 393
Goodman, Mr. P. T., rupture of the heart, 1067
Gordon, Mr. B., sugar in urine, 1321
Gordon, Dr. H. L., Rhodesia, 1365
Gordon, Dr. R., the liver, 1213
Gorham, Mr. J., obituary, 140
Gould, Mr. A. P., bullet wound, 310; sarcoma, 930
Gout, artificial, in birds, 274; sodium biurate in, 931; treatment of, 931, 1444; excretion of nitrogen in, 931; therapeutics of, 1133
"Goutte de lait" society, 1672
Govan District Asylum, Paisley, 124
Government, the, and the Royal Commission on the licensing laws, 556
Government (see also Home Office)
Gow, Dr. W. J., uterine fibroids, 99
Gowers, Dr. W. R., the late Sir James Paget, 131
Graham, Dr. W., aneurysm, 1209
Grant, Surg.-Maj. A., the late, 62, 144; obituary, 139
Grant, Dr. D., emphysema, 314; thrombophlebitis, 543
Grant, Dr. L., cerebral hæmorrhage, 1204
Gravely, Mr. R., presentation to, 141
Graves's disease complicated by ophthalmoplegia externa, 98; treatment of, as of intestinal origin, 116; cases of, 781; bradycardia in, 1591; removal of the thyroid gland in, 1815
Gray, Dr. A. A., the ear, 1125
Greek text by Galen, recovery of a, 1666
Green glass bottles for preserved fruit and vegetables, 49
Green vision, 855
Green, Dr. A. B., amyloid sections, 381; amyloid disease, 384
Greenwood, Dr. M., presentation to, 974
Greer, Mr. W. J., the Presidency of the Royal College of Surgeons in Ireland, 1466
Greig, Mr. D. M., cases and specimens exhibited, 859
Gresswell, Dr. D. A., precautions against the plague, 427; Medical Society of Victoria, 811
Griffin *versus* Peirson, 341
Griffiths, Prof. W. H., Prescriptions (review), 1214
Grigg, Dr. W. C., obituary, 973
Grimaux, Mons., the late, 1377
Grimsdale, Dr. T. B., tumour of the uterus, 30; peritonitis, 316; metrorrhagia, 709; fibromyoma, 1008; papilloma of the vagina, 1209
Grimshaw, Dr. T. W., the late, 272
Groves, Dr. J., medical officers of health, 1612
Growth, primary disorders of, 1643, 1866
Grossmann, Dr. Karl, anophthalmos, 940
Grube, Dr. Karl, coma, 706
Grün, Mr. E. F., rheumatism, 964
Grünbaum, Dr. A. S. F., plague, 780; typhoid fever, 1169; agglutination, 1210
Grünwald, Dr. Ludwig, Nasal Suppuration (review), 1888
Guardians and vaccination, 951
Guiana (see British Guiana)
Gunning, Dr. R. H., the late, 963; obituary, 973
Gunshot wound of the abdomen and intestine, 704; of the head, 1068
Gut, the primitive, in human embryos, 170
Guthrie, Dr. L., ophthalmoplegia, 101; bulbar paralysis, 618; myotonia congenita, 1071, 1180
Guy, Insp.-Gen. T., the late, 729; obituary, 738
Guy's Hospital, appointments at, 328, 558; Pharmacopœia of (review), 468; a complaint against, 871, 975; distribution of prizes, 1817; dinner, 1899
Gymnastics, Medical Indoor (review), 1013
Gynæcological operations shown with the kinematograph, 30; therapeutics, 709
Gynæcology, minor, 31; 1366
Gynæcology, Practical (review), 1733
Gynæcology and Obstetrics, congress of, 1398, 1466
Gynæcomastia, cases of, 475
Gynäkologie, Handbuch der (review), 32
Gynecological Practice, A Manual of (review), 1287
Gynécologie et Chirurgie Abdominale, Revue de (review), 35, 1594; et d'Obstétrique, Revue de (review), 35, 1663

H

Habershon, Dr. S. H., tuberculous glands, 1282
Haddon, Dr. J., cancer, 965
Hadley, Dr. W. J., rheumatism, 457
Hæmarthrosis of the knee, 1446
Hæmatoma, vulvar, in labour, 1517
Hæmaturia, epidemic, 249, 461
Hæmoglobinuria, paroxymal, case of, 167
Hæmoglobinuric fever, 11
Hæmolytic poison in pyocyanic toxin, 1441
Hæmo-pneumothorax, 458
Hæmoptysis, cause of death in, 1255
Hæmorrhage, meningeal, Kernig's sign in, 47; subdural, followed by loss of ability to name objects, 552; cerebral, strychnine and, 1204
Hæmorrhages of Pregnancy, Parturition, and the Puerperium (review), 105
Hæmorrhagic ascites, 17, 131
Haffkine's plague prophylactic, inoculations with, 258, 345; demand for, in Australia, 427; the nature of, 780
Haffkine's antiplague inoculation, the Indian Plague Commission on, 567, 713
Hair, superfluous, destruction of, by the Roentgen rays, 654
Hair (see also Depilation)
Hale, Dr. G. E., cases exhibited, 315
"Half a man" in court, 475
Hall, Dr. A., vaccination pustules, 388; syphilitic ulceration, 465; skin diseases, various, 781; hysteria, 1213
Hall, Dr. Basil, intestinal obstruction, 707
Hall, Dr. F. de H., diphtheria, 1030
Hall, Dr. J. B., gastrostomy, 941; osteitis, 1875
Hall, Dr. Walker, mercuriol, 709
Hall, Dr. W. S., Physiology (review), 860
Hall, Dr. W. W., the Boers, 574, 732
Hall-Edwards, Mr. J. F., lupus, 637
Hallam, Mr. H., cases exhibited, 1075
Halliburton, Prof. W. D., proteids, 539; Physiology (review), 1289
Hallux valgus and hallux varus, 609, 621
Hallux valgus, with hammer-toe, case of, 621; varus, skiagram of, 621
Hamburg, a university for, 582
Hamilton, Prof. D. J., heredity, 808, 855
Hamilton, Mr. G. G., colectomy, 1075
Hamilton, Dr. T., presentation to, 974
Hammersley, Mr. P. H. V., oxygen, 510
Hammond, Dr. G. M., auditory memories of words, 552
Hampstead Heath extension scheme, 792
Hand and forearm, the right, sweating of, 1008
Handford, Dr. H., typhoid fever, 943
Hands, vaccination pustules on the, 388; Dupuytren's contraction of the, 388; deformity of the, in father and son, 618; parakeratosis of the, 781
Happiness (see Life and Happiness)
Harding, Mr. J. J., spitting in the streets, 981
Hare, Dr. H. A., Progressive Medicine (review), 389; anæmia, 401
Harley, Dr. V., scurvy, 1184
Harris, Mr. C. J., chloroform, 1846
Harris, Mr. D., concurrent diseases, 1003; explosive bullet, 1400
Harris, Mr. F., masturbation, 1256
Harris-Bickford, Dr. A., obituary, 504
Harrison, Insp.-Gen. G. W. L., the late, 129
Harrison, Mr. R., ambulances, 475; urethrotomy, 768; vasectomy, 1275
Harrison, Miss Eveleen, Home Nursing (review), 1369
Harrisson, Mr. D., malignant pustule, 164
Hart, Dr. D. B., connective tissue, 170; nomenclature, 1885
Hart, Dr. F. L., Midwives Bill, 1166, 1907
Hartnell, Mr. E. B., an appeal, 818
Hartridge, Mr. G., Ophthalmic Practice (review), 1662
Haslam, Mr., tumour of nerve, 623
Haswell, Dr. W. A., Zoology (review), 1443
Haultain, Dr. F. W. N., amenorrhœa, 939
Hawthorne, Dr. C. O., endocarditis, 1169
Hay, Dep.-Insp.-Gen. R., the late, 129
Hay, Dr. J., pulsus paradoxus, 535; specimens of aorta, 1269
Hayes, Lieut.-Col. A. E., obituary, 1687
Head, gunshot wound of the, 1068
Head-rest for a barber's chair, 862
Health Abroad (review), 625
Health Resorts of Europe (review), 1014
Health (see also Public health)
Hearne, Mr. E. C., hyalitis, 544
Heart, the effect of athletics on the, 174; multiple valvular stenosis and abscess of the, 315; rheumatic diseases of the, treatment of, 923; aortic valve of the, fenestration of, 944; spontaneous rupture of the, 1067; fatty, the Schott treatment of, 1144; organic affections of the, and fibro-myoma of the uterus, 1361; the first sound of the, 1430, 1440
Heart, valvular diseases of the, in old age, 324; in acute rheumatism, prevention of, 776
Heart complications in rheumatism, 766; muscle, degeneration of, 985
Heart Disease with Special Reference to Prognosis and Treatment (review), 1731
Heart wall in diphtheria, rheumatic fever, and chorea, 1352
Heart (see also Mitral, Dextro-cardia, Endocarditis)
Heat, the dynamical theory of, 1301; deaths from, 1737, 1812, 1842, 1920
Heat apoplexy in the Argentine Republic, 868
Heat-stroke and sun-stroke, 952
Heath, Capt. A. J., the late, 729
Heather, Surg. B. G., the late, 729, 813
Heaton, Mr. G., vesical calculus, 780
Hebrides, medical service of the, 46
Heidelberg University, female students at, 141
Heider, Dr. K., Embryology of Invertebrates (review), 33
Helen Prideaux memorial scholarship, 1742
Hellier, Dr. J. B., kyphotic pelvis, 707, 1279; imperforate hymen, 1366
Helme, Dr. A., ovarian sarcoma, 1366
Helouan, baths at, 252
Hemichorea, 622
Hemiplegia in scarlet fever, 1143
Hempson, Messrs., Griffin *versus* Peirson, 341
Henchley, Mr. A. R., vaccination, 1846
Henderson, Mr. A. M., drainage, 891
Henderson, Mr. D. G., Analytical Chemistry (review), 392
Hendon, new infirmary at, 1023
"Henpuye" (a disease of the face) in the Gold Coast colony, 20
Hepatic mucoid cyst, 453, 590; abscess, the diagnosis and treatment of, 556; toxæmia, 622
Herculaneum (see Mirage)
Heredity in disease, 808, 855
Hermaphroditism, case of, 1884
Hernia, femoral, cases of, 929, 1726
Hernia, inguinal, due to abnormal descent of the testis, 457; strangulated, 459, 1281; double, 1212
Hernia, volvulus and, 237, 1726; resection of intestine in, 309, 381; obturator, strangulated, 940; combined internal and external strangulation of a, 1357
Hernia, the rarer forms of, the anatomy and pathology of, three lectures on, 513, 518, 596 (with subheadings of the following varieties:—bilocular, 513; properitoneal, 514; interstitial, 516; encysted, 518; of the bladder (cystocele), 596; subsequent correspondence relative to the above, 730, 806)
Hernial sac, appendicitis in a, 1085

Heroin in respiratory affections, 180
Herring, Mr. E. K., dislocation, 1130
Herschell, Dr. G., intra-gastric needle-douche, 37
Heuston, Mr. F. T., aneurysm, 463, 1365
Hetol, a remedy for tuberculosis, 1761
Hewlett, Dr. W. H., diphtheria, 198
Hewlett, Dr. R. T., diphtheria, 1093, 1167; a pasteuriser, 1215; serum diagnosis, 1441
Hibbs, Dr., hæmarthrosis of the knee, 1446
Hicks, Mr. A. B., the Coroners' Society, 805
Hildebrand, Prof. Dr., Jahresbericht über die Chirurgie (review), 626
Hill warfare, field hospitals and ambulance for, 420
Hill, Dr. A., annual report for Birmingham, 577
Hime, Dr. T. W., vaccine lymphs, 1398
Hinshelwood, Dr. J., word-blindness, 1506
Hippodrome, the London, the warming and ventilation of, 1315
Hip, bilateral dislocation of the, 1716
Hip-joint disease, destructive, operation for, 1499
Hips, congenital dislocation of the, 102, 167, 456
Hobbs, Dr. A. H., hysteria, 388; focus tube dermatitis, 465
Hobhouse, Dr. E., Health Abroad (review), 625
Hodgkin's disease, 1135
Hoffmann, Dr., paralysis of nerves, 556
Holidays (see Easter, Factory Girls, Dispensary)
Holland, Hon. Sydney, the sick and wounded, 423
Holmes, Miss Jessie, The Private Nurse (review), 1014
Holy water, microbes in, 47; a new font for, 252
Holy Year, hygiene and the, 68; a contre-coup to the, 136
Homatropine, glaucoma and, 311
Home Office, verification of anthrax, 1014, 1021
Homes wanted, 744, 818, 898, 1414, 1634, 1925
Hong-Kong, public health in, 585; plague in, 1301
Honolulu, plague in, 1916
Honour where honour is due, 1301
Honours to medical men and women, 43, 334, 495, 654, 792, 868, 1220, 1246, 1320, 1526, 1539, 1601, 1911
Hooper, Dr. D., not the disease only, &c., 574
Hope, Dr., housing of the working classes, 601
Hope *versus* the Chertsey Board of Guardians, 1080
Hopwood, Mr., an insurance agent, criminal charge against, 182, 253 (see also Anglo-American)
Horder, Mr. T. G., hospital reform, 1401
Horder, Mr. E. G., a staining method, 64
Horn (see Cicatrix horn)
Horne, Dr. J. F., Mirage of Two Buried Cities (review), 782
Horrocks, Dr. Peter, Crook *versus* Crook and Horrocks, 882
Horrocks, Mr. W. H., tubal pregnancy, 941; the stomach, 1030; Gibbon the historian, 1731
Horse, a boy's ear bitten off by a, 25; mycotic tumour in a, 165
Horse dung, diarrhœa and, 865; ambulances, 1034, 1604, 1768, 1816, 1836, 1907; sickness, African, the virus of, 1441; flesh as food, 1598
Horse (see also Equine)
Horses, pink-eye in, the bacillus of, 201; an antiseptic muzzle for, 628
Horsley, Mr. V., Bradford and West Riding Medical Union and, 557; medical corporations, 639; alcohol, 956, 1271; the Medical Acts, 1302, 1458, 1533, 1605
Horton-Smith, Dr. P., typhoid bacillus, 821, 910, 1050, 1079
Hospital, a flying, 129, 183
Hospital, responsibility of a, for the acts of a nurse, 1916
Hospital should be governed by those who support it, 1024
Hospital, infectious, or isolation, or fever (see Infectious or Isolation or Fever hospital or hospitals)
Hospital abuse, 129, 1304; car, 183; support the war funds and, 319; appointment, alleged family tenure of, in France, 348; ship *Nubia*, 406; ships, Sir William Mac Cormac on, 405; laboratories, 426; service, United States Marine, 477; appointments in Paris, the examinations for, 969; reform, 1401; certificate fees, 1544; gangrene, the bacillus of, 1762; boards, medical men and, 1817; organisation, 1912
Hospital Fund for London, the Prince of Wales's, 50, 180, 481, 649, 956, 1825
Hospital patients, should they smoke or play cards? 589; unqualified attendance upon, 871
Hospital Saturday Fund, the Metropolitan, 352, 1039
Hospital Saturday in Plymouth, 50; in Liverpool, 1839
Hospital Sunday Fund, the Metropolitan, 253, 1734, 1737, 1812, 1831, 1916; special supplement in support of the, 1771–78
Hospital Sunday in Birmingham, 267; in Bristol, 428, 1031; in Manchester, 578
Hospital accommodation for sick and wounded (see Soldiers, Sick, and wounded)
Hospitals, general, dental appointments at, 62, 115; the Birmingham Christmas festivities in, 134; floating, for West Africa, 178; and local rates, 253, 715, 875, 1563, 1843, 1921; for hill warfare, 420; complaints against, 479, 871, 975, 1813; the military, in Cape Colony and Natal, 506; post-mortem examinations in, difficulties in making, 581; in New South Wales, 634; military, women nurses in, 662; general, in the United States, wards for the insane in, 890; the Society for Visiting, 1147; and the war, 1771; and Charities, Burdett's (review), 1888
Hospitals for South Africa (see Edinburgh and East of Scotland, Imperial Yeomanry, Irish Field, Scottish National Red Cross, Sivewright, Swiss ambulance)
Hospitals, bequests and donations to, appeals on behalf of, 48, 50, 207, 231, 272, 278, 428, 475, 704, 773, 784, 871, 1023, 1035, 1120
Hospitals, infirmaries, dispensaries, asylums, convalescent homes, annual or half-yearly meetings or reports of, 65, 95, 123, 141, 203, 206, 271, 278, 289, 318, 328, 346, 347, 348, 352, 364, 377, 381, 411, 424, 479, 505, 547, 559, 572, 576, 578, 579, 580, 585, 614, 628, 639, 658, 664, 684, 707, 712, 733, 739, 813, 893, 946, 967, 974, 1033, 1035, 1038, 1042, 1074, 1252, 1267, 1914
Hot springs of Bath, 1467
Hotel Company, the Inns of Court, action for damages against, for supplying poisonous food, 1017
Hotels and congresses in Paris, 325
Houghton, Mr. Murtaugh, organisation of the profession, 143; public medical service, 341
House, the hygiene of a, 211
House Construction, Modern, The Principles and Practice of (review), 1732
House surgeon, complaint against a, 204
House (see also Dwelling-house, Lodging-houses, Tenement house)
Houses, unfit, 1375
Houses let in lodgings, 1603
717, 864; of the poor, 1179, 1665
Housing Acts, area condemnation under the, 943
Housing of the working-classes, 201, 601, 665, 717, 864, 1895
Housing (see also Rehousing)
Howard Association, 1179; medal of the Royal Statistical Society, 1896
Howard, Mr. E., "To-morrow" (a book), 574, 732
Howison, Mr. J., obituary, 139
Howse, Mr. H. G., Neale's Digest, 420
Huchard, Mons., influenza, 809
Hughes, Capt. M. L., the late, 190
Hughes, Prof. D. E., bequest to hospitals, 773, 784
Hulbert, Dr. E. B., hypothermia, 29, 85
Humanity, the friend of, 743
Hume, Dr. G. H., cases exhibited, 541
Humerus, sarcoma of the, 382; the lower epiphysis of the, displacement of, 384
Hunt, Dr. J. M., dysphonia, 1285
Hunter, Dr. J. B., spitting and tuberculosis, 71; infirmaries, 806
Hunter, Dr., gastralgia, 1075
Hunter, Dr. R. L., the late, 203
Hunter, Dr. W., anæmia, 221, 296, 371; pyocyanic toxin, 1441
Hunter, Dr. D., the pericardium, 1434
Hunter, Dr. J. D., vesico-vaginal fistula, 743
Hunterian Oration and Lecture of the Hunterian Society, 723, 1259, 1265
Hurdsfield, sanitation in, 817
Husband, Dr. H. A., Practice of Medicine (review), 1521
Hutchinson, Mr. Jonathan, Neale's Digest, 420
Hutchinson, Mr. Jonathan, jun., resection of os calcis, 167; hernia, 309; aneurysm, 1283; excision of Gasserian ganglion, 1440; chancres, 1575, 1637
Hutchinson, Dr. J. A., an appeal, 1467, 1566
Huth, Mr. A. H., deaf-mutism, 367
Huxley lecture, 1742
Huxley, Prof. T. H., Physiology (review), 1214; statue of, 1301
Hyalitis, 544
Hybrids, exhibition of, 888
Hydatid mole, the essential nature of, 170
Hyde, Dr. S., obituary, 662
Hydrastia (see Bismuth)
Hydrocele outfit, 1370
Hydrocele sac, foreign body in a, 771
Hydrogen peroxide, 106; solid, 1093
Hygiene and the Holy Year, 68
Hygiene and Demography, International Congress of, 1161, 1463, 1566
Hygiène, Les Maitres de l', 1528
Hygiene, Architectural (review), 626
Hygiène et de Police Sanitaire, Revue de (review), 242
Hymen, imperforate, 1366, 1799
Hyperæsthesia, cortical, in acute alcoholism, 1739
Hyperpyrexia, 1010, 1725
Hyperpyrexia (see also Temperature)
Hypnotic, apomorphine as a, 1083, 1481, 1635
Hypodermic injections, gaseous abscesses following, 1021
Hypoglossal nerve, paralysis of the, 556
Hypokinesis, cases of, 27
Hypospadias with absence of urethral aperture, 1208
Hypothermia, 29, 85
Hyrgolum, 1450
Hysterectomy, cases of, 464, 1109, 1276
Hysterectomy, abdominal, cases of, 99, 613; abdomino-vaginal, 781
Hysterectomy (see also Pan-hysterectomy)
Hysteria, case of, 388; in boys, 1213
Hysterical mutism, 1009; dysphonia, 1285
Hystérie, &c., Recherches sur l' (review), 241

I

I and I food, 470
Ice, impure, the sale of, 136
Ice cream, the bacteriology of, 138; vendors of, the control of, 256
Ichthyol ointment taken internally, 660
Ichthyosis, cases of, 27, 543
Ideals, Unwritten (review), 946
Idiotie, &c., Recherches sur l' (review), 241
Ignorance, the courage of, 71
Ilfracombe, water-supply of, 70
Iliac arteries, embolism of the, 1010
Imbecility in young children, diagnosis of, 1378
Imperial Yeomanry Hospital, 484, 486, 490, 578, 1225, 1240, 1309, 1310, 1383, 1536, 1606, 1743, 1819, 1900; ambulance vehicle, 728
Impotence, the treatment of, 1136
"Inca" bone, 326
Incubator, a new, 1014
Indecent literature, the question of, 250; subjects, newspaper reports of, 950
Index Medicus, the French edition of the, 660
India, natives of, typhoid fever in, 131; cases sent from, to the Pasteur Institute in Paris, 345; jigger (an insect) in, 499; new hill stations in, 1527; hill stations of, as health resorts, 1659
India, notes from, 64, 130, 270, 345, 423, 499, 657, 732, 884, 966, 1031, 1096, 1247, 1321, 1402, 1548, 1608, 1679, 1758, 1911
India, plague in, 65, 130, 270, 345, 419, 423, 499, 657, 665, 732, 884, 966, 1031, 1096, 1247, 1321, 1402, 1548, 1608, 1679, 1758, 1911; Portuguese, plague in, 253
India, small-pox in, 423, 1031; measles in, 423; cholera in, 1630, 1842, 1899, 1911
India, famine in, 270, 420, 548, 657, 665, 732, 884, 967, 1031, 1096, 1247, 1899, 1911
India (see also Dutch East Indies)
Indian Medical Association, 64
Indian medical service and the army medical school, Netley, 130; increase of the, 270; pass lists, 334, 495; dinner, 1532, 1826
Indian Medical Service (see also Services)
Indian non-medical officials on the plague, 65
Indian Plague Commission, report upon Haffkine's antiplague inoculation, 567, 713; statistical methods and the, 568, 724
Indigestion a cause of sleeplessness, 216
Inebriate, the, and the certified reformatory, 718
Inebriate asylum, a proposed, 201
Inebriates, homes for, 207, 318, 585, 704, 1884
Inebriates Act, committal under the, 1170
Inebriates Act board, a county, 399
Inebriates Act in Scotland, 585
Inebriety, a layman's views of, 1925
Infancy, mongolism and cretinism in, 23; the use of opium in, cerebral and mental degeneration and, 1737
Infant, sarcoma of the liver in an, 427; lateral curvature in an, 617; femoral fractures in the, 1130; cirrhosis of the liver in an, 1213; strangulated inguinal hernia in an, 1281
Infant mortality, 544
Infantile paralysis, cases of, 27, 622; diarrhœa, salol and petroleum in, 544; insanity, 857; paraplegia, 942
Infantry, mounted, 1029
Infants, the feeding of, with modified milk, 540, 1672; dilatation of the large intestine in, 1300; purulent ophthalmia in, 1447; teaching of, 1842
Infection, how to spread, 633; the spread of, the Paris municipality and, 981; a new form of, 1106
Infection (see also Cross infection)

Infectious disease (or diseases) in Austria, 69; notification of, in Edinburgh, 500; in the Post Office service, 586; legislation as to, in Germany, 1251
Infectious Diseases (Notification) Act, difficulties under the, 590
Infectious hospitals, existing or proposed: Warrington, 201; Sydney, 427; Enfield, 482; Liverpool, 579; Southampton, 585; Belfast, 735, 808, 1035; Manchester, 887; Paris, 889; Chesterfield, 1027; Colne, 1799
Infective diseases, oysters and, 1173
Infirmaries in Ireland, medical officers to, legal position of, 734
Infirmaries, deficiencies in our, 806
Influenza, heroin in, 180; a cause of sleeplessness, 217; and the eye, 289; and the Holy Year, 426; the treatment of, 426, 809; muscular atrophy after, 541; carbolic acid in, 1030; encephalitis following, 1441
Influenza in Belfast, 67, 135; in Dover, 181; in Liverpool, 201; in Ireland, 203, 273; in Italy, 274, 349, 426; in Paris, 426; in Edinburgh, 500, 658; in St. Marylebone, 1027
Influenza epidemic, the lesson of the, 107, 198
Influenza (see also Post-influenzal)
Ingleby lectures, 1859
Inguinal hernia, cases of, 457, 459, 1212, 1281, 1357
Inheritance, the facts of, 1038
Injured, first aid to the, 1145
Injuries, fatal, without apparent lesion, 335
Injury claims, personal, 769
Innominate aneurysm, 1209, 1443
Inoculation, antityphoid, 150, 245, 338, 421, 504, 565, 967, 1578; antiplague, 258, 345, 424, 567, 713, 780
Inoculation of small-pox, 1029
Inquests, cases in which they should be held, 805
Inquests held by the coroner of Liverpool in 1899, 790
Insane, bones of the, 347; wards for the, in general hospitals in the United States, 890; farm colonies for the, 971
Insane, the phthisical, isolation of, 248
Insane, general paralysis of the, morbid anatomy of, 942; etiology and pathology of, 943
Insane (see also After-care)
Insanity, increase of, 462, 1523; infantile, 857; the pathological study of, 888; is it increasing? 951; criminal, 1036
Insanity, sexual function, and crime, 169
Insanity (see also Vice and Insanity)
Insects in the ear, 283
Insects (review), 545
Insomnia, unusual cases of, 953
Instruments, black, in the examination of interiors, 883; surgical, at the Paris Exhibition, 1837
Interparietal bone, 326
Interscapulo-thoracic amputation, 382, 1364
Intestinal lesions, typhoid fever without, 910; infection, cerebral complications due to, 971; suture, experiments on, 1067; absorption, 1084; suture, cases of, 1586; perforation in typhoid fever, laparotomy for, 1800
Intestinal obstruction, operation for, 314; arising from Meckel's diverticulum, 383, 452, 707, 1068, 1585; due to thrombosis of mesenteric vessels, 705; due to peritoneal bands, 781; chronic, 852; treated without laparotomy, 1205; due to gall-stones, 1356
Intestine, gangrenous, resection of, 309; the large, resection of, for cancer, 465; gunshot wound of the, 704; the large, in infants, hypertrophic dilatation of, 1300
Intestine, the small, resection of, 217, 248, 456; bullet wounds of, 310; stricture of, 459; volvulus of, 1279
Intestines, tuberculosis of the, 939
Intolerance, 1700
Intoxicating liquors, the sale of, to children, 788, 814, 1085
Intoxication (see Auto-intoxication)
Intra-gastric needle-douche, apparatus for, 37
Intra-uterine hæmorrhage from cystic molar pregnancy, 163
Intussusception, cases of, 28, 454
Invalid, The Art of Feeding the (review), 1139
Invertebrates, Embryology of (review), 33
Iodised hot spring, 889
Iodoform gauze in rupture of the uterus, 100

IRELAND, CORRESPONDENCE FROM.—Surgical appointments in South Africa, 66—Death of Mr. H. J. Broomfield, 66—Irish university education, 66—Influenza, 67, 135, 203, 273—Death of a medical man from accidental poisoning, 67—Death-rate of Dublin, 135—Royal College of Physicians of Ireland, 135—Belfast Workhouse, 135, 659—Rainfall in Ulster, 135, 1098—Health of Belfast, 135, 348, 501, 735, 1035, 1405—Case of anthrax, 136—Portadown water-supply, 136—Health of Dublin, 203, 347, 425, 658, 888, 968, 1615—Mater Misericordiæ Hospital, Dublin, 203, 1171—The Irish Field Hospital for South Africa, 203, 272, 425, 734, 1097, 1171—Death of Dr. S. R. Mason, 203—Coleraine Cottage Hospital, 203—Death of Dr. R. L. Hunter, 203—Ulster Medical Society, 203, 580, 735, 1171, 1405—Death of Dr. S. O'Sullivan, 203—City of Dublin Hospital, 272—Death of the Registrar-General for Ireland, 272—Infringement of the Vaccination Acts, 272—Londonderry Asylum, 273—The Local Government Act, 347—Death of Sir William Miller, 347—The condition of the bones in the insane, 347—Belfast Maternity Hospital, 348—Belfast Hospital for Sick Children, 348, 1839—Samaritan Hospital, Belfast, 348, 1616—Hardwicke Hospital, Dublin, 425—Apathy of the sanitary authorities at Cork, 425—Forster Green Hospital for Consumption, Belfast, 425—City analyst for Belfast, 425—The successor to the Registrar-General for Ireland, 501, 659, 1035—Appointment of a bacteriologist to the Local Government Board for Ireland, 501—Royal University of Ireland, 501—Belfast and District Lunatic Asylum, 501—Battle of the clubs at Cork, 501—Londonderry County Infirmary, 580, 1839—Royal Victoria Eye and Ear Hospital, Dublin, 580—Death of Dr. S. G. Wilmot, 580—Extra professional assistance in dispensing cases, 580—Chairs of surgery and materia medica at Queen's College, Cork, 580, 1328—Nursing question in the Belfast Royal Victoria Hospital, 580—Milk in Belfast, 659, 1683—South Charitable Infirmary, Cork, 659—The late Mr. W. I. Wheeler, 734—The legal position of the medical officers to county infirmaries, 734—Proposed new infectious diseases hospital at Belfast, 735, 808, 1035, 1171, 1405, 1472, 1760—Irish Workhouse Association, 808—Death of Mr. T. P. Mason, 808—Dublin University Biological Association, 888—Belfast port sanitary authority, 888—Mater Infirmorum Hospital, Belfast, 888, 1328—Commissioner of Education in Ireland, 968—Royal College of Surgeons in Ireland, 968, 1550, 1616, 1682—The gas-lighting of Dublin, 968, 1035, 1760—Water-supply and drainage of Newtownards, 969—Queen's College, Belfast, 969, 1616—Close of the medical session at Belfast, 969—Dublin Sanitary Association, 1035—Queen Victoria cots in the Dublin hospitals, 1035—Belfast Royal Hospital, 1035—Belfast Ophthalmic Institution, 1035—An honorary degree for Sir James Reid, 1097—A new nursing home in connexion with the City of Dublin Hospital, 1097—Death of Maj. J. Minniece, 1097—Important to Irish dispensary medical officers, 1097—Memorial to Prof. J. F. Hodges, 1097—Pharmacy prosecutions, 1097—Royal Hospital, Kilmainham, 1171—Death of Mr. R. G. Patteson, 1171—The Queen in Ireland, 1250—County of Antrim Infirmary, Lisburn, 1250, 1472—Asylum attendants up to date, 1250—The British Association, 1250, 1839—The Royal visit to Dublin from its medical aspect, 1327—The new coroner for the city of Dublin, 1328—Downpatrick Asylum, 1328—Newry Union, 1328—Epidemic cerebro-spinal meningitis in Dublin, 1404—Meath Hospital and County of Dublin Infirmary, 1405, 1472—Death of Mr. J. Smith, 1405—Dispensary medical officers and their holidays, 1472, 1550, 1616—Letterkenny District Lunatic Asylum, 1472—Typhoid fever in Belfast, 1551, 1616, 1682, 1760, 1912—Notification of infectious diseases in Dublin, 1616—Death of Dr. E. J. Quinan, 1616—Royal Medical Benevolent Fund Society of Ireland, 1682—The able-bodied pauper, 1682—Ulster (Benn) Eye, Ear, and Throat Hospital, 1682—Irish boards of guardians and their medical officers, 1683—Charitable bequests, 1683—The Apothecaries' Hall of Dublin, 1760—Burning of Newry workhouse, 1760—Royal University Graduates' Association, 1760—Irish Medical Association and the superannuation of medical officers, 1839—Municipal honour to a medical man, 1912

Ireland: dispensary medical officers and nurses, 507; the Queen's visit, 716; rabies, 814
Ireland, the Statistical and Social Inquiry Society of, 689
Ireland, Registrar-General for, death of the, 272; appointment of a new, 501, 659; appointment of a superintendent of the Registry Office, 895, 1035
Ireland (see also Royal University, &c.)
Ireland, Dr. W. W., Auguste Comte, 399; insanity, 462
Irish university education, 66, 1815, 1908; field hospital for South Africa, 203, 272, 425, 734, 1097, 1171; Medical Schools and Graduates' Association, annual dinner, 639, 862; national schools, sanitary condition of, 689; regiments, shamrock to be worn by, 716
Iron, the treatment of anæmia by, 1146
Iron (see also Ferri and Ferro)
Irvine, Fleet-Surg. G. J., cerebral hæmorrhage, 97
Isolation Hospitals Act (1893), Bill to amend the, 429, 585; laws, non-compliance with, 1739
Italian navy, defective sanitation in the, 729; army, tuberculosis in the, 1082; medical degrees, recognition of, 1665
Italy: accommodation for British sick and wounded, 259; the English-speaking practitioner in, 582, 792; medical reciprocity with, 863, 1626, 1628, 1913; the threatened exclusion of foreign medical practitioners, 955, 1086, 1098
Italy or Italian (see also ROME, CORRESPONDENCE FROM)

J

Jacket, respiratory, 457
Jackman, Mr. C. H., hepatic cyst, 590
Jackson, Mr. F. G., scurvy, 1184
Jackson, Mr. H., the late, 347
Jackson, Mr. H. C., obituary, 1037
Jackson, Dr. J. H., epilepsy, 477
Jackson, Mr. T. V., lithotomy, 26, 264; cystotomy, 928
Jacobi, Dr. A., dinner to, 1619
Jaffe, Sir Otto, cockles, 421; milk-supply of Belfast, 1683
Jaffrey, Mr. F., coccygeal teratoma, 101; urticaria, 456; suppression of urine, 541, 612
Jakins, Dr. P., Stacke's operation, 364
Jakob, Dr. Christfried, Atlas of the Nervous System (review), 240
James, Dr. A., hypokinesis, 27
James, Mr. D., lichen, 781
Jamieson, Dr. J., diseases in Melbourne, 891
Janus (review), 34
Japan, dysentery in, 323
Japanese navy, kakke in the, 722
Jardine, Dr. R., The Hæmorrhages of Pregnancy, Parturition and the Puerperium (review), 105; Text-book of Midwifery (review), 173; puerperal septicæmia, 466; eclampsia, 938
Jaundice, cirrhosis of the liver and, 906
Jaw, tumour of the, 17; separation of sequestra from the, 461; sarcoma of the, 859
Jaw (see also Mandible)
Jefferiss, Mr. F. B., ribs, 1437
Jejunostomy, 841
Jejunum obstructed by a gall-stone, 544; attachment of the, to the stomach, 707; resection of the, 1007
Jellett, Dr. H., the placenta, 1730
Jellies, table, 471
Jelunga transport, soldiers' families on the, 429
Jenner Society, 1030; Institute of Preventive Medicine, the rating of, 1814
Jennings, Mr. J. C. S., obituary, 1148
Jepson, Dr. E., medical ethics, 1543
Jequirity in pannus, 265
Jerusalem, cerebro-spinal meningitis at, 1897
Jessop, Mr. T. R., aneurysm, 707
Jessop, Mr. W. H., the retina, 1801
Jigger (an insect) in India, 499
Johnston, Dr. Arthur, author of Latin poems, 555
Johnston, Dr. C. H. L., carbolic acid, 1356
Johnston, Dr. J., interscapulo-thoracic amputation, 1364
Johnstone, Mr. J. H., Midwives Bill, 1166
Johnstone, Dr. R. W., Eton rural district, 493
Joint, the temporo-maxillary, ankylosis of the, 168
Joints, flail-like, fixation of, 30
Joke, practical, Mons. Karl's, 1809
Jones, Dr. C., monogamy, 1835
Jones, Dr. E., obituary, 504
Jones, Dr. H. Macnaughton, sexual function, 169; congress of gynæcology, &c., 1466
Jones, Dr. H. L., electricity, 695, 879, 966, 1031
Jones, Mr. R., spinal caries, 932
Jones, Prof. T., flail-like joints, 30; surgeon to the Welsh Hospital in South Africa, 572, 652, 882, 1034; his death, 1817, 1912
Jones, Mr. W., presentation to, 460, 579
Jones, Dr. W. B., presentation to, 278; Llangammarch Wells, 1883
Joseph, Dr. Max, Dermato-histologische Technik (review), 241
Journalism and the war, 418
Journals, medical, in Germany, 349; American lay, medical news in, 583
Jowers, Mr. R. F., intestinal obstruction, 1585
Jubilee of the Paris Society of Biology, 204; of the Royal Meteorological Society, 953
Jubilee (see also Diamond)
Judicial warnings, 950
Juler, Mr. H. E., orbital exostosis, 101; eye symptoms, 287
Jung, Dr. W. L., mercury in urine, 92, 117

Juvenile offenders, rod or prison for, 248
Juveniles, attendance on, by contract, 1531

K

Kaisar-i-Hind, gold medal, awards of the, 1911
Kakke in the Japanese navy, 722
Karl, Mons., his practical joke, 1809
Kauffmann, Dr. O. J., chorea, 780; neuroses of childhood, 1742, 1859
Keegan, Dr. D. F., Rhinoplastic Operations (review), 1594
Keeley, Dr., the late, 971
Keetley, Mr. C. B., appendicitis, 87, 264; coxa vara, 775, 1115; hospital government, 1024
Keith, Mr. A., parasitic fœtuses, 777
Keith, Dr. G. S., A Plea for a Simple Life and Fads of an Old Physician (review), 1077
Keith, Mr. S., appendicitis, 645
Kelling, Dr. Georg, endoscopy of the œsophagus and stomach, 1189
Kellock, Mr. T. H., stricture of the intestine, 459; achondroplasia, 618
Kelly, Mr. A. B., epistaxis, 314, 531
Kelvin, Lord, heat and light, 1301
Kelynack, Mr. T. N., Pathologist's Handbook (review), 240
Kennan, Dr. R. H., bullous eruption, 1007
Kennedy, Dr. R., nerve-section, 448
Kenny, Mr. J. E., obituary, 1101
Kentucky, osteopathy in, 275
Ker, Dr. C. B., cross infection, 1364
Kernig's sign in meningeal hæmorrhage, 47
Kerr, Dr. J. M., the uterus, 1072
Kerr, Dr. J., corneal ulcers, 464; adenitis, 1009; sensory aphasia, 1446
Kershaw, Mr. E., ambulances, 1836
Kidd, Dr. F. W., panhysterectomy, 1730
Kidd, Dr. P., new growth of the skull, 1283
Kidd, Dr. W., vaccination, 1906
Kidney, moveable, producing symptoms of gall-stones, 15; a single, suppression of urine associated with, 25; actinomycosis of the, 68; tuberculous disease of the, 526, 601, 699; the surgery of the, 608; operations on the, life insurance and, 613; moveable, the causes and treatment of, 1265; ruptured, 1278; internal secretion of the, 1299
Kidney, Granular (review), 1011
Kidney weight, diminished, excretion of urinary waters and urea with, 1878
Kidneys, lymphangitis affecting the, 303; in diabetes infected with staphylococci, 544
Kinematograph, gynæcological and surgical operations shown with the, 30, 364
King's College, London, festival dinner, 481, 491; old students' dinner, 1301
Kingscote, Surg.-Capt. E., a muzzle, 628
Kipling, Mr. Rudyard, The Absent-minded Beggar (review), 1663
Kipping, Mr. F. S., Organic Chemistry (review), 317
Kleptomania in a medical man, 969
Klimmer, Dr. M., milk, 321
Knaggs, Mr. L., volvulus, 237; 1726
Knee, dislocation of the, operation for, 617; hæmarthrosis of the, 1446
Knee-joint, internal derangements of the, 6, 1183, 1320; arthrectomy of the, 168; loose cartilages in the, 463; tuberculous disease of the, 618
Knee-joint or knee (see also Knock-knee, Genu)
Knights, new medical, 43, 1526
Knock-knee, cases of, 623
Knott, Dr., specimens of bones, 620
Knox, Dr. D. N., large gall-stone, 544
Koch, Prof., on malaria, 581; in Italy, 889
Kola Astier, 470
Kolobovka, plague in, 257, 350
Korschelt, Dr. E., Embryology of Invertebrates (review), 33
Kostanecki, Dr., the late, 506
Krafft-Ebing (see Von Krafft-Ebing)
Kraske's operation, 1075
Krönlein, Prof., cancer, 502
Kyle, Dr. D. B., Diseases of the Nose and Throat (review), 545
Kynoch, Prof. J. A. C., cœliotomy, 28; case and specimens exhibited, 239, 1213
Kyphotic pelvis, craniotomy in a, 707, 1279

L

Labels, materia medica, 143
Laboratories, private, legislation for, 251, 273; hospital, 426; lunacy, 1039; of the Westminster Hospital, 1747
Labour, sudden death following, 29; premature, the induction of, 171; vulvar hæmatoma in, 1517
Lactescent ascites, 869
Lack, Dr. H. L., curtain ring in the pharynx, 1207
Ladies and the Berlin Medical Society, 273
Ladies' Health Society, 272; sanitary work, 733
Laing, Dr. W. A. G., death certification, 1481
Lake, Mr. R., ossiculectomy, 702
Lake, Mr. W. W., presentation to, 974
Lamb, Dr. W., Nasal Suppuration (review), 1888
Lambeth Vestry, the bacteriological laboratory of the, 401
Laminectomy in spinal caries, 1007; for paralysis, 1363
Lamp accidents, 974
Lancashire, an Inebriates Act board for, 399
LANCET, THE, Commission on Glycerinated Calf Vaccine Lymphs, 1216, 1227-1236, 1398, 1540, 1831, 1926
LANCET, THE, Analytical Sanitary Commissions of, from 1851 to the present time, 48
LANCET, THE, Laboratory, Analytical Records from, 35, 105, 470, 1290, 1449, 1522
LANCET, THE, Relief Fund, 36 A, B, C, D, 43, 51
LANCET, THE, Special Supplement in support of the Metropolitan Hospital Sunday Fund, 1771-78
LANCET, THE, war correspondence of: from the War Correspondent, 59, 188, 336, 562; from the Special Correspondent at the Base, 60, 123, 190, 259, 338, 406, 489, 644, 877, 961 1312; from our own correspondents (on board a transport), 564 (with the Imperial Yeomanry Hospital), 1240
LANCET, THE, the Special Commissioner of, on Hospital Abuse in Dublin, 129; on Public Health in Dublin, 199, 268; on the Organisation of the Profession, 342, 497, 576, 655, 885; on the Battle of the Clubs, 1031; on the conference at Manchester on medical organisation, 1382, 1613
LANCET, THE, poll of the profession with regard to the Midwives Bill, 549, 872
LANCET, THE, and Italy's climatic resources, 809; a compliment to, 1145; misquotations from, by Mr. M. L. Johnson, 1180; the four-thousandth number of, 1219, 1321
Landslips at Darjeeling, 64
Lane, Capt. C., deaths under chloroform, 132, 731, 1467
Lane, Mr. W. A., fractures, 1489, 1532
Langport District Council and infectious diseases, 303
Lankester, Dr., endocarditis, 1010
Laparotomy, exploratory, the question of, in intestinal obstruction, 1205
Lard, adulteration of, 49
Larkin, Mr. F., fracture of skull, 1285
Larrien, Dr. J. F., Syphilis (review), 468
Laryngeal obstruction, congenital, 1207
Laryngoscope, a new, 37, 471
Larynx, epithelioma of the, 463; tuberculosis of the, 859
Laslett, Dr., spinal descending degeneration, 541
Lateral sinus, thrombosis of the, 96, 543
Latin poems by Dr. Arthur Johnston, 555
Launceston, medical report for, 974
Laurie, Mr. W. B., the widow of, appeal on behalf of, 818
Lavies, Mr. J. W. Y. H., obituary, 663
Law and the Leicester guardians, 248
Lawrie, Dr. D., osteitis, 1009
Lawrie, Dr. J. Macpherson, uterine appendages, 1518
Laws, Unwritten (review), 946
Lawson, Dr. A., cicatrix horn, 311
Lawton, Dr. H. A., annual report for Poole, 1027
Lea, Dr. A. W. W., gonorrhœa, 1731
Leach's Family Dressmaker, medical queries, replies, and advertisements in, 744, 899
Lead paralysis, an unusual case of, 554
Lead poisoning, 114, 407; in the pottery districts, electrical treatment of, 879, 966, 1031; industrial, 1144, 1162; the special rules relating to, 1530
Lead Compounds in Pottery from the Potter's Point of View (review), 391
Lead (see also Plumbism)

LEADING ARTICLES.

The new year, 39—The disciplinary action of the General Medical Council, 40, 1735—The office of Registrar-General, 41—Preliminary medical education in 1900, 42—The lesson of the influenza epidemic, 107—The study of epidemic diarrhœa, 108—The regulation of common lodging-houses, 109—Shaw *v.* The Railway Passengers Assurance Company, 110—The ethics of operations, 174—The effect of athletics on the heart and circulation, 174—The practice of sleep, 175—The report of the Royal Commission on the Metropolitan water-supply, 243—University representation in Parliament, 243—Medical charities, 244—Anti-typhoid inoculation, 245—A bright spot in the present war, 319—The war funds and hospital support, 319—The nomenclature of diarrhœa, 320—A fund for the Royal Army Medical Corps, 393—On taking patients into consultation, 393—Sunday shaving, 394—The midwives question, 472—The Metropolitan Asylums Board and their matron, 472—Sick and Wounded Officers' Surgical and Medical Aid Fund, 473—The election of a Member of Parliament for the University of London, 474—The Indian famine, 548—The value of medical societies, 548—The midwives question: our poll of the profession, 549—The war news and the public health, 629—American methods of dealing with plague, 629 — Alcoholic stimulants and life assurance, 630—The new Lunacy Bill, 631—The report of the Indian Plague Commission, 713—First-aid dressing in modern warfare, 714—The General Medical Council *v.* Alabone, 715—Hospitals and local rates, 715—The second reading of the Midwives Bill, 783—A munificent gift to hospitals, 784—The Medical Defence Union, 785—Crook *v.* Crook and Horrocks, 786—The executive committee of the General Medical Council, 863—The housing of the working-classes in rural districts, 864—The Milroy lectures upon epidemic diarrhœa, 865—The surgery of the stomach, 947 — The army estimates and the medical establishments, 948—The London and Counties Medical Protection Society, 949—The Midwives Bill and the General Medical Council, 1015—The treatment of rheumatism, 1016 — Innkeepers and food, 1017—Protracted gestation and legitimacy, 1078 — The Goulstonian lectures, 1079—Hope *v.* the Chertsey Board of Guardians, 1080—The plague and its dangers, 1140—The British census of 1901, 1141—The control of the London water-supply, 1141—THE LANCET Commission on Glycerinated Calf Vaccine Lymphs, 1216—Cirrhosis of the liver, 1217—Enteric fever and the South African campaign, 1218—The four-thousandth number of THE LANCET, 1219—The seal of professional secrecy, 1292—Nursing regarded as a luxury, 1293—The dinner at the Reform Club to Sir William Mac Cormac and Mr. F. Treves, 1293—Colonial practitioners and the public, 1371—The Conference at Manchester and the Midwives Bill, 1372—The bacteriology of burial and of the soil, 1372—The approaching meeting of the General Medical Council, 1451—Irish dispensary medical officers and their holidays, 1451 — Anderson and Fenner *v.* Moeller, 1452—Fixity of tenure for medical officers of health: a caution, 1454—The Board of Trade and colour-blindness, 1523—The increase of diseases of the nervous system and of insanity, 1523—Mr. Whitmore, M.P., on the London water-supply, 1525—Some of the lessons of the war, 1595—The Consultative Medical and Surgical Institution of Birmingham, 1595—The modern treatment of diabetes mellitus, 1596—Plague and the money market, 1597—The recognition of Italian medical degrees, 1665—The housing of the poor, 1665—Recovery of a Greek text by Galen, 1666—The Metropolitan Hospital Sunday Fund, 1734—The pauper lunatics of St. Pancreas, 1736—Soper *v.* Gibson and Young, the dangers of the medical profession, 1809—M. Karl's practical joke, 1809—Coroners' inquests on persons dying under anæsthetics, 1811—The medical aspects of the Chinese crisis, 1890—The Prince of Wales and the Royal Victoria Infirmary of Newcastle, 1890—The strange case of Mr. C. A. Bynoe, 1891

Leaf, Mr. C., blood-vessels and lymphatic vessels, 606, 636
Lean's Royal Navy List, 334
Le Conte, Mr. Joseph, Physiology and Morphology of Animals (review), 1288

LECTURES.

ANDERSON, Dr. T. MCCALL:—
An Address on the Value of Tuberculin in Diagnosis and Treatment, delivered at the Medical Graduates' College and Polyclinic on Feb. 9th, 1900, 1703

BANKS, Sir W. M.:—
Lettsomian Lectures on Practical Observations on Cancer of the Breast, delivered before the Medical Society of London.
Lecture I., 684
Lecture II., 843
Lecture III., 990

BENNETT, Mr. W. H.:—
A Clinical Lecture upon Internal Derangements of the Knee-joint (popularly called "Slipped Cartilage"), based upon a Series of 200 Cases, delivered at St. George's Hospital, 6
Two Clinical Lectures on the Use of Massage in Recent Fractures and other Common

Injuries, delivered at St. George's Hospital on Jan. 30th and Feb. 27th, 1900.
Lecture I., 1569
Lecture II., 1640

BISHOP, Mr. E. S.:—
Remarks on Fetishism in Surgery, 363

BRADFORD, Dr. J. R.:—
Two Lectures on Rabies, delivered at the University of London on Feb. 13th and 20th, 1900.
Lecture I., 593
Lecture II., 758

BROADBENT, Sir W. H.:—
A Clinical Lecture on Sleeplessness, delivered at the Medical Graduates' College and Polyclinic on Jan. 17th, 1900, 215

BUTLIN, Mr. H. T.:—
The Cavendish Lecture on the Application of Pathology to Surgery, delivered before the West-London Medico-Chirurgical Society on June 22nd, 1900, 1856

CHAMPNEYS, Dr. F. H.:—
An Address on Some Points in the Natural History of Uterine Fibroids, delivered before the North London Medical and Chirurgical Society on Oct. 12th, 1899, 147

CHEADLE, Dr. W. B.:—
The Lumleian Lectures on Some Cirrhoses of the Liver, delivered before the Royal College of Physicians of London.
Lecture I., 903
Lecture II., 985
Lecture III., 1045

COLLINS, Mr. E. T.:—
The Erasmus Wilson Lectures on the Anatomy and Pathology of the Eye, delivered at the Royal College of Surgeons of England on Feb. 12th, 14th, and 16th, 1900.
Lecture I., 435
Lecture II., 439
Lecture III., 521

DALBY, Sir W. B.:—
Presidential Address on the Present Position of Aural Surgery, delivered at the First Meeting of the Otological Society of the United Kingdom on Feb. 5th, 1900, 359

DUNCAN, Dr. WILLIAM:—
A Clinical Lecture upon the Modern Treatment of Uterine Fibroids, with Table of 68 Consecutive Cases of Hysterectomy, delivered at the Middlesex Hospital on March 13th, 1900, 1109

GOODHART, Dr. JAMES:—
An Address on Acidity, delivered before the Reading Pathological Society, 1

HORSLEY, Mr. VICTOR:—
The Lees and Raper Memorial Lecture on the Effect of Alcohol on the Human Brain, delivered at St. James's Hall on April 27th, 1900, 1271

HORTON-SMITH, Dr. PERCIVAL:—
Goulstonian Lectures on the Typhoid Bacillus and Typhoid Fever, delivered before the Royal College of Physicians of London.
Lecture I., 821
Lecture II., 910
Lecture III., 1050

HUTCHINSON, Mr. JONATHAN, Jun.:—
Two Clinical Lectures on Primary Syphilitic Chancres, delivered at the London Hospital on Feb. 16th and March 2nd, 1900.
Lecture I., 1575
Lecture II., 1637

JULER, Mr. H. E.:—
Presidential Address on the Value of Eye Symptoms in the Diagnosis of General Diseases, delivered before the Harveian Society on Jan. 18th, 1900, 287

KAUFFMANN, Dr. O. J.:—
The Ingleby Lectures on the Commoner Neuroses of Childhood, their Pathology and Treatment, delivered at the Mason University College, Birmingham, 1859

LANE, Mr. W. A.:—
A Lecture on the Operative Treatment of Simple Fractures, delivered at Guy's Hospital on May 25th, 1900, 1489

LITTLEWOOD, Mr. H.:—
A Clinical Lecture on Some Complications following on Injuries about the Elbow-joint and their Treatment, delivered at the Leeds Infirmary on Nov. 14th, 1899, 290

MAC CORMAC, Sir WILLIAM:—
An Address on the Wounded in the Present War, delivered before the Royal Medical and Chirurgical Society on May 22nd, 1900, 1485

MANSON, Dr. PATRICK:—
Two Clinical Lectures on Malaria and the Malarial Parasite, delivered at the Medical Graduates' College and Polyclinic.
Lecture I., 1417

MOTT, Dr. F. W.:—
The Croonian Lectures on the Degeneration of the Neurone, delivered before the Royal College of Physicians of London.
Lecture I., 1779
Lecture II., 1849

MOULLIN, Mr. C. M.:—
The Hunterian Lecture on the Causes and Treatment of Moveable Kidney, delivered before the Hunterian Society on Feb. 28th, 1900, 1265

MOYNIHAN, Mr. B. G. A.:—
The Arris and Gale Lectures on the Anatomy and Pathology of the Rarer Forms of Hernia, delivered at the Royal College of Surgeons of England on Feb. 19th, 21st, and 23rd, 1900.
Lecture I., 513
Lecture II., 518
Lecture III., 596

OWEN, Mr. EDMUND:—
A Clinical Lecture on a Case of Internal Derangement of the Knee-joint, delivered at St. Mary's Hospital, 1183

ROBSON, Mr. A. M.:—
Three Lectures on the Surgery of the Stomach, delivered in the Theatre of the Royal College of Surgeons of England on March 5th, 7th, and 9th, 1900.
Lecture I., 671
Lecture II., 747
Lecture III., 830

SAUNDBY, Dr. ROBERT:—
An Address on the Modern Treatment of Diabetes Mellitus, delivered before the Annual Meeting of the Gloucestershire Branch of the British Medical Association at Cheltenham on May 15th, 1900, 1420

SAVAGE, Dr. G. H.:—
A Clinical Lecture on Mental Dissolution, delivered at the Medical Graduates' College and Polyclinic on Jan. 31st, 1900, 360

SHEILD, Mr. A. M.:—
A Clinical Lecture (Abstract of) on Cancer of the Penis, delivered at St. George's Hospital on Nov. 12th, 1899, 75

SMITH, Dr. F. J.:—
The Hunterian Oration on Then and Now; or, the Influence of Modern Surgery upon Medical Practice, delivered before the Hunterian Society on Feb. 14th, 1900, 1259

THOMAS, Dr. WALTER:—
Presidential Address on Colonial Practitioners and the Public, delivered at the annual meeting of the New Zealand Branch of the British Medical Association at Christchurch, New Zealand, on Feb. 19th, 1900, 1268

TREVES, Mr. FREDERICK:—
A Clinical Lecture on Ptosis of the Liver and the "Floating Lobe," 1339

WALDO, Dr. F. J.:—
The Milroy Lectures on Summer Diarrhœa, with Special Relation to Causation and Prevention, delivered before the Royal College of Physicians of London on March 8th, 13th, and 15th, 1900.
Lecture I., 1344
Lecture II., 1426
Lecture III., 1494

Lediard, Dr. H. A., intussusception, 454; aneurysm, 1283
Lee, Mr. C. G., cases exhibited, 460
Lee, Dr. R. J., the diaphragm, 232; small-pox and vaccination, 1095, 1169
Lee, Mr. S., Dictionary of National Biography (review), 1012, 1519
Leech, Prof. D. J., baths, 709
Lees, Dr. D. B., intestinal obstruction, 852
Lees and Raper memorial lecture, 956, 1271
Leffmann, Dr. Henry, Examination of Water (review), 392
Leg, compound comminuted fracture of the, 101
Legal rights of a woman in child-bed, 1036
Legion of Honour, promotion in the, for French military and naval medical officers, 334, 495, 654
Legislation, factory, 635
Legitimacy, protracted gestation and, 1078
Lehmann, Prof. K. B., Bakteriologie (review), 33
Lehmann's Hand Atlanten (see Nervous System in Health and Disease, Atlas of the)
Leicester guardians, the law and the, 248; cottage homes, eczema and water-supply at the, 893; Infirmary, annual meeting, 1267
Leicester and District People's Dispensary 1038
Leichtenstein, Prof., the late, 661
"Lennox," an apology by, 341
Lentaigne, Mr. J., goitre, 463
Leontiasis ossea, 1266
Lepers in the United States, 890
Leprosy, cases of, 27, 611; chaulmoogra (or chaulmougra) oil in, 315, 1283; serum treatment of, 476; in British Guiana, 636
Leucocythemia, spleno-medullary, acute Ménière's symptoms in, 615
Leucocytosis, uric acid and, 326
Leucoderma in Addison's disease, 453
Leukæmia, lymphatic, 926, 1725, 1906
Levurine in furunculosis and appendicitis, 619
Lewers, Dr. A. H. N., uterine fibroids, 262, 444
Lewis, Mr. F. W., obituary, 140
Lewis, Dr. P. G., Nursing (review), 172
Libraries, public free, and hygiene, 743
Lice of the eyelids, 466
Licensing Laws, Royal Commission on the, 556; the Lords and the, 1454
Lichen scrofulosorum, case of, 781
Liebreich, Dr. Oscar, boric acid, 13, 131, 730
Life, ante-natal, chronology of, 938
Life and Happiness (review), 1076
Life, a Simple, A Plea for (review), 1077
Life assurance examinations, 132; policies for children, 1075
Life assurance societies (or companies): London and Manchester, 40; Anglo-American (fraudulent), 72, 271, 956; Railway Passengers, 110, 263; Clerical, Medical, and General, 851; 1075; Prudential, 893; Equitable, 1477; Medical Sickness, &c., 1889
Life insurance and operations on the kidney, 613; and alcoholic stimulants, 630
Life's Mechanism (review), 546
Light, dynamical theory of, 1301; ultra-violet rays of, treatment by, 1447
Lightning-stroke, deaths from, 1221, 1916
Lime-juice and scurvy, 1184
Lindsay, Dr. J., specimens exhibited, 466
Linn, Dr. T., Health Resorts of Europe (review), 1014
Lipomata of the limbs, 1284
Liquid air, the temperature of, the influence of, on bacteria, 849, 1130
Liskeard, new infirmary at, 95
Lister, Lord, appointed Serjeant-Surgeon to the Queen, 268; delivery of the Huxley lecture, 1742
Literary intelligence, 277, 342, 489, 813, 893, 1165, 1242
Literary Year-book (review), 946
Literature, indecent, the question of, 250
Lithotomy, suprapubic, 26, 198, 264, 780, 964, 1652
Lithotomy (see also Nephro-lithotomy)
Lithotrity, 964
Little, Mr. E. M., stiff shoulder, 621; rickets, 1071
Little's disease, 942
Littledale, Dr. H. E., actinomycosis, 1210
Littlejohn, Dr. H., cut throat, 238
Littlewood, Mr. H., the elbow-joint, 290; specimens exhibited, 387; gastro-jejunostomy, 707
Liver, sarcoma of the, in an infant, 427; abscesses of the, 534, 852, 1285; cirrhoses of the, 903, 985, 1045, 1217; tuberculosis of the, 939; cirrhosis of the, 1213; ptosis of the, and the "floating lobe," 1339; ruptured, 1355; yellow atrophy of the, 1438

LIVERPOOL, CORRESPONDENCE FROM.—The Liverpool hospitals and the invalids from the seat of war, 65, 201—Prevention of tuberculosis from milk, 65, 807—Rating of Liverpool charities, 65—The late Dr. R. Robertson, 65—Liverpool Workhouse Hospital, 65—University College, Liverpool, 201, 579, 1249, 1403—Warrington Infectious Diseases Hospital, 201—Influenza, 201—Proposed county asylum for inebriates, 201—The microbe of "pink-eye" in horses, 201—The Northern Hospital, 346—Liverpool School of Tropical Diseases (or Medicine), 346, 658, 967, 1549—Liverpool Royal Infirmary, 578, 1248—Liverpool Royal Southern Hospital, 579, 1681—The municipal bacteriologist, 579—The Stanley Hospital, 579, 658—Liverpool Medical Institution, 579, 1249—Proposed joint parochial hospital for tuberculosis, 579, 658, 1681—Extension of a corporation infectious hospital, 579—Liverpool workhouse, 579, 1096, 1403—Liverpool Eye and Ear Hospital, 658—Report

of the head constable of Liverpool for 1899, 807—Proposed amalgamation of two Liverpool hospitals, 807—Liverpool Country Hospital for Chronic Diseases of Children, 967—Formalin in milk, 967—Liverpool Branch of the National Association for the Prevention of Tuberculosis, 967, 1549—The new assistant medical officer of health, 967—Small-pox, 1096, 1403, 1549—Sterilised milk depôts, 1096 Liverpool Ladies' Charity, 1096—Home for epileptics at Maghull, 1096, 1839—Queen Victoria District Nursing Association, 1096—The new Food and Drugs Act, 1248—Colne Jubilee Cottage Hospital, 1249—Pathological Diagnosis Society of Liverpool, 1403—Boric acid in margarine and cream, 1681—Atmosphere of the city police-court, 1681—Liverpool surgeon wounded in South Africa, 1681—Annual report of the medical officer of health, 1759—Hospital Saturday Fund, 1839—Death of Mr. A. Fisher, 1839—Health of St. Helens in 1899, 1839

Liverpool, housing of the working classes in, 621; inquests in, 790; ophthalmia in, 940; University College, post-graduate course in, 1301; malaria conference in, 1899; mortality averages for, 1919
Liverpool Pilots' Benevolent Society, advertisement for a medical officer, 589
Liverpool School of Tropical Diseases (or Medicine), memoirs published by the, 323, 871, 1010; the second malaria expedition, 871; expedition to Brazil and the United States, 1893
Living animals, experiments on, 1842
Livingstone Exhibition, 46
Llangammarch Wells, the water of, the action of, on uric acid, 1383
Lloyd, Mr. R. E., the antivivisectionists and, 665
Local Government Act, the Irish, 347
Local Government Board, the English, the new medical officer of, 247; medical inspectors of, reports of, 493, 1090; and vaccination, 1788
Local Government Board, the Irish, appointment of a bacteriologist, 269, 480, 501
Lockhart, Sir William, the late, 882
Lockwood, Mr. C. B., appendicitis, 225, 235; Aseptic Surgery (review), 469
Locum tenent, a position as, application for, 283
Locum-tenents, the dearth of, 143
Lodge, Prof. O. J., appointed Principal of Birmingham University, 1899
Lodge, Mr. P. G., oxygen, 1002
Lodging-houses, common, the regulation of, 109
Lodgings, houses let in, 1603
Loeffler, Captain (German staff officer), tactics for sanitary troops, 881
Loewenbach, Dr. Georg, Dermato-histologische Technik (review), 241
Lomax, Mr. M., General Baden-Powell, 1846
Lommel, Mr. E., Experimental Physics (review), 173
London, the county of, medical report for, 181, 256, 490, 725; the streets of, in the middle ages, 478; vaccination in, 491; the port of, sanitary work in, 1019; the Lord Mayor of, on the Metropolitan Hospital Sunday Fund, 1831
London, the Prince of Wales's Hospital Fund for, 50, 180, 481, 649, 956, 1825
London, vital statistics of, monthly, 192, 569, 801, 1090, 1395; during 1899, 417; weekly (see Vital statistics, weekly, health of English towns)
London county asylums: Bexley-heath, annual report, 415; Horton, annual report, 415
London County Council and street noises (or nuisances), 399, 955; non-pauper lunatics and the, 481; report on sewage treatment, 557; window cleaning and flash lights, 866; water Bills of the, 1020; mural advertising and the, 1180
London Hippodrome, the warming and ventilation of the, 1315
London Hospital Medical College, distribution of prizes, 1733
London hospitals, large bequest to, 773, 784
London Polyclinic (see Medical Graduates, &c.)
London School Board, medical certificates for the, 667; lectures on first-aid and home nursing, 1532
London Scottish rifle volunteers in Aberdeen, 347; companies volunteer medical staff corps, distribution of prizes, 420, 572
London smoke and London fumes, 1146
London streets and the vestries, 396
London telegraphists and medical attendance, 975
London University: Meeting of convocation, 114; representation in Parliament, 116, 243; the candidature of Dr. W. J. Collins, 134, 266, 342; pass lists, 140, 504, 1697; election of a Member of Parliament, 474, 482, 497; statutes and regulations of the reconstituted University, 550, 558, 960; lectures on rabies, 593; the new premises in the Imperial Institute, 1381; the Rogers Prize, 1670
London water question, 353, 1039
London water-supply, 256; the control of the, 1141; Mr. Whitmore, M.P., on the, 1525 (see also Metropolitan)
London and Counties Medical Protection Society, 949, 1025, 1765
London and Manchester Insurance Company, 40
London (see also City of London, Central London, West London, North London)
Londonderry, medical appointments in, 585
Londonderry asylum, 273; county infirmary, 580
Longevity, monogamy and, 1654, 1835
Longhurst, Mr. P. A., eczema, 1614
Long pull in drawing beer, 1471
Lords and the licensing laws, 1454
Loughborough General Hospital, 813.
Low, Dr. R. B., "fever" at South Witham, 493
Low, Mr. E. J., the late, 791
Lubbock, Sir John, peerage for, 43
Lucas, Mr. R. C., a correction, 576
Lucy, Mr. R. H., ovarian cyst, 1132
Ludovici morbus, case of, 28
Luff, Dr. A. P., gout, 931; Chemistry (review), 1662
Lumbo-sacral nerve roots, injury to the, 27
Lunacy Bill, 429, 506, 631, 740, 813; fees, 539, 790, 1080; Act, 730; certificates and medical justices of the peace, 900; laboratories, the proposed, 1039
Lunacy Board in Scotland, 974, 1040
Lunacy in Somerset, 141; in New South Wales, 664; in Cheshire, 887; in Dorsetshire, 893; in Scotland, 894
Lunacy (see also Asylum, Soper *versus* Gibson and Young)
Lunatic asylums, private, the conduct of, 1039
Lunatics, surgical operations on, the legality of, 67; non-pauper, and the London County Council, 481; the pauper, of St. Pancras, 1736, 1919
Lung, tubercle of the, a plea for early operation in, 1792; bullet wounds involving the, 1820
Lunn, Mr. J. R., cases exhibited, 167
"Lupa humaniser," 1077
Lupus, the Roentgen rays in, 27, 637
Lustgarten, Dr. S., prostitution, 328
Lying-in hospitals (see Queen Charlotte's, Dublin)
Lyle, Dr. R. P. R., midwifery forceps, 466
Lymphangitis, septic, anti-streptococcic serum in, 303
Lymphatic leukæmia, 926, 1725, 1906
Lymphatic origin, lactescent ascites of, 869
Lymphatic vessels, the relation of blood-vessels to, 606, 626; cords, indurated, 1678
Lymphocythæmia, 1725
Lymphoma, case of, 28
Lyon, Dr. I. P., malaria, 267
Lyssophobia, 596

M

Macan, Dr. A. V., atmo-kausis, 1074
McCardie, Mr. W. J., chloroform administration, 29; "gas and oxygen," 1435
McCartie, Lieut.-Col. C. J., hospitals for hill warfare, 420
Macaskie, Mr. J. G., foreign body in the ear, 1585
McCausland, Mr. R. B., spinal dislocation, 1210
Maccormac, Dr. J. M., reflexes, 927
Mac Cormac, Sir W., notes from, 58, 111, 118, 184, 335, 403, 561, 641, 795, 873, 958, 1152, 1238; narratives of, 319, 320; unauthorised use of his name by a fraudulent company, 966; dinner to, 1293, 1301, 1313; the return of, from South Africa, 1295; the wounded, 1485, 1515; honorary degrees for, 1817; freedom of the Salters' Company, 1819
McCreery, Dr. J. V., criminology, 892
MacDonald, Dr. G., black instruments, 883; pressure on bronchus, 1438
McDonnell, Mr. W. C., hepatic cyst, 453; cranio-thorax relation, 1213
McDougall, Dr. P., sea-sickness, 781
McDougall, Mr. A. H., presentation to, 813
Maceo, Antonio, skull of, 326
Macevoy, Dr., diplegia, 942
MacEwan, Prof. D., bullet-wound, 1213
McFadyean, Prof. J., African horse sickness, 1441; a correction, 1543
Macfadyen, Dr. A., liquid air, 849, 1130
McGillivray, Dr. A., cases exhibited, 239
McGillivray, Dr. C. W., injury of parietal bone, 238
McHardy, Mr. M., eyesight of children, 1022
Machinery, dangerous, 407
McIlraith, Dr. C. H., laryngeal obstruction, 1207
Macintyre, Dr. John, Roentgen rays, 1591
Mackay, Dr. H. J., intestinal obstruction, 1062
Mackay, Dr. W. A., suprapubic lithotomy, 198
Mackenzie, Dr. J., diphtheria, 943
Mackey, Mr. S., the widow of, subscriptions for, 72, 144, 431
Mackinlay, Mr. J. G., obituary, 1687
Maclagan, Dr. T. J., moveable kidney, 15; rheumatism, 1094
Maclagan, Sir A. D., the late, 1097; obituary, 1100
MacLaren, Mr. S., dislocation of the patella, 238
MacLaurin, Dr. C., hernia, 1281
McLean, Dr. A., obituary, 892
MacLennan, Dr. A., involution of the uterus, 466
McMillan, Mr. E., dinner and presentation to, 1034
McMillan, Dr. A., presentation to, 206
McNaught, Capt. J. G., anomalous case of fever, 534
McReynolds, Dr. J. O., pharyngitis, 179
Macroglossia, 618
McVicar, Dr., bronchial cyst, 239
Macvie, Dr., eclampsia, 619
McWalter, Mr. J. C., an allegation against, 431, 510
McWeeney, Prof. E. J., appointed bacteriologist to the Irish Local Government Board, 480; specimens exhibited, 939
Madagascar, Pasteur Institute in, 1172
Madness on the stage, 204
Maghull, home for epileptics at, 1096, 1839
Magnetisers, the illegal practice of medicine by, in France, 1761
Maguire, Dr. R., diver's paralysis, 1072
Maidenhead Cottage Hospital, 1841
Maize glucose as an adulterant of golden syrup, 177
Major, Dr. H. C., trance, 464; mediastinal growths, 1069, 1145
Makuna, Mr. M. D., coccygodynia, 1724
Malaria and mosquitoes, 79, 111, 130, 267, 323, 384, 658, 1010, 1834
Malaria expedition, the second, 871; conference in Liverpool, 1899; problem, 1914
Malaria Expedition of the Liverpool School of Tropical Medicine and Medical Parasitology (review), 1010
Malaria, prevention of, 13, 83, 323; the crusade against, 69; the pathology of, 323; blood parasites in, 333; Prof. Koch's researches on, 581; quinine in, 952; and the malarial parasite, 1417
Malarial blood, the staining of, 64; commission, the report of the, 586
Malbot, Dr. H., hepatic abscess, 556
Malformation, malposition, or absence, congenital: fœtus, 28, 618, 777, 940; hips, 102, 167, 456; rectum, 232; knee, 250; heart, 456, 457; hands, 618; radius, 618; vulva, 710; pylorus, 758; eyes, 940; ears, 1106; tongue, 1209; iris, 1210; ribs, 1437
Malignant disease, removal of the tongue and floor of the mouth for, 168; of the rectum, 1212
Malins, Dr. E., vesical calculi, 780
Malsbury, Dr. G. E., Practice of Medicine (review), 1521
Malt, extract of, and glycerophosphates, 470
Malta, the sanitary condition of, 894
Malta fever, serum diagnosis of, 1445
Malted marmalade, 470
Maltzyme, 36
Mammæ, both, excision of, for cancer, 1356, 1513
Man, The Races of (review), 390
Man (see also "Halt a man," "Not the disease, &c.")

MANCHESTER, CORRESPONDENCE FROM.—Housing of the working classes, 201—Street explosion, 201—A fatal Christmas feast, 202—Washhouses in congested districts, 202—Finances of Manchester medical charities, 271, 500—Ladies' Health Society, 272—Salford Workhouse question, 272, 1471—Vaccination of Oldham pauper children, 272—The Anti-tobacco League, 424—A Manchester scholar's death, 424—Manchester medical staff corps, 424, 1912—Manchester Royal Infirmary, 578, 733, 1034—Manchester and Salford Sanitary Association, 578—Hospital Sunday, 578—Inspection of food, 733—Ladies' sanitary work, 733—Bakers' and Confectioners' exhibition, 886—Asylum accommodation in Cheshire, 887—Preservation of milk, 887—Small-pox hospital for Manchester, 877—Notification of phthisis, 1034—Leave of absence granted to Prof. T. Jones, 1034—Manchester students for the front, 1034—Stockport Workhouse, 1169—Earth-shocks at Pendleton, 1170—Preston and the Inebriate's Act, 1170—Unsound meat? 1170—Powers of boards of guardians, 1326—Vaccination fees at Bury, 1326—Mr. W. Whitehead on the advantages of hospital treatment, 1326—Infant mortality in the Northwich district, 1326—Scarlet fever in the police court, 1326—Conference on medical

organisation, 1471—Lead-poisoning, 1471—Chorlton Union Workhouse, 1471—Small-pox at Stalybridge, 1615—Sale of drink to children, 1615—Chorlton board of guardians, 1615—Horse ambulances, 1680—Manchester water-supply, 1680—Pollution of the Manchester Ship Canal, 1681—Tramps and their children, 1911—Anatomical Society of Great Britain, 1912—Bar parlours and tuberculosis, 1912—The late Prof. T. Jones, 1912—Hospital organisation, 1912

Manchester, the medical charities of, 271, 400, 500; conference on medical organisation at, 1168, 1302, 1372, 1379, 1382, 1389, 1471, 1543, 1613; water-supply of, 1897
Manchester Medical Guild, 428; Statistical Society, 951
Manchester and Salford Hospitals Inquiry Association, 1738
Manchurian partridges, 1106
Mander, Dr. W. R., empyema, 982; hæmoptysis, 1255
Manders, Dr. H., a flying hospital, 129, 183
Mandible, necrosis of the, 327
Mania after operations on the breast, 844
Manila, health of, 1330
Manley, Dr. E. P., presentation to, 584
Manson, Dr. P., malaria, 1417
Marcet, Dr. W., the late, 723, 791; obituary, 811
Marchand, Maj., his medical officer, 495
Mares, the unsexing of, 866
Margarine, tubercle bacilli in, 159; the sale of, for butter, 1018
Margarine (see also Oleomargarine)
Marine Hospital Service of the United States, 477
Marmalade, diabetic, 35; malted, 470
Marmoset, fœtus and decidua of a, 466
Marriage, consanguineous, and deaf-mutism, 367; breach of promise of, justified by illness, 972
Marriage (see also Monogamy)
Marriages between persons of the same sex, 1814
Marrot, Mons. Auguste, Life and Happiness (review), 1076
Marsden, Dr. R. W., typhoid fever, 90, 1800
Marsh, Maj. T. A. P., obituary, 1619
Marshall, Prof. C. R., nitrites, 859
Marshall, Mr. F. J., presentation to, 867
Marshall, Dr. F. E., anæsthesia, 1656; chloroform, 1925
Martel, (see De Martel)
Martin, Dr. A. M., lesions of the muscular system, 541
Martin, Dr. S., blood, 1006
Marty, Dr. J., tendency to crime, 1022
Mason, Dr. S. R., the late, 203
Mason, Dr. T. P., the late, 808
Massage in recent fractures and other injuries, 1569, 1640
Masselin, Mons. E. J., Bacteriology (review), 1288
Masseurs, the illegal practice of medicine by, in France, 1761
Massey, Dr. G. B., cancer, 717
Mastoid antrum, removal of cholesteatoma from the, 1208; disease in an epileptic, 1355
Mastoid operation, for the cure of otorrhœa, 234, 455; the radical, cases of, 364
Masturbation, the results of, 1256
Match factories, rules for, 353
Matches, "strike anywhere," made without yellow phosphorus, 407
Materia medica labels, 143
Materia Medica and Pharmacy, Practical (review), 317
Materia Medica, Merck's Manual of the (review), 468
Mathews, Mr. F. J., obituary, 1619
Maunsell, Dr. R. C. B., thyroid gland, 1210
Mauritius, plague in, 182, 482, 639, 1023, 1086, 1147, 1225, 1817
Maw, Mr. W. E., insects in the ear, 283
Maxillæ, the inferior, fractures of the, treated by a modified method of wire suture, 1722
Maxillary sinus of a horse, mycotic tumour in the, 165
Maxillary sinus, topographical relations of the, 525
Maxillary (see also Temporo-maxillary)
Mayhew, Mr. C., improved syringe, 242
Mazzoni, Dr., and the ceremony of the Porta Santa, 68
M.D. Durham for practitioners, 1468
Measles, notification of, 491; complicated with meningitis and spinal myelitis, 533; prodromal rashes in, 555, 654; disinfection after, 736; distribution and control of, 941
Measles in India, 423
Meat, unwholesome, prosecutions for possessing, 395, 1170; diseased, the fraudulent supply of, 736
Meat for the troops, 429; on board the transports, 740, 814
Meat, sulphite of sodium in, 586; inspection of, 1254
Meat supply, the London, 181; of Cardiff, 1756
Meats, white and dark, in medical dietetics, 791
Meckel's diverticulum, intestinal obstruction arising from, 383, 452, 707, 1068, 1585
Medal for Dr. Lapponi and Dr. Mazzoni, 205; the Howard, 1898; the Kaisar-i-Hind, 1911
Médecine, Termes des, Dictionnaire des (review), 34; Histoire de la (see Janus)
Mediastinal growths with secondary deposits in the spinal canal causing paraplegia, 1069; growths, the diagnosis of, 1145
Mediastinum, tuberculous glands in the, 1282, 1283
Medica (see Encyclopædia Medica, Materia medica, Bibliographia Medica)

MEDICAL SOCIETIES.

ÆSCULAPIAN SOCIETY.—Exhibition of cases, 544—Uterine carcinoma, 944—Micro-organisms in the causation of certain diseases of the nervous system, 1075—Pseudo-diphtheritic throat, 1213—Treatment of pulmonary tuberculosis, 1447—Use of mercury in the treatment of cardiac failure due to arterio-sclerosis, 1519, 1881
ANATOMICAL SOCIETY. — Meeting in Manchester, 1912
BECKENHAM AND PENGE MEDICAL SOCIETY.—The Cannon-street hotel meeting and Dr. Glover, 1755—Annual dinner, 1764
BERLIN MEDICAL SOCIETY.—Ladies as members, 273
BIRKENHEAD MEDICAL SOCIETY.—Peritonitis in the female, 316—General paralysis of the insane, 943—Dilatation of the stomach, 1212
BOMBAY MEDICAL AND PHYSICAL SOCIETY.—Atropine in plague; Diagnosis of typhoid fever and Malta fever, 1445
BOURNEMOUTH MEDICAL SOCIETY.—Cases of surgical interest, 1276
BRADFORD AND DISTRICT MEDICO-ETHICAL SOCIETY.—Election of officers, 240
BRADFORD MEDICO-CHIRURGICAL SOCIETY.—Contagion in modern times, 170—Inflamed corneal ulcers, 464—Exhibition of specimens, 941—Exhibition of cases, 1009—Exhibition of cases and specimens, 1445—Case of thoracic aneurysm; Uræmia, 1730
BRISTOL MEDICO-CHIRURGICAL SOCIETY.—Exhibition of specimens, 170—Intestinal obstruction, 452
BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The treatment of diseases of the nervous system and nervous affections by baths and climate, 387—Treatment of nervous diseases by baths and climate, 943—The climate of Rhodesia, 1365—The hill stations of India as health resorts, 1659
BRITISH GYNÆCOLOGICAL SOCIETY.—Demonstrations by means of the kinematograph, 30—Annual meeting; Election of officers; President's valedictory address, 169—Chronic tubal inversion of the uterus, 464—Exhibition of specimens, 858—Exhibition of specimens; Uterine myoma removed by panhysterectomy; Treatment of cancer based on the parasitic theory, 1211—Indications for the removal of the uterine appendages, 1518—Exhibition of specimens; Indications for the removal of the uterine appendages, 1802
BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—Exhibition of cases, 314—Conditions of the throat and larynx simulating and predisposing to tuberculosis, 859—Use of the Roentgen rays in the diagnosis of diseases of the throat, nose, and neighbouring organs, 1591
BRITISH ORTHOPÆDIC SOCIETY.—Hallux valgus and varus and analogous deformities, 609, 621—Treatment of spinal abscess; Treatment of severe congenital equino-varus, 1805
CARDIFF MEDICAL SOCIETY.—Some points connected with the induction of premature labour, 171—Exhibition of specimens, 466
CHELSEA CLINICAL SOCIETY.—Treatment of rheumatism, 328, 761, 778, 872, 920, 933, 1016—Gynæcological therapeutics, 709—Valedictory address, 1886
CLINICAL SOCIETY.—Exhibition of cases, 167—Primary resection of gangrenous intestine; Primary abdominal section for wounds of the abdomen, 309—Cases of hæmo-pneumothorax; Perforated duodenal ulcer; Stricture of the small intestine following strangulated hernia, 458—Exhibition of cases, 617—The prevention of valvular disease in acute rheumatism, 776—Case of dermoid cyst within the spinal canal; Reduction of the deformity of spinal caries by manual rectification, 932—Exhibition of cases, 1282—Acute encephalitis following influenza; Operative treatment of gall-stones; Pneumothorax in an apparently healthy man, 1441—Case of gastro-enterostomy followed by pylorectomy; Septicæmia treated by anti-streptococcic serum and nuclein; Graves's disease, 1590
DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—Exhibition of cases, 315, 710, 1010, 1366—Annual meeting, 1381—Election of officers; The chief constitutional and local conditions associated with seborrhœa, 1660
EDINBURGH MEDICO-CHIRURGICAL SOCIETY.—Exhibition of cases and specimens, 27—Salol in the treatment of small-pox; Permanent dislocation of the patella, 237—Hæmaturia; Increase of nervous disease and insanity, 461—Heredity in disease, 808—The effect of heredity on disease, 855—Laminectomy for paralysis; Activity of the saliva in diseased conditions of the body; "Cross infection" in fever hospitals; Exhibition of specimens, 1363—Exhibition of cases; Blood-pressure in sleeplessness and sleep; Origin, development, and structure of the umbilical cord, 1803
EDINBURGH OBSTETRICAL SOCIETY.—Vaginal cœliotomy, 28—Albuminuria, multiple pregnancy, papyraceous fœtus, and placenta prævia; Differentiation of connective tissue in the human fœtus, 169—Eclampsia; Basilysis; The use of levurine, 618—The chronology of ante-natal life; Double ovariotomy; Chylous ascites, 938, 1791—Vaporisation of the endometrium; Vulvar hæmatoma in labour, 1516—Exhibition of specimens; Nomenclature of transverse presentations and of version; Set of the pelvis in the body, 1885
EDINBURGH ROYAL MEDICAL SOCIETY.—Dinner, 808
EPIDEMIOLOGICAL SOCIETY.—Bacteriological diagnosis in a school epidemic of diphtheria, 236—Housing of the working classes in Liverpool, 482, 621—Measles, its distribution and control, 941—Infectivity of enteric fever, 1284—Changes in the council, 1519
FOLKESTONE MEDICAL SOCIETY.—Patent and quack remedies, 466—Musical evening, 859—Operative midwifery, 1286
FORFARSHIRE MEDICAL ASSOCIATION.—Exhibition of cases and specimens, 239—Nitrites and allied substances, 859—Exhibition of cases and specimens, 1213
FRENCH ACADEMY OF MEDICINE.—Election of a member, 502—Typhoid fever, 659—Disinfection after measles, 736—Influenza; Appendicitis, 809—Percussion of the cranium, 1036—Rabies, 1250—Sea-sickness, 1251—Malaria commission; The Tarnier bequest, 1405—Alcoholism, 1473—Facial neuralgia, 1616—Dissemination of small-pox by flies, 1761—Goitre, 1840—Disinfection of wells, 1913
FRENCH SOCIETY OF BIOLOGY.—Celebration of fiftieth anniversary, 204
FRENCH SOCIETY OF SURGERY.—New buildings, 273
GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The involution of the puerperal uterus, 466
GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—Exhibition of cases and specimens, 315, 544, 1135
GLASGOW SOUTHERN MEDICAL SOCIETY.—Presentation, 1034
HARVEIAN SOCIETY.—Exhibition of cases, 101—Annual meeting, 239—Eye symptoms in the diagnosis of general diseases, 239, 287—Exhibition of cases and specimens, 384—Fibroid tumours of the uterus, 444—The feeding of infants with modified milk, 540—Suppression of urine, 541, 612—The localisation of cerebellar disease, 708—Exhibition of cases, 942—Discussion on the diagnosis and treatment of chronic purulent nasal discharges, 1073—Removal of a certain ring from the pharynx of a child; Congenital laryngeal obstruction; Cholesteatoma; Exhibition of cases, 1207—Selection of cases for abdominal section, 1446
HUNTERIAN SOCIETY.—Hunterian oration on the influence of modern surgery upon medical practice, 402, 1259—Election of officers, 781—Exhibition of specimens, 944—Some points in the therapeutics of gout, 1133—Exhibition of cases, 1658
IPSWICH CLINICAL SOCIETY.—Exhibition of cases, 543, 1010
ISLINGTON MEDICAL SOCIETY.—Midwives Bill, 872—Placenta prævia, 1660
KIDDERMINSTER MEDICAL SOCIETY.—Malformation of the vulva, 710—Exhibition of specimens; Double empyema, 1212
LARYNGOLOGICAL SOCIETY. — Exhibition of cases, 1135
LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—Fœtid expectoration; Removal of a submucous fibroid by section of the uterus; Volvulus associated with hernia, 237—The notification of phthisis; The treatment of gonorrhœal arthritis, 386—Urotropine as a urinary antiseptic; Intestinal obstruction, 707—Exhibition of cases, 1007—"Return" cases of scarlet fever and th

length of infectivity of the disease; Simulation of gastric perforation; Exhibition of cases and specimens, 1133—Ventro-fixation; The pathology of gout, 1443

LEICESTER MEDICAL SOCIETY. — Centenary dinner, 650

LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.—Alcoholic stimulants, 630

LIVERPOOL MEDICAL INSTITUTION.—Fibroid tumour of the uterus, 30 — Election of officers, 170—The pathology and treatment of pneumonia; National Association for the Prevention of Consumption, 460, 579—Parasite of cancer; Exhibition of specimens, 541—Exhibition of cases, 620—Acute Bright's disease; Suprapubic lithotomy in old men with enlarged prostate; Bubonic plague, 783—Exhibition of cases and specimens, 858—Exhibition of cases, 940, 1074—Exhibition of specimens; The use of agglutination of red corpuscles for diagnostic purposes, 1209—Conversazione, 1249—Exhibition of cases; The so-called pulsus paradoxus, 1285

MANCHESTER CLINICAL SOCIETY.—Exhibition of cases, 30—The prevention of tuberculosis, 313—Exhibition of cases and specimens, 622, 1365

MANCHESTER MEDICAL SOCIETY.—Election of officers, 240—Presidential address, 544—Epididymectomy for tuberculosis of the right testis, 781—Rectal cancer and treatment by excision, 1135

MANCHESTER PATHOLOGICAL SOCIETY.—Exhibition of specimens, 239—Pathology of pneumonia, 544—Exhibition of specimens, 942—Pathological relations of the thyroid gland, 1213—Acute hæmorrhagic cystitis; Innominate aneurysm, 1443

MANCHESTER THERAPEUTICAL SOCIETY.—Mercuriol in syphilis, 709

MEDICAL SOCIETY OF LONDON.—Excision of the vesicula seminalis; Operative treatment of uterine fibroids, 99—Pathology and treatment of appendicitis, 225, 235, 378, 557, 615—Dinner, 402, 789—Exhibition of cases, 456—Lettsomian lectures on cancer of the breast, 684, 843, 990, 1094—New method of performing prostatectomy, 774—Coxa vara, 774, 1115—Chemistry of gout, 931—Exhibition of cases, 1071—Cystic diseases of the breast, 1201, 1206—24 years' death certificates in general practice, 1207—Conversazione, 1381, 1459, 1529—The causes of the first sound of the heart, 1430, 1440—Excision of the Gasserian ganglion for trigeminal neuralgia, 1440

MEDICAL SOCIETY OF VICTORIA. — Annual meeting, 811

MEDICO-PSYCHOLOGICAL ASSOCIATION. — Meeting of the Northern and Midland Division, 1102—General meeting, 1296—Meeting of the South-Eastern Division, 1332

MIDLAND MEDICAL SOCIETY.—Exhibition of cases and specimens, 314, 623, 780—Function of the pericardium, 1009

NEUROLOGICAL SOCIETY.—Annual meeting, 466

NEW CROSS MEDICAL SOCIETY.—Backache as a symptom of rectal disorder, 1128

NEW YORK ACADEMY OF MEDICINE.—Exhibition of cases, 1446

NEW YORK GENITO-URINARY SOCIETY.—Formation of the society, 1459

NEW YORK STATE MEDICAL SOCIETY.—Election of president, 662

NEWCASTLE-ON-TYNE CLINICAL SOCIETY.—Exhibition of cases, 388—The use of midwifery forceps, 465

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—Uterine fibroids, 147, 174—The open-air treatment of consumption, 102—Discussion on syphilis, 542

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—Minor gynæcology, 31—Exhibition of specimens, 315, 708—Treatment of fibro-myoma of the uterus, 1008—Exhibition of specimens; Prevention and relief of pain in minor gynæcology, 1366—Exhibition of specimens; The influence of gonorrhœa on the puerperium, 1731

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—Exhibition of cases, &c., 541

NORWICH MEDICO-CHIRURGICAL SOCIETY.—Professional union, 886

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—Cases of diphtheria treated by antitoxin, 943—Exhibition of cases and specimens, 1075

OBSTETRICAL SOCIETY.—Treatment of rupture of the uterus by packing the tear with iodoform gauze; Exhibition of specimens, 100—Annual meeting, 465—A lantern demonstration on the anatomy of two specimens of dropsical parasitic fœtuses; Extra-uterine gestation; Spondylolisthesis; Exhibition of cases and specimens, 777 — Incarcerated retro-displaced gravid uterus, 1072 — The relations of organic affections of the heart to fibro-myoma of the uterus; Exhibition of specimens, 1361—Extra-uterine gestation; Exhibition of specimens, 1729

ODONTOLOGICAL SOCIETY.—Grants in aid of research, 328, 555

OPHTHALMOLOGICAL SOCIETY.—Experimental exophthalmos and enophthalmos; Cicatrix horn growing from the cornea; Glaucoma following the use of homatropine, 310—Family tendency to ophthalmoplegia externa; Meningitis followed by panophthalmitis; Pigmented tumour of the eyeball; Green vision, 854—Opaque nerve-fibres remote from the disc degenerating after neuritis; Exhibition of cases and specimens, 1362—Occlusion of the central retinal artery on both sides; The arithmetical triangle in ophthalmology; Dermoid tumour of the conjunctiva; Periarteritis of the retinal arteries; Ophthalmitis associated with basal meningitis, 1801

OTOLOGICAL SOCIETY.—Position of aural surgery, 359—Cerebellar abscess, 542—Exhibition of cases and specimens, 857, 1515

OXFORD MEDICAL SOCIETY.—Clinical value of blood examinations, 544

PATHOLOGICAL SOCIETY.—The bacteriology of venous thrombi; Mycotic tumour from a horse; "Spontaneous" carcinoma; Experiments with the toxins of the pneumococcus, 165—The part played by insects in the spread of malaria; Experimental production of amyloid disease in animals; Neutralisation of cobra venom by its antitoxin; Cortical changes in acute chorea, 384—Discussion on the forms and significance of proteids in the urine, 539, 853—The results obtained by injecting β-amido-butyric acid into animals, 706—The changes of the blood in disease, 1006, 1360—Laboratory meeting, 1440, 1543—Exhibition of cases and specimens, 1589—Meeting at Cambridge, 1817

PLAISTOW AND CANNING TOWN MEDICAL SOCIETY.—Diphtheria, 623

READING PATHOLOGICAL SOCIETY.—Acidity, 1393

ROYAL ACADEMY OF MEDICINE IN IRELAND.—The examination of sick children, 28—Deciduoma malignum; Ulceration in the female urethra, 238 — Tracheotomy in diphtheria, 462—Protamines and their cleavage products, 619—Clinical report of the Rotunda Lying-in Hospital, 707, 1074—Presidential address; Infantile insanity, 856 — Growth of the typhoid bacillus; Exhibition of specimens, 939 — Congenital bullous eruption, 1007—Atmo-kausis and zesto-kausis, 1074—Polycoria; Thyroidectomy; Actinomycosis; Spinal dislocation, 1210; Chorea; Croup; Pemphigus and erythema, 1284 — Interscapulo-thoracic amputation; Axillary aneurysm; Disease of ankle-joint and foot, 1364—Commercial pepsin; Asylum pathology; The medico-legal relations of general paralysis, 1444—Sarcoma of both ovaries; Porro's operation, 1517—Tubal pregnancy; Pan-hysterectomy; Delivery of the placenta, 1730—Cerebro-spinal meningitis, 1805

ROYAL MEDICAL ACADEMY OF TURIN.—Cacodylate of soda, 1037

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—Ophthalmoplegia externa, complicating Graves's disease; Action of tetanus toxin on nerve-cells of the cerebral cortex, 98—The mastoid operation for the cure of chronic purulent otorrhœa: methods and indications, 234—Discussion on mastoid operation for the cure of chronic purulent otorrhœa, 455, 576—Acute Ménière's symptoms in leucocythæmia, 615—Skin affections in Bright's disease, 773—Open-air treatment of tuberculosis, 870—Rupture of the œsophagus caused by vomiting; Sarcoma of the gastro-hepatic omentum, 930—The wounded in the present war, 1300, 1359, 1374, 1459, 1485, 1515—Alterations in the by-laws; The medical and surgical complications of pyorrhœa alveolaris, 1728—Innovations, 1895

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—Exhibition of microscopical and macroscopical specimens, 103—Report of the sanatorium treatment of phthisis at the Sheffield Royal Infirmary, 388—Exhibition of cases, 465—Exhibition of cases; Simple tonsillitis with paralysis of the soft palate; Cases of skin disease presenting unusual features, 781—Exhibition of cases and specimens, 940, 1075—Exhibition of cases and specimens; Cirrhosis of the liver in an infant, 1213

SOCIETÀ ITALIANA DI MEDICINA INTERNA.—Malaria and mosquitoes, 79

SOCIETY OF ANÆSTHETISTS.—A new inhaler, 29—The after-effect of ether inhalation upon the respiratory system, 389, 557, 779—Paralysis of the respiratory centre under chloroform; Administration and choice of anæsthetics for young children, 1210—Failure of respiration under anæsthesia, 1518

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The application of bacteriology to public health, 311—Deaths from diarrhœa, 320—Inter-notification of infectious diseases, 505—Area condemnation under the Housing Acts, 943—Difficulties in the administration of fever hospitals, 1208—Yorkshire branch dinner, 1671

SOUTHPORT MEDICAL SOCIETY.—Exhibition of cases, 544—Perforated gastric ulcer, 944—Exhibition of cases and specimens, 1136

SOUTH-WEST LONDON MEDICAL SOCIETY.—Plague, 1063—Exhibition of cases; Demonstration on the production of Roentgen rays, 1212—The operative treatment of chronic otorrhœa, 1592

STOCKPORT AND DISTRICT MEDICAL SOCIETY.—The local branch of the St. John Ambulance Association, 1457

ULSTER MEDICAL SOCIETY.—Protamines, 203—Smoking concert, 580—Intussusception, 1171—Gastroptosis, 1405

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—Exhibition of cases, 389

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—Surgical treatment of dilated stomach, 103, 999—Treatment of primary and secondary syphilis, 253, 463—Dinner, 481—Exhibition of cases, 710—Purulent ophthalmia in children and its treatment, 1135—Notification of purulent ophthalmia in infants, 1447—Exhibition of cases, 1661—Cavendish lecture, 1856

WEST PENWITH (CORNWALL) MEDICAL SOCIETY.—The prevention and treatment of diphtheria, 543

WIGAN MEDICAL SOCIETY.—Annual meeting, 544 — Pharmaceutical and therapeutical snapshots, 1136—Exhibition of specimens, 1886

WINDSOR AND DISTRICT MEDICAL SOCIETY.—Temperature in health and disease, 29, 85—The use of anti-streptococcic serum, 315—Exhibition of cases, 622—Eye symptoms in tabes dorsalis, 1009—Annual meeting, 1286—Annual dinner, 1592

WOOD GREEN AND DISTRICT MEDICAL SOCIETY.—The new rules of the National Deposit Friendly Society, 1102

Medical Acts, Mr. V. Horsley on the, 1302, 1458, 1533, 1605; an unqualified plaintiff under the, 1896

Medical Aid Fund (see Sick and Wounded)

Medical aid societies (see Friendly societies, Liverpool Pilots)

Medical Alliance, the Friendly Societies', 1255

Medical anniversaries in America, 1915

Medical Annual and Practitioners' Index (review), 1369

Medical appointments and vacancies, university and collegiate, 139, 253, 580, 798, 871, 872, 1374, 1380; hospital, infirmary, and dispensary, 65, 139, 328, 402, 558, 639, 872, 887, 1086, 1177; in South Africa, 66; in Londonderry, 585; in Egypt, 954

Medical appointments (see also Appointments, Services)

Medical arrangements for the war, Birmingham and the, 578

Medical aspects of the Chinese crisis, 1890

Medical assistance, gratuitous, to the public, 72

Medical assistants, qualified, the dearth of, 212, 355, 1898

Medical Association, Gateshead, 1205

Medical Athletic Club, Bristol, 428

Medical attachés, German military, in South Africa, 404, 970, 1165

Medical attendance on the families of soldiers, reservists, or volunteers, 30, 103; during the night, 425; gratuitous, rates for, in France, 581; at Bournemouth, 589, 667; on London telegraphists, 975; for accidents, 1336; on juveniles and women by contract, 1531

Medical Benevolent Fund (see British, &c.)

Medical bill, an eighteenth-century, 818

Medical certificates in the Post Office service, 429; for the London School Board, 667; for the use of school boards, 743; false, 1526, 1697

Medical charities, 244, 1304; and war funds, 271; Manchester, finances of, 271, 400

Medical Congress, the International, in Paris, 398, 479, 490, 660, 1160, 1162, 1220, 1381, 1631, 1670, 1821, 1897

Medical consultations, the degradation of, 271

Medical corporations, 639

Medical corps, army (see Royal Army Medical Corps)

Medical corps, New South Wales army, 811

Medical Council (see General Medical Council)

Medical Defence Union, a case conducted by the, 341; annual meeting of the, 723, 800; work of the, 785, 942, 1917; offices of the, 1336

Medical degrees, American, valueless, 715; Italian, recognition of, 1665

Medical department, the Royal Navy, 898, 982, 1106
Medical department of the United States army, reforms in the, 276
Medical Dictionary, Pocket (review), 241
Medical dietetics, white and dark meats in, 791
Medical Digest, 355, 397, 420; Dr. R. Neale, the compiler of the, proposed testimonial to, 397
Medical Directory, statistics from the, 401
Medical dramatic club, Bristol, 893, 1282
Medical education, preliminary, in 1900, 42; of Women, Scottish Association for the, 887; in the United States, uniformity in the standard of, 890
Medical Electrology and Radiology, congress of, in Paris, 398
Medical establishment of the army, vote for the, 740, 894, 948
Medical ethics (or Professional medicine and medical deontology) international congress on, 176, 325, 792, 1160, 1457
Medical ethics and the Brit. Med. Assoc., 1543
Medical etiquette, a question of, 356
Medical evidence, conflicting, 981
Medical examination of volunteers, 585; of personal injury claims, 769
Medical Examiner (review), 1370
Medical faculty, new, in Russia, 1656
Medical fees under the Poor-law, 117
Medical fees, the Fife miners and, 347; liability for the payment of, 510, 667, 743, 899; actions for the recovery of, 510, 982, 1080, 1176
Medical folklore of shamrock, 1020, 1179
Medical football match, 428
Medical Freemasons, appeals to, 900, 982, 1256
Medical golf tournament, 1039, 1325, 1918
Medical Graduates' College and Polyclinic, 179, 215, 360, 872, 955, 1301, 1417, 1526, 1671, 1703, 1817, 1899
Medical Graduates' Association, Durham, 1909; Brussels, 1918
Medical Guild, the Manchester, 428
Medical Handbook of Travel (review), 625
Medical high sheriff, 740
Medical In-door Gymnastics (review), 1013
Medical inspectors of the Local Government Board, reports of, 493, 1090
Medical instruction in the United States, 971
Medical journals in Germany, 349
Medical justices of the peace, lunacy certificates and, 900
Medical legislators in Italy, 1914
Medical lock-out by friendly societies, 576, 656
Medical magistrates, 141, 206, 278, 506, 1023, 1103, 1332
Medical man, accidental poisoning of a, 67; obey your, 113; as military governor of Cuba, 137, 722; the clergyman and the, 143, 509, 667, 743; assault on a, 271; killed by a lunatic, 348; a philanthropic, 428; a deceased, door-plate of, 743; kleptomania in a, 969; practising as a charlatan, 981, 1042; prosecution of a, 1697; convicted of forgery, strange case of a, 1817, 1891
Medical man (see also Doctor, Physician)
Medical matters in Rangoon, 327
Medical men, actions-at-law brought by, 141, 341, 510, 635, 982; the hours of sleep of, 175; Widows and Orphans of, Society for the Relief of, 206, 1132, 1687; dissensions between, 348; the prescribing of whisky by, 5, 393; motor-cars for, 590; street noises and, 635; in the Divorce Court, 786, 793; actions-at-law brought against, 1809, 1812; hospital boards and, 1816
Medical men, honours to, 43, 334, 495, 654, 792, 868, 1220, 1246, 1320, 1526, 1539, 1601, 1911; academic honours to, 734
Medical men, presentations to (see PRESENTATIONS); eminent foreign, deaths of (see Deaths, &c.); or their families, appeals on behalf of (see Subscriptions); frauds on (see Anglo-American, Hopwood)
Medical Missionary Society, Edinburgh, 346; Bristol, 893
Medical news in American lay journals, 583
Medical officer, an army, reported murder of, 572; army, the retired, position of, 732, 806
Medical officer of health and others, a matter for the, 44
Medical officer of health, a consulting, 950
Medical officer of health, position of the, towards his local authority, 973
Medical officer of health, the question of appointing a, for Monmouthshire, 479
Medical officer of health of Salop, 402; of Sutherland, 500; of St. Austell, 893; assistant, of Liverpool, 967; of Croydon, 1918
Medical officer, a district, compensation to, 499
Medical officer, Major Marchand's, 495
Medical officers mentioned in despatches, 62, 882; civilian and military, with the army in South Africa, remuneration of, 507, 1040
Medical officers, French, military and naval, promotion in the Legion of Honour for, 334, 495; German army, on the war in South Africa, 404, 970; German military, the position of, 881; Italian military, memorial to, 889
Medical officers of health, reports of, 181, 256, 332, 401, 490, 577, 585, 725, 972, 973, 974, 1019, 1027, 1215, 1249, 1318, 1537, 1682, 1759, 1828, 1907; Scotch, and sanitary inspectors, 250; county, 479, 949, 1533; the appointment of, 1225; tenure of office of, 1375, 1599, 1612; fixity of tenure for, 1454
Medical officers, dispensary, in Ireland, vacation allowances of, 507, 1256, 1451; to country infirmaries in Ireland, legal position of, 734
Medical officers, Poor-law, early, 45
Medical officers, assistant, of the Metropolitan Asylums Board, 211
Medical officers for the French mercantile marine, 136
Medical Officers' Association, Scottish Poor-law, 135; Union, Railway, 1907
Medical organisation for the army, 586; volunteer, 1039
Medical organisation, conference on, at Manchester: preliminary notice, 1168; opening of the conference, 1302; address by Mr. Horsley on the Medical Acts, 1302; motions carried, 1303, 1304, 1306, 1389, 1390, 1391, 1392; paper by Mr. R. B. Anderson on corporate and medical reform, 1304; the midwives question, 1304; medical education, 1304; paper by Mr. George Brown upon medical charities, their relation to the public and the profession, 1304; death certification, 1306; friendly societies, 1306; address by Dr. Glover on some debated points in medical politics (i.e., the Midwives Bill), 1306, 1389; the conference and the Midwives Bill, 1372; vote of thanks to Dr. Glover, 1379; the special commissioner of THE LANCET on the conference, 1382, 1613; public vaccinators, 1389; medical organisation, 1390; paper by Mr. T. G. Horder on the Brit. Med. Assoc., 1391; close of the proceedings, 1392; remarks by the Manchester correspondent, 1471; letter from the secretary of the conference, 1543
Medical politics, 943, 1306
Medical practice in Monte Carlo, 589
Medical practice, the influence of modern surgery upon, 1259; reciprocity of, with Italy, 1626, 1628, 1913
Medical practitioner (see General medical practitioner)
Medical practitioners, the duty of, in reference to inquests, 805; foreign, the threatened exclusion of, from Italy, 955
Medical Practitioners' Association, the Incorporated, 577
Medical Press, congress of the, 1160, 1324
Medical profession, the younger members of the, an appeal to, 48, 62; in the United Kingdom, distribution of the, 401; in England, a French view of the, 431; members of the, civil and military, who have lost their lives or been wounded in the war, 804, 964, 1026, 1029, 1755, 1830; and the war, 1040; dangers of the, 1809
Medical profession in Germany, statistics of the, 68
Medical Profession Association, the Cork, 342
Medical Protection Society, the London and Counties, 949, 1025, 1765
Medical Protection and Medico-Ethical Society, East Suburban, 278
Medical reciprocity with Italy, 863
Medical reform (see Corporate, &c.)
Medical Register for 1900, 1146
Medical report, the army, for 1898, 1384, 1675, 1827
Medical reports of the Chinese maritime customs, 480
Medical reserve, Royal Naval, 882
Medical schools (see under respective names, e.g., Army, Irish, &c.)
Medical science, electricity in, 695
Medical service of the Hebrides, 46; proposed public, 267, 341; the Battersea and Clapham, 497; the public, of British Guiana, 636; public, the Coventry, 1542
Medical service, the army, in the field, lecture on, 205; the strength of, 429
Medical service, the Indian, increase of, 270; pass list, 334, 495; dinner, 1532, 1826
Medical service, the Royal Navy, 638, 664
Medical services, army, the Canadian, 1914
Medical services, naval, military, &c. (see also Services)
Medical Sickness, Annuity, and Life Assurance Friendly Society, 1889
Medical slander case, 141
Medical societies, the value of, 548
Medical staff of a dispensary, resignation of the, 204.
Medical staff corps, volunteer, the London companies, distribution of prizes, 420, 572; the Manchester, for service in the war, 424; Edinburgh company volunteer, annual dinner, 347; volunteer, Aberdeen company, 968
Medical standpoint, criminology from a, 892
Medical students, the supply of, 955
Medical students (see also Student)
Medical Supplemental Fund, the Naval, 129, 1093
Medical, Surgical, and Hygienic Exhibition, 1673, 1749
Medical titles, the assumption of, 667
Medical titles in Germany, 970
Medical union (see Birmingham and District, Bradford and West Riding, Durham, Woolwich)
Medical women, the study of tropical diseases by, 870; honours to, 1911
Medical Work, Roentgen Rays in (review), 317
Medical worthies, three, 137
Medical (see also British Medical, Clerical Medical, &c., Veterinary)
Médicale, Clinique, Leçons de (review), 1448
Medicine, examinations in, in Vienna, new rules for, 69; the practice of, by unqualified persons, 284; popular, 744, 899; Cambridge Summer School of, 328, 1662, 1816; at Oxford University, 1822
Medicine and surgery, the Vatican consultants in, 205
Medicine, internal, congress of, at Wiesbaden, 556, 660, 1325, 1544
Medicine, congress of, in Paris (see Medical Congress), professional, and medical deontology, congress of (see Medical Ethics); French Academy of (see MEDICAL SOCIETIES)
Medicine, State, Journal of (review), 242; Practical, Cyclopædia of (review), 316; Progressive (review), 389; A System of (review), 466; Practical, The Principles of Treatment and their Application in (review), 623; the Practice of, A Text-book of (review), 782; Clinical (review), 1137; The Practice of (review), 1138; Clinical, The Sphygmograph in (review), 1215; Practice of (review), 1521; Practice of, Handbook of the (review), 1521; A Manual of (review), 1887
Medicine (see also Twentieth Century Practice)
Medicines (see Remedies, Preparations)
Medico-legal expert evidence in France, 348
Medicus (see Index Medicus)
Melbourne: small-pox and beri-beri on shipboard, 138; meeting of the Australasian Association for the Advancement of Science, 891; infectious diseases, 891; milk-supply, 891; drainage, 891
Memorial lecture, Lees and Raper, 956, 1271; scholarship, Helen Prideaux, 1742
Memorials to: Dr. Mabel Webb, 720, 739; Italian army surgeons, 889; Prof. J. F. Hodges, 1097; Prof. Huxley, 1301; Mr. G. J. Symons, 1697
Memory, loss of, 1670
Ménière's symptoms, acute, in leucocythæmia, 615
Meningeal hæmorrhage, Kernig's sign in, 47
Meningitis, the common forms of, 178; measles complicated with, 533; following enucleation of the eyeball, 772; followed by panophthalmitis, 854; basal, recovery from, 942; epidemics of, 1223; in typhoid fever, recovery from, 1671; cerebro-spinal, 1404, 1805
Mental dissolution, 360; changes in Sydenham's chorea, 1145; degeneration and the use of opium in infancy, 1737
Menteath, Mr. C. G. S., word-blindness, 1699
Mercantile marine, the French, medical officers for, 136
Merck's Manual of the Materia Medica (review), 463
Mercurial inunction in syphilis, 542
Mercuriol in syphilis, 709
Mercurol, 1450
Mercury in urine, quantitative estimation of, 92, 117; in syphilis, 463, 468; in cardiac failure, 1519, 1881
Mercury (see also Corrosive sublimate, Hyrgolum)
Mercy and Truth (review), 1139, 1889
Meredith, Mr. W. A., uterine fibroids, 262
Mesenteric artery, embolism of the, 1074
Mesenteric vessels (or veins), thrombosis of the, 705, 1800
Metacarpal bone, the epiphysis of a, dislocation of, 1130
Metcalfe, Dr. J., sarcoma, 941; appendicitis, 1010
Meteorological daily readings, 73, 144, 212, 284, 356, 432, 510, 590, 668, 744, 818, 900, 983, 1043, 1107, 1181, 1256, 1336, 1415, 1482, 1567, 1635, 1700, 1768, 1846, 1926
Meteorological (see also Royal Meteorological)
Meteorologists, three great, 791
Meteorology of Ben Nevis, 718
Metropolitan Asylums Board and their assistant medical officers, 211; and their matron,

472; and the Royal College of Physicians of London, 1162
Metropolitan Hospital, appointment at the, 872
Metropolitan Water-supply, the Royal Commission on the, 243, 253, 329, 407, 423, 565, 646, 797, 877
Metrorrhagia, 709
Meyer, Prof. Ludwig, obituary, 583; the late, 660
Miall, Mr. P. E., contagion, 170
Michie, Mr. W., scavenging in Braemar, 1907
Micro-organisms in diseases of the nervous system, 1075
Microscopical Science, Quarterly Journal of (review), 547, 1370
Microscopy, methods in, 381, 384
Middle ages, the streets of London in the, 478
Middle-ear suppuration, with thrombosis of the lateral sinus, 96; cerebellar abscess following, 543
Middle-ear disease, operations for, 235, 622
Middlesbrough, the union hospital at, 1247, 1401; pneumonia at, 1380
Middlesex Hospital, appointments at, 402, 872
Midwifery for Nurses and Students (review), 173
Midwifery Notes (review), 1368
Midwifery, Chinese, 480; operative, 1286
Midwifery forceps, the use of the, 466
Midwifery question, the conference at Newcastle and the, 63, 133, 197, 338, 420, 575
Midwifery (see also Accouchements, Craniothorax, Geburtsakt, Geburtshilfliches, Transverse presentations, Versions)
Midwives in Berlin, 68
Midwives question, 428, 472, 731, 943, 1304, 1568; Bill, 482, 549, 639, 665, 723, 783, 798, 800, 805, 813, 814, 863, 872, 883, 894, 953, 956, 964, 975, 1015, 1025, 1082, 1089, 1095, 1103, 1166, 1205, 1306, 1372, 1389, 1458, 1478, 1544, 1755, 1841, 1898, 1906, 1919, 1920; Board, 783; problem in New York, 1018; registration, opposition to, 1086, 1163, 1907
Mikuliez's operation for disease of the tarsus, 28; œsophagoscope, 1189
Military medical attachés, German, in South Africa, 404, 970, 1165; hospitals, women nurses in, 662; Tournament, 1539; drill in schools, 1604
Military surgery (see under First-aid, War in South Africa, *passim*)
Militia, &c., advice to young medical men to join the, 48, 62
Milk, boric acid in, 13, 50, 229, 279, 586; adulterations of, 48, 659; the prevention of tuberculosis from, 65; a standard for, the difficulties of, 138, 328; tubercle bacilli in, 159; the bacteriology of, 312; composition and characters of, 321; formalin in, 429, 967; modified, the feeding of infants with, 540; sophistication and carriage of, 637; the production of, the American department of agriculture on, 661; preservation of, 887; sterilised, the sale of, 1096; pasteuriser for, 1215
Milk prosecutions, 894; standards, 1299
Milk-supply, diphtheria and, 132, 198; and tuberculosis, 807; of Melbourne, 891
Milk (see also Lupa, Goutte de lait)
Milkine food, 1990
Miller, Dr. A. W., F.C.S.M., 284
Miller, Sir William, the late, 347; obituary, 351
Miller, Mr. J., apomorphine, 1481
Millet, Dr. C. S., sleeping out of doors, 552
Milligan, Dr., cerebellar abscess, 543; middle-ear disease, 622
Millingen (see Van Millingen)
Mills-Roberts, Dr. E. A., dislocation of the tibia, 308
Milnes, Dr. G. H., certificates, 743
Mind, anatomy of, 891
Mineral spring, a new, at Nauheim, 806; hot iodised, at Salsomaggiore, 889
Mineral springs in France, regulations affecting, 1250
Mineral waters, various, 35
Mirage of Two Buried Cities (review), 782

MIRROR OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

BEDFORD COUNTY HOSPITAL.—A case of suppurative appendicitis with secondary liver abscesses (under the care of Mr. W. Gifford Nash), 852
BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—A case of omphalitis resulting in ulceration at the umbilicus; closure of ulcer by a plastic operation; recovery, with a firm cicatrix (under the care of Dr. J. Pinkerton), 1656
BIRMINGHAM GENERAL HOSPITAL.—A case of fibro-myoma of the uterus; left hydrosalpinx; cardiac dilatation and degeneration; total abdominal hysterectomy; death on the tenth day from perforation of a latent duodenal ulcer (under the care of Dr. Thos. Wilson), 306
BRADFORD ROYAL INFIRMARY.—Two cases of mediastinal growths with secondary deposits in the spinal canal causing paraplegia (under the care of Dr. H. J. Campbell and Dr. H. C. Major), 1069
CUMBERLAND INFIRMARY.—Two cases of intussusception; operation; recovery (under the care of Dr. H. A. Lediard), 454
EDEN HOSPITAL, CALCUTTA.—A case of ectopic gestation; abdominal section and removal of unruptured tube; recovery (under the care of Captain H. M. Earle, I.M.S., late Resident Surgeon), 234
GOVERNMENT CIVIL HOSPITAL, HONG-KONG.—Two cases of malignant pustule; recovery (under the care of Mr. J. Bell), 1005
GREAT YARMOUTH GENERAL HOSPITAL.—A case of suppurative otitis; mastoid disease; cerebral abscess; necropsy (under the care of Dr. Henry Blake), 929
GUY'S HOSPITAL.—A successful case of removal of a packing-needle from the descending colon; rapid disappearance of intra-peritoneal adhesions (under the care of Mr. N. Davies-Colley), 96—A case of severe intra-uterine hæmorrhage from cystic molar pregnancy (under the care of Mr. J. H. Targett), 163
HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.—A case of chronic intestinal obstruction; necropsy (under the care of Dr. D. E. Lees), 852
KENSINGTON INFIRMARY.—A case of traumatic tetanus with recovery (under the care of Dr. H. P. Potter), 705
KING'S COLLEGE HOSPITAL.—A case of chronic middle-ear suppuration with thrombosis of the lateral sinus in which the internal jugular vein was not ligatured; recovery (under the care of Mr. Arthur H. Cheatle), 96—A case of combined external and internal strangulation (under the care of Mr. Albert Carless), 1357—A case of pressure on the left bronchus; recovery (under the care of Dr. Norman Dalton and Dr. Greville MacDonald), 1438
LEEDS GENERAL INFIRMARY.—A case of rupture of the femoral artery (under the care of Mr. W. H. Brown), 539—A case of kyphotic pelvis (under the care of Dr. J. B. Hellier), 1279—A case of strangulated femoral hernia in which gangrene was precipitated by an intra-abdominal volvulus (under the care of Mr. R. Lawford Knaggs), 1726
LIVERPOOL NORTHERN HOSPITAL.—Ten cases of malignant pustule (under the care of Mr. Chauncy Puzey, Mr. Damer Harrisson, and Mr. R. W. Murray), 164
LIVERPOOL STANLEY HOSPITAL.—A case of retro-peritoneal fibro-cystic tumour; death from pulmonary embolism ten days after operation (under the care of Mr. D. Douglas-Crawford), 1514
LUCEA HOSPITAL, JAMAICA.—A case of prolapse of the rectum and a case of fibroids of the uterus (under the care of Dr. E. R. C. Earle), 1657
MIDDLESEX HOSPITAL.—A case of pregnancy complicated by fibrous tumour of the supra- and infra-vaginal cervix; abdominal hysterectomy; operation; recovery (under the care of Dr. William Duncan), 613
MONSALL FEVER HOSPITAL, MANCHESTER.—Two cases of perforation of the intestine during an attack of typhoid fever treated by laparotomy; one recovery (under the care of Dr. R. W. Marsden, medical superintendent), 1800
NEW HOSPITAL FOR WOMEN.—Three cases of intestinal suture (under the care of Mrs. Stanley Boyd, M.D. Brux.), 1586
NEW YORK POST-GRADUATE HOSPITAL.—A case of acute yellow atrophy of the liver (under the care of Dr. Stephen Smith Burt), 1438
NEWCASTLE-ON-TYNE ROYAL INFIRMARY.—A case of removal of a gall-stone from the common bile duct by the duodenal incision (under the care of Mr. Frederick Page), 1885
NORTHAMPTON GENERAL INFIRMARY.—A case of Addison's disease with associated leucoderma and tuberculous peritonitis (under the care of Dr. F. Buszard), 453
PENRHYN QUARRY HOSPITAL, BETHESDA.—A case of dislocation of the head of the tibia backwards, upwards, and inwards, and of the patella upwards and outwards (under the care of Dr. E. A. Mills-Roberts), 308
PRINCE ALFRED HOSPITAL, SYDNEY.—A case of strangulated inguinal hernia in an infant aged 14 days (under the care of Dr. Chas. MacLaurin), 1281
ROCHDALE INFIRMARY.—A case of intestinal obstruction arising from Meckel's diverticulum (under the care of Mr. R. B. Sellers), 383
ROTHERHAM HOSPITAL.—A case of meningitis following enucleation of the eyeball (under the care of Mr. F. B. Judge Baldwin), 772
ROYAL FREE HOSPITAL.—A case of compound separation of the lower epiphysis of the femur; recovery with useful limb (under the care of Mr. E. W. Roughton), 233
ROYAL HOSPITAL FOR CHILDREN AND WOMEN.—A case of pyonephrosis with imperforate right ureter (congenital) (under the care of Mr. A. Marmaduke Sheild), 1131
ROYAL HOSPITAL, HASLAR.—A case of cerebral hæmorrhage presenting several unusual features; necropsy (under the care of Fleet Surgeon G. J. Irvine), 97
ST. BARTHOLOMEW'S HOSPITAL.—A case of suppression of urine associated with a single kidney (under the care of Mr. D'Arcy Power), 25
ST. GEORGE'S HOSPITAL.—Two interesting cases of hernia (under the care of Mr. G. R. Turner), 929—A series of cases of abdominal injuries without external wound treated by laparotomy (under the care of Mr. G. R. Turner), 1277—A case of hermaphroditism (under the care of Mr. G. R. Turner), 1884
ST. MARY'S HOSPITAL.—Two cases of resection for high rectal carcinoma (under the care of Mr. Page), 1004
ST. MARY'S HOSPITAL FOR SICK CHILDREN, PLAISTOW, E.—A case of diphtheria of the vulva (under the care of Dr. E. E. Ware), 382
ST. PANCRAS INFIRMARY.—A case of thrombosis of the superior mesenteric veins (under the care of Dr. W. M. Dunlop, medical superintendent), 1800
SHEFFIELD ROYAL INFIRMARY.—A case of traumatic tetanus with recovery (under the care of Dr. W. Dyson), 538
SOUTH DEVON AND EAST CORNWALL HOSPITAL.—A case of intestinal obstruction due to thrombosis of some of the mesenteric vessels; laparotomy; death; necropsy (under the care of Mr. C. Whipple), 705—A case of ovarian cyst communicating with thickened gall-bladder containing a solitary calculus (under the care of Mr. R. H. Lucy), 1132
SUSSEX COUNTY HOSPITAL.—A case of inter-scapulo-thoracic amputation (under the care of Mr. T. J. Verrall), 382
UNIVERSITY COLLEGE HOSPITAL.—A case of traumatic enopthalmos (under the care of Mr. Percy Flemming), 771
WESTMINSTER HOSPITAL.—A case of double optic neuritis from serous effusion (Quincke's disease) (under the care of Dr. W. Murrell), 1206—A case of lymphatic leukæmia or lymphocythæmia treated surgically by the the establishment of a collateral circulation (under the care of Dr. W. Murrell and Mr. Walter Spencer), 1725
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—A case of suprapubic lithotomy; removal of two vesical calculi; recovery (under the care of Mr. T. Vincent Jackson), 26

Missionary Society, Edinburgh Medical, 346; Bristol medical, 893
Mitchell, Dr., ectopic gestation, 464
Mitral stenosis, the murmurs of, 64, 195, 267, 340
Mivart, Dr. St. George, the late, 1023; obituary, 1100
Modlin, Dr. I. G., rectal deformity, 232
Moeller, Anderson and Fenner *versus*, 1413, 1452
Moir, Dr. J. M., ear bitten off, 25
Molar pregnancy, intra-uterine hæmorrhage from, 163
Mole, hydatid, the essential nature of, 170
Mona Maclean (review), 1663
Money market, plague and the, 1597
Mongolism and cretinism, 23
Monkeys, the artificial production of scurvy in, 1184
Monmouthshire, the question of appointing a medical officer of health for, 479
Monmouthshire (see also Newport and Monmouthshire)
Monogamy in its relation to longevity and the diseases of late life, 1654, 1835
Monro, Dr. T. K., valvular disease of heart, 315; Raynaud's Disease (review), 316
Monro, Dr. W., Bubonic Plague (review), 1076
Monsarrat, Mr. K., parasite of cancer, 541
Monte Carlo, medical practice at, 589
Montenegro, Dr. José Verdes, Bubonic Plague (review), 1076
Montgomerie, Dr. H. M., cerebral embolism, 543
Montgomery, Mr. R. J., pannus, 265
Montgomery, Mr. W. P., imperforate rectum, 304; rectal cancer, 1135
Montholon, Dr. Edouard, the English medical profession, 431
Montreal General Hospital, annual report, 1914

Moor, Mr. C. G., Analysis of Food and Drugs (review), 468
Morison, Dr. A., the heart, 1430, 1440; cardiac failure, 1518, 1881
Morison, Dr. B. G., pseudo-diphtheria, 1213, 1542
Morison, Mr. R., abscess in connexion with the appendix, 541
Morokhowetz, Prof. Léon, L'Electricité en Physiologie (review), 317
Morphology of Animals (review), 1288
Morris, Mr. R. O., dilatation of the stomach, 1212
Morrison, Mr. J. T. J., an appeal, 1679
Mortimer, Insp.-Gen. E. T., the late, 195
Mortimer, Dr. W. G., revaccination, 1004
Mortimer, Dr. J. D. E., Home Nursing, &c. (review), 1014
Morton, Dr. A. S., drug habits, 1700; tuberculosis, 1768
Morton, Mr. C. A., intestinal obstruction, 452
Moses, Dr. O. St. John, excision of the spleen, 224
Mosquito, the fever-bearing, at Zanzibar, 557; in India, the natural history of, 1096
Mosquitoes, destruction of, 13, 262, 323, 1400; malaria and, 79, 111, 130, 267, 323, 384, 658, 1010, 1834
Mother's Call, 355
Motor-cars for medical men, 590
Mott, Dr. F. W., degeneration of the neurone, 1606, 1779, 1849
Moullin, Mr. C. M., excision of the vesicula seminalis, 99; Hunterian lecture on the causes and treatment of moveable kidney, 723, 1265; peritonitis, 1756
Mountains, the Italian, re-afforesting of, 1173
Moussoir, Dr., heat-stroke, 952
Mouth, floor of the, removal of, for malignant disease, 168
Mouth (see also Foot-and-Mouth)
Mowat, Dr. D., a noble example, 1414
Mowat, Dr. G., chloroform, 884, 1679
Moynihan, Mr. B. G. A., hernia, 513, 596
Mucoid cyst, hepatic, 455
Muir, Dr. R., Bacteriology (review), 34
Muir, Prof., kidneys in diabetes, 544
Mukherji, Mr. Atul Chandra, nasal polypus, 95
Müller, Dr. Arthur, Taschenphantom (review), 782
Mullick, Mr. S., dextro-cardia, 457
Mumps (?), chronic, 1009
Mumps, orchitis of, 25; in old age, 634
Munro, Dr. W., Bubonic Plague (review), 1076
Mural advertising, 1180
Murchison scholarship, 247
Murderer, responsibility of a, 1036
Murphy, Mr. S., annual report for London, 181, 256, 490, 725
Murray, Dr. M., pyosalpinx, 29
Murray, Mr. R. W., malignant pustule, 164; aneurysm, 1074
Murray, Dr., brass poisoning, 623
Murrell, Dr. W., optic neuritis, 1206; leukæmia, 1725
Muscle plasma in tuberculous infection, 809
Muscular atrophy, progressive, cases of, 27, 460, 541; system, lesions of the, in an infant, 541
Mustard, adulteration of, 49
Mutism, hysterical, 1009
Mütter, Prof. T. D., lectures instituted by, 871
Muzzle, an antiseptic, 628
Mycotic tumour in a horse, 165
Myelitis, spinal, measles complicated with, 533
Myers, Mr. G. W., Experimental Physics (review), 173
Myers, Dr. W., cobra venom, 384; antivenomous serum, 1433
Myles *versus* Fitzgibbon, 1614
Myoidema in pulmonary tuberculosis, 230, 575
Myology of the Pelvic Floor (review), 467
Myotonia congenita, 955, 1071, 1180

N

Nadkarni, Mr. K. M., Treatment of Disease (review), 710
Naevus of patriotism, 284
Nails, a warty condition round the, disappearance of, after revaccination, 1004
Naming of objects, incapacity for, after subdural hæmorrhage, 552
Nancy, the University of, degree in biological science of, 888
Nansen, Fridtjof, Norwegian Polar Expedition (review), 1662
Nantwich, public health of, 553
Naples, congress at, on tuberculosis, 661, 723, 1225, 1329, 1388
Nasal and post-nasal polypus, enormous, 95
Nasal region, syphilitic ulceration of the, 465; septum, primary tuberculosis of the, 617; discharges, chronic purulent, the diagnosis and treatment of, 1073
Nasal Suppuration (review), 1888
Nash, Dr. J. B., urinary water and urea, 1878
Nash, Mr. W. G., appendicitis, 852
Naso-pharyngeal case, an obscure, 314
Natal, hospitals in, 506; the Bishop of, My Diocese during the War (review), 1888
National Deposit Friendly Society, the new rules of the, 1102
Nations, fertility and sterility of, 551
Nature (see Giving nature, &c.)
Nauheim, a new mineral spring at, 806
Naval Medical Supplemental Fund, 129, 1093
Navy, health of the, 962
Navy, the Dutch, vital statistics of, 255; the Japanese, kakke in, 722; the Italian, defective sanitation in, 729
Navy recruits, the teeth of, 814
Navy and Navy Medical Service (see also Channel Fleet, Royal navy, Services)
Neale, Dr. R., Medical Digest, 355; testimonial to, 397, 420, 1335
Neck, cysts of the, 388, 859; actinomycosis of the, 1210
Needle-douche, intra-gastric, apparatus for the, 37
Needle (see Packing-needle)
Needles inserted into the breast by a hysterical girl, 388
Neisser, Prof., experiments on syphilis, 970
Nephrectomy, 609, 633; and nephrotomy, statistics of, 701
Nephritis (see Pyonephritis)
Nephro-lithotomy, 609
Nephropexy, tetanus following, 157
Nerve-roots, the lumbo-sacral, injury to, 27; cells, action of tetanus toxin on, 98; section, the restoration of coördinated movements after, 448; fibres, the medullary sheath of, the minute structure of, 1297; fibres, opaque, in the eye, 1362; structure, elucidated by nerve staining, 1601
Nerveux, Le Système Central (review), 1076
Nervous matter, excitability of, 253; symptoms, peculiar (? malingering), 543; disease following typhoid fever, 943; symptoms in typhoid fever, 1121
Nervous system, diseases of the, baths and climate in, 387, 943; increase of, 462, 1523; micro-organisms in, 1075
Nervous system in typhoid fever, 913
Nervous System in Health and Disease, Atlas of the (review), 240; in Social Life (review), 1139; of the Child (review), 1662
Nerves, resection of, in tic douloureux, 1528
Nerves (see under the respective names, and also Cranial, Reflexes, Spinal)
Ness, Dr. R. B., valvular disease of heart, 315
Netley (see Royal Victoria Hospital)
Neumann, Dr. R. O., Bakteriologie (review), 33
Neuritis, cases of, 28; double optic, 1206, 1350; alcoholic, perforating ulcer of the foot in, 1224
Neurological Association, the American, 1605
Neurology and Psycho-pathology, Archives of (review), 1661
Neuroma and Neuro-fibromatosis (review), 1593
Neurone, degeneration of the, 1606, 1779, 1849
Neuroses of childhood, the commoner, their pathology and treatment, 1742, 1859
Nevill, Dr., the Experiment of (a novel), (review), 1449
New Caledonia, plague in, 427

NEW INVENTIONS.

A new laryngoscope, 37—A simple apparatus for administering the intra-gastric needle-douche, 37—Materia medica labels, 143—Sanitary water-closet seat, 212—An improved exploring syringe, 242—A new chloroform inhaler, 318—An improved storage battery, "resistance," and charging board for medical use, 471—The nitro-propiol test for sugar in urine, 471—An improved method of eye-measurement, 627—Improved ear-drums, 628—An improved cuff fastener, 628—An antiseptic muzzle, 628—An improved "Esmond" cycle saddle, 667—The sanitary bandelet, 818—Automatic dry seat for tramways, &c., 818—A head-rest, 862—A new chimney cowl, 862—A tent for the open-air treatment of tuberculosis, 946—A new incubator, 1014—Splint for bunions, 1042—Gelatin envelopes for surgical dressings, 1042—The "Lupa Humaniser," 1077—Apparatus for the local application of ethyl chloride, 1139—The "Allenburys" milk Pasteuriser, 1215—A new tonsil forceps, 1291—Iodised phenol aseptic hydrocele outfit, 1370—Invalid bedstead with lifting arrangement, 1450—Acetylene lamps for bicycles, 1482—Cycle tool-bag, 1482—New form of vaginal douche tube, 1522—Tonsil clamp, 1664—A pocket spittoon, 1664—The Onah vaginal douche, 1664—"Portia" combined stocking suspender and shoulder support, 1664—An aseptic vaccination case, 1808—A portable spittoon, 1808

New South Wales: leprosy, 476; hospitals in, 634; lunacy, 664; tick fever, 1898
New South Wales Nurses' Association, 427; army medical corps, 811
New Style and Old Style, 351
New year, the, 39
New year honours, 43

NEW YORK, CORRESPONDENCE FROM.—The military governor of Cuba a sanitarian, 137—The army ration, 137—Mortality from diphtheria in New York before and after the introduction of the antitoxin treatment, 138—Decision in Kentucky with respect to osteopathy, 275—Reforms in the medical department of the army, 276—Cigarettes, 276—An Antivivisection Bill, 583—Rapid transit for New York City, 583—Medical news in American lay journals, 583—The Department of Agriculture on the production of milk, 661—Women nurses in military hospitals, 662—Losses of the volunteer troops in the Spanish-American war, 662—Progress of the plague, 662, 1916—Death-rates in cities and States, 662—The new president of the New York State Medical Society, 662—The physical fitness of railway employés, 662—Report of the State Board of Charities of New York State, 890—Uniformity in the standard of medical education, 890—Wards for the insane in general hospitals, 890—A proposed leper colony, 890—Medical instruction in the United States, 971—Death of the author of the "gold cure" of alcoholism, 971—The farm colony for the insane, 971—Indigence in Porto Rico, 971—Tenement house exhibition, 971—Illness being an act of God justifies a breach of promise, 972—The tenement houses of New York and tuberculosis, 1174—Disinfecting steamer for Havana, 1174—State hospital for consumptives of New York City, 1174—Adulteration of food, 1174—The first 10 years' work of the New York Pasteur Institute, 1329—Health of Manila, 1330—National health legislation, 1330—Insanity among the United States troops, 1330—Medical congresses at Washington, 1474—Professional incomes in the United States, 1474—Commission on tenement houses in New York City, 1475—Isolation for tuberculous patients, 1553—Small-pox, 1553—Report of the chief surgeon of the department of Matanzas and Santa Clara, Cuba, 1553—Antitoxin and the diphtheria death-rate in New York, 1618—The comparative efficiency in steam disinfection of flowing steam and of steam with a vacuum, 1618—Ruptured and crippled patients in New York, 1618—Deaths, disabilities, and liabilities incidental to occupation, 1618—Ingredients of oleomargarine, 1618—Liability for the infection of an assistant, 1618—Boards of health in Porto Rico, 1619—Dinner to Dr. A. Jacobi, 1619—Medical anniversaries, 1915—Typhoid fever among the American soldiers in 1898, 1915—Victims of lightning, 1916—Death of Dr. E. O. Shakespeare, 1916—Responsibility of a hospital for the acts of a nurse, 1916

New York: diphtheria statistics, 138, 326; midwives problem, 1018
New Zealand (see Brit. Med. Assoc.)
Newbolt, Mr. G. P., tumour of the jaw, 17; cancer, 1513
Newcastle, the conference at, and the midwifery question, 63, 133, 197, 338, 420, 575; the new infirmary at, 402, 1890, 1902
Newland-Pedley, Mr. F., dental surgeons, 486
Newman, Dr. D., the kidney, 526, 601, 699
Newman, Dr. H. R. C., hyperpyrexia, 1725
Newman, Dr. G., tubercle, 1441
Newport and Monmouthshire Infirmary, 328, 410
Newport waterworks, 131
Newsholme, Dr. A., diarrhœa, 107
Newspaper, hostile criticism of a judge by a, 950
Newspaper yeller, the case of a, 637
Newton Abbot Hospital, 289, 792
Newtownards, water-supply and drainage of, 969
Niger territory, blackwater fever in the, 11
Night, medical attendance during the, 425
Nightingale, Florence, 1456
Nile, the low, 504
Nitrites and allied substances, effects of, on the circulation, 859
Nitrogen, the excretion of, in rheumatoid arthritis, 706; in gout, 931
Nitro-propiol test for sugar in urine, 471, 882, 1321
Niven, Dr. J., tuberculosis, 313
Noble example, 1414
Noble, Dr. P., chloroform, 1210
Noises, street, 113, 399, 429, 635

Nolan, Mr. J. J., Professions for Boys (review), 625
Non-pauper lunatics and the London County Council, 481
Nordrach-on-Dee, 135
Norris, Dr. W. F., Diseases of the Eye (review), 104
North London Hospital for Consumption, new wing, 1301
North Polar Expedition, the Norwegian (review), 1662
Northamptonshire, housing of the working-classes in, 864

NORTHERN COUNTIES NOTES.—Student volunteers, 967—University of Durham College of Medicine: presentation to Dr. F. Page, 967

Norwegian experiment of notification of venereal diseases, 574; Polar Expedition (review), 1662
Norwich, organisation of the profession at, 885
Nose, bullet removed from the, 24; phagedæna of the, 942; discharge of cerebro-spinal fluid from the, 1222, 1285; and throat, diseases of the, diagnosis of, Roentgen rays in, 1591
Nose and Throat, Diseases of the, A Text-book of (review), 545; Diseases of the, A Manual of (review), 712
Nose (see also Dog nose, Rhinoplastic)
Not the disease only, but also the man, 476, 574
Notification of phthisis, 386, 1034, 1915; of measles, 941; of infectious diseases in Edinburgh, 500; of venereal diseases, 574; of purulent ophthalmia, 1447
Notification Act (see Infectious Diseases)
Novy, Dr. F. G., Bacteriology (review), 31
Nubia hospital ship, 406
Nuclein in septicæmia, 1591
Nuisances, trade, 256; street, 955
Nunn, Mr. T. W., Cancer (review), 626
Nurse, the acts of a, responsibility of a hospital for, 1916
Nurse, The Private (review), 1014
Nurses, nuns as, in Ireland, 507; women, in military hospitals, 662; training institution for, in Birmingham, 807
Nurses and Students, Midwifery for (review), 173
Nurses' Association, New South Wales, 427; home at Bath, 639
Nursing Association, the Colonial, 178; the Cornwall, 944; Queen Victoria District, 1097
Nursing orderlies for South Africa, 665; staff in South Africa, 1040
Nursing Profession: How and where to Train (review), 1077; Directory, Burdett's Official (review), 1369
Nursing regarded as a luxury, 1293
Nursing Society, East London, 1102
Nursing, its Theory and Practice (review), 172; A Handbook of (review), 469; Home, of Sick Children (review), 1014; Practical (review), 1139; Home (review), 1369
Nursing, parish, 1106; home, school lectures on, 1532
Nuttall, Dr. G. T. H., malaria and mosquitoes, 384

O

Oatmeal cocoa, 1290

OBITUARY.—Sir James Paget, Bart., F.R.C.S. Eng., F.R.S., D.C.L. Oxon., LL.D. Cantab., &c., 52—Henry Thompson, M.R.C.S. Eng., L.R.C.P. Lond., 56—Alexander Grant, F.R.C.S. Edin., 139—W. N. Thursfield, M.D. Edin., M.R.C.S. Eng., D.P.H. Camb., 139—J. Howison, L.R.C.P., L.R.C.S., L.M. Edin., 139—David Cullen, M.D., L.R.C.S. Edin., 140—John Gorham, M.R.C.S. Eng., L.S.A., 140—Frederick W. Lewis, M.R.C.S. Eng., 140—George Cheesman, L.R.C.P. Edin., M.R.C.S. Eng., 140—Thomas Greaves Walker, M.R.C.S. Eng., L.S.A., 205—Henry Hannotte Vernon, M.D., F.R.S. Edin., M.R.C.S. Eng., L.M., J.P., 276—Robert Cullum, M.D. Glasg., M.R.C.P. Lond., M.R.C.S. Eng., 277—Charles Pope Walker, M.B. Durh., M.R.C.S. Eng., Major R.A.M.C., 277—Sir William Miller, M.B. T.C.D., J.P., 351—Alex. C. Archibald Alexander, B.A. Cantab., M.R.C.S. Eng., L.S.A., Major R.A.M.C., 251—Thos. Jones Dyke, J.P., F.R.C.S. Eng., L.S.A., 351—Frederick Edward Pearse, M.D. St. And., M.R.C.P. Edin., M.R.C.S. Eng., 352—Sir Thomas Grainger Stewart, M.D., F.R.C.P. Edin., LL.D. Aberd., F.R.S.E., 412—Bernard Edward Brodhurst, F.R.C.S. Eng., 415—Francis Charlewood Turner, M.D. Cantab., F.R.C.P. Lond., 504—Edward Jones, M.D. St. And., M.R.C.S. Eng., J.P., 504—Abraham Harris-Bickford, M.D. St. And., L.R.C.P. Edin., &c., 504—Prof. Ludwig Meyer, 583—Samuel Hyde, M.D. St. And., M.R.C.S. Eng., L.R.C.P. Edin., 662—Joseph William Young Howison Lavies, L.F.P.S. Glasg., M.S.A., 663—Thomas Scattergood, M.R.C.S. Eng., L.S.A., 737—Thomas Guy, M.D. Heidelb., F.R.C.P. Lond., M.R.C.S. Eng., 738—William McNeill Whistler, M.D. Penns., M.R.C.P. Lond., M.R.C.S. Eng., 738—Robert Goldsworthy Tucker, M.R.C.S. Eng., L.R.C.P. Edin., 738—William Marcet, M.D. Edin., F.R.C.P. Lond., F.R.S., 811—William Adams, F.R.C.S. Eng., 812—John Cadwaladr Williams, M.B., C.M. Edin., M.R.C.S. Eng., &c., 892—Lieut.-Col. Allan McLean, M.D., C.M., L.R.C.S., L.M. Edin., J.P., 892—Robert Cory, M.D. Cantab., F.R.C.P. Lond., 972—His Excellency Robert Halliday Gunning, M.D., LL.D. Edin., 973—William Chapman Grigg, M.D. Edin., M.R.C.P. Lond., 973—Edward Dalzel Dickson, M.D. Malta, M.R.C.P. Lond., 1037—Hadley Charles Jackson, L.R.C.P. Lond., M.R.C.S. Eng., 1037—Sir Andrew Douglas Maclagan, M.D., LL.D. Edin., LL.D. Glasg., F.R.C.P., F.R.C.S., F.R.S. Edin., 1100—St. George Mivart, Ph.D., F.R.S., F.L.S., F.Z.S., M.D. Louvain (honoris causâ), 1100—Joseph E. Kenny, L.R.C.P., L.R.C.S. Edin., L.A.H. Dub., 1101—Sir William Priestley, M.D., LL.D., F.R.C.P. Edin., F.R.C.P. Lond., M.P., 1147—Joseph Cave Spicer Jennings, F.R.C.S. Eng., L.S.A., 1148—John Underwood, M.D. Edin., M.R.C.S. Eng., L.S.A., 1151—Walter Clegg, M.R.C.S. Eng., L.S.A., 1151—Robert Wills Soper, M.R.C.S., L.S.A., J.P., 1251—Edwin Van Millingen, M.D. Würtzburg, 1252—Robert Glasgow Patteson, B.A., M.B. T.C.D., F.R.C.S. Irel., 1331—Daniel Ainley, L.R.C.P. Edin., M.R.C.S. Eng., 1331—George Viner Ellis, F.R.C.S. Eng., 1407—John Wiblin, F.R.C.S. Eng., 1407—John Neville Colley Davies-Colley, M.A., M.B., M.C. Cantab., F.R.C.S. Eng., 1475—George Bird, M.R.C.S. Eng., M.D. St. And., 1619—Major T. A. P. Marsh, L.R.C.P. Lond., M.R.C.S., R.A.M.C., 1619—F. J. Mathews, L.R.C.P. Irel., 1619—Corrado Tommasi-Crudeli, 1686—James Grosvenor Mackinlay, F.R.C.S. Edin., 1687—Lieut.-Col. Aylmer Ellis Hayes, D.S.O., L.R.C.P. Edin., M.R.C.S. Eng., R.A.M.C., 1687—James Fenton Stamper, M.D. St. And., M.R.C.S. Eng., L.S.A., J.P., 1687—George Edward Williamson, F.R.C.S. Eng., 1762—Thomas Fitz-Patrick, M.D., M.A. Dub., M.R.C.P. Lond., 1762—Julius Althaus, M.D. Berlin, M.R.C.P. Lond., 1762—W. T. Radford, M.D. T.C.D., 1763

Obstetrics (see Gynæcology and Obstetrics)
Obturator hernia, 940
O'Carroll, Dr. J. F., pulmonary second sound, 28
O'Conor, Dr. J., appendicitis, 294
Ocular phenomena associated with Cheyne-Stokes respiration, 537
Œsophagitis, acute, 1285
Œsophagoscopy, 1222
Œsophagus, spasmodic stricture of the, air dilator for, 544; foreign body impacted in the, 788; rupture of the, 930, 940; endoscopy of the, 1189, 1222
Officers (see Sick and Wounded)
Offord and Sons, Messrs., military ambulance vehicle, 195, 728
Ogle, Dr. C., opening the pericardial sac, 693
O'Hara, Mr. H. M., and the Victorian Branch of the Brit. Med. Assoc., 1529, 1554
Old age, valvular disease in, 324; mumps in, 634
Oldham, vaccination of pauper children in, 271
Oleomargarine, the ingredients of, 1618
Oliver, Dr. C. A., Disease of the Eye (review), 104
Oliver, Dr. J., papilloma, 1513
Oliver, Dr. T., muscular atrophy, 541
Olympia (an exhibition), Zulus at, 44
Omentum, sarcoma of the, 930
Omphalitis, case of, 1656
O'Neill, Dr. W., shamrock, 1179
Onions in typhoid fever, 1481
Open-air treatment of consumption (or phthisis or tuberculosis), 102, 284, 590, 870, 1447; at the patient's home, 162; a tent for the, 946
Operations, ethics of, 174
Ophthalmia, purulent, in children, 1135, 1447
Ophthalmia in Liverpool, 579, 940
Ophthalmic operations, "gas and oxygen" in, 1435
Ophthalmic Practice, Golden Rules of (review), 1682
Ophthalmology, the arithmetical triangle in, 1801
Ophthalmoplegia externa, in Graves's disease, 98; family tendency to, 854
Ophthalmoplegia, tabetic, 101
Ophthalmoscope, various applications of the, 289
Opium, the use of, in infancy, cerebral and mental degenerations and, 1737
Oppenheim, Dr., paralysis of nerves, 556; insomnia, 953
Opportunity, a great, 589
Optic atrophy disturbances of colour, a hitherto unrecorded phenomenon in, 1009; neuritis, double, 1206, 1350
Orbit, bullet-wound of the, 460
Orbital exostosis, 101; region, syphilitic ulceration of the, 465
Orchitis of mumps, 25
Orexin, therapeutic uses of, 1019
Organic Evolution, A First Book in (review), 1368
Organisation of the profession, 143, 342, 497, 576, 655, 885
Organisation, medical, conference on, 1168, 1302, 1372, 1379, 1382, 1389, 1471, 1543
Orr, Dr. D., general paralysis, 942
Orsi, Prof. Francesco, the late, 204
Orthopædic (see City Orthopædic)
Os calcis, subperitoneal resection of the, 167
Osborn, Mr. S., fatal injuries, 335; South African war, 1158
Osman Digna, 262
Ossiculectomy, 702
Osteitis deformans in only one bone, 457; in several bones, 1009
Osteitis, cases of, 618, 1875
Osteo-arthritis, case of, 1072; pneumococcic, 1740
Osteomalacia, 1870
Osteomyelitis, case of, 618
Osteopathy (a peculiar method of treatment), 275
Osteopsathyrosis, 1870
O'Sullivan, Dr. S., the late, 203
Otitis media, suppurative, operations for, 364, 929; ossiculectomy in, 702; in an epileptic, 1355
Otorrhœa, mastoid operation for the cure of, 234, 455; chronic, treatment of, 1592
Ounce and the tablespoonful, 743
Ouston, Mr. T. G., spina bifida, 466
Ovarian cyst removed, 30; large, 274; ruptured, 710; and fibroid uterus, 780; with no pedicle, 941; communicating with the gall-bladder, 1132
Ovarian sarcoma in a girl, 1366
Ovaries, both, sarcoma of, 1517
Ovariotomy, scars of, pigmentation of, 239; double, 938
Ovary, dermoid cyst of the, with twisted pedicle, 47; prolapse of the, 450; solid tumours of the, 466; a pathological, 707
"Ovid, the medical" (i.e., Dr. Arthur Johnston), 555
Owen, Mr. E., an appeal, 48, 62; the knee-joint, 1183
Oxford University, pass lists, 206; graduation, 813; Radcliffe travelling scholarship, 1093; new operating theatre and laboratories, 1822
Oxford, Miss M. N., Handbook of Nursing (review), 469
Oxydol (i.e., peroxide of hydrogen), 106
Oxygen in tinnitus and post-influenzal deafness, 510; in sea-sickness, 1251
Oxygen treatment of ulcers, 667; inhalation, the uses of, 1002
Oxygen (see also "Gas and oxygen")
Oysters, the purity of, 585; and infective diseases, 1173

P

Packing-needle in the colon, 96
Page, Mr. H. W., Volkmann's paralysis, 83; carcinoma, 1004
Page, Mr. F. J. M., Chemistry (review), 1662
Page, Mr. F., dinner and presentation to, 967, 974; removal of gall-stone, 1885
Paget, Sir James, the late, 43, 112, 131; obituary, 52
Paget, Mr. S., Experiments on Animals (review), 391
Paignton, convalescent home at, 278
Pakes, Mr. W., venous thrombosis, 165; public health, 311
Palæontology, Text-book on (review), 624
Palate, the soft, paralysis of, 781
Palermo as a health resort, 126; La Villa Igiea at, 275
Palin, Dr. E. W., intestinal obstruction, 1356
Palmer, Mr. J. F., tubercle of the lung, 1792; presidential address, 1886
Pan-hysterectomy, cases of, 466, 1211, 1730
Pannus, jequirity in, 265
Panophthalmitis, meningitis followed by, 854
Paper inhaler for chloroform apparatus, 29
Papilloma, multiple, of the cervix uteri, 1513
Paracentesis abdominis, 1046
Paraguay, plague in, 737, 1065
Parakeratosis palmaris, 781
Paralysed and Epileptic, National Hosp tal for the, 1817

Paralysis, infantile, cases of, 27, 622; pseudo-bulbar, case of, 28; Volkmann's ischæmic, 83; asthenic bulbar, 618; diver's, 1072; bulbar, 1074; laminectomy for, 1363; aphasic, 1699, 1767
Paralysis of the facial and hypoglossal nerves, 556; of various cranial nerves, 618; facial, 781; of the respiratory centre under chloroform, 1210
Paralysis, general, of the insane, morbid anatomy of, 942; etiology and pathology of, 943; medico-legal relations of, 1445
Paralysis, lead, an unusual case of, 554
Paraplegia, infantile, 942
Parasite of cancer, 541
Parasitic crustacean on the cornea, 1002, 1095, 1467
Parental neglect, the law on, 1376
Parietal bone, a portion of the, detachment of, 238
Parietal (see also Interparietal)

PARIS, CORRESPONDENCE FROM.—Operations on lunatic patients in asylums, 67—Spitting on the pavement, 68, 889—Medical officers for the mercantile marine, 136—Sale of impure ice, 136—Disinfection of telephones, 136—Resignation of the medical staff of a municipal dispensary, 204—Jubilee of the Society of Biology, 204—Complaint against a house surgeon, 204—Madness on the stage, 204—The new buildings of the Society of Surgery, 273—Crusade against travelling spirit-bars, 273—A victim to professional duty, 348—Budget of the Assistance Publique, 348—Dissensions between medical men, 348—Medico-legal expert evidence, 348—Medical attendance during the night, 425—Hospital laboratories, 426—Influenza, 426, 809—Treatment of dyspepsia by natural gastric juice, 502—Obituary, 502, 1761—Notes on news, 502—Difficulties in making post-mortem examinations in hospitals, 581—Rates for gratuitous medical attendance, 581—Typhoid fever, 669, 1172—The French edition of the *Index Medicus*, 660—Disinfection after measles, 736—Diseased meat, 736—Tuberculosis and the national convalescent homes, 736—Therapeutics of cacodyle, 376—Treatment of tuberculous infection by muscle plasma, 809—Appendicitis in pregnant women, 809—The degree of Doctor of Biological Science, 888—Sanitary condition of Paris, 888—Paris water-supply, 969—Kleptomania in a medical man, 969—Septicæmia among children at nurse, 969—The examination for hospital appointments, 969—Legal rights of a woman in child-bed, 1036—Lectures by women doctors at the Faculty of Medicine, 1036—Criminal insanity, 1036—Percussion of the cranium, 1036—Cystine in water-supplies, 1098—Paris association of female students, 1098—Faulty prescriptions, 1098—Inspection of schools, 1098—Professional ethics, 1172—Professional secrecy, 1172, 1617—Pasteur Institute in Madagascar, 1172—Precautions to be observed by pharmaceutical chemists, 1172—Rapid diagnosis of rabies in the dog, 1250—Regulations affecting mineral springs, 1250—Oxygen in the treatment of sea-sickness, 1251—The hygiene of the Paris Metropolitan Railway, 1328—Immunity against symptomatic charbon by the administration of preventive serum, 1329—A hospital debate, 1329—Death of Dr. Apostoli, 1329—The Academy of Medicine, 1405—School teachers as vaccination propagandists, 1405—Temperance measures in the army, 1472—Statistics of the Paris Faculty of Medicine for 1899, 1473—Treatment of alcoholism, 1473—The admission of lunatics into asylums, 1551—The Exhibition, 1551—A temperance manifesto by the Academy of Medicine, 1616—Surgical treatment of facial neuralgia, 1616—Sanitary measures against plague, 1617—Solidarité universitaire, 1683—Opening of the Pasteur Hospital, 1683—Anti-alcoholic measures in the navy, 1684—Treatment of pneumonia by brewer's yeast, 1684—The illegal practice of medicine by masseurs and magnetisers, 1761—The carriage of small-pox by flies, 1761—Treatment of tuberculosis by means of raw meat and meat-juice, 1840—Increase in the Paris supply of drinking-water, 1840—Small-pox at Lyons, 1840—Geographical distribution of goitre in France, 1840—Disinfection of wells, 1913—A forerunner of Pasteur, 1913—The feeding of tuberculous patients, 1913

Paris, hotels and congresses in, 325; the *Sanitary Record* trip, 1225; Guides to (review), 1663
Paris, congresses in (see Congress)
Paris Exhibition (or Universal Exhibition), 1036, 1086, 1159, 1225, 1323, 1468, 1545, 1551, 1756, 1837, 1909
Paris municipality and the spread of infection, 981; water-supply, 1545
Parish nursing, 1106
Parker, Mr. M. A., Analytical Chemistry (review), 392
Parker, Mr. R., operations on the stomach, 620
Parker, Dr. T. J., the late, Practical Zoology (review), 945; A Manual of Zoology (review), 1448
Parker, Dr. W. N., Zoology (review), 945
Parliament, university representation in, 243; an Act of, singular mistake in, 551
Parliamentary Companion, Dod's (review), 469

PARLIAMENTARY INTELLIGENCE.—Opening of the session, 353—London water question, 353, 1039—Rules for chemical works and match factories, 353—Midwives Bill, 428, 665, 813, 814, 894, 975, 1103, 1478, 1841, 1919, 1920—Isolation Hospitals Amendment Bill, 429, 585—Lunacy Bill, 429, 506, 740, 813—Vaccination petition, 429—Inoculation with anti-typhoid serum (or anti-enteric vaccine), 429, 665, 1477, 1478, 1920—Street noises, 429—Meat (or food) for the troops (or on board the transports), 429, 740, 814, 1409—Sanitation of Gibraltar, 429—Medical certificates in the Post Office Service, 429, 1409—The transport *Jelunga*, 429—The strength of the Army Medical Service, 429—Amendment of company law, 506, 1841, 1919—Physical drill in schools, 506, 1039—Water-supply Bill, 506—The hospitals in Cape Colony and Natal, 506—The position of Canadian surgeons at the front, 507—Invalid soldiers from South Africa, 507, 814, 1919—Clothing for the troops, 507, 813—Remuneration of the consulting surgeons, 507, 1040—Netley Hospital, 507, 665, 740, 1477—Deaths from disease at the war, 507, 586—Dispensary medical officers and nurses in Ireland, 507—Petroleum Bill (or question), 585, 894, 974—Inebriates Act in Scotland, 585—Medical examination of Volunteers, 585—Purity of oysters, 585—Sir Michael Foster, 585—Medical appointments in Londonderry, 585—Infectious diseases in the Post Office service, 586—Report of the Malarial Commission, 586—Removal of casualty cases in Glasgow, 586—Medical organisation for the army, 586—New factory legislation, 664—Medical service of the Royal Navy, 664—Royal Army Medical Corps, 665, 1039—Nursing orderlies in South Africa, 665—Housing of the working classes, 665—Plague, famine, and cholera in India, 665, 1630, 1631, 1842, 1843—Sanitary inspectors, 665, 1103—Purity of water-supplies, 665—The anti-vivisectionists and Mr. R. E. Lloyd, 665—Teeth of army and navy recruits, 665, 814, 894—Civil surgeons at the war, 665, 1040—Vote for the medical establishment of the army, 740, 894—Small-pox precautions, 740—Proposed food standards, 740—Bethnal-green Infirmary, 740—Workhouse dietary scales, 740—Inspection of cows and dairies, 740—Food of the Royal Navy (or Channel Fleet), 814, 894—Women and children in textile factories, 814—Sale of intoxicating liquor to children, 814—Medical School of Queen's College, Cork, 814—Rabies in Ireland, 814—French assistance for the wounded in South Africa, 814—Ambulance waggons, 814—Vaccination question, 814, 1039—Accounts of the General Medical Council, 894—Sanitary condition of Malta, 894—Wounded who have returned to the front, 894—Dogs Regulation Bill, 894—Milk prosecutions, 894—Death certification, 894—Treatment of lunatics in Scotland, 894—Hospitals and local rates, 895, 1563, 1843, 1921—Medical appointments in Dublin, 895—Lunacy Board in Scotland, 974, 1040—Sale of undersized fish, 974—The War Office and civil hospitals, 974—Corporal punishment in prisons, 974, 975—Boots of the soldiers in South Africa, 974, 1563—Death-rate in Dublin, 974—Carburetted water gas, 974, 1630—Guy's Hospital, 975—London telegraphists and medical attendance, 975—The proposed lunacy laboratories, 1039—Prison dietary, 1039—Conduct of private lunatic asylums, 1039—Employment of children in coal mines, 1039—The medical profession and the war, 1040—Nursing staff in South Africa, 1040—Medical officers of health and sanitary inspectors, 1103—Preservatives in cream, 1103, 1630—Medical examination of army officers, 1103—The Education Department and vaccination of pupil teachers, 1103, 1563—Medical officers and the certification of lunatics, 1103—Commission on Sewage Disposal, 1103—Railways (Prevention of Accidents) Bill, 1103—Phthisis in the Post-office service, 1103—Vaccination in the St. Pancras Workhouse, 1333—Expenditure under the Vaccination Act, 1333—Pollution of the River Lee, 1333—The Edinburgh and St. Andrews Universities vacancy, 1333—Plague regulation in India, 1333—Deaths from carbolic acid, 1333—Superannuation allowances for medical officers of health, 1333—Rating of institutions for imbeciles, 1409—Inoculation experiments in India, 1409—Notification of deaths to the coroner, 1409; Plague Commission in India, 1409—The special rules for lucifer match factories, 1409—Disease in the Indian famine relief camps, 1409, 1843—Introduction of Sir J. B. Tuke, 1409—Treatment of sewage, 1409—Conditions of hospital admission, 1477—Lead poisoning, 1478—New hospital at Hong-Kong, 1478—Irish lunacy laws, 1563—Whipping for youthful offenders, 1563—Army medical officers, 1563—Infectious disease in the Quarrier homes, 1563—The conscientious objector, 1563—Size of the Geneva Cross, 1563—Medical allowance of volunteer adjutants, 1630—Medical officers in Ireland, 1630—Proposed vaccination return, 1630—Fatal accidents in the railway service, 1631—Teaching of infants, 1842—Animals, living, experiments on, 1842—Deaths from heat (or sunstroke) at Aldershot, 1842, 1920—Hours of labour in shops, 1919—St. Pancras lunacy scandal, 1919—Medical officers in volunteer corps, 1919—Mortality averages for Liverpool, 1919—Medical examination under the Workmen's Compensation Act, 1919—Extermination of rabies, 1919—Sale of Food and Drugs Act, 1919

Parotitis from plumbism, 114
Parry, Dr. L. A., hemiatrophy of the tongue, 537
Parsons, Dr. I., cancer, 1212
Partridges, Manchurian, 1106
Parturition, &c., The Hæmorrhages of (review), 105
Pass lists (including lists of recipients of degrees and diplomas): Army Medical School, Netley, 62, 1320; Royal College of Surgeons of England, 69, 584, 663, 1696, 1763; London University, 140, 504, 1697; Society of Apothecaries of London, 140, 277, 663, 973, 1101, 1252, 1562, 1917; Oxford University, 206, 813; Examining Board in England by the Royal Colleges of Physicians and Surgeons, 206, 663, 738, 1038, 1175; Cambridge University, 277, 428, 584, 739, 812, 946, 1331, 1408, 1630, 1764, 1840, 1917; Royal College of Physicians of England, 277; Indian Medical Service, 334, 495; Royal Army Medical Corps, 495; Apothecaries' Hall of Ireland, 505; conjoint examinations in Ireland by the Royal Colleges of Physicians and Surgeons, 505; Royal College of Surgeons in Ireland, 664, 1039, 1562, 1630, 1917; Royal Navy medical service examination, 729; Victoria University, 1038, 1841; Aberdeen University, 1102; Durham University, 1175, 1331; Glasgow University, 1175; Edinburgh University, 1252; Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, 1332; Brussels University, 1562, 1917
Pasteur, a forerunner of, 1913
Pasteur Institute, the Paris, cases sent to, from India, 345
Pasteur Institute in Madagascar, 172
Pasteuriser for milk, 1215
Patella, fractured, case of, 169, 1072; dislocations of the, 238, 308
Patent remedies, 466
Paterson, Dr. A. G., vomiting, 284
Paterson, Mr. A. W., hyperpyrexia, 1010
Paterson, Dr. G. S., sudden death, 29
Pathologist's Handbook (review), 240
Pathology, lay, 510; at the Scottish asylums, 1020; asylum, 1444; the application of, to surgery, 1856
Patients, on taking, into consultation, 1, 393
Patriotism, the nævus of, 284
Patten, Dr., the gibbon, 620
Patteson, Dr. R. G., the late, 1171; obituary, 1331
Paul, Mr. F. T., cysts of the neck, 859
Paunz, Dr. Mark, a new laryngoscope, 37, 471
Pauper children, vaccination of, 272; lunatics of St. Pancras, 1736, 1919
Pauper (see also Non-pauper)
Pauperism, charity organisation and, 1296
Pauperism in the Chard Union, 50
Pavement, spitting on the, 889
Pavor diurnus, 292
Pavy, Dr. F. W., phlorizin, 706; diabetes, 1706, 1787, 1863
Pay, who is to (or should)? 667, 743
Peacock, Staff-Surg. H., the late, 1742
Pearmain, Mr. T. H., Analysis of Food and Drugs (review), 468
Pearse, Dr. F. E., obituary, 352
Pearse, Mr. T. F., plague, 1273
Pearson, Mr. Karl, Grammar of Science (review), 1447

Pearson, Mr. A. E., scarlet fever, 1133
Pechell, M. L., Professions for Boys (review), 625
Pediculi palpebrarum, 466
Peirson, Griffin *versus*, 341
Pelvic organs, backward displacement of the, 449
Pelvic Floor, Myology of the (review), 467; Inflammation, Treatment of, through the Vagina (review), 1367
Pelvis, the set of the, in the body, 1886
Pelvis, kyphotic, craniotomy in a, 707, 1279
Pemphigus and erythema, concurrent, 1284
Peninsula, a prisoner in the, 1380
Penis, cancer of the, 75
Pepsin, commercial, 1444
Pericardial sac, a method of opening the, 693
Pericarditis, purulent, case of, 693; rheumatic, and its treatment, 924
Pericardium, abscess of the, 1474
Perineal prostatectomy, 774
Periostitis, case of, 618
Periostitis, osteoplastic (see "Henpuye")
Peritoneal (see Retro-peritoneal)
Peritonitis, acute, symptoms of, 1648, 1756, 1836
Peritonitis in the female, 316
Perkin, Mr. W. H., jun., Organic Chemistry (review), 317
Perkins, Dr. J. J., duodenal ulcer, 458
Pernet, Mr. G., parasitic crustacean, 1095
Peroneal muscles, atrophy of the, 27
Personal identity, sense of, loss of, 1670
Petroleum in infantile diarrhœa, 544
Petroleum (lamps and oil) question, 585, 974; Bill, 894
Phagedæna of the nose and face, 942
Pharmaceutical Society of Great Britain, 1455
Pharmaceutical chemists, French, objectionable methods of, 1172
Pharmaceutical Testing, A Manual of (review), 626
Pharmacopœia of Guy's Hospital (review), 468
Pharmacopœia (see also British Pharmacopœia)
Pharmacy, Year-book of (review), 392; Aids to (review), 1449
Pharmacy (see also Materia medica)
Pharyngitis, membranous, chronic recurring, 179
Pharynx, a curtain ring in the, for eight years, 1207
Philadelphia, the College of Physicians of, lectures on surgical pathology at, 871
Philip, Dr. A., thirst, 1565
Philippi, Dr. F. A., diet of diabetic subjects, 72
Philippines, plague in the, 117
Phillips, Mr. H., deformity of the arm, 101
Phillips, Mr. H. C., hypospadias, 1208
Phillips, Dr. John (Southsea), protracted gestation, 94
Phillips, Dr. John (London), extra-uterine gestation, 778
Phillips, Dr. S., bradycardia, 1208
Phlorizin, the production of glycosuria by, 706
Phosphates in the urine, 850
Phosphates (see also Bynoglycerophosphates, Glycerophosphates)
Phosphatic diabetes, 850
Phosphorus, poisoning by, reports and regulations relative to, 353, 407; yellow, "strike anywhere" matches made without, 407
Photographic Record Association, the National, 849
Phthisical insane, isolating the, 248
Phthisical patients, sanatoria for, 135, 275, 347, 425, 1481, 1566; sleeping out of doors for, 552
Phthisis, heroin in, 180; the open-air treatment of, 284; notification of, 386, 1034, 1915; sanatorium treatment of, 388; the contagiousness of, a seventeenth-century physician on, 1845
Physical training (or drill) in schools, 398, 506, 1039
Physician, an Old, Fads of (review), 1077; a seventeenth-century, on phthisis, 1845
Physics, Experimental (review), 173
Physiologie, L'Électricité en (review), 317
Physiology, Golden Rules of (review), 469; Journal of (review), 547, 1369; A Text-book of (W. S. Hall) (review), 860; A Manual, &c. (review), 861; A Text-book of (M. Foster) (review), 1214; Elementary, Lessons in (review), 1214; Comparative, of Animals (review), 1288; Handbook of (review), 1289
Pickles, adulteration of, 48
Picton, Mr. J. A., juvenile offenders, 248
Pietermaritzburg, the College Hospital, 719
Pigs, the unsexing of, 866
Pill, a female, request for the formula of, 590
Pilocarpine, the chemistry of, 1603
Pinkerton, Dr. J., omphalitis, 1656
Pink-eye in horses, the bacillus of, 201
Pinto, Dr. Guiseppe, the late, 137
Pipes (see Water pipes)
Pitcairn, Mr. E. H., Unwritten Laws (review), 946
Pituitary gland, tumour of the, 401
Place, Mr. F. E., equine tetanus, 538
Placenta, bipartite, 1136; prævia, 1660; the delivery of the, the Dublin method of effecting, 1730
Plague, opinions of Indian non-medical officials on, 65; on board ship, 69; precautions against the importation of, 179, 274; alleged, in cats, 180; proposed hygienic congress on, 349; alleged fatal case of, in a bacteriological laboratory, 506; carbolic acid in, 614; American methods of dealing with, 629; precautions against, in the United States, 662; paper on, read before a society, 780; conveyed by a flea-bite, 810; viewed from several aspects, 1063; and its dangers, 1140; the epidemiology of, 1273; an unfounded rumour of, in Glasgow, 1379; atropine in, 1445; alarm of, in Smyrna, 1456, 1672; incubation period of, 1508; contracted from the bite of a rat, 1513; and the money market, 1597; a curious theory of, 1669; introduction and spread of, 1789; prophylaxis of, 1898; precautions against, in Canada, 1915
Plague in India, 65, 130, 270, 345, 419, 423, 499, 657, 665, 732, 884, 966, 1031, 1096, 1247, 1321, 1402, 1548, 1608, 1679, 1758, 1911
Plague in San Paulo, 69; in the Philippines, 117; in Singapore, 153; in Mauritius, 182, 482, 639, 1023, 1086, 1147, 1225, 1817; in Portuguese India, 253; in Russia, 257, 350; in New Caledonia, 427; in Hong-Kong, 585; in Aden, 639; in Australia, 657, 810, 1023, 1081, 1099, 1223, 1297, 1377, 1470, 1548, 1679, 1685, 1758, 1836, 1908; in the Argentine Republic, 721, 737, 1022; in Paraguay, 737, 1065; in Alexandria, 1534; erroneous announcement of, in Ceylon, 1817; in San Francisco, 1915; in Honolulu, 1916
Plague, Bubonic (review), 1076
Plague Commission, the Indian, the report of, delay in the publication of, 270; report of, upon Haffkine's anti-plague inoculation, 567, 713; statistical methods of, 568, 724
Plague cultures, novel medium for, 270
Plague prophylactic, inoculations with, 258, 345, 424, 1911; preparation of, 270, 568
Plant, The Flowering (review), 945
Plarr, Mr. Victor G., lecturers and lectures at the Royal College of Surgeons of England, 1894
Plasmon, 1335
Platt, Mr. J. E., aneurysmal varix, 622; intestinal obstruction, 781
Playfair, Dr. W. S., congress on gynæcology, &c., 1398
Pleurisy caused by Eberth's bacillus typhosus, 480
Plombières, the treatment of appendicitis at, 645
Plumber, a poem on the, 211
Plumbers' Company, Sir Philip Magnus and the, 638; Registration Bill, 1816
Plumbism, parotitis from, 114
Plymouth: Hospital Saturday, 50; public health, 155; drainage, 973
Plymouth Royal Eye Infirmary, 206; Borough Asylum, 1114
Pneumococci in corneal ulcers, 464
Pneumococcic osteo-arthritis, 1740
Pneumococcus, the toxins of, 166
Pneumonia, pathology and treatment of, 460, 461, 544; with streptococci in the secretions, 1136
Pneumonia in Middlesbrough, 1380
Pneumonia, diphtheria, and typhoid fever, concurrent, 1003
Pneumothorax in an apparently healthy man, 1443; with a valvular perforation of the pleura, diagnosis and treatment of, 1456
Pneumothorax (see also Hæmo-pneumothorax and Pyo-pneumothorax)
Pochin, Dr. F. L., inversion of the uterus, 381
Poetry: the plumber, 211; the mother's call, 355; the public vaccinator, 744; the autocratic doctor, 1042; the doctor's dream, 1105, 1180; General Baden-Powell, 1846
Poisoning by carbolic acid, 67; by corrosive sublimate, 95, 859; by lead, phosphorus, and arsenic, 407; by eserine, 790; by carbon dioxide, 928; by carbon monoxide, 1009; by arum maculatum, 1176
Poisoning (see also Brass-poisoning, Lead-poisoning, Ptomaine poisoning)
Poisons Act, 1565
Police Sanitaire (see Hygiène)
Politics, medical, 943
Polyclinic (see Medical Graduates)
Polycoria in both eyes, 1210
Pompeii (see Mirage)
Pons Varolii, hæmorrhage into the, 1067
Pontypridd, diphtheria at, 699
Poole, Cornelia Hospital at, 712; medical report for, 1027
Poor, aids to the, in a rural parish, 45; guardians of the, and the Vaccination Act, 177; re-housing of the, 268; housing of the, 1179, 1665
Poor-law, medical fees under the, 117
Poor-law medical officers, early, 45; Medical Officers' Association, the Scottish, 135
Poor-law (see also Dispensers, &c.)
Poore, Dr. G. V., the dwelling-house, 566
Pope, the medical attendants of the, 205
Pope, Dr. H. C., cases exhibited, 710; death certificates, 1207
Popert, Mr. A. J., impotence, 1136
Popliteal aneurysm, 463; region, sarcoma of the, 941
Pork, poisoning by, 1894, 1918
Porro's operation, case of, 1517
Portadown, water-supply of, 136
Porter, Dr. C., presentation to, 1381
Porto Rico, indigence in, 971
Portuguese India, plague in, 253
Post-influenzal deafness, oxygen in, 510
Post-mortem examinations in hospitals, difficulties in making, 581
Post-mortem Room, A Manual for the (review), 240
Post nubila Phœbus, 736
Post Office, the sending of bacteriological specimens through the, 1014
Post Office service, medical certificates in the, 429; infectious disease in the, 586
Postage stamp, the new halfpenny, chemistry of, 1299, 1457
Postal Medical Officers, Association of British, annual dinner, 1534, 1902
Potter, Dr. H. P., tetanus, 705
Pottery, Lead Compounds in, from the Potter's Point of View (review), 291
Pottery districts, lead-poisoning in the, 879 966, 1031
Pott's disease or fracture of vertebræ? 232
Powell, Sir R. D., Neale's Digest, 420; rheumatism, 920
Power, Mr. D'Arcy, suppression of urine, 25; case exhibited, 384
Power, Mr. H., Neale's Digest, 420
Power, Mr. W. H., appointed medical officer to the Local Government Board, 247; placed on a Royal Commission, 482
Powys, Mr. A. O., cancer, 892
Poynton, Dr. F. J., heart wall in diphtheria, 1352
Practice (see Civil practice, General practice, Medical practice)
Practitioner (see Colonial practitioner, English-speaking practitioner, Foreign practitioner, General medical practitioner, Medical practitioner, United practitioners, Unqualified practitioner, Unregistered practitioner, Young practitioner)
Practitioners, M.D. Durham, for, 1468
Predtechenski, Dr., chyluria, 637
Pregnancies, unusual lapse of time between two, 1413, 1481, 1566
Pregnancy, abdominal, 31; simultaneous intra-uterine and extra-uterine, 274; ectopic, 466; extra-uterine, 708; tubal, 941, 1730
Pregnancy, poisoning by corrosive sublimate during, 95; albuminuria in, 169; the vomiting of, 212, 284, 355; nephrectomy during, 608; complicated by fibrous tumour of the cervix, 613; swelling of the legs and body during, 622; appendicitis in, 809
Pregnancy, &c., The Hæmorrhages of (review), 105
Preparations, secret, the sale of, 349
Prescribing, public, 576
Prescription, property in a, 355
Prescriptions, faulty, 1098
Prescriptions and the Art of Prescribing, Lessons on (review), 1214

PRESENTATIONS AND TESTIMONIALS.—To Mr. and Mrs. J. C. Weld, 38; to Mr. R. T. Williams, 38; to Mr. R. Gravely, 141; to Dr. A. McMillan, 206; to Mr. H. T. M. Alford, 278; to Dr. W. B. Jones, 278; to Mr. J. Carlisle, 352; to Dr. F. F. Caiger, 352; to Dr. J. Sutherland, 352; to Mr. E. F. Eliot, 428; to Mr. Lennox Browne, 428; to Mr. W. Jones, 460, 579; to the Earl of Chesterfield, 557; to Dr. R. L. Brander, 584; to Dr. W. C. Smith, 584; to Dr. E. P. Manby, 584; to Dr. J. W. Wigmore, 584; to Mr. J. P. Bush, 664; to Mr. F. B. G. Stableford, 813; to Mr. E. F. H. Burroughs, 813; to Mr. A. H. McDougall, 813; to Mr. F. J. Marshall, 867; to Dr. F. Page, 967, 974; to Dr. T. Hamilton, 974; to Mr. W. W. Lake, 974; to Dr. M. Greenwood, 974; to Mr. E. McMillan, 1034; to Miss May Anderson, 1102; to Dr. J. Jones, 1253; to Dr. W. R. N. Cole, 1253; to Mr. L. F. Houghton, 1253; to Mr. W. Ashford, 1253; to Mr. F. Woods, 1253; to Mr. S. and Mrs. Finlay, 1253; to Dr. S. C. Jamieson, 1253; to Mr. W. K. Bell, 1253; to Mr. W. H. Lloyd, 1253; to Mr. E. W. Jollye, 1253; to Mr. W. R. Williams, 1253; to Mr. J. L. A. Hope, 1253; to Mr. J. M. Carvell, 1253; to Dr. F. Wilson, 1332; to Dr. C. Porter, 1381; to Miss Nightingale, 1456; to Mr. E. S. Forde, 1476; to Dr. W. K. Clayton, 1476; to Dr. H. M. and Mrs. Robertson, 1476; to Mr. L. M. Griffiths, 1476; to Dr. H. L. Ormerod, 1476; to Mr. Kristnalal Datta, 1562; to Mr. A. N. Heron, 1562; to Dr. A. Duke, 1562; to

Dr. M. Young, 1562; to Mr. S. O. Lane, 1562; to Mr. C. W. Seccombe, 1562; to Mr. D. Thomas, 1697; to Dr. E. A. Chill, 1764; to Dr. A. J. Boyd, 1791; to Dr. D. Dougal, 918

Preservatives in food, 48, 207, 228, 279, 429, 507, 586, 1301, 1409
Preston (see East Preston)
Prickett, Dr. M., encephalitis, 1441
Prideaux (see Helen Prideaux)
Pridham, Mr. F., time between pregnancies, 1413
Priestley, Dr. J., area condemnation, 943
Priestley, Sir William, obituary, 1147
Prison or the rod for juvenile offenders? 248
Prison dietary, 1039
Prisoner in the Peninsula, 1380
Prisons, corporal punishment in, 974, 975
Pritchard, Dr. U., antisepsis of the auditory meatus, 543
Pritchard, Dr. E., scurvy, 1466
Prizes: Reuben Harvey, 135; Bressa, 205; for M.D. thesis at Cambridge, 664; Walker, 800; Jacksonian, 1089; John Tomes, 1089; Rogers 1670; Wakley, 1816; Balbi-Valier, 1914
Pro montibus, 1173
Proctor, Mr. B. S., Pharmaceutical Testing (review), 626
Profession, organisation of the, 143, 342, 497, 576, 655; our poll of the, 549, 872
Professional duty, a victim to, 348; union, 432; ethics, 1172; secrecy, 1172, 1292, 1414
Professional medicine and medical deontology (see Medical Ethics, congress of)
Professions for Boys (review), 625
Prosecutions: of a pretended life insurance company's agent, 72, 182, 253, 271; vaccination, 272, 893; by an osteopath, 275; for Sunday shaving, 394; for possession of unwholesome food, 395; for selling camphorated oil not in accordance with the British Pharmacopœia, 550, 804; for infectious cases using street cabs or being at large, 633, 1739, 1918; for failing to remove snow, 633; under the Factory Acts, 635; of a newspaper seller, 637; for adulteration of milk, 659; of an unregistered practitioner by the General Medical Council, 715; of a lecturer on sexual subjects, 869; of milk venders, 894, 967; of a journalist, 950; of grocers and confectioners, 1063; for unauthorised sale of strychnine, 1097
Prostate, enlarged, vasectomy in, 1275; suprapubic lithotomy in, 1652
Prostatectomy, suprapubic, 465, 1075; perineal, a new method for, 774
Prostitution, the legal control of, 328
Protamines and their cleavage products, 619
Protargol, soloids of, 1290
Proteid, a peculiar, in the urine, 540
Proteids in the urine, the forms and significance of, 539, 853, 966
Protozoa, flagellated, of field rats, 1441
Prudential Assurance Company, 893
Pryor, Dr. W. R., Pelvic Inflammation (review), 1367
Pseudo-bulbar paralysis, case of, 28
Pseudo-diphtheria, 1542
Pseudo-diphtheria bacillus, 1441
Pseudo-diphtheritic throat, 1213
Psoriasis and osteo-arthritis, 1072
Psycho-pathology (see Neurology)
Ptomaine poisoning, 1894, 1918
Ptosis with paresis of the external rectus, 544
Pubic region, abscess in the, 710
Pubic (see also Suprapubic)
Public health, bacteriology and, 311; war news and the, 629
Public Health, Royal Institute of, Congress in Aberdeen, 425, 1327
Public Health Act, prosecution under the, 633
Public prescribing, 576
Puerperal Eclampsia, The Treatment of, by Saline Infusions (review), 105
Puerperal septicæmia, antistreptococcic serum in, 315; case of, 466
Puerperal uterus, involution of the, 466; eclampsia, cases of, 619, 709, 938, 1717
Puerperium, gonorrhœa and the, 1731
Pulex irritans, 1925
Pulmonary area, the second sound in the, 28; circulation, the action of certain drugs on the, 706; disease, physical signs of, 997
Pulmonary tuberculosis, myoidema in, 230, 575
Pulsus bisferiens, 456; paradoxus, 535, 1285
Punch and the children, 475
Punishment, corporal, in prisons, 974, 975
Purcell, Dr. F. A., specimens exhibited, 464
Purefoy, Dr. R. D., ulceration of the urethra, 239; report of the Rotunda Lying-in Hospital, 707, 1074
Purslow, Dr. C. E., fibroid uterus, 780
Pustule, malignant, cases of, 164, 1005
Putnam, Dr. J., not the disease only, &c., 476
Puzey, Mr. C., malignant pustule, 164
Pye-Smith, Dr. P. H., pulmonary disease, 997
Pylorectomy, 541, 838, 1000, 1590
Pyloroplasty, cases of, 387, 541, 1000, 1009
Pylorus, congenital stenosis of the, 758
Pyocyanic toxin, 1441
Pyonephritis, calculous, 623
Pyonephrosis with imperforate right ureter, 1131
Pyo-pneumothorax due to empyema, 1724
Pyorrhœa alveolaris, 1728
Pyosalpinx, 29, 1276

Q

Quack, the sexual, 818, 869, 1767; the womb, 900; the registered, 981, 1042
Quack dentistry, the anæsthetist's position towards, 283; remedies, 466
Quack (see also Unqualified practitioner)
Quackery, aspirants to, 590, 899; rampant and beastly, 1565
Quacks and the Workmen's Compensation Act, 283; and abortion, 356, 510, 1297
Quarantine against plague, American regulations for, 629
Queen, visit of the, to the Royal Isle of Wight Infirmary, 557; to the Royal Victoria Hospital, Netley, 640, 1461; to the Herbert Hospital, Woolwich, 957
Queen, surgeons to the, appointment of, 868
Queen Victoria cots in the Dublin hospitals, 1035; District Nursing Association, 1097
Queen (see also Diamond Jubilee)
Queen Charlotte's Lying-in Hospital, 664
Queen's visit to Ireland, 716, 1250; birthday, 1165, 1526, 1539, 1601, 1911
Queensland, vital statistics of, 664
Quincke's disease, 1206
Quinine, the distribution of, in the Dutch Indies, 581, 635; in malaria, 952; hydrobromide, tabloids of, 1449

R

Rabbit, carcinoma in a, 166; rabies in the, 760
Rabies, lectures on, 593, 758; functional disturbance simulating, 596; Pasteur treatment of, in the Dutch East Indies, 635; in Ireland, 814; extermination of, 1919
Rabies (see also Antirabic)
Radford, Dr. W. T., obituary, 1763
Radiology (see Electrology and ROENTGEN RAYS)
Radius and ulna, partial resection of the, 168
Radius, absence of the, 618
Ragged School Union and the cure of cripples, 211, 283
Railton, Dr. T. C., infant mortality, 544
Railway Passengers' Assurance Company, Shaw and the, 110, 263; trains, sale of liquor on, 273; employés, the physical fitness of, 662; accident at Slough, 1893; Medical Officers' Union, 1907
Railways, underground, considered from a sanitary standpoint, 1328, 1373, 1385
Rainfall in Ulster, 135
Rajputana States, The Western: a Medico-Topographical and General Account of Marwa, Sirohi, Jaisalmir (review), 171
Ramage, Mr. David, the late, 66
Ramsay, Dr. F. W., inversion of the uterus, 465
Ramsden, Dr., blood examinations, 544
Rangoon, medical matters in, 327
Rankin, Dr. G., diabetes, 859
Ranvier, Mons. L., the animal cell, 251
Raper (see Lees and Raper)
Rat, the bite of a, plague contracted from, 1513
Rates, local, hospitals and, 715, 895
Rating of scientific institutions, 1814
Ration of the United States army, 137
Rats as carriers of plague, 179, 629; death of, during plague epidemics, 424; field, protozoa of, 1441
Raw, Dr. N., pneumonia, 460, 461, 544; eclampsia, 709
Raynaud's disease, case of, 388
Raynaud's Disease (review), 316
Rebman, Mr. F. J., vaccine lymphs, 1540
Recruiting, the Inspector-General for, report of, 1314
Recklinghausen's disease, a case allied to, 1283
Rectal deformity, 232; carcinoma, high, resection for, 1004; disorder, backache as a symptom of, 1128; cancer, types of, 1135
Rectum, imperforate, the treatment of, 304; dermoid cyst expelled from the, 315; cancer of the, 502; excision of the, 1007, 1075; prolapse of the, 1657
Red Cross Hospital, the Scottish National, 739, 962, 1327
Reflexes, superficial and deep, 927
Reform Club, dinner at the, 1293, 1301, 1313
Reformatory, the certified, the inebriate and, 718
Registered quack, 981, 1042
Registrar-General for England and Wales, the office of, 41; the new, 402; annual report of the, for 1898, 1023, 1087
Registrar-General for Ireland, death of the, 272; the new, 501, 659; appointment of a medical man as superintendent in the office of the, 895, 1035
Regnier, Dr. Paul, topographical relations of the brain, &c., 525
Rehousing of the poor in Dublin, 268
Reid, Dr. G. A., alcohol, 198; cancer, 1094
Reid, Sir James, an honorary degree for, 1097
Reid, Dr. W. L., ectopic pregnancy, 466
Reissmann, Mr. C., gunshot wound, 704
Relief Fund, THE LANCET, 36A, B, C, D, 43, 51
Relieving officers, charges against, 1736
Remedies, patent and quack, 466
Remedies, The Newer (review), 317
Renal sarcoma, laparo-nephrectomy for, 239; calculi, shown by the Roentgen rays, 503; calculi, the formation of, 1147
Rentoul, Dr. R. R., proposed medical service, 267; the midwives question (or Bill), 731, 805
Representation, direct, the ethics of, 1162, 1243
Reservists, the families of, medical attendance on, 30
Respiration, alcohol and the, 478; Cheyne-Stokes, ocular phenomena associated with, 537; exalted, the production of glycosuria by, 706; failure of, under anæsthesia, 1518, 1656
Respiration (see also Tachypnœa, Pulsus paradoxus)
Respiratory affections, heroin in, 180; system, the after-effects of ether on the, 389, 557, 710, 779; jacket or waistcoat, 457; system in typhoid fever, 913; centre, paralysis of the, under chloroform, 1210; impediment, management of the anæsthetic in, 1714
Retina, the central arteries of the, occlusion of both, 1801
Retro-peritoneal fibro-cystic tumour, 1514
Revaccination, public vaccinators and, 252; a rapid result of, 1004

REVIEWS AND NOTICES OF BOOKS.

Encyclopædia Medica: under the general editorship of Chalmers Watson, M.B., M.R.C.P. Edin., 31, 1286—Laboratory Work in Bacteriology: by Frederick G. Novy, Sc.D., M.D., second edition, 31—Handbuch der Gynäkologie: edited by Professor Veit, 32—Text-book of the Embryology of Invertebrates: by Dr. E. Korschelt and Dr. K. Heider, 33—Atlas und Grundriss der Bakteriologie, und Lehrbuch der Speziellen Bakteriologischen Diagnostik: von Prof. K. B. Lehmann und Dr. R. O. Neumann, second edition, 33—Manual of Bacteriology: by Robert Muir, M.A., M.D. Edin., and James Ritchie, M.A., M.D. Edin., second edition, 34—Chemical and Microscopical Aids to Clinical Diagnosis: by C. C. Douglas, M.B., B.Sc. Edin., 34—Dictionnaire des Termes de Médecine (Français-Anglais): by H. de Méric, M.R.C.S. Eng., 34—System of Diseases of the Eye by American, British, Dutch, French, German, and Spanish Authors: edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., 104—The Hæmorrhages of Pregnancy, Parturition, and the Puerperium: the Treatment of Puerperal Eclampsia by Saline Infusions, with Notes of 17 Cases: by Robert Jardine, M.D. Edin., 105—The Western Rajputana States: a Medico-Topographical and General Account of Marwa, Sirohi, Jaisalmir: by Lt.-Col. Archibald Adams, I.M.S., M.D., M.Ch. R.U.I., F.R.C.S. Irel., 171—Diseases of the Eye: a Handbook of Ophthalmic Practice for Students and Practitioners: by G. E. de Schweinitz, A.M., M.D.; third edition, 172—Nursing: its Theory and Practice: by Percy G. Lewis, M.D. Brux., M.R.C.S. Eng., 172—Experimental Physics: by Eugene Lommel; translated from the German by G. W. Myers, 173—Practical Text-book of Midwifery for Nurses and Students: by Robert Jardine, M.D. Edin., 173—The Carlsbad Treatment for Tropical and Digestive Ailments and How to Carry it out Anywhere: by Louis Tarleton Young, M.D., B.Ch., B.A. Dub., Major I.M.S.; second edition, 173—The Pathologist's Handbook: a Manual for the Post-mortem Room: by T. N. Kelynack, M.D. Vict., M.R.C.P. Lond., 240—Lehmann's Medicinische Hand-Atlanten (Atlas of the Nervous System in Health and Disease): by Dr. Christfried Jakob; second edition, 240—Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie: par Bourneville, avec la collaboration de MM. Cestan, Chapotin, Katz, Noir, Phillippe, Sebilleau, et Boyer, 241—Dermato-histologische Technik: by Dr. Max Joseph and Dr. Georg Loewenbach, 241—A Pocket Medical Dictionary: by W. A. Newman Dorland, A.M., M.D., 241—Who's Who? for 1900, 241—Annual and Analytical Cyclopædia of Practical Medicine: by Charles E. de M. Sajous, M.D., 316—Raynaud's Disease: by

Thos. Kirkpatrick Monro, M.A., M.D. Glasg., 316—The Roentgen Rays in Medical Work: by David Walsh, M.D. Edin.; second edition, 317—L'Electricité en Physiologie: par M. Léon Morokhowetz, 317—Organic Chemistry: by W. H. Perkin., jun., Ph.D., F.R.S., and F. Stanley Kipping, Ph.D., D.Sc., F.R.S., 317—Elements of Practical Materia Medica and Pharmacy: by William Wood, M.B., C.M. Edin., 317—The Newer Remedies: by Virgil Coblentz, Ph.D., F.C.S.; third edition, 317—Progressive Medicine: a Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences: edited by Hobart Amory Hare, M.D., 389—The Races of Man: an Outline of Anthropology and Ethnography: by J. Deniker, Sc.D., Paris, 390—Experiments on Animals: by Stephen Paget, F.R.C.S. Eng., 391—A Manual of Surgery for Students and Practitioners: by Wm. Rose, M.B., B.S. Lond., F.R.C.S. Eng., and Albert Carless, M.S. Lond., F.R.C.S. 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PERIODICALS.—Janus, 34—Revue de Gynécologie et Chirurgie Abdominale, 35, 1594—Annales de Gynecologie et d'Obstétrique, 35, 1663—Archiv für Dermatologie und Syphilis, 171—The Journal of Anatomy and Physiology, 241, 1289—Revue d'Hygiène et de Police Sanitaire, 242—The Journal of State Medicine, 242—Journal of Physiology, 547, 1369—Quarterly Journal of Microscopical Science, 547, 1370—Veterinarian, 861, 1077, 1523—Veterinary Journal, 861, 1521—Treatment, 1077—Caledonian Medical Journal, 1139—Mercy and Truth, 1139, 1889—Edinburgh Medical Journal, 1215, 1889—Scottish Medical and Surgical Journal, 1215, 1889—Dublin Journal of Medical Science, 1215, 1889—The Medical Examiner, 1370—The Journal of the Sanitary Institute, 1370

Reynolds, Prof. E., gas-lighting, 969, 974
Rheumatic arthritis in a child, 457; diseases of the heart, treatment of, 923; endocarditis, the prevention of, 1169; fever, the heart wall in, 1352; fever and its complications, statistics of, 1581
Rheumatism, liq. auri brom-arsenatis in, 72; with embolism, 457; treatment of, 721, 761, 778, 871, 920, 933, 1016, 1094; acute, valvular disease in, the prevention of, 776; the organism (?) of, 964; acute, hyperpyrexia in, 1725
Rheumatoid arthritis, the excretion of nitrogen in, 706
Rhinoplastic Operations, with a Description of Recent Improvements in the Indian Method (review), 1594
Rhodes, Dr. J. M., insanity, 951
Rhodesia, the climate of, 1365
Ribs, fragility of, in anæmia, 239; in insanity, 347
Ribs, incomplete development of, 1437
Rice, Dr. W. R., public medical service, Coventry, 1542
Rice, Mr. J. D., femoral fractures, 1130
Richards, Dr. M., annual report for Chesterfield, 1027
Richardson, Dr. W. P., gangrene of the feet, 388
Richardson, Mr. S. W. F., the Boer wounded, 487
Richet, Dr. Ch., epilepsy, 554
Rickets, late, case of, 1071
Rideal, Dr. S., preservatives in food, 228
Risely, Dr. S., abscess of the brain, 388
Ritchie, Dr. James (Oxford), Bacteriology (review), 34
Ritchie, Dr. James (Edinburgh), pregnancy with complications, 169
River Plate, public health on the, 737
Rivers, Dr. W. H. R., Physiology (review), 1214
Roberts, Dr. F. T., an appeal, 48, 62; Neale's Digest, 420
Roberts, Mr. E., optic neuritis, 1350
Roberts, Mr. H., homes for incurables, 1925
Roberts, Dr. Ll., specimen exhibited, 315
Roberts and Co., Messrs., Trousseau's wine, 898
Robertson, Dr. J. G., aneurysm, 1443
Robertson, Dr. R., the late, 65
Robertson, Dr. W. G. A., saliva, 808, 1363
Robinson, Dr. M. K., boric acid in food, 131
Robinson, Mr. T., measles, 941
Robson, Mr. A. M., the stomach, 671, 747, 830, 947
Roche, Prof. A., Irish schools, 689
Rockwell, Dr. W. H., Physiology (review), 861
Rockwood, Dr. E. W., Physiological Chemistry (review), 626
Rod or prison for juvenile offenders? 248
Roe, Mr. C. D., sanatoria, 590

ROENTGEN RAYS.—The rays in favus (Dr. Norman Walker), 27—The rays in lupus (Dr. Norman Walker), 27; (Mr. J. F. Hall-Edwards), 637—Ray apparatus at a missionary station, 72—Packing-needle in the descending colon localised by the rays (Mr. N. Davies-Colley), 96—Fractured patella discovered by means of the rays (Mr. A. Barker), 169—Depilation by the rays (Dr. N. Wood), 231—Roentgen Rays in Medical Work (Dr. D. Walsh) (review), 317—Congress of Medical Electrology and Radiology in Paris, 398, 1807—Foreign body in the eye shown by the rays (Mr. C. G. Lee), 460—Focus-tube dermatitis (Dr. A. H. Hobbs), 465—Renal calculi shown by the rays (Mr. Wuest), 503—Radiographic researches on the topographical relations of the brain, &c. (Dr. Paul Regnier and Dr. Jules Glover), 525—Skiagram of hallux varus (Mr. J. Poland), 621—Radiographs of fractures (Mr. Noble Smith), 622—Superfluous hair destroyed by the rays (Mr. James Startin), 654—The rays in dental cases (Mr. G. J. Goldie), 939—Dislocation of the epiphysis of a metacarpal bone shown by the rays (Mr. E. K. Herring), 1130—Demonstration on the rays (Mr. J. H. Gardiner, F.C.S., and Mr. James Wimshurst, F.R.S.), 1212—The rays in the diagnosis of diseases of the nose and throat (Dr. John Macintyre), 1591

Rolleston, Dr. H. D., hæmo-pneumothorax, 458

ROME, CORRESPONDENCE FROM.—Hygiene and the Holy Year, 68—Dr. Mazzoni and the ceremony of the Porta Santa, 68—The crusade against malaria, 69—Plague at San Paulo, 69—A contre-coup to the Holy Year, 136—Three medical worthies, 137—Death of Prof. Francesco Orsi, 204—The Vatican consultants in medicine and surgery, 205—Award of the Bressa prize, 205—Influenza, 274, 349, 426—La Villa Igiea, Palermo, 275—A congress of international hygiene, 349—Influenza and the Holy Year, 426—Small-pox, 503—Italy and the wounded from South Africa, 503—Sanitary precautions at the French frontier, 503—Illness of Dr. Baccelli, 503—Apparent death and premature burial, 582, 661—The English-speaking practitioner in Italy, 582—The crusade against tuberculosis, 661—Post nubila Phœbus, 737—Public health on the River Plate, 737—THE LANCET and Italy's climatic resources, 809—The Senator Lorenzo Bruno, 810—How the "Rè galantuomo" died, 810—International hygiene: the lazzaretto of Mogador, 889—In memory of Italy's surgeons fallen in battle, 889—Prof. Robert Koch in Italy, 889—Italian hygiene at the Paris Exhibition, 1036—Cacodylate of soda, 1037—Pro montibus, 1173—Oysters and infective diseases, 1173—The international congress against tuberculosis, 1329—Reciprocity of medical practice, 1913—Award of the Balbi-Valier prize, 1914—Medical legislators, 1914—The malaria problem, 1914

Rose, Prof. W., Manual of Surgery (review), 391
Rosenheim, Mr. Otto, uric acid, 1708
Ross, Dr. D., gout, 1133
Ross, Maj. R., Malaria Expedition, &c. (review), 1010; a suggestion, 1400
Rotunda Hospital (see Dublin)
Roughton, Mr. E. W., dislocation of the hips, 102; injury to femur, 233; nasal discharges, 1073
Row, Dr. R., atropine in plague, 1445
Rowan, Dr. J., sarcoma, 1135
Rowland, Mr. S., liquid air, 1130; serum diagnosis, 1441
Royal Academy of Arts, 1312
Royal Army Medical Corps: pay in India, 64; in Egypt, 333; pass list, 495; nominations, 579; enlistment, 664; *Blackwood's Magazine*, 803; officers who have lost their lives or been wounded in the war, 804, 964, 1026, 1029, 1755, 1830; officers mentioned in despatches, 882, 1029; messes in India, 882; Parliamentary references, 740, 894, 948, 1039; the stall at the National Bazaar, 1465, 1601; strength in South Africa, 1819
Royal Army Medical Corps (see also Services, War)
Royal Army Medical Corps Fund, 261, 334, 393, 416, 477, 572, 888, 1029, 1143, 1222, 1817
Royal College of Physicians of London: the official lectures and the Murchison scholarship, 247; admission of Members, 277, 331; nomenclature of diarrhœa, 320, 331; ordinary meeting of comitia, 331; appointment of orators and lecturers, 331; removal of names from the lists of Fellows, Members, and Licentiates, 331; Goulstonian lectures, 821, 910, 1050, 1079; Milroy lectures, 865, 1344, 1426, 1494; Lumleian lectures, 903, 985, 1045; re-election of the President, 1086, 1161; extraordinary meeting of comitia, 1161, 1537; presidential address, gifts to the College, congress on tuberculosis at Naples, 1161; communication from the Metropolitan Asylums Board relative to scarlet fever, Congress on Medicine at Paris, 1162; election of Fellows, 1317, 1537; Croonian lectures, 1606, 1779, 1849
Royal College of Surgeons of England: pass lists and admission of Members, 69, 584, 663, 1696, 1763; quarterly meeting of council, 191, 1089; meeting of Fellows and Members, 191; reports from the Discipline Committee, 191; Hunterian orator for 1901, the official lectures, 249, 671, 747, 830, 947; Erasmus Wilson lectures, 435, 521; dental students with the army in South Africa, 487, 490, 800; ordinary meeting of council, 490, 800, 1464; the Cartwright Trust, 490; the International Medical Congress in Paris, 490; Arris and Gale lectures, 513, 596; Midwives Bill, 800; Walker prize, 800; Jacksonian prize, 1089, 1464; John Tomes prize, 1089, 1464; election of Fellows, 1089, 1464; candidates for the Council, 1456, 1529, 1603, 1670, 1674, 1816; celebration of the centenary, 1663, 1808; the lecturers and lectures from 1810 to 1900, 1894; meeting of Fellows, 1897; election of members of council, 1903
Royal College of Physicians of Edinburgh, 506
Royal College of Physicians of Ireland: Reuben Harvey memorial prize, 135; nomination to the R.A.M.C., 740; admission of an honorary Fellow, 1086
Royal College of Surgeons in Ireland: election of a member of council, 206; the various examinations, 505; pass list, 664, 1562; decorations for the Queen's visit, 968; admission of Fellows, 1039, 1917; election of examiners, 1176, 1408; special Fellowship examination, in recognition of the Royal visit, 1252; the presidency, 1466
Royal Colleges of Physicians and Surgeons, Examining Board in England by the, pass lists, 206, 663, 738, 1038, 1175; arrangements at the examinations, 283
Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, pass list, 1332
Royal Colleges of Physicians and Surgeons, conjoint examinations in Ireland by the, 505
Royal Commissions (see Water-supply, Sewage disposal, Licensing laws)
Royal Devon and Exeter Hospital, 639, 974, 1120
Royal Edinburgh Asylum for the Insane, 733; Hospital for Sick Children, 887
Royal Free Hospital, new museums and laboratories, 720, 739
Royal Institution, 43, 849, 974, 1038, 1098, 1742
Royal Isle of Wight Infirmary, 557
Royal Medical Benevolent College, 1554, 1610, 1816
Royal Meteorological Society, 278, 635, 791, 953
Royal naval medical reserve, 882
Royal navy medical department, 898, 982, 1106
Royal navy, food of the, 814
Royal Navy List, Lean's, 334
Royal navy medical service, 638, 664
Royal navy medical service examination, 729
Royal Portsmouth Hospital, 1177
Royal Society of Edinburgh, papers read before the, 808
Royal Society of London, papers read before the, 849, 1184; conversaziones, 1392, 1813
Royal Statistical Society, 1896
Royal University of Ireland, unfavourable criticism of the, 66; appointments at the, 501; the appointment of extern examiners in the, 651
Royal Victoria Hospital, Netley, the war and, 484; visit of Princess Christian, 486; depletion of the staff, 507; visited by the Queen, 640, 1461; seats without backs, 665; proposed special night staff, 740
Royal visits to the wounded, 640
Rumboll, Mr. S., opening the abdomen, 315; ether inhalation, 389, 710
Rural parish, aids to the poor in a, 45; districts, the housing of the working classes in, 864
Russell, Dr. J. C., stricture of the œsophagus, 544
Russell, Dr. J. S. R., cerebellar disease, 708; myotonia, 955; micro-organisms in nervous disease, 1075
Russell, Mr. R. H., dislocation, 851
RUSSIA, CORRESPONDENCE FROM.—Plague in Southern Russia, 350—Diphtheria, 350—New Style and Old Style, 351
Russia, health of, for 1893-1895, 124; bacteriological laboratory at Cronstadt in, 506; new medical faculty in, 1656
Russia (see also Kolobovka)
Rye, the sewerage of, 1634

S

Saccharomycetes, its relation to cancer, 1212
Sachs, Dr. B., cauda equina, 398
Sacral (see Lumbo-sacral)
Saddle, Esmond cycle, 667
St. Andrews University, the M.D. of, 481
St. Andrews and Edinburgh Universities, the representation of, 1249, 1300, 1333, 1380, 1409
St. Austell, appointment of medical officer of health, 893
St. George's Hospital and the Prince of Wales's Hospital Fund, 180; the resident medical officer of, 867
St. John Ambulance Association, the Stockport Centre of the, 253, 1457
St. John of Jerusalem, the Order of, Knights of Grace of, 792
St. Marylebone, medical report for, 1027
St. Pancras, the pauper lunatics of, 1736, 1919
St. Thomas's Hospital Medical School, prize list, 1177
Sajous, Dr. C. E. de M., Practical Medicine (review), 316
Salary, a question of, 982
Saldanha, Mr. C. N., cancer, 1246
Salford, small-pox at, 1898
Salford Workhouse, 272
Salford (see also Manchester and Salford)
Salicylate of sodium in diabetes, 709
Salicylates in rheumatism, 764, 765, 766, 922, 924, 934, 1016
Salicylic acid in urine, 207, 586; in food, 279; the effect of, on digestion, 508
Saline solution, transfusion of, in eclampsia, 105, 709, 938; baths, 709
Salisbury-Sharpe, Mr. W., dust and flies, 1613
Saliva in diseased conditions of the body, 808, 1363
Salol in small-pox, 238; in infantile diarrhœa, 544
Salop, medical officer of health of, 402
Samways, Dr. D. W., mitral stenosis, 64, 267
San Francisco, plague at, 1915

San Paulo, plague at, 69
Sanarelli, Prof., the discovery of the bacillus icteroides by, 477
Sanatoria for phthisical patients, 135, 275, 347, 425, 590, 791, 1481, 1566
Sanatorium, the Royal West of England, 628
Sanatorium treatment of phthisis, 388
Sanitary progress in 1899, 115; authorities, apathy of, 425; work, ladies', 733; bandelet, 818
Sanitary inspectors and medical officers of health, Scotch, 250; women, 347; Bill relative to, 665; qualifications for, 1085
Sanitary Association, the Church, 322; Manchester and Salford, 578; Dublin, 1035
Sanitary Institute, courses of lectures at the, 249; Journal of the (review), 1370; dinner of the, 1528
Sanitation, the church militant for, 817
Sanitätsrath, the title of, 970
Sansom, Dr. A. E., mitral stenosis, 195; rheumatic diseases of the heart, 923
Sarcoma: radius, 168; kidney, 239; humerus, 382; pituitary gland, 401; liver, 427; recurrent, in mother and daughter, 544; jaw, 859; omentum, 930; scapula, 941, 1075; thyroid gland, 941; popliteal region, 941; calcaneum, 1135; choroid, 1135; ovaries, 1366, 1517
Sauces, adulteration of, 49
Saundby, Dr. R., nitropropiol test, 882; diabetes, 1420
Saunders, Dr. A., duck with webless feet, 1589
Savage, Dr. G. H., mental dissolution, 360
Savill, Dr. T. D., University of London, 266; skin lesion, 1071; leprosy, 1283
Sawyer, Sir J., cancer, 848
Scabies, the treatment of, 781
Scalp, avulsion of the, 28
Scapula, excision of the, for sarcoma, 941, 1075
Scapula (see also Interscapulo)
Scarborough Hospital, fatality at, 632
Scarlet fever, the infectivity of, 1133, 1162, 1208; hemiplegia in, 1143
Scattergood, Mr. T., the late, 639; obituary, 737; portrait, 1841
Schaeffer, Dr. Oscar, Atlas und Grundriss, &c. (review), 1807
Schenck, Prof., origin of sex, 321
Schlatter, Prof. Carl, resection of the intestine, 217, 248
Schofield, Mr. C. R., aneurysm, 1443
School epidemics of diphtheria, 236; teacher, chastisement by a, said to have caused death, 424; boards and medical certificates, 667, 743
School (see also Board school, Ragged school)
Schoolmaster, action-at-law by a, against a pupil, 632
Schools, physical training (or drill) in, 398, 506, 1039, 1604
Schools in the slums of Dublin, 199; Irish national, the sanitary condition of, 689; English public, health of, 1482
Schott, Prof., a mineral spring, 806; his treatment of fatty heart, 1144
Schreiber, Dr. D. G. M., Medical Indoor Gymnastics (review), 1013
Schumacher (H.), Dr., mercury in urine, 92, 117
Schweinitz (see De Schweinitz)
Sciatic nerve, section of the, in dogs, 448
Science, The Grammar of (review), 1447
Scientific institutions, the rating of, 1814
Scirrhus, amputation of the breast for, 1276
Scleroderma, diffuse, 1074
Sclerosis, insular, 461

SCOTLAND, CORRESPONDENCE FROM.—Edinburgh Royal Infirmary, 65, 66, 272, 346, 1681—Drugging with chloral, 66—New asylum for the Edinburgh District Lunacy Board, 66—Typhoid fever in Ayr, 66, 202, 272, 347—Edinburgh University, 134, 658, 1170, 1249, 1250, 1327, 1404—"Nordrach-on-Dee," 135—Scottish Poor-law Medical Officers' Association, 135—The late Dr. George Elder, 135—Hospital accommodation of wounded soldiers, 202, 425, 968—Urban mortality in Scotland in 1899, 202—Aberdeen University, 203, 734, 888, 968, 1035, 1327, 1682, 1760—Hospital for incurables at Dundee, 272—Edinburgh Medical Missionary Society, 347—Edinburgh Company Volunteer Medical Staff Corps, 347—Proposed sanatorium for consumptives at Dundee, 347—Edinburgh Town Council and women sanitary inspectors, 347—The Fife miners and medical fees, 347—Aberdeen Royal Hospital for Sick Children, 347—Death of Dr. Henry Jackson, 347—London Scottish Rifle Volunteers in Aberdeen, 347—Death of Sir T. G. Stewart, 424—Royal Hospital for Incurables, Edinburgh, 424—Edinburgh and East of Scotland South African Hospital, 425, 500, 658, 887, 968—Congress of the Royal Institute of Public Health in Aberdeen, 425, 1327—Influenza in Edinburgh, 500, 658—Notification of infectious diseases in Edinburgh, 500—Medical officer of health for the county of Sutherland, 500—Aberdeen Royal Infirmary, 501—Royal Asylum, Aberdeen, 501—Suicide in Scotland, 579—Food-supply of the poor in Edinburgh, 580—Lecture on bacteriology, 658—Royal Edinburgh Asylum, 733—Faculty of Physicians and Surgeons of Glasgow, 734—Health of Edinburgh, 808—Edinburgh Royal Medical Society, 808—Royal Society of Edinburgh, 808—Edinburgh Medico-Chirurgical Society, 808—Royal Edinburgh Hospital for Sick Children, 887—Scottish Association for the Medical Education of Women, 887—Exhibition of hybrids, 888—Recital in aid of the Royal Army Medical Corps Fund, 888—Dundee surgeon for South Africa, 888—Church of Scotland Deaconess Hospital, 967—The late Dr. R. H. Gunning, 968—Maternity Hospital, Dundee, 968—Scottish National Red Cross Hospital, 968, 1327—Aberdeen City Hospital, 968, 1327—Aberdeen Volunteer Medical Staff Corps, 968, 1760—Glasgow Southern Medical Society, 1034—Death of Sir Douglas Maclagan, 1097—Sanitary work on Deeside, Aberdeenshire, 1097—Whooping-cough in Aberdeen, 1097—Laboratory of the Scottish asylums, 1170—Annual report of the medical officer of health of Edinburgh, 1249—The representation of Edinburgh and St. Andrews Universities, 1249, 1404—Dispute between hospital committee and medical men, 1327—The Queen and the Red Cross Hospital movement, 1327—Royal College of Physicians of Edinburgh, 1403—Prevention of tuberculosis, 1404—Proposed memorial to the late Dr. Jackson, 1404—New maternity hospital, Aberdeen, 1404—Hospital Saturday in Aberdeen, 1404—Queen Victoria Jubilee Institute for Nurses, 1472—Torchlight procession by Edinburgh University students, 1550—Aberdeen Dispensary attacked by medical students, 1550—Aberdeen and the Sale of Food and Drugs Act, 1550—Health and sanitary condition of Aberdeenshire, 1682—Bequests to Aberdeen hospitals, 1760

Scotland, the Inebriates Act in, 585; the consumption sanatoria of, 791; lunacy in, 894; the Lunacy Board in, 974
Scotland (see also Church of Scotland)
Scotch medical officers of health and sanitary inspectors, 250
Scott, Mr. K., eye-measurement, 627
Scottish Poor-law Medical Officers Association, 135; Education Department on physical training, 398; Association for the Medical Education of Women, 887; asylums, pathology at the, 1020; asylums, the laboratory of the, 1170; Medical and Surgical Journal (review), 1215, 1889
Scottish hospitals for South Africa: Edinburgh and East of Scotland, 425, 495, 500, 658, 887, 968; National Red Cross, 739, 968, 1327
Scurvy, an experimental inquiry into, 1184; the causation of, 1466
Seamen, mortality among, 1671
Seamen's Hospital (see Cardiff)
Seamen's Hospital Society, 1023
Sea-sickness, hypodermic injection of atropine and strychnine in, 781; oxygen in, 1251
Seaside resorts, risk to, from jettisoning diseased cattle, 1455
Sea-water for home use, 72
Seat, an automatic dry, for tramcars, &c., 818
Seats for shop assistants, 44, 1668
Seborrhœa, 1660
Secrecy, professional, 1172, 1292, 1414
Sellers, Mr. R. B., intestinal obstruction, 383
Seminalis (see Vesicula seminalis)
Septic skirts, 1600
Septicæmia, puerperal, 315, 466
Septicæmia, antistreptococcic serum and nuclein in, 1591
Septicæmia among children at nurse, 969
Serum, antialcoholic, 44; anti-venomous, 1433
Serum, antistreptococcic, in septic lymphangitis, 303; in puerperal septicæmia, 315; in pernicious anæmia, 1198; in septicæmia, 1591; in cerebro-spinal meningitis, 1897
Serum treatment of leprosy, 476; diagnosis, negative, of enteric fever in a tuberculous patient, 553; quantitative, 1441
Serum (see also Anti-typhoid)
Services, the naval and military, weekly article on, 61, 128, 194, 261, 333, 419, 494, 571, 652, 727, 803, 881, 963, 1028, 1092, 1165, 1245, 1320, 1397, 1465, 1539, 1611, 1678, 1754, 1830, 1904
Sewage, the treatment of, 115; crude, the bacterial treatment of, 649
Sewage disposal, Royal Commission on, 482; treatment, report on, by the London County Council, 557
Sewage (see also Water and Sewage)
Sewerage in Bombay, 732; of Rye, 1634
Sewers, flooding of basements from, 256
Sex, the origin of, 321; the same, marriages between persons of, 1814
Sex (see also Unsexing)
Sexual function, insanity, and crime, 169; perversions and hallucinations of smell, 361; evolution, 396; quack, 818, 869, 1767
Shakespeare, Dr. E. O., the late, 1916
Shamrock to be worn by Irish regiments, 716; the medical folklore of, 1020, 1179
Sharp, Mr. D., Insects (review), 545
Shattock, Mr. S. G., carcinoma in a rabbit, 166; anatomical rarities, 1589
Shaving on Sunday, 394
Shaw and the Railway Passengers' Assurance Company, 110, 263
Shaw, Dr. H. B., erythro-melalgia, 168
Shaw-Mackenzie, Dr. J. A., syphilis, 265; lymphatic cords, 1678
Shears, Mr. C. H. B., glaucoma, 311
Sheep, tuberculosis in, 1300
Sheerness, new naval sick quarters at, 639
Sheffield Royal Infirmary, sanatorium treatment of phthisis at the, 388
Sheild, Mr. A. M., cancer of the penis, 75; pyonephrosis, 1131
Shell-fish and polluted estuaries, 1599
Shepton Mallet District Hospital, 381
Sherrington, Prof., spinal descending degeneration, 541; blood, 1006
Shine, Dr. J. P., time between pregnancies, 1566
Ship (see Hospital Ship, Mercantile Marine)
Ship board, plague on, 69; beri-beri on, 138
Shop assistants, seats for, 44, 1668
Shoreditch Vestry and Mr. Bartley, M.P., 1668
Short, Dr. T. S., facial paralysis, 781
Shoulder, stiffness of the, case of, 601
Shute, Dr. D. K., Organic Evolution (review), 1368
Shuttleworth, Dr. G. E., the Lunacy Act, 730
Sian, Mr. T. G., phlorizin, 706
Sick and wounded officers, accommodation for, in Italy, 259, 503
Sick and Wounded Officers' Surgical and Medical Aid Fund, 133, 416, 473, 490, 1677
Sick children, the examination of, 28
Sick Children, Hospital for, *Punch* and the, 457; appointment at the, 558
Sick Children, Home Nursing of (review), 1014
Sickness (see Medical Sickness)
Silcock, Mr. A. Q., meningitis, 854
Silver, nitrate of, solution of, catarrh produced by, in the eyes of newly-born children, 1741
Simon, Dr. M. F., plague, 153; beri-beri, 720
Simpson, Prof. A. R., anencephalic fœtus, 28; specimens exhibited, 170; basilysis, 619; levurine, 619; vaporisation of the endometrium, 1516
Simpson, Prof. W. J., plague, 1063
Simson, Mr. F. T., life assurance, 132
Singapore, plague at, 153; beri-beri at, 720
Sinus (see Cavernous sinus, Frontal sinus, Lateral sinus, Maxillary sinus)
Sipido, shot fired at the Prince of Wales by, 1017
Sivewright, Sir James, his ambulance corps, 653
Skeleton, growth disorders of the, 1867
Skin, writing on the, 710; tuberculous ulceration of the, 1074
Skin, Excretion of Urea by the, in Health (review), 945
Skin affections in Bright's disease, 773; diseases, various, 781; lesion, pigmented, 1071
Skin (see also Dermatitis et seq. and Dermatological Society under MEDICAL SOCIETIES)
Skirts, septic, 1600
Skull, fracture of the, 544; malignant growth of the, 1282
Slaughter-houses in Aldgate High-street, 431
Sleep, the practice of, 175
Sleeping out of doors for phthisical patients, 552
Sleeplessness, 215; and sleep, blood-pressure in, 1804
Slough, the accident at, 1893
Smale, Mr. M., dental appointments, 63
Small-arm projectiles, modern, wounds caused by, 1667
Small-pox, salol in, 238; and vaccination, 1029, 1095, 1169; the danger from, 1455
Small-pox in Barry, 70; on shipboard at Melbourne, 138; in India, 423, 1031; in Italy, 503; in Liverpool, 1096; in Egypt, 1379; in Stalybridge and Salford, 1898
Small-pox precautions, 740; hospital for Manchester, 887
Small-pox (see also Acne varioliformis)
Smell, hallucinations of, and sexual perversion, 361; sensations of, in epilepsy, 477
Smith, Dr. W. C., presentation to, 584
Smith, Mr. N., surgical cases, 622; the knee-joint, 1320
Smith, Dr. A., a pathological ovary, 707; tubal pregnancy, 1730
Smith, Dr. W. R., Diphtheria (review), 1288
Smith, Mr. L., appointed a justice of peace, 1023

Smith, Dr. F. J., modern surgery, 1259
Smith, Dr. H., Gynæcology (review), 1733
Smithwick, Mr. J. W., orexin, 1019
Smoke nuisance, 256
Smoke (see also Coal-smoke)
Smoking by hospital patients, 589
Smyly, Dr. W. J., deciduoma malignum, 238; an inaugural address, 465; congress of gynæcology, &c., 1466
Smyrna, alarm of plague in, 1456, 1672
Snails, Glycogen of (review), 711
Snake poison (see Cobra venom, Antivenomous)
Snell, Mr. S., suppuration of the eyeball, 925
Snow, the removal of, 396; vestries and the, 633
Snow, Dr. H., gall-stones, 1135; excision of mammæ, 1356
Snuff, adulteration of, 49
Soap, rose cream, 1290
Society of Apothecaries of London, the diploma of the, and the Medical Register, 40; pass lists, 140, 277, 663, 973, 1101, 1252, 1562, 1917; election of representative in the General Medical Council, 253; use of the term physician or surgeon by the Licentiates, 1694; the right of the Licentiate to style himself "physician and surgeon," 1906
Society of Arts Albert Medal, award of the, 1817
Soil, bacteriology of the, 1372
Soldiers, distressed families of, gratuitous attendance on, 103; invalid, from South Africa, 507, 1919; invalid, provision for, 814; boots for, 974; deaths of, from heat, 1737, 1812, 1842, 1920; sick, the treatment of, 1893
Soldiers, sick or wounded, hospitals or convalescent homes for, in: Liverpool, 65, 201, 579; Torquay, 141; Scotland, 202, 425; Dublin, 203; Paignton, 278; Bristol, 303, 505; general lists, 402, 486; the question in general, 423; Weston-super-Mare, 628
Soloids, various, 106, 1290
Somerset, lunacy in, 141
Somerset (see also Taunton, &c.)
Somerville, Mr. T. A., consumption, 162
Soper *versus* Gibson and Young, 1809
Soper, Mr. R. W., obituary, 1251
Soury, Mons. Jules, Le Système Nerveux Central (review), 1076
South African field force, typhoid fever in the, 1321
South Devon and East Cornwall Hospital, 50, 505
Southam, Mr. F. A., cystotomy, 239; epididymectomy, 781
Southampton, isolation hospital for, 585
Spanish-American war, losses in the, 662
Speculum (see Black)
Spencer, Dr. H., rupture of the uterus, 100
Spencer, Dr. W., Spencer's Disease (review), 712
Spencer, Dr. M. H., leukæmia, 926
Spencer's Disease (review), 712
Spencer, Mr. W. G., leukæmia, 1725
Sphygmograph in Clinical Medicine (review), 1215
Spina bifida, 466
Spinal caries, a supporting apparatus for, 385; the deformity of, rectification of, 932; laminectomy for, 1007
Spinal cord, tumours of the, operation for, 792
Spinal cord (see also Cauda equina)
Spinal myelitis, measles complicated with, 533; descending degeneration, 541; curvature, the treatment of, 623; canal, dermoid cyst within the, 932; canal and mediastinum, neoplasms in the, 1069, 1145; dislocation, 1210; nerves, the ganglia on the posterior roots of the, 1379; abscess, 1805
Spine, lateral curvature of the, in an infant, 617
"Spine, typhoid," 1530
Spirit-bars in railway trains, 273
Spitting on the pavement, 68, 889, 981; and tuberculosis, 71
Spittoons, pocket or portable, 1664, 1808
Spleen, excision of the, 224; action of diphtheria toxin on the, 707; abscess of the, 710
Splenic anæmia, 115; complicated by diabetes, 401
Spleno-medullary leucocythæmia, Ménière's symptoms in, 615
Splint for bunions, 1042
Sprains, recent, the treatment of, 1756
Spurr, Mr. F., eclampsia, 1717
Squire, Dr. J. E., an appeal, 48, 62
Stabb, Mr. E. C., intestinal suture, 1067
Stableford, Mr. F. B. G., presentation to, 813
Stacke's operation, cases of, 364, 622
Stage, madness on the, 204
Staining methods, 64, 1601
Stalker, Prof., endocarditis, 859
Stalybridge, small-pox at, 1898
Stammering, a case of, 314
Stamper, Dr. J. F., obituary, 1687
Stanley, Dr. D., favus, 623
Staphylococci in the kidneys in diabetes, 544
Staple, Mr. J. D., Jenner Society, 1030
Stark, Mr. A. C., Pharmacy (review), 1449
Starr, Prof. A., chorea, 1897
Startin, Mr. J., superfluous hair, 654
State Children's Association, 1223
States, American, death-rate in, 662
Statistical and Social Inquiry Society of Ireland, 689; methods and the Indian Plague Commission, 568, 724
Statistical (see also Royal Statistical)
Status thymicus, 869
Stawell, Dr. R. R., education, 891
Steam, unconfined superheated, sterilising properties of, 299
Stedman, Dr. T. L., Twentieth Century Practice (review), 1136, 1807
Steell, Dr. G., Sphygmograph (review), 1215
Steen, Dr. R. H., asylums, 899
Stengel, Dr. A., athletics, 174
Stenhouse, Dr. J. W., lymphangitis, 303; hepatic toxæmia, 622
Stephens, Mr. E., the late, 813
Stephenson, Mr. S., diphtheria, 451
Stephenson, Mr. W. H., leontiasis, 1366
Sterilising by steam, 299
Sterility and fertility of nations, 551
Sternberg, Dr. Maximilian, Acromegaly (review), 1592
Stevens, Dr. T. G., venous thrombosis, 165; carcinoma, 944; Davies-Colley memorial, 1906
Stewart, Sir T. G., obituary, 412; the late, 424
Stewart, Dr. J., a case simulating perforation of the stomach, 1134
Stewart, Dr. P., epilepsy, 477; brachial plexus, 692
Stewart, Miss Isla, Practical Nursing (review), 1139
Stewart, Field-Marshal Sir D., the late, 963
Stiles, Mr. H., cases exhibited, 28
Still, Dr. G. F., day terrors, 292
Stocking suspender, the "Portia," 1664
Stockport, cellar dwellings in, 47
Stockport Centre of the St. John Ambulance Association, 253, 1457; workhouse, 1169
Stomach, dilated, surgical treatment of, 103, 999; upward dilatation of the, 385; form, position, and relations of the, 620; epithelioma of the, operation for, 707; surgery of the, 947, 1030; a case simulating perforation of the, 1134; endoscopy of the, 1189, 1222; dilatation of the, 1212; cancer of the, in the young, 1600
Stomach, the surgery of the, three lectures on, 671, 747, 830 (with sub-headings as follows:—anatomical considerations, diagnosis, gastric ulcer, treatment of gastric ulcers, surgical treatment of hæmorrhage due to ulcer, operation for bleeding ulcer, 671-684; perforation, gastric fistula, perigastritis and adhesions, hour-glass contraction, dilatation of the stomach, congenital stenosis of the pylorus, 747-758; dilatation from atony, acute dilatation of the stomach, gastro-enterostomy, tetany and gastric dilatation, injury of the stomach, cancer and other tumours, surgical treatment, 830-842)
Stomach (see also Ulcer of the Stomach, &c.)
Stomatitis and pernicious anæmia, 221, 297
Stone, removal of, from the bladder, 964
Storage battery, "resistance," and charging board for medical use, 471
Stout, London, 106
Straits Settlements, beri-beri in the, 720
Street noises, 113, 399, 429, 635; explosions, 201
Streets, London, and the vestries, 396; in the middle ages, 478
Streptococcal infections, 30
Streptococcus (see also Anti-streptococcic)
Stretton, Mr. J. L., malformation of the vulva, 710; empyema, 1212
Strophanthus as an adjuvant in chloroform anæsthesia, 660
Strümpell (see Von Strümpell)
Strümpell's paralysis, 618
Strychnine in sea-sickness, 781; the sale of, by unauthorised persons, prosecution for, 1097; as a factor in causing cerebral hæmorrhage, 1204
Student volunteers, 967
Style (see New Style)
Subclavian aneurysm, 1283, 1284
Subclavio-axillary aneurysm, 463
Subdural hæmorrhage followed by loss of ability to name objects, 552
Subscriptions, 72, 143, 144, 397, 420, 431, 818, 982, 1086, 1467, 1566, 1679, 1700, 1906
Subsoil water, the level of the, the Central London Railway and, 1373, 1385
Sugar in urine, nitro-propiol test for, 471, 882, 1321; the excretion of, in diabetes, 709
Sugar, sacrette, 1450
Suggestion, a forgotten, 1400
Suicide in Scotland, 579
Suicide, relation of alcoholism to, 1081
Sullivan, Dr. W. C., suicide, 1081
Sulphite of sodium in meat, 586
Sulphuric acid in vinegar, 48
Sunday shaving, 394
Sun-stroke, heat-stroke and, 952
Superannuation allowances, 141
Suppuration, antral, 636; Nasal (review), 1888
Suppuration in typhoid fever, 919
Suprapubic lithotomy, 26, 198, 264, 780, 964, 1652; cystotomy, 239, 928; prostatectomy, 465, 1075
Surgeon (see House Sugeon, Barber, Colliery)
Surgeons, the consulting, at the war, the remuneration of, 507; Canadian, at the war, the position of, 507; civil, at the war, 665; colonial, in Ashanti, 1814
Surgery, aural, the present position of, 359; of the stomach, 671, 747, 830, 947, 1030; modern, the influence of, upon medical practice, 1259; the application of pathology to, 1856
Surgery, fetishism in, 363; in fiction, 981
Surgery, Manual of (review), 391; Aseptic (review), 469; The Mechanics of (review), 626
Surgery or surgical (see also Chirurgie, First-aid, Gauze, Operations, Colliery, War in South Africa, *passim*)
Surgical Anatomy (review), 1138; Treatment, A Manual of (review), 1138
Surgical operations on lunatics, the legality of, 67; operations, rapidity in, 364; cases, some interesting, 622; Congress, the German, 660, 1401, 1469; science, electricity in, 695; dressings, gelatin envelopes for, 1042; interest, cases of, 1276
Suspenders, a man who swallowed his, 788
Sutcliffe, Mr. G. L., House Construction (review), 1732
Sutherland, Dr. G. A., mongolism and cretinism, 23
Sutherland, Dr. J., presentation to, 352
Sutherland, medical officer of health for, 500
Suture, intestinal, experiments on, 1067; cases of, 1586
Sutures, unabsorbable, 1541
Swan, Mr. R. L., loose cartilages, 463
Swansea, the new coroner for, 1530
Sweating of the right hand and forearm, 1008
Sweetness, what is it? 1533
Swindon, Victoria Hospital at, 547
Swinson, Mr. H., the late, 113

SWITZERLAND, CORRESPONDENCE FROM.—Large ovarian cyst, 274—Swiss ambulance for South Africa, 274—Professor Krönlein on cancer of the rectum, 502—Roentgen rays and renal calculi, 503—The Swiss army, 970—Cerebral complications due to intestinal infection, 971—Sterilisation of cocaine and atropine solutions, 1173—Swiss mortality statistics for 1899, 1173—Trachoma, 1685—Iodine preparations, 1685—School hygiene, 1685

Sycosis, coccogenic, 386
Sydney: public health, 138, 811; surgeons for the war, 427; need for a fever hospital, 427; hospitals, 634; plague (see Australia); drainage, 891; Prince Alfred Hospital, 1099
Symes, Dr. J. O., vaccine lymphs, 1398
Symes, Mr. L., sick children, 28; croup, 1284
Symmers, Dr. W. St. Clair, Bacteriology (review), 1288
Symonds, Mr. H. P., ambulances, 1836
Symonds, Mr. C. J., goitre, 167; removal of clavicle, 1283; Davies-Colley memorial, 1906
Symons, Mr. G. J., the late, 791, 1697
Syphilis, the treatment of, 253; the prevention of, by treatment, 341, 496; primary and secondary, the treatment of, 463; the treatment of, by mercurial inunction and otherwise, 542; mercuriol in, 709
Syphilis in the Dutch navy, 255; inherited, the contagiousness of, 265; and the eye, 287; experiments on, discussed in the Prussian Diet, 970; the blood in, peculiar corpuscles in, 1762
Syphilis, Dermatologie und, Archiv für (review), 171; Cure Prompte et Radicale de la (review), 468
Syphilitic disease of the brain, 101; ulceration of the nasal and orbital region, 465; cirrhosis of the liver, 908; chancres, primary, 1575, 1637; fibro-spongioid osteitis, 1875
Syphilography (see Dermatology)
Syringe, an improved exploring, 242
Syringomyelia, case of, 28
Syrup, golden, adulteration of, 177

T

Taberner, Mr. W., horse ambulances, 1907
Tabes dorsalis, eye symptoms in, 1009
Tabetic ophthalmoplegia, 101
Tablespoonful and the ounce, 743
Tabloids, various, 106, 1449
Tachypnœa, 385
Tænia nana a cause of chyluria, 637

Targett, Mr. J. H., intra-uterine hæmorrhage, 153; Railway Passengers' Assurance Company, 263
Tarsus, the posterior, Mikulicz's operation for disease of, 28
Taste sensations in epilepsy, 1119
Taunton and Somerset Hospital, 572
Taylor, Mr. E. C., hernia, 731
Taylor, Dr. J., disease of the brain, 101
Taylor, Mr. J. W., Gynecological Practice (review), 1287
Tea, China, 1522
Teaching of infants, 1842
Teeth of schoolboys, 665; of navy and army recruits, 814, 894; caries of the, cause of, 1896
Teetotalism, 1886
Telegraphists, London, and medical attendance, 975
Telephones, disinfection of, 136
Temperament and tendency to crime, 1022
Temperance (see British Medical Temperance, Teetotalism)
Temperature in health and disease, 29, 85
Temperature, elevation of, produced by the absorption of moisture and by wrapping the thermometer in cloth or paper, 300, 962
Temporo-maxillary joint, ankylosis of the, 168
Templeman, Dr. C., typhus fever, 1213
Tendon lengthening in Volkmann's paralysis, 83
Tendon reflexes, 927
Tenement houses of New York and tuberculosis, 1174
Tenement house exhibition, 971
Tent for the open-air treatment of tuberculosis, 946
Terrors (see Day terrors)
Testis, abnormal descent of the, hernia due to, 457; tuberculosis of the, 781
Tetanus following nephropexy, 157; equine, carbolic acid in, 538; traumatic, 539, 705; the various forms of, 1221
Tetanus toxins, action of, on the cerebral cortex, 98; toxin, preservation of, 1441
Tetany and gastric dilatation, 834
Thames Conservancy, 1825
Theatre (see Stage)
Theobald, Dr. S., cataract, 721
Thermometer (see Temperature)
Thirst, the relief of, 1458, 1565
Thoinot, Dr. L. H., Bacteriology (review), 1288
Thomas, Mr. J. L., a tourniquet, 457
Thomas, Dr. W., colonial practitioners, 1268
Thomas, Dr. D., inquests, 1811
Thomas, Mr. W. T., lithotomy, 780, 1652
Thompson, Mr. H., obituary, 56; contribution on tetanus following nephropexy, 157
Thompson, Dr. J. A., leprosy, 476
Thompson, Dr. Peter, Myology of the Pelvic Floor (review), 467
Thompson, Prof. W. H., protamines, 619
Thompson, Dr. W. J., resection of the jejunum, 1007
Thomsen's disease, 955, 1071
Thomson, Mr. H. W., embolism, 18
Thomson, Dr. H. C., nerve-cells and tetanus toxin, 98; typhoid fever, 1121; glossitis, 1798
Thomson, Dr. St.Clair, tuberculosis, 617
Thomson, Mr. A., Neuroma (review), 1593
Thomson, Mr. W. S., carbon dioxide, 928
Thomson, Prof. J. A., the facts of inheritance, 1038
Thoracic aneurysm, 1730
Thornton, Mr. P., Bath, 1467
Thresh, Dr. J. C., report for Chelmsford and Maldon, 332
Throat and larynx, tuberculosis of the, 859
Throat, pseudo-diphtheritic, 1213
Throat (see also Cut throat, Nose and Throat)
Throats, septic, the bacteriology of, 312
Thrombi, venous, bacilli in, 165
Thrombosis, septic, of the cavernous sinus, 1296, 1467
Thrombosis of the superior mesenteric vessels (or veins), 705, 1800
Thursfield, Dr. H., skin affections, 773
Thursfield, Dr. W. N., obituary, 139
Thymus gland (see Status thymicus)
Thyroid cachexia, case of, 28; extract in the treatment of tuberculosis, 252; treatment in xerodermia and ichthyosis, 386; extract in ichthyosis, 544
Thyroid gland, supposed malignant disease of the, 388; sarcoma of the, 941; right lobe of the, removal of, 1210; pathological relations of the, 1213; removal of the, in Graves's disease, 1815
Tibia, dislocation of the, 308; compound comminuted fracture of the, 465
Tic douloureux, resection of nerves in, 1528
Tick fever, 1898
Tiger, fœtus and decidua of a, 466
Tilley, Dr. H., frontal sinus empyema, 385; cholesteatoma, 543, 1208; tonsil forceps, 1291
Times, Bailey's Index to the (review), 1139
Tinnitus, oxygen in, 510
Tiverton Infirmary and dispensary, 364
Tobacco (see Cigarettes, Anti-tobacco)
Todd, Dr. Margaret, Mona Maclean (review), 1663
Toe (see Hallux)
Tomlinson, Mr. J. H., tabes dorsalis, 1009
Tommasi-Crudeli, Corrado, obituary, 1686
To-morrow (a book), 574, 732
Tongue, floor of the mouth, &c., removal of, for malignant disease, 168; hemiatrophy of the, 537
Tongue (see also Macroglossia)
Tonsil forceps, a new, 1291; clamp, 1664
Tonsillitis with paralysis of the soft palate, 781
Tonzig, Dr. C., a new incubator, 1014
Toogood, Dr. F. S., Midwives Bill, 1026; direct representation, 1243
Tool-bag, cycle, 1482
Torquay, home for wounded soldiers at, 141
Torquay hospital, 614
Torup, Prof., scurvy due to tainted animal food, 1185
Toulouse, Dr. Ed., epilepsy, 554
Tourdes, Prof., the late, 502
Tourniquet, a new, 457
Townsend, Dr. W. C., the late, 659
Townsend, Dr. W. R., injury to spine, 232
Toxæmia, hepatic, 622
Toxin of tetanus, 98
Toxins of pneumococcus, 166
Tracheotomy in diphtheria, 462
Trade nuisances, 256
Trades, dangerous, 407
Tramps and their children, 1911
Trance terminating fatally, 464
Transvaal, freemasonry in the, 1220
Transvaal war (see War in South Africa, Services)
Transverse presentations, nomenclature of, 1885
Travel, A Medical Handbook of (review), 625
Travers, Graham, Mona Maclean (review), 1663
Treatment (review), 1077
Trephine, a simplified, 461
Trephining, cases of, 544, 929, 1277
Trevelyan, Dr. E. F., endocarditis, 707; specimens exhibited, 1443
Treves, Mr. F., moveable kidney, 15; appointed surgeon-extraordinary to the Queen, 868; dinner to, 1293, 1301, 1313; return of, from South Africa, 1295; the wounded, 1300, 1359, 1374; the liver, 1339
Triangle, the arithmetical, in ophthalmology, 1801
Troops, meat for the, 429, 814; clothing for the, 507, 813; sanitary, tactics for, 881
Tropical Diseases (or Medicine), the Liverpool School of, 323, 346, 658, 870, 871, 967, 1010, 1893
Tropical diseases, the study of, by medical women, 870
Tropical and Digestive Ailments, the Carlsbad Treatment for (review), 173
Tropon preparations, 1290, 1335
Trousseau's wine, 324, 818, 898
Truax, Mr. C., Mechanics of Surgery (review), 626
Tsetse fly in South Africa, 593
Tubal pregnancy, 941, 1730
Tubby, Mr. A. H., spinal caries, 932; spinal abscess, 1805
Tubercle, the fight with, 658; inoculability of different animals with, 1441; of the lung, a plea for early operation in, 1792
Tubercle bacilli in milk, butter, and margarine, 159; in urine, 605
Tuberculin as a test for tuberculosis, 400, 954; in diagnosis and treatment, 1703
Tuberculosis, spitting and, 71; pulmonary, myoidema in, 230, 575; in cattle, tuberculin as a test for, 400, 954; the proposed parochial hospital at Liverpool for, 579, 658; the crusade against, 660; congress on, at Naples, 661, 723, 1329, 1388; and the French national convalescent homes, 736; milk-supply and, 807; in Melbourne, 891; in the Italian army, 1082; American congress of, 1083; the tenement houses of New York and, 1174; in sheep, 1300
Tuberculosis from milk, the prevention of, 65; the prevention of, 313, 1409, 1614, 1675, 1679, 1768; prevention and treatment of, 1376
Tuberculosis, thyroid extract in the treatment of, 252; Prof. Cervello's treatment of, 275; open-air treatment of, 590, 870, 1447; tent for the treatment of, 946; hetol, a remedy for, 1761
Tuberculosis of the nasal septum, 617; of the testis, 781; of the throat and larynx, 859; of the intestines and liver, histology of, 939
Tuberculosis (see also Consumption)
Tuberculous disease of the kidney, 526, 601, 699; patient, enteric fever (with negative serum reaction) in a, 553; disease of the knee-joint, 618; infection, the treatment of, by muscle plasma, 809; patients, the feeding of, 1913
Tucker, Mr. R. G., obituary, 738
Tuke, Sir J. B., M.P. for Edinburgh and St. Andrews Universities, 1380, 1409
Tunbridge Wells, the general hospital at, complaints against, 479
Tunnicliffe, Dr. F. W., uric acid, 1708
Turner, Dr. F. C., the late, 402; obituary, 504
Turner, Dr. G. G., thrombosis, 1467
Turner, Mr. G. R., hernia, 929; rupture of the œsophagus, 930; abdominal injuries, 1277
Turner, Mr. J. G., antral suppuration, 636
Turner, Mr. J. S., dental appointments, 62
Turner, Sir William, Neale's Digest, 420; Midwives Bill, 1906
Turner, Mr. G. R., hermaphroditism, 1884
Tuttle, Dr. G. M., Diseases of Children (review), 1520
Twentieth Century Practice (review), 1136, 1807
Twins, parasitic, 777
Typhoid bacillus, the inhibition of, by urotropine, 707; and typhoid fever, 821, 910, 1050, 1079; the effect of the nutrient medium on the, 939
Typhoid fever, early differentiation of, 46; diet in, 90; in natives of India, 131; diagnosis of, by Widal's test, 212; cockles and, 421, 506, 799; inoculation against, 421, 1578; caused by celery, 790; cerebral symptoms of, 867; nervous disease following, 943; of prolonged duration, 1004; nervous symptoms in, 1121; bacteriology of, 1169; in the French army, 1172; in the South African field force, 1321; serum diagnosis of, 1445; onions in, 1481; meningitis in, recovery from, 1671; glossitis in, 1798; intestinal perforation in, laparotomy for, 1800; among the American soldiers in 1898, 1915
Typhoid fever, pneumonia, and diphtheria, concurrent, 1003
Typhoid fever in Ayr, 66, 202, 272, 347; in Birmingham, 134, 1034; in Sydney, 138, 811; in Batley, 397; in Falmouth, 628; in Paris, 659; in Newton Abbot, 792; in Melbourne, 891; in Belfast, 1551, 1616, 1682, 1760, 1912
Typhoid pleurisy, 480
"Typhoid spine," 1530
Typhoid (see also Antityphoid)
Typhus fever, bacteriology of, 113
Typhus fever, inoculation of, 1459
Typhus fever in the Hebrides, 46; in Dundee, 1213; in Lanarkshire, 1488

U

Ulcer, an intractable, 667, 743; perforating, of the foot, 1224
Ulcer, duodenal, perforated, 306, 458
Ulcer, gastric, perforated, operation for, 155, 944; case simulating a, 1007
Ulcer of the Stomach and Duodenum and its Consequences (review), 1806
Ulcers, corneal, inflamed, 464; gastric, various, 676
Ulna and radius, partial resection of the, 168
Ulnar nerve, tumour of the, 623
Ulster, rainfall in, 135
Umbilical cord, origin and structure of the, 1804
Umbilicus, ulceration at the, 1656
Uncinate group of fits, 477
Underwood, Dr. J., obituary, 1151
United Practitioners Limited, 510
University education, Irish, 66, 1815, 1908; intelligence, foreign, 140, 352, 428, 663, 893, 1176, 1408, 1630, 1841; representation in Parliament, 243
University College Hospital, vacancies at, 629; an appointment at, 1374
University College, London, changes in the medical staff at, 1374; prize list, 1917
Unqualified persons, the giving of anæsthetics by, 283; practitioners, 284, 743; persons, the practice of medicine by, 284; assistants, the employment of, 668; man, action for malpraxis against an, 791; attendance upon hospital patients, 871; plaintiff under the Medical Acts, 1896
Unqualified practitioner (see also Quack)
Unregistered practitioner, prosecution of an, by the General Medical Council, 715; dentist, action against an, 791
Unsexing animals, the after-effects of, 866
Unwritten Laws and Ideals (review), 946
Upton, Mr. J. R., the Society of Apothecaries of London, 1906
Uræmia, pathology and treatment of, 1730
Urea, excretion of, with diminished kidney weight, 1878
Urea, Excretion of, by the Skin in Health (review), 945
Ureter, imperforate, 1131; and urethra, passage of a large calculus through the, 1585
Urethra, the female, ulceration of, 239; the male, slate pencil in, 620
Urethrotomy, external, 768
Uric acid, the water of Llangammarch Wells and, 1883
Uric acidity, 1, 393; acid and leucocytosis, 326; acid, Buxton thermal water and, 1351

Uric acid salts, a contribution to our knowledge of, 1708
Uric acid (see also Biurate)
Uricedin, 818
Urinary system in typhoid fever, 914; water, excretion of, 1878
Urine, suppression of, associated with a single kidney, 25
Urine, suppression of, case of, 541; incision of the kidney for, 612
Urine, mercury in, quantitative estimation of, 92, 117; sugar in, nitro-propiol test for, 471, 882, 1321; proteids in the, the forms and significance of, 539, 853, 966; a peculiar proteid in the, 540; tubercle bacilli in, 605; urotropine in the, 707; phosphates in the, 850; drugs which colour the, 982
Urine (see also Blackwater)
Urotropine, 36; the excretion of, in the urine, and its effect on the typhoid bacillus, 707; as a urinary antiseptic, 1876
Urticaria pigmentosa, 456; hæmorrhagica, 1740
Uteri, complete invertio and prolapsus, 381; cervix, papilloma of the, 1513
Uterine fibroids, the treatment of, 99, 858, 1109; natural history of, 147, 174, 262, 573
Uterine displacements, the rectification of, 450; carcinoma, early diagnosis of, 944; appendages, removal of the, indications for, 1518, 1802
Uterine (see also Intra-uterine, Extra-uterine)
Uterus, fibroid tumour of the, producing ascites, 30; rupture of the, treatment of, 100; carcinoma of the, in a rabbit, 166; section of the, fibroid removed by, 237; myoma or fibro-myoma of the, 306, 464, 465, 544, 708, 858, 1008, 1211, 1361; interstitial fibroid tumour of the, sloughing en masse, and other cases of fibroid tumours of the uterus, 444; chronic tubal inversion of the, 465; the puerperal, involution of, 466; fibroid tumour of the, removal of, 466; cervix of the, fibrous tumour of the, 613; fibroid, with ovarian cyst, 780; incarcerated retro-displaced gravid, 1072; the myomatous, inversion of, 1203; ruptured, Porro's operation for, 1517; large fibroids of the, 1657

V

Vacancy, a droll, 283
Vaccination of pauper children, 272; objections to, in plague districts, 629; guardians and, 951; small-pox and, 1029, 1096, 1169; on the genitals of a husband and wife, 1639; a question of, 1697; cost of, 1765; the Local Government Board and, 1768; accidental, 1846, 1906
Vaccination in Warmley, 469; in London, 491; in the Dutch East Indies, 635; in Egypt, 1379
Vaccination fees, 131, 1253, 1897; prosecutions, 272, 893; legislation, 324; returns, 352; pustules on the hands, 308; grants, 428, 585, 1918; petition, 429; officers, antivaccinationists as, 740; question, 814, 1039; law, 1254, 1651, 1764; case, an aseptic, 1808
Vaccination Act and guardians of the poor, 177; difficulties under the, 668
Vaccination (see also Revaccination, Leicester, Antivaccination)
Vaccinator, a public, the troubles of, 744; the public, lot of, 899
Vaccinators, public, and revaccination, 252; alleged interference with other practitioners by, 1389
Vaccine, anti-enteric, 665
Vaccine lymph, weather and, 264; lymphs, glycerinated calf, 1216, 1227–1236, 1398, 1540, 1831, 1926
Vacher (a French murderer), responsibility of, 1036
Vagina, coal and pebbles in the, 620; Treatment of Pelvic Inflammation through the (review), 1367
Vaginal cœliotomy, 28; douche tube, 1522; douche, the Onah, 1664
Vaginal (see also Vesico-vaginal)
Valgus, the modern meaning of, 609
Valtine globules, 1290
Van Millingen, Dr. E., obituary, 1252
Vaporisation of the endometrium, 1074, 1516
Varix, aneurysmal, 622
Varnier, Prof. Henri, Pratique des Accouchements (review), 711
Varus, the modern meaning of, 609
Vasectomy, 1275
Vegetables, preserved, copper in, and green glass bottles for, 49
Veit, Prof., Gynäkologie (review), 32
Venereal diseases, the Norwegian notification of, 574; collective investigation on, 1251; the nomenclature of, 1414
Venomous (see Antivenomous)
Venous thrombi, bacilli in, 165
Ventilation, Natural and Artificial Methods of (review), 712
Ventro-fixation, cases of, 1444
Vernon, Dr. H. H., obituary, 276
Verrall, Mr. T. J., interscapulo-thoracic amputation, 382
Version, nomenclature of, 1885
Vertebræ, fracture of, Pott's disease or? 232
Vesical calculi, removal of, 26, 198, 264, 780
Vesico-vaginal fistula, 465, 743
Vesicula seminalis, excision of the, 99
Vestries, London streets and the, 396; and the snow, 633
Veterinarian (review), 861, 1077, 1522
Veterinary Journal (review), 861, 1521; Medical Association, Western Counties, 893; Medical Society, Yorkshire, 1332; department, the army, report of, 1532
Viavi Company, the British, 742, 899
Vibif fluid beef, 1449
Vice and Insanity, Clinical Studies in (review), 861
Victor Emanuel, King, the death of, 810
Victoria Cross conferred on Maj. Babtie, 1220, 1246, 1320
Victoria University (Manchester), pass lists, 1038, 1841

VIENNA, CORRESPONDENCE FROM.—Infectious diseases in Austria, 69—Plague on an Austrian steamer, 69—New rules for examinations in medicine, 69—The bacillus of hospital gangrene, 1762—Peculiar corpuscles in the blood of syphilitic persons, 1762

Vinegar, sulphuric acid in, 48
Vines, Mr. S., chloroform, 1767
Vires, Dr., Leçons de Clinique Médicale (review), 1448
Vision, green, 855
Vital statistics, weekly, English towns, Scotch towns, and Dublin, 61, 127, 191, 260, 332, 416, 493, 568, 652, 726, 800, 880, 962, 1028, 1165, 1245, 1319, 1394, 1464, 1538, 1610, 1677, 1752, 1829, 1904; monthly, of London, 192, 569, 801, 1090, 1395, 1754; of London during 1899, 417; of the Dutch Navy, 255; of Queensland, 564; Egyptian, 1295; of the German navy, 1755
Vital statistics: urban mortality of Scotland in 1899, 202
Vivisection (see Animals, Experiments on, Antivivisection)
Voelcker, Dr., Friedreich's ataxy, 168
Volkmann's ischæmic paralysis, 83
Volunteer corps (see Services); medical staff corps (see Medical Staff Corps)
Volunteer officer's decoration, 495; ambulance school of instruction, 572; transport, notes on board a, 564; medical organisation, 1039
Volunteers, &c., advice to young men to join the, 48, 62
Volunteers, the families of, medical attendance on, 30; medical examination of, 585; student, 967; and the contractor, 1020
Volvulus in association with hernia, 237, 1726
Vomiting of pregnancy, 212, 284, 355
Von Krafft-Ebing, Dr. R., chorea, 871
Von Strümpell, Prof. A., Atlas of the Nervous System (review), 240
Von Zittell, Dr. Karl, Palæontology (review), 624
Vulva, diphtheria of the, 382; malformation of the, 710
Vulvar hæmatoma in labour, 1517

W

Waddelow, Mr. J. J., intestinal obstruction, 1205
Waggett, Dr. E., sequestration of the cochlea, 543
Wahltuch, Dr. A., cases exhibited, 622
Wakley Prize, 1816
Waldo, Dr. F. J., diarrhœa, 865, 1344, 1426, 1494
Wales, Prince of, his Hospital Fund for London, 50, 180, 481, 649, 966, 1525; and the new infirmary at Newcastle, 402, 1890, 1902; attempt on the life of the, 1017
Wales, North, University College of, 352; South, University College of, 1318
Wales (see also New South Wales)
Walford, Dr. E., report to the Cardiff port sanitary authority, 972
Walker, Dr. N., cases exhibited, 27; acne varioliformis, 238
Walker, Mr. T. G., obituary, 205
Walker, Maj. C. P., the late, 261; obituary, 277
Walker prize, 200
Wallace, Mr. C. S., duodenal ulcer, 458
Wallace, Mr. D., hæmaturia, 461
Waller, Dr. A. D., nervous matter, 253, 466
Wallis, Mr. F. C., resection of the intestines, 456; cases exhibited, 618; fracture of the patella, 1072
Walls, Dr., dermoid cyst, 315
Walsh, Dr. D., Roentgen Rays in Medical Work (review), 317
Walsham, Dr. H., myoidema, 230
Walton, convalescent home, 352
War in South Africa, 56, 117, 182, 258, 334, 402, 483, 560, 639, 723, 794, 873, 956, 1026, 1088, 1151, 1237, 1308, 1382, 1460, 1535, 1606, 1676, 1742, 1818, 1899 (see also Africa, South, war in, Army, Austro-Hungarian, Boers, Rhodesia, Royal Army Medical Corps, Services, Sick and wounded, Soldiers, Troops, South African)
War in South Africa (paragraphs for the most part not included under the foregoing): medical attendance on the families of soldiers, reservists, or volunteers, 30, 105; surgical appointments, 66; the Irish field hospital, 203, 272, 425, 734, 1097, 1171; German military medical attachés with the British army, 404, 970, 1099; journalism, 420; Manchester Medical Staff Corps, 424; Edinburgh and East of Scotland South African Hospital, 425, 495, 500, 658, 887, 968; surgeons from Sydney, 427; meat for the troops, 429, 814, 1409; troops from Egypt, 504; hospitals in Cape Colony and Natal, 506; position of Canadian surgeons, 507; invalid soldiers, 507; clothing for the troops, 507; remuneration of the consulting surgeons, 507; the staff at Netley Hospital, 507, 740, 1477; deaths from disease, 507, 586; Birmingham and the medical arrangements, 578, 657; "Lumsden's Horse," 657; nursing orderlies, 665; civil surgeons with the army, 665; the College Hospital, Pietermaritzburg, 719; army estimates, 729, 740; marches and soldiers' equipment, 729; Italian journalism, 736; Scottish National Red Cross Hospital, 739, 968, 1327; meat on board the transports, 740; the medical arrangements, 739; members of the medical profession, civil and military, who have lost their lives or been wounded, 804, 1093, 1163, 1246, 1320, 1397, 1465; New South Wales Army Medical Corps, 811; French assistance for the wounded, 814; Ambulance wagons, 814; wounded who have returned to the front, 894; soldiers' boots, 974; Manchester students for the front, 1034; nursing staff in South Africa, 1040; German ambulances with the Boers, 1165, 1251, 1406; wounded soldiers, 1213, 1400; enteric fever, 1218; Victoria Cross conferred on Major Babtie, 1220, 1246, 1320; return of Sir William Mac Cormac and Mr. F. Treves, 1293, 1295, 1301, 1313; the wounded, 1300, 1359, 1374, 1459, 1485, 1515; the treatment of sick soldiers, 1893
War, the, and the national temper, 246; Dr. Conan Doyle on the, 249; the present, a bright spot in, 319; Who's Who at the (review), 782; the colonies and the, 787; the medical profession and the, 1040; some of the lessons of the, 1595; the hospitals and the, 1771; My Diocese during the (review), 1888
War, modern, applied science in, 551
War, the Spanish-American, losses in, 662
War correspondent of THE LANCET, letters from the (see LANCET, THE)
War funds, medical charities and, 271; funds, and hospital support, 319; news, and the public health, 629; Office and civil hospitals, 974; pictures, 1038
Ware, Dr. E. E., diphtheria, 382
Warfare, hill, hospitals for, 420; modern, first-aid dressing in, 714
Warmley, vaccination at, 469
Warner, Dr. F., ophthalmoplegia externa, 98; Nervous System of the Child (review), 1662
Warrington infectious hospital, 201
Washhouses in congested districts, 202
Water, the bacteriology of, 312; and Sewage, Hints on the Analysis of (review), 392; Examination of (review), 392
Water-closet seat, a sanitary, 212
Water-pipes, freezing of, 211
Water question, the London, 353, 1039; gas, 968, 974; Bills of the London County Council, 1021
Water-supply of Ilfracombe, 70; of Portadown, 136; of London, 256; of Chard, 389; of Bolton, 493; of Paris, 888, 969, 1545; of the Leicester cottage homes, 893; of Newtownards, 969; of Manchester, 1897
Water-supply, the metropolitan, Royal Commission on, 243, 253, 329, 407, 423, 565, 646, 797, 877; the London, control of, 1141; the London, Mr. Whitmore on, 1525
Water-supply Bills, 506, 665
Water (see also Mineral water or spring, Holy water, Sea-water, Subsoil water, Buxton thermal water, Hot springs, Urinary water, Llanganmarch Wells, Wells)
Watson, Dr. C., Encyclopædia Medica (review), 31, 1256
Watson, Dr. C. S., club methods, 654
Watt, Dr. J. P., annual report for Aberdeenshire, 1682
Weak-mindedness in young children, diagnosis of, 1373

Weather and vaccine lymph, 264; and outbreaks of fire, 1223
Webb, Dr. Mabel, memorial to, 720, 739
Weber, Dr. F. P., leucocythæmia, 615; pneumothorax, 1443
Welby, Frances A., Electro-physiology (review), 1366
Welch, Surg.-Col. F. H., anti-typhoid inoculations, 338; syphilis, 496
Weld, Mr. J. C., presentation to, 38
Wellcome chemical research laboratory, 1841
Welldon, Rev. Dr. J. E. C., Professions for Boys (review), 625
Wellingborough guardians and vaccination, 961
Wells, the disinfection of, 1913
Wendelstadt, Dr., alcohol and the respiration, 478
West African frontier force, 952
West Cornwall Infirmary and Dispensary, 278; Women's Hospital, 974
West London Hospital, annual dinner, 1301, 1532
West, Dr. S., Granular Kidney, &c. (review), 1011
Westcott, Mr. M., typhoid fever, 1321
Western Counties Veterinary Medical Association, 893
Westminster Hospital, the new laboratories of the, 1747
Weston-super-Mare, Royal West of England Sanatorium, 628
Weston-super-Mare Hospital and Dispensary, 739
Whales, A Book of (review), 1449
Wheeler, Mr. W. I., the late, portrait of, 734
Whipple, Mr. C., intestinal obstruction, 705
Whisky, the prescribing of, 5, 393
Whisky, Scotch, 1290, 1522
Whistler, Dr. W. McNeill, obituary, 738
White, Dr. S., cases exhibited, 465
White, General Sir George, 882
White, Dr. W. H., dermoid cyst, 932
White, Dr. P., diphtheria bacilli, 942
Whiteford, Mr. C. H., chloroform, 197, 339, 496; hernia, 806; sutures, 1541
Whitfield, Dr. A., acne, 385
Whitmore, Mr., M.P., on the London water-supply, 1525
Who is responsible? 899
Who's Who (review), 241
Who's Who at the War (review), 782
Whyte, Dr. G., corrosive sublimate poisoning, 859
Wiblin, Mr. J., obituary, 1407
Widal's test in the diagnosis of typhoid fever, 212
Wiesbaden, congress of internal medicine at, 566, 660, 1325, 1544
Wiggin, Dr. F. H., pelvic organs, 449
Wight (see Royal Isle of Wight, &c.)
Wigmore, Dr. J. W., presentation to, 584
Wilks, Dr. S., Auguste Comte, 573; small-pox, 1029
Willett, Mr. E., anæsthetics, 1211
Williams, Mr. R. T., charge made against, by the General Medical Council, and presentation to, 38
Williams, Dr. Ethel, diphtheria, 132
Williams, Sir John, premature labour, 171
Williams, Dr. John, specimens exhibited, 466
Williams, Mr. W. R., the myomatous uterus, 1203
Williams, Dr. J. C., obituary, 892
Williamson, Dr. R. T., diabetes, 709; optic neuritis, 1350
Williamson, Mr. G. E., the late, 1673; obituary, 1762
Willock, Mr. E. H., emphysema, 457
Willow-bark, a new glucoside in, 1603
Wilmot, Dr. S. G., the late, 580
Wilson, Dr. T., fibro-myoma, 306, 1361
Wilson, Dr. R. A., mastoid disease, 1355
Wilson, Mr. A., Brain and Body (review), 1139
Wilson, Dr. G. R., Vice and Insanity (review), 861
Wimshurst, Mr. James, production of Roentgen rays, 1212, 1392
Window cleaning, 866
Wine, Trousseau's, 324, 818, 898
Wine, salicylic acid in, 207, 586
Wines, various, 35, 36, 105, 470, 1450
Wire-suture of fractured maxilla, 1722
Witham, South, enteric fever at, 493
Woakes, Mr. C., bullet-wound, 24
Woman in child-bed, legal rights of a, 1036
Woman's Exhibition at Earl's Court, 1607
Womb quack, 900
Women, Diseases of, A Handbook of the (review), 1733; The Diseases of, A Handbook for Students, &c. (review), 1887
Women, young, the reluctance of, to seek medical advice, 71; sexual function, insanity and crime in, 169; in textile factories, 814; medical, the study of tropical diseases by, 870; the medical education of, Scottish Association for, 887; attendance on, by contract, 1531; London School of Medicine for, the Helen Prideaux memorial scholarship, 1742
Women sanitary inspectors, 347; inspectors of factories and workshops, 407; nurses in military hospitals, 662; students and the Manchester Royal Infirmary, 733; doctors, lectures by, at the Paris Faculty of Medicine, 1036
Women (see also Ladies)
Wood, Dr. N., depilation, 231
Wood, Dr. W., Materia Medica (review), 317
Wood, Mr. J. F., fracture of the skull, 544
Wood, General Leonard, Governor of Cuba, 137, 722
Wood, Dr. T. J., ovarian tumour, 941
Woodward, Mr. M. F., Embryology of Invertebrates (review), 33
Woolmer, Mr. S. L., constipation, 1720
Woolwich, Plumstead, and Charlton Medical Union, 1544, 1918
Word-blindness, congenital, 1506; or aphasic paralysis, the use of raised letters in, 1699, 1767
Words, recollection of, 552
Workhouse dietary scales, 740; association, the Irish, 808; officials at variance, 1893
Working classes, housing of the, 201, 601, 665, 717, 864, 1895
Workman, Dr. C., valvular disease of heart, 315
Workmen's Compensation Act, 283, 1042, 1253, 1919
Workshops (see Factories and Workshops)
Worth's Foods Syndicate, Cheltine foods, 1908
Wounded who have returned to the front, 894; in the present war, 1300, 1359, 1374, 1459, 1485, 1515
Wounded (see also Sick and Wounded)
Wounds caused by modern small-arm projectiles in the Cuban campaign, 1667
Wray, Mr. C., the arithmetical triangle in ophthalmology, 1801
Wright, Prof. A. E., antityphoid inoculations, 150, 245
Wright, Mr. C. A., coroners' society, 883

X

X rays (see ROENTGEN RAYS)
Xerodermia, case of, 386
Xerosis of the cornea and conjunctiva, 436

Y

Yarmouth, Great, the friendly societies decree a medical lock-out at, 576, 655
Yarrow Convalescent Home, 331, 1397
Yaws, henpuye due to, 20
Year, the new, 39
Year, the Holy, hygiene and, 68; a contre-coup to, 136; influenza and, 426
Year (see also New Style and Old Style)
Year-book, The Literary (review), 946
Yeast (or dried extract of yeast) in various diseases, 619, 1684
Yellow fever, the cause of, 477; investigation of, 1893
Yellow fever in Cuba, 180
Yeoman, Mr. G., an appeal, 1700
Yeomanry, &c., advice to young medical men to join the, 48, 62
Yeomanry (see also Imperial Yeomanry)
Yerman, Mr. T., an appeal, 1467
Yonge, Dr. E. S., consumption, 162; phagedæna, 942
York, The Retreat, annual report, 123
York, Duchess of, accouchement of the, 1023
Yorkshire Veterinary Medical Society, 1332
"Young Practitioner, His Code and Tariff," inquiry for, 1926
Young, Dr. L. T., Carlsbad Treatment (review), 173
Young, Dr. R. R., "save us from our friends," 509
Young, Gibson and, Soper *versus*, 1809

Z

Zanzibar, the fever-bearing mosquito at, 557
Zebra hybrids, 888
Zesto-kausis, 1074, 1516
Ziemann, Dr. Hans, malaria, 333
Zittel (see Von Zittel)
Zoia, Dr. Giovanni, the late, 137
Zoology, Practical (review), 945; A Manual of (review), 1448
Zulus at Olympia (an exhibition), 44
Zunz, Mr. S. Rudolph, bequests by, 428

[For List of Illustrations see next pages.]

LIST OF ILLUSTRATIONS.

COLOURED.

Five Microscope Fields, of which three represent the appearance of the Blood in Blackwater Fever and Malaria, one shows a Section of the Liver, and one a Section of the Spleen; they are described in the article on the Histology and Prevention of Blackwater Fever (Mr. W. H. Crosse), 11

Two Temperature Charts of Cases referred to in clinical lecture upon Internal Derangements of the Knee-joint (Mr. W. H. Bennett), 10

Two Portraits of a Woman, one before and one after operation for Multilocular Cystic Epithelial Tumour of the Jaw (Mr. G. P. Newbolt), 18

Perimeter Chart and Drawing of the Fundus, illustrating description of an Unusual Case of Embolism in the Fundus Oculi (Mr. H. Wright Thomson), 19

Four Portraits of Negroes and Photographs of the Bones of the Face, accompanying Report on "Henpuye" in the Gold Coast Colony (Dr. A. J. Chalmers), 20, 21, 22

Two Portraits of Infants, one a Mongolian Imbecile and the other a Cretin, accompanying paper on the Differential Diagnosis of Mongolism and Cretinism in Infancy (Dr. G. A. Sutherland), 23

Bullet which entered the Skull just below the Left Frontal Eminence and was Removed from the Nose 20 months afterwards (Mr. C. Woakes), 24

New Laryngoscope (Dr. Mark Pauntz), 37

Simple Apparatus for administering the Intra-gastric Needle-Douche (Dr. G. Herschell), 37

Portrait of the late Sir James Paget, 53

Illustrations accompanying the weekly series of articles headed "The War in South Africa":—Diagrams of Bullet Wounds of the Cæcum and Outline Diagram of Patient showing Opening Communicating with the Bladder, 59. Plan of No. 4 Stationary Field Hospital at Frere, 118. Plans of a Bearer Company Encampment and of a Bearer Company in Action, 119. Seven Outline Diagrams of Patients showing Various Wounds, 120, 121, 122. Landscape showing a portion of the Ground traversed by the Hospital Train while bringing Wounded to Wynberg, 189. View of interior of Hospital Train, showing arrangement of Sick Cots, 189. Drawings of a piece of a Shell which inflicted an Abdominal Wound, 259. The Staff of No. 1 General Hospital, Wynberg, 337. Diagram of the Knee-joint, showing bullet wound, 488. View of Military Hospital at De Aar, 563. Plan of Military Hospital at De Aar, 563. Plan of No. 4 General Hospital at Mooi River, 642. Eleven Diagrams showing Bullet Wounds, 874, 875, 1154. Plan of the Imperial Yeomanry Hospital, 1745.

Sketch of Apparatus for a Perineal Urethral Opening, described in clinical lecture on Cancer of the Penis (Mr. A. M. Sheild), 77

Two Diagrams to illustrate the Procedures described in paper on a Mode of Operating in Cases of Appendicitis (Mr. C. B. Keetley), 87, 88

Portrait of Patient referred to in article headed "Pott's Disease or Fracture of Vertebræ?" (Dr. W. R. Townsend), 233

Improved Exploring Syringe (Mr. C. Mayhew), 242

Diagrams illustrating a clinical lecture on Some Complications following on Injuries about the Elbow-joint and their Treatment (Mr. H. Littlewood), 290, 291

Two Temperature Charts accompanying paper on the Sterilising Properties of Unconfined Superheated Steam (Dr. L. Cobbett and Dr. J. H. C. Dalton), 301

Reproduction of a Photograph of a Sketch of the Leg, accompanying description of a case of Dislocation of the Head of the Tibia Backwards, Upwards, and Inwards, and of the Patella Upwards and Outwards (Dr. E. A. Mills-Roberts), 308

New Chloroform Inhaler (Dr. G. Flux), 318

Map showing (1) the Administrative County of London, (2) the Area of the Metropolitan Water-supply, and (3) the Metropolitan and City Police Area, accompanying article headed "The Royal Commission on the Metropolitan Water-supply," 330

Portrait of the late Sir Thomas Grainger Stewart, 413

Illustration showing a Field of a Transverse Section of the Liver closely underlying a Hepatic Mucoid Cyst (Mr. W. C. McDonnell), 453

Various Photoprints and Drawings illustrating lectures on the Anatomy and Pathology of the Rarer Forms of Hernia (Mr. B. G. A. Moynihan), 513, 514, 516, 518, 519, 520, 597, 598

Ten Photoprints of Views and Sections of the Kidney and one of the Ureter, accompanying paper on Tuberculous Disease of the Kidney, its Etiology, Pathology, and Surgical Treatment (Dr. D. Newman), 528, 529, 530, 531, 602, 603, 700

Eight Pulse Tracings described in paper on Pulsus Paradoxus (Dr. J. Hay), 536

Various Diagrams illustrating paper on the Relation of Blood Vessels to Lymphatic Vessels (Dr. C. H. Leaf), 606, 607

Two Photoprints of Large Renal Calculus described in paper on the Surgery of the Kidney (Mr. L. W. Bickle), 609

Two Drawings of Metatarsal Bones, Two Drawings of a Foot, and Photoprint of Casts of a Foot before and after Operation, accompanying paper on Hallux Valgus and Hallux Varus (Mr. J. J. Clarke), 609, 611

Drawing of Uterus containing Fœtus from a case of Pregnancy Complicated by Fibrous Tumour of the Supra- and Infra-vaginal Cervix (Dr. W. Duncan), 614

Two Drawings of Instruments used in an Improved Method of Eye Measurement (Mr. K. Scott), 627

Improved Ear-Drums (Mr. H. Dadysett), 628

Antiseptic Muzzle (Lord F. B. Bruce and Surg.-Capt. E. Kingscote), 628

Illustrations accompanying Mr. A. Mayo Robson's lectures on the Surgery of the Stomach:—Diagram of the Abdomen divided into Four Regions; Seven Sketches of the Stomach showing respectively Kink of the Pylorus from Adhesions, Hour-glass Contraction, Bifid and Trifid Stomach, and Pyloroplasty over a Bone Bobbin; Six Sketches showing Different Methods of Gastroplication; Outline Diagram of Patient showing the Position of Incisions; Two Sketches showing the Attachment of the Stomach to the Skin, 672, 750, 753, 756, 831, 839, 840

Three Half-length Portraits of Patients, One Front View of Face, and Diagram of Brachial Plexus, illustrating description of a case of Rupture of the Brachial Plexus (Dr. P. Stewart and Mr. M. Collier), 692, 693

Diagram of the Ribs, Sternum, and Clavicles and Reproduction of a Photograph from a Dead Body on which the Operation was performed, to illustrate a Suggestion for a Method of Opening the Pericardial Sac (Dr. C. Ogle and Mr. H. Allingham), 694, 695

Drawings of Attic Curette and Ossicles of the Ear, accompanying paper on Complete Ossiculectomy (Mr. R. Lake), 703

Illustrations accompanying Dr. P. Horton-Smith's lectures on the Typhoid Bacillus and Typhoid Fever:—Five Microscope Fields, showing Three Varieties of Bacillus Coli, Gärtner's Bacillus Enteritidis, and Bacillus Typhosus; Three Microscope Fields showing various Bacteria in the Urine ("Bacteriuria"); Two Microscope Fields showing Agglutination of the Typhoid Bacillus and also of Gärtner's Bacillus; Six Agglutination Curves; Four Test-tubes containing Cultures; Two Microscope Fields containing Urine; Two Test-tubes containing Urine, 823, 918, 919, 1052, 1054, 1056, 1060, 1061

Illustrations accompanying Sir William Banks's lectures on Cancer of the Breast:—Whole Page containing Six Photoprints of sections showing Chronic Mastitis; Photoprint showing the "complete" as opposed to the "redundant" operation; Whole Page containing Six Photoprints showing parasites (1) in a Mammary Carcinoma; (2) in an Axillary Gland; and (3) in the Lung of an Inoculated Guinea-pig, 848, 995, 997

Head-rest on a Barber's Chair, 862

Illustrations accompanying Dr. Cheadle's lectures on Some Cirrhoses of the Liver:—Portions of Four Microscope Fields showing Hypertrophic and Syphilitic Cirrhosis of the Liver; Portions of Two Microscope Fields showing extreme Degeneration of the Heart Wall and Granular Changes in Muscle Fibres from the Left Ventricle in Alcoholic Cirrhosis of the Liver; Portions of Two Microscopic Fields showing Cardiac Cirrhosis, 904, 907, 908, 909, 985, 986, 1049

Parasitic Crustacean as a Foreign Body on the Cornea (Dr. R. D. Batten), 1002

The "Lupa Humaniser," 1077

Three Drawings of Myomatous Uteri, described in lecture on the Modern Treatment of Uterine Fibroids (Dr. W. Duncan), 1110, 1111, 1114

Seven Diagrams of the Head of the Humerus, Portrait of Patient (face only), and two Views of Patient's Lower Limbs, accompanying paper on Coxa Vara (Mr. C. B. Keetley), 1115, 1117, 1118

Skiagram showing Dislocation of the Epiphysis of a Metacarpal Bone (Mr. E. K. Herring), 1131

Apparatus for the Local Application of Ethyl Chloride, 1139

LIST OF ILLUSTRATIONS—(*Continued*).

Portrait of the late Sir William O. Priestley, 1149

Two Drawings of an Œsophagoscope, Three Drawings of a Rod for Exploring the Stomach, Photoprint of Stomach filled with Plaster-of-Paris, Three Photoprints of Models of the Stomach, Three Views of a Gastroscope, Two Photoprints showing the Methods of introducing the Gastroscope and inspecting the Stomach, described in paper on Endoscopy of the Œsophagus and Stomach (Dr. Georg Kelling), 1190, 1192, 1193, 1194, 1196, 1197

The "Allenburys" Milk Pasteuriser, 1215

Whole Page containing Six Photographs of Gelatin Plates to illustrate THE LANCET Special Commission on Glycerinated Calf Vaccine Lymphs, 1236

Representations of Nerve Cells, accompanying lecture on the Effect of Alcohol on the Human Brain (Mr. V. Horsley), 1272, 1273

Chart showing Plague Mortality in India, explained in Observations on the Epidemiology of Plague (Mr. T. F. Pearse), 1274

Two Views of Back of Patient and Diagrams of Pelvis, accompanying description of a case of Kyphotic Pelvis (Dr. J. B. Hellier), 1280, 1281

New Tonsil Forceps (Dr. H. Tilley), 1291

Two Views of an Air Filter, accompanying description of the Warming and Lighting of the London Hippodrome, 1316

Four Outline Diagrams of Patients, accompanying lecture on Ptosis of the Liver and the "Floating Lobe" (Mr. F. Treves), 1341, 1342

Portions of Two Microscope Fields showing Cardiac Muscle Fibres, accompanying paper on the Heart-wall in Diphtheria, Rheumatic Fever, and Chorea (Dr. F. J. Poynton), 1352, 1353

Two Diagrams accompanying description of a case of Combined External and Internal Strangulation (Mr. A. Carless), 1357

Iodised Phenol Antiseptic Hydrocele Outfit (Mr. F. Deane), 1370

Photoprint of the Interior of the Left Ventricle of the Heart, accompanying description of a Chronic Abscess of the Pericardium (Dr. D. Hunter), 1435

Half-length Portrait of Patient showing want of Symmetry owing to the Incomplete Development of the Third and Fourth Right Ribs (Mr. F. B. Jefferies), 1437

Invalid Bedstead with Lifting Arrangement, 1450

Twelve Outline Diagrams of Patients showing Bullet Wounds, accompanying address on the Wounded in the Present War (Sir William Mac Cormac), 1487

Five Photoprints and Two Diagrams of Fractures, accompanying lecture on the Operative Treatment of Simple Fractures (Mr. W. A. Lane), 1490, 1491, 1492

Photoprint of Section of a Retro-peritoneal Fibro-cystic Tumour, showing Muscle Cells (Mr. D. Douglas-Crawford), 1514

New Form of Vaginal Douche Tube (Mr. A. Duke), 1522

Seven Photoprints showing Massage in Recent Fracture of the Leg, as described in a lecture on the Use of Massage in Recent Fractures and other Common Injuries (Mr. W. H. Bennett), 1570, 1571, 1572, 1573

Two Temperature Charts accompanying paper on Preventive Inoculation against Typhoid Fever (Mr. A. G. R. Foulerton), 1580

Three Views of a Calculus which passed through the Ureter and Urethra (Maj. J. A. Cunningham), 1586

Photoprint of Indiarubber and String attached, removed from the Ear (Mr. J. G. Macaskie), 1586

Boer Trenches, 1609

Diagram of Plastic Operation for the Closure of an Ulcer at the Umbilicus (Dr. J. Pinkerton), 1657

Tonsil Clamp (Dr. D. W. Aitken), 1664

Pocket Spittoon, 1664

Onah Vaginal Douche, 1664

"Portia" Combined Stocking Suspender and Shoulder Support, 1664

Two Views of Body and Thighs of Patient suffering from Bilateral Dislocation of the Hip, presumably congenital (Dr. T. P. Cowen), 1717

Diagram representing the Relative Position of Clots in the Brain, referred to in paper on Cases of Brain Injury Clinically Examined (Mr. E. E. Dwyer), 1720

Two Diagrams of the Sigmoid Flexure, accompanying paper on the Surgical Aspects of Constipation (Mr. S. L. Woolmer), 1721

Diagram showing the Position of the Parts in a case of Strangulated Femoral Hernia in which Gangrene was precipitated by an Intra-abdominal Volvulus (Mr. R. L. Knaggs), 1727

New Clinical Laboratories of the Westminster Hospital, 1748

Five Diagrams of Brain, Reflex Arc, and Neurones, Three Drawings to show Degeneration of Nerves, Two Transverse Sections of the Sciatic Nerve, and Transverse Section of the Spinal Cord, Microscope Field, showing Hypoglossal Nuclei, Double Whole Page containing Seventeen Histological Micro-Photographs, accompanying lecture on the Degeneration of the Neurone (Dr. F. W. Mott), 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1849, 1855

Aseptic Vaccination Case (Mr. C. Corben), 1808

Portable Spittoon, 1808

Plan and Interior of the New Operating Theatre at the Radcliffe Infirmary and Plans of the Ground Floor and Upper Floor of the new Pathological Laboratories, Oxford, 1822, 1823, 1824

Full-length Portraits (1) of "General and Mrs. Tom Thumb" (dwarfs), (2) of Winkelmeyer (a giant), and (3) of a case of Degenerative Hypoplasia of the Skeleton, Photoprints of Bones affected with Degenerative Hyperplasia, described in paper on Primary Disorders of Growth (Mr. H. Gilford), 1868, 1869, 1870, 1872

Photoprint of Lower Legs, accompanying description of a case of Syphilitic Fibro-spongioid Osteitis (Mr. J. B. Hall), 1875

Chart showing Excretion of Urine and Urea, accompanying paper on the Excretion of Urinary Water and Urea (Dr. J. B. Nash), 1878

Diagram illustrating Removal of a Gall-stone from the Common Bile Duct by the Duodenal Incision (Mr. F. Page), 1885

END OF THE FIRST VOLUME FOR 1900.

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ABSTRACT OF

A Clinical Lecture

ON

CANCER OF THE PENIS.

Delivered at St. George's Hospital on Nov. 12th, 1899,

BY A. MARMADUKE SHEILD, M.B. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE HOSPITAL AND LECTURER ON PRACTICAL SURGERY.

GENTLEMEN,—You are aware that I lay great stress upon the importance of your perfecting yourselves in the knowledge of common maladies, or of such diseases as are of great importance in daily practice. The distressing complaint which we are about to consider to-day falls into the latter category. It can hardly be called common. Probably it does not amount to more than one or two per cent. of all cancers. Yet instances of the malady may "crop up" at any time in your future practice, and if you mismanage the complaint, if you fail to grasp the full significance of the symptoms in their early stage, you may do a patient grave damage or allow the period to pass when surgical intervention can alone be of avail. Some weeks ago, you may remember, a man came to show himself upon whom I had operated some four years ago. He still, I am glad to say, remains well, and I thought the case so important that I take this opportunity of bringing the subject before you to-day in a practical light.

As local irritation is the great exciter or producer of epithelioma upon muco-cutaneous structures, we find, what might *a priori* be expected, that the majority of the victims of cancer of the penis have been life-long sufferers from phimosis. They have never been able to retract the foreskin, secretion and dirt have accumulated beneath, and thus the affection has originated. I have looked through long lists of cases, but only in a few instances have I found the disease to originate in men who have an uncovered glans penis and a retracted foreskin. The rarity of this complaint in Jews is traditional. This grave consideration is a powerful incentive for urging circumcision upon children with elongated foreskins. It is still more a powerful consideration in the case of adults who begin to get "soreness" or irritation beneath a phimosed prepuce; such cases are commonly enough dubbed "gouty eczema." I believe this to be a misnomer. Timely operation and removal of the source of irritation may doubtless ward off one of the most distressing diseases that a human being can suffer from. There can hardly be a more important matter for the care and consideration of the family practitioner than that, and I implore you to lay it closely to heart.

As you may naturally expect, epithelioma of the penis is an affection of advanced life, yet there are striking exceptions to this rule. I myself have seen two cases in which the patients were under the age of 35 years, and a case is recorded where the victim was only 22 years of age.[1] Indeed, it is curious at how early an age cancer may occasionally be found to attack the rectum or the genitals of either sex. I have known grave diagnostic errors committed from want of knowledge of this fact. I must strongly draw your attention to it. Mistakes are made by supposing that cancerous diseases follow fixed laws, and diagnostic confusion with syphilis is especially likely to occur in young men, as I shall presently point out. I do not know that soot has much influence in causing cancer of the penis. The cancer of chimney-sweeps is essentially an integumentary disease mostly affecting the scrotum. In exceptional, very exceptional, cases cancer may attack a non-phimosed penis; I know of such cases in literature, but I have only seen one. Here the cancer sprouted from the scar of an imperfectly healed chronic syphilitic ulcer. A case is also related where the disease originated in injury, but I have never witnessed such an occurrence. The statement that these cases are due to contact infection—namely, that the wife of the patient is suffering from a cancerous cervix—has little true value. One authority stated in what he terms the "heat of a clinical lecture" that such cases were common, but on requesting him to furnish one example he was unable to do so.[2] I know of only one reputed case and this was probably coincidence. The disease in its early beginnings may be a superficial erosion, a warty growth, or a nodular mass. If the prepuce cannot be retracted some discharge commonly issues from the orifice. This may be hæmorrhagic or sero-purulent. Attacks of redness, pain, and swelling occasionally occur. The discharge is peculiarly fœtid as soon as ulceration begins. At last a hard lump like a haricot bean is felt beneath the prepuce and the disease is established. In other instances perhaps the prepuce can be retracted and the growth will be seen commencing as a small nodule or a vegetating wart which "itches and burns." The latter symptom is of fearful import in such cases. Too often—far too often—this little lesion is treated with caustics, as nitric acid or nitrate of silver, and thus the disease is not arrested, but is stimulated into serious and progressive growth. Infiltration of the tissues takes place at the base of the wart and ultimately a foul ulcer forms, surrounded with hard gristly edges and covered with fungous protuberant granulations exuding a most offensive discharge. Still later the body of the organ becomes infiltrated with disease, as is evidenced by its hard feeling and increased size. The corpora cavernosa are especially affected, the urethra remaining free, comparatively speaking. The condition of the inguinal and lumbar glands is of vast importance in this malady. Sooner or later the lumbar glands become affected and agonising "crampy" neuralgic pains with œdema of the legs supervene. Sometimes a foul and extensive ulcer forms in one or both groins and the patient may be carried off by hæmorrhage from the femoral vessels. I recollect a case in the Hunter Ward which happened when I was a student in which death occurred in this way. More commonly, however, the patient sinks from exhaustion and sepsis produced by the fungating sores and by "secondary" growths in the lumbar and inguinal glands. Indeed, these cases are among the most terrible that we meet with, and did patients only realise the full horrors of neglected malignant disease of these parts they would not be so difficult to persuade of the necessity for early or preventive treatment. Secondary growths in the lungs or other viscera are exceedingly rare though not unknown. The period of life in a case not submitted to operation is variously estimated. I advise you not to prophesy concerning matters beyond your ken. Cancer, above all other maladies, runs very different courses in different individuals and confident prophecies are apt to be rudely falsified. A very difficult but fortunately rare complication of advanced penile cancer is retention of urine. Probably in such cases the disease commences in the urethra. An instance of this occurred in the practice of the late Mr. Henry Smith.[3] Here the surgeon seemed to have relieved the retention by forcing a silver instrument through the growth. In these days, supposing the patient declined the radical operation of amputation, paracentesis of the bladder or opening the urethra behind the growth would be advisable. It is an awkward complication of such cases and you may possibly meet with it in future practice.

Such being a sketch of the cause and terminations of these cases, we next turn to the diagnosis. It is upon this I wish especially to dwell, because it is here that disaster and much blame and after-reproach may fall upon the medical man who acts wrongly or injudiciously. The "pre-cancerous" or early stage is marked by so-called "chronic eczema" or the formation of a warty growth or nodule. When these conditions, however slight, are associated with phimosis and advancing life the case at once assumes a most anxious aspect. The right course here is at once to advise circumcision and apply local antiseptic and soothing remedies. Of these carbolic acid, boric acid, and mercurial preparations take the first place, but they must all be applied very dilute. The case must be carefully watched and once the diagnosis is made very free removal must be carried out. We will speak of this presently. I would only again caution you against complicating the diagnosis by the application of inefficient caustics. I do this from my own experience of what I have seen from thus treating early cancerous conditions in the tongue, lips, and elsewhere. I am aware that

[1] Transactions of the Pathological Society of London, vol. xi

[2] Medical Times and Gazette, Jan. 12th, 1884.

[3] THE LANCET, Jan. 31st, 1863.

more than one authority advises a contrary course. With the greatest diffidence I must directly differ from them, and I have no hesitation in speaking strongly against the practice.

There are two very peculiar conditions associated with early cancer of the penis. The one is the formation of horns, the other the occurrence of malignant dermatitis (Paget's disease) of the integument of the glans. An epitheliomatous horn is always indurated at its base; it consists of massed epithelial material, frequently being "piled up" upon the summit of a wart. I show you here the remarkable specimen kindly sent to me by Dr. Walker of Peterborough who operated. The parts have somewhat shrivelled and the appearances do not give you much idea of what one saw clinically, for in this very striking case "Paget's disease" was evident behind and around the horny growths.

A case of this remarkable condition was shown by Mr. Pearce Gould at a meeting of the Pathological Society of London in February, 1887. The patient, aged 52 years, had as usual congenital phimosis, for which he was circumcised. The wound never soundly healed and a small wart developed. Upon this a horn grew, and it is stated that the patient regularly pared it down. After removal epitheliomatous structures were found at the base. Five cases of penile horns are stated in the same paper to have been collected by Erasmus Wilson, six by Lebert, and other authors. Horns may also be in exceptional cases non-epitheliomatous, as in a case related Dr. Van Orloff.[4] Here the patient was a boy, aged only 14 years, and the horn grew from a wart behind the prepuce. So, as a rarity, a horn may originate in an ulcerating sebaceous cyst. A specimen measuring one and three-eighths of an inch in circumference was removed by Brunton of Philadelphia.[5]

The practical lesson you learn from all this is obvious. A horny growth on the penis usually has an epitheliomatous base, and if this be the case free extirpation cannot be too early carried out. The condition is a rare one, ulceration and warty papillomatous structures being far more commonly met with. Should the horn originate from a sebaceous cyst induration at the base will be absent.

The so-called malignant dermatitis is quite unmistakeable in appearance. Usually occurring about the nipple in the female, it may exceptionally be found in other parts, and I myself have described a case occurring in an elderly man above the pubes. The patch of disease is of a vivid red, raw, glazed appearance, there is a viscid alkaline discharge, and whitish islets of epithelium are scattered about upon it. To these the name of "psoriasis" is often wrongly given. If you can lightly "pinch up" a portion of the affected patch between the finger and thumb a definite slight thickening may be felt. Now, this condition is certainly cancerous, and I know of no local remedies which will definitely arrest or cure it. Early free extirpation is the sole safe resource. It is in this condition especially that the remarkable "cell forms" termed psorosperms are so common, and the latest theories regarding the true nature of these and their relation to cancer may well be worthy of your attention.[6]

Tarnovsky of St. Petersburg describes a case of psorospermosis (Paget's disease) of the glans penis in a syphilitic patient. The patch resembled eczema and was accompanied by ulceration, itching, and pain. It is important to note that treatment for four months failed to make any impression upon the disease. Another case is related by Pospeloff of Moscow.[7] In Crocker's case the skin of the penis and scrotum were both affected by the disease.[8]

I have an idea that "Paget's disease" of the glans penis or prepuce is really more common than is generally described, and looking back on cases I have seen discussed as "intractable" or "gouty" eczema under the foreskin of elderly men I cannot help thinking that they were really of this nature. The vivid raw, red, glazed appearance is very striking and at once engages attention, if the observer be familiar with it from observation of previous cases. The whitish patches of epithelium may be very abundant and largely conceal the vivid red surface beneath. In some instances, as pointed out, cancer begins as a nodule on the glans penis, which breaks down and leaves an excavated ulcer. Indeed, I may say with truth that cancer of the penis assumes two distinct forms—the warty or papillary and the excavated ulcerating variety.

This brings me to speak of a very important subject in connexion with these cases—the condition of the inguinal and lumbar glands. The inguinal glands receive the lymph from the superficial area (skin and mucous membrane of the urethra) of the penis, while the lymph from the deeper parts of the organ passes to the lumbar glands along the dorsal vein of the penis. Consequently it is the inguinal glands which are most early affected in this disorder, the lumbar glands only becoming implicated in neglected cases, when the growth has extended along the corpora cavernosa. Now the greatest peculiarities are observed in the way the glands become affected. In some quite advanced cases the glands escape. In others they are early affected. The more chronic, warty, or horny the cancer the less likely are the glands to suffer. The more ulcerating, unequally extending, and exuberant the growth, the more early and hopeless will be glandular contamination. Thus enlarged glands in the groin must be taken with reserve in diagnosis. Moreover in an ulcerating cancer the glands may inflame and even suppurate, for not only "cancer"-cells but pyogenic organisms gain access to them. This is of great importance in the treatment. When the inguinal or lumbar glands are extremely infected anything like great prolongation of life is hardly to be looked for as a result of operation. It is, however, often justifiable to amputate in such cases, only to relieve the patient of the terrible local suffering caused by a mass of ulcerating cancer.

In the more advanced cases diagnosis is seldom difficult. The fœtor, the infiltration of growth, the warty granulations are all as typical of cancer as is the case elsewhere. Gummatous ulceration of the penis may simulate cancer, but here the base of the sore is devoid of gristle-like hardness, the margins are serpiginous, and other signs of syphilis will usually be present, as scars on the tongue and legs. Moreover, large doses of iodides soon effect obvious improvement. Should cancer engraft itself upon an old syphilitic sore the sprouting warty mass will soon make the true nature evident. This will be well seen in a case narrated at the end of this lecture. It is otherwise in the diagnosis between primary chancre and cancer. Here problems arise which must be investigated with the extremes of caution or very deplorable errors may arise. I do not like to mention names in connexion with these cases for fear of identification. I may tell you, however, that cases have occurred where amputation has been performed on the diagnosis of cancer when a roseolous rash and subsequent examination showed that the true malady was primary syphilis. I need only mention this terrible error to you to show you the difficulty that surrounds some of these cases and how warily you have to walk regarding them. Great diagnostic difficulties arise in regard to "relapsing" chancres. Some of you may know, or will hereafter learn, that chancres may develop *de novo* upon the site of former chancres, perhaps as long as 12 months after the original disease. I have had a case in my own practice where this occurred twice at intervals of 12 months, and the diagnosis of cancer might readily have been made. I will give you the following rules in dealing with such difficulties. Firstly, remember that it is within the boundaries of possibility that a man of any age, of any calling, may have a "hard" chancre beneath a phimosed prepuce. Secondly, cancer may occur in comparatively young men.

The ulcer should be inspected, if needful circumcision can first be performed. Should there be any doubt of its nature, and this is likely enough, full consultation should be sought. If still difficulties arise, mercury and iodides should be administered in full doses, and we must wait. It has happened to me more than once to be placed in these perplexities, and it is better to wait for a confirmatory "rash" than to operate recklessly. I may remark that the development of the sore is far more rapid in syphilis than in cancer, and the glands in the groin become more rapidly enlarged in chancre than in cancer. The microscopical test of excising a portion of the edge of the sore under cocaine must never be omitted. Unless the appearances are quite definite of epithelioma you had better distrust the evidence. It is my practice in such cases to send portions to two separate pathologists of acknowledged repute, and to consider their evidence in conjunction with clinical manifestations.

Next, I must draw your attention to the possible diagnostic difficulties which may arise between cancer and gummata of

[4] Brit. Med. Jour., August 13th, 1887.
[5] Medical Press and Circular, August 17th, 1887.
[6] Practitioner, April, 1899.
[7] British Journal of Dermatology, 1891.
[8] Transactions of the Pathological Society of London, Nov. 6th 1888.

the body of the organ, or that rare condition known as "gouty tumour" of the penis. Here you may especially note that cancer of the penis is in its commencement essentially a superficial disease. It begins on the surface and extends downwards. A hard nodule commencing in the corpora can hardly be carcinoma. Cancer commencing in the urethra is very rare, and usually associated with old sinuses or other causes of chronic irritation. Gummata of the body of the penis may be hard and are very threatening in aspect, so that the hasty diagnosis of cancer is readily made. The gouty tumour is of the same nature as Dupuytren's contraction of the palmar fascia. Indeed, I have once seen these two conditions associated in the same person. It is a localised fibrosis leading to thickening, and perhaps deformity, of the organ. The patient is usually elderly, and the signs of gout are marked. In these cases also the diagnosis of carcinoma has been arrived at. An allusion is made to the gouty infiltration of the penis in the *British Medical Journal* of May 8th, 1886. In the case referred to a distinguished Scotch surgeon wished to amputate the organ for supposed cancer. A typical case is related by Cameron of Glasgow.[9] Here the patient was a gentleman past middle life, and he had a tumour in the penis, oval and about the size of a horsebean. During erection the organ became distorted. The question here arose as to its being of a "malignant or scirrhous" nature. It is worthy of remark that the patient in this case had a little "knotty" thickening in the palmar fascia leading to contraction of the little finger. The concidence was very striking.

No doubt some such tumours are due to gout, others to gummatous deposit, and under large doses of iodide of potash very threatening-looking swellings may disappear which have developed slowly in the corpora cavernosa.

Sarcoma of the penis is very rare and probably you will never meet with an instance of it. I only mention it here for the sake of completeness. A case is related by Mr. Battle[10] well worthy of note. The patient was a retired clergyman, aged 60 years. He noticed a gradual enlargement of the end of the penis with a blood-stained discharge from under the prepuce. Hæmorrhage seems to have been a marked symptom. There is a specimen of melanotic disease in our museum removed by Mr. Holmes in 1872, and Mr. Golding-Bird is stated to have had another case at Guy's Hospital of spindle-celled sarcoma. The diagnosis of these cases prior to removal is uncertain, except in the case of melanosis, but the clinical characters of malignant disease are usually well marked.

Having thus spoken of the important diagnostic difficulties which may beset this subject the appropriate treatment must now engage our attention. Firstly, what course are we to pursue in the very early or dubious cases? Take the case of an elderly man with whitish thickening of the epithelium over the glans and the formation of an itching wart or horn with questionable induration at its base. I am sure in such cases that amputation of the end of the organ is the safer practice and that which would be followed by the best ultimate results. Few patients will submit to such radical treatment for an affection they consider but slight. If any other local treatment be adopted of a destructive nature it must be efficient. The action of such agents as nitric acid is very difficult to control and I strongly oppose them. Either free excision of the diseased part must be practised or it must be eradicated with the actual cautery. The resulting healing leaves a deformed organ and the scar is only too likely soon to show signs of fresh mischief, so the operation of amputation becomes absolutely needful and had better have been performed at first.

The instance of horny growth on the penis referred to affords a good example of the difficulties associated with treatment of early cancer. This very interesting and important case was sent to me by Dr. Walker of Peterborough for an opinion in 1897. It is principally of interest here as showing the treatment I advise in such conditions. The question was, should the horn and its diseased base be cut out or should amputation be performed? Seeing that "malignant dermatitis" was present over the glans, with vivid red patches and masses of thickened and fissured white epithelium, I felt sure that any partial operation would leave disease behind and I most strongly urged amputation of the anterior end of the organ. The greatest opposition was expressed to this course, but I remained inflexible and it was ultimately carried out. I heard lately that this patient died from bronchitis about a year or 14 months after the operation. He had good micturition power, and there was no sign of return. I may add that there was no reason to suspect implication of the inguinal glands.

In early cases, when the body of the penis is free, amputation must be performed about the centre of the organ. When, however, the surgeon is confronted with those common cases where the disease has been concealed and serious infiltration of the corpora cavernosa has occurred I am sure that removal of the whole organ after the method described by Gould is the best treatment. In such cases the question of removal of the testes also will arise. Here there is always room for difference of opinion. My own practice would be to leave the organs on account of the mental depression that must arise in adding such an operation to one already sufficiently distressing. The idea of division of the cord, to cause testicular atrophy, has been present in my mind, but hitherto I have not adopted it. Should the scrotum and testes be unhappily implicated the removal of such a loathsome condition may be justifiable. In bad cases, where the whole genital apparatus is involved, the penis and scrotum with the testes have been successfully removed, as in a case under the care of Mr. Vincent Jackson of Wolverhampton.[11] Here the surgeon met with rather free hæmorrhage in detaching the crura. This has also been my own experience.

I am not going to waste your time by describing the various operations for removal of the penis. If any one of you undertakes this proceeding he will probably carefully study the various methods and select the most appropriate. The remarks I shall make will be therefore rather general. Firstly, I may mention the use of the hot galvano-ecraseur wire only to condemn it. Secondly, the great difficulty of these operations lies in the management of the urethra. Gould's operation described in THE LANCET of May 20th, 1882 (p. 821), is infinitely to be preferred when the amputation has to be done close to the scrotum. Nothing is more miserable than the condition of a man whose urethra opens flush with the pubes. At every effort of micturition urine runs over the scrotum and thighs, which become eczematous and red, and no apparatus can be constructed to carry away the urine from the person. It is otherwise when the urethra projects from the perineum. In seclusion the patient micturites like the opposite sex and when out of doors he uses a receptacle. An excellent apparatus is one made out of glass and Mr. Hawksley has lately fitted a patient of mine with



Apparatus for a perineal urethral opening.

this contrivance with striking benefit. The patient applies the urinal when he wishes to micturite and the stream is carried away clear of the clothes by the tube. It should be a leading principle always to make a perineal opening in cases where the organ has to be removed far back.

When amputation is performed about the centre or behind the glans, great care must be taken in the operation. I have found the formation of lateral skin and fascia flaps very advantageous. The urethra is cut a little longer than the corpora, and slit up along its under surface for a full half inch. The cut margins are accurately united to the edges of the skin flaps, the incision being prolonged backwards for the purpose. Indeed, the urethral opening can hardly be much too free. I pass a No. 12 gum catheter into the bladder and keep it there during the first week, secured by a silk stitch to the mouth of the operation wound.

The question of infection of the inguinal glands is an anxious one. Any implication of these structures renders the prognosis unfavourable. Still, amputation may be performed even in the presence of hopeless glandular contamination, in the hopes of giving the patient temporary relief by removing a local mass of disease, a source of great discomfort and misery.

The question of operating or not upon enlarged glands in the groin must vary with each individual case. Instances

[9] THE LANCET, May 10th, 1884, p. 841.
[10] Transactions of the Pathological Society, 1885.
[11] THE LANCET, August 20th, 1887.

may come before the surgeon where all proceedings are hopeless. Many cases may present themselves which are doubtful. I would, however, draw your attention to one condition in which operation is peculiarly unfavourable, namely, when a twofold infection has occurred, and the glands are suppurating as well as implicated in cancerous growth. As a rule, in such cases operation wounds never heal, and a cancerous ulcer in the groin with all its attendant miseries may result from the best executed operation. Supposing you have made up your mind to extirpate the glands you may recollect that the majority lie above the fascia lata, and can be safely taken away from the femoral sheath. I strongly advocate raising a large triangular flap of skin and fascia, so as to expose the whole of Scarpa's triangle, and not to attempt to operate through small or insufficient incisions. The glands must then be cautiously removed. Should the femoral vessels pass through the mass I advise nothing more to be done if it be impossible to remove the glands from the vessels. I have seen the femoral artery and vein taken out in such cases and I have twice seen high amputation at the hip performed under similar circumstances. The result of these cases made me make a careful note never to imitate such proceedings in my own practice. If the lumbar glands are infected the case is very hopeless. It would be quite justifiable in such cases to remove the masses through a trans-peritoneal opening, but the practice would be risky and, I fear, would hardly prevent speedy recurrence by the side of the spine higher up. One course of practice is quite clear. If early glandular enlargement exists at the time of operation a very free removal should coincidently be effected.

The last part of this interesting and important subject is the question of prognosis. Here the usual caution must be inculcated. As a broad rule cases of chronic growth started by local irritation show remarkably good results and I have an impression that the warty papillomatous epithelioma is less malignant than the infiltrating ulcerative type. Another rule which stands good is the fact that if glandular contamination is at all extensive temporary local relief alone can be hoped for. To try to form an estimate of the results of these operations I looked up a number of cases in our hospital notes, but I failed to find the patients at the addresses given and I could not accurately estimate the final results. This is an unfortunate circumstance and the final results of our cases are in hospital practice too often lost in obscurity, yet nothing is of more importance from an educational point of view, as teaching the true value of operative procedures. Accordingly I am not in a position to offer you information regarding the prognosis founded on a large series of cases. Like other instances of epithelioma produced by local irritation extreme chronicity is observed in some instances, and if removal is effected prior to glandular contamination very beneficial and lasting results may be anticipated. I have performed this operation, or assisted in its performance, six times and I have knowledge of what has happened to the cases afterwards. These cases I now shortly relate. I may remark that the diagnosis in each of them was established without doubt and that microscopical examinations were made.

In the first case I have experienced the operation was performed by the late Sir George Humphry and I acted as assistant. As I have intimate knowledge of the progress of the patient afterwards I may shortly relate it. A gentleman, aged about 60 years, had persistent eczema of a gouty nature beneath a phimosed prepuce. He declined circumcision and an ulcer formed which, unfortunately, was treated with caustics—I believe nitric acid. An ugly epitheliomatous sore of the size of a shilling implicating the glans penis was the result. The glands in the groin were apparently not enlarged. The penis was amputated about its centre, the urethra was left long, slit up beneath, and attached to the skin. This gentleman remained well for no less a period than over 10 years. He was hale and hearty and died from affections quite unconnected with the original malady.

The second case was that of a gentleman, aged 57 years. I saw him in July, 1889. He had life-long phimosis and a hard, painful, indurated lump had slowly formed beneath the prepuce. The glands in the groin were apparently not implicated. In this case I was in grave doubts about the nature of the sore. The patient was married with one child but confessed to occasional irregular intercourse. I obtained permission to slit up the prepuce under anæsthetics. When this was done a foul ulcer was disclosed with hard gristly edges. This was dressed with carbolised dressings and iodoform and watched. Portions of the edge of the sore were examined microscopically, but one observer contradicted the dictum of the other. Iodides were administered in full doses, for an eminent consultant, relying rather on the history of the patient, pronounced strongly in favour of syphilis. As time wore on the true nature of the malady only became more apparent and amputation was performed in 1889. The organ was removed flush with the pubes and the urethra was dissected up and brought out in the perineum in front of the anus. This patient died two years ago from "bronchitis." He remained well with comfortable micturition for no less a period than eight years. Micturition through the perineal urethra was always well performed without discomfort.

The third case is still more remarkable. A retired army officer, aged between 50 and 60 years, had long suffered from old syphilis of the penis. The glans was ulcerated, the prepuce was thickened, fissured, and scarred, with whitish patches of thickened epithelium upon it. Indeed the appearance much resembled what one is familiar with in old syphilis of the tongue. This gentleman saw many surgeons and all sorts of remedies, local and general, were applied. At length, from the site of the imperfectly healed ulcer, a mass of epitheliomatous growth sprouted. I removed the organ about the centre, by the lateral flap method, leaving the urethra long, well slitting it up, and stitching it to the skin on either side. The inguinal glands being but slightly enlarged were not interfered with. The operation was done in 1892 and the patient is well, with good micturiting power at the present time, a period of seven years.

The fourth case was that of a man, aged 45 years, who was operated upon in St. George's Hospital nearly four years ago. In his case the disease had commenced beneath a phimosed prepuce nearly 10 years prior to admission and had extended to a great degree, infiltrating the body of the organ. The inguinal glands remained free. In this case the whole organ was removed by splitting the scrotum and detaching the crura. Great trouble was encountered with profuse venous bleeding from a large vein which passed through the sub-pubic ligament and was cut nearly flush with it (dorsal veins of penis). This was ultimately secured by a pressure forceps which was left attached. The urethra was brought out in front of the anus, left about three inches long, and covered by two little flaps of skin dissected up from the perineum. This patient healed well, but his mental condition was serious and on the third day he became insane. I at once got him out of bed and gave him a liberal allowance of wine and good food. In about a week his delusions passed away and he ultimately recovered completely. The other day he came to see us. Nearly four years have elapsed and there is no sign of return of the disease. His micturition power is excellent. The perineal urethra is shrunken and retracted, so that a prominent elevation about an inch in height projects from the surface. He is able to micturite with comfort and even to expel a definite jet of urine away from the body.

The fifth case was in the person of a strong, healthy man, only 40 years of age. A mass of papillary epithelioma had formed beneath a phimosed prepuce. The history was quite uncertain. Amputation was performed and he was quite well three years after. He has gone abroad and I do not know what has become of him.

The last and sixth instance was in the person of a gentleman, aged about 50 years. He had noticed trouble beneath a phimosed prepuce for about two years. The whole penis was converted into a formidable cancerous mass, a sprouting lump of papillary growth projecting from the prepuce. The inguinal and lumbar glands were free. In this case the "complete" operation was performed. He recovered well, with good micturition power. The operation was done too recently to estimate its ultimate result.

In conclusion I would point out that a recollection of these cases will enable you justly to offer great encouragement where it is so much needed. I have an impression that, as in the case of cancer of the breast, an investigation into the results of operations for epithelioma of the penis would show many cases as strikingly favourable in their ultimate results as those I have related. It is for you in your future practice to remember that early operation is the secret of success, and ever to avoid undue procrastination,

or the treatment of conditions on the verge of being cancerous with irritating and inefficient remedies. You will thus avoid reproaches too often justly deserved, and will obtain the confidence and ultimately the gratitude of your patients.

MALARIA AND MOSQUITOES.[1]

BY DR. G. BASTIANELLI
AND
DR. A. BIGNAMI.

(*Translated for* THE LANCET *by* Dr. G. SANDISON BROCK.)

THE suspicion that some relation exists between malaria and mosquitoes is to be found more or less clearly expressed by even the less recent authors, amongst others by the celebrated Roman physician Lancisi. But the question cannot be said to have entered upon its scientific phase until within the last few years, when, with a knowledge of the malarial parasites of man, various investigators directed their efforts to the investigation of the biology of these parasites in their extra-corporeal existence and to the means by which they effect an entrance into the human organism. The constantly negative results of all attempts to discover the parasites in the soil or in the water of malarious places led some observers to the conclusion that their studies should be pursued in another direction. Taking advantage of certain facts observed in the analogous affections filaria disease and Texas cattle fever, two hypotheses were constructed which served as guides in this fresh investigation. As to the first, it was known that in filaria disease the parasite is sucked in with the blood by a particular species of mosquito, within which it completes its life-cycle, and after the death of which it is set free in water. On this fact was constructed one of the many hypotheses suggested by Laveran which was afterwards sustained with much warmth by Manson. In regard to the second — the Texas fever — it had been shown that the disease was caused by a tick which inoculated a parasite of the red corpuscles, closely analogous to that of human malaria, into the blood of cattle. This served as the basis of the other hypothesis.[2] Two indications towards a solution were thus furnished. On the one hand the attempt was made by causing mosquitoes of various species to bite malarious persons, to follow out in them the further development of the malarial parasite as had been done in the case of filaria, and on the other hand mosquitoes collected in malarious localities were made to bite healthy persons in order to see whether the latter would take the fever. The former method led up to the first brilliant results of Ross who, studying the proteosoma of sparrows, succeeded in following out its whole life-cycle in a particular species of mosquito (the grey mosquito). These researches of Ross, it is apparent to everyone, possess an extraordinary importance, since they not only indicate for the first time the forms in which a hæmosporidium develops in the body of a certain species of mosquito, but demonstrate the fact that for a given hæmosporidium such development is only possible in a given species of mosquito, and in no other species, and therefore indicate the necessity of looking for a separate and appropriate species of mosquito to serve for the development of each different species of hæmosporidium. In this way they constitute an invaluable guide to subsequent researches on human malaria. We deem it well to emphasise these points so that no one can suspect our perception of the truth to have been obscured by certain recent polemics. The second method, after a series of attempts which little by little led to a simplification of the problem, has resulted in an irrefutable experimental demonstration that human malaria is a disease inoculated by particular species of mosquitoes.

The two hypotheses referred to as having served as guides in the investigation (namely, that of Laveran-Manson, based on analogy with the filaria nocturna, and the hypothesis of inoculation) appear at first contradictory, since the former led to the conclusion that man is affected through the medium of the water of malarious places (as sustained by Laveran, Manson, and, in the beginning of his studies, likewise by Ross), or even by means of the air; the latter, on the contrary, excludes any such possibility, holding that malaria is a disease exclusively of inoculation. This last view was supported, not only by arguments founded on analogy, but also by a series of epidemiological and clinical facts all tending to exclude the possibility of infection by the other channels so commonly—indeed, one may say universally—believed in. In fact, in the case both of human malaria and of the proteosoma of birds, mosquitoes not only take the parasite from its warm-blooded host but inoculate it afresh into a new one.

For determining the variety or varieties of mosquito adapted to the development of the hæmosporidia of human malaria the assistance of a zoologist was necessary in order that it might be ascertained which were the species predominating in places where malaria prevailed. To this study attention was devoted by Grassi, who pronounced as "suspected" all the species which are found in malarious localities and are not found in healthy ones, and more especially three of these—viz., anopheles claviger, culex penicillaris, and the so-called culex malariæ. With these species, captured in the adult state in a highly malarious locality at the end of the malarial season of 1898, the first case in man of experimental malarial infection was obtained. This result, the importance of which has almost been overshadowed by the mass of evidence brought forward later, produced a deep impression on our minds since it gave us the certainty of being on the right track.[3] The mode in which this experiment was conducted did not, however, admit of an exact determination of the species of mosquito responsible for the inoculation. Only by subsequent researches was it demonstrated that the extra-corporeal hosts of the human malarial parasite are the various species of the genus anopheles. The complete demonstration of this truth is the fruit of the work carried out in collaboration during the past year by Grassi and ourselves.

Of these researches we may give here a brief *résumé* to indicate the present state of the question, and we propose in doing so to occupy ourselves first of all with the æstivo-autumnal parasites. These present two life-cycles, one of which is completed entirely in man and is the cause of the fever, while the other is only initiated in man and is completed in mosquitoes of the genus anopheles. This second cycle is represented by the semilunar bodies, the significance of which has hitherto been a subject of controversy. These forms, as we have demonstrated, originate principally, if not exclusively, in the medulla of the bones, where the young forms are found accumulated; they then pass into the peripheral circulation, where as a rule they are discoverable after the fever has lasted some days; and finally, without giving rise to fever or other symptom of illness, they degenerate and disappear without multiplying and without having any relation to subsequent relapses of the fever. For these reasons we considered them as sterile forms,[4] and sterile they certainly are with respect to *man*. But if blood containing mature semilunar bodies be sucked by mosquitoes of the genus anopheles, the crescents complete in the body of the mosquito a new life-cycle which may be briefly sketched as follows. Some of the crescents are converted into the well-known flagellate bodies; others become round bodies and do not flagellate. From the former the flagella (which, as we have demonstrated,[5] in the forms found in human malaria consist of a filament of chromatin surrounded by a very fine envelope of protoplasm) detach themselves; one of these so-called flagella penetrates one of the round bodies and impregnates it; this impregnated form, after a series of changes to which we shall return later, finds its way into the wall of the middle intestine of the anopheles and is there developed. The semilunar bodies have therefore the significance of sexual forms; adopting the terminology of the zoologist we shall call the crescents "gametes," the pseudo-flagellates or male elements "microgametocites," the single flagella microgametes, and the forms which become impregnated, or female elements, "macrogametes." The macrogametes differ from the microgametocites (in preparations stained by

[1] A paper read before the Tenth Congress of the Società Italiana di Medicina Interna.

[2] A. Bignami: Hypothesis as to the Life-history of the Malarial Parasite outside the Human Body (THE LANCET, Nov. 14th and 21st, 1896, pp. 1363 and 1441).

[3] A. Bignami: The Inoculation Theory of Malarial Infection (THE LANCET, Dec. 3rd and 10th, 1898, pp. 1461 and 1541).

[4] A. Bignami and G. Bastianelli: Osservazioni sulli Febri Malariche Estivo-autunnali (Rif. Med., 1890); Studi sulla Infezione Malarica (Reale Accademia Medica di Roma, 1894).

[5] G. Bastianelli and A. Bignami: Sulla Struttura delle Forme Semilunari e dei Flagellati (Annali di Medicina Navale, 1898).

Romanowsky's method) in having a smaller quantity of nuclear chromatin and the protoplasm more deeply coloured by the blue.

As to the facts of analogy and the observations on which the above conclusions are based, having already cited them in recent writings on this subject, we shall omit them here for the sake of brevity. We refer more especially to the observations of Simond, Schaudin, Siedlecki, MacCullum, and Koch. The impregnated forms—or zigotes—traverse the epithelium of the middle intestine of the anopheles and lodge amongst the muscular fibres. They may, however, develop amongst the cells of the epithelium itself. In either situation they become surrounded by a delicate membrane, and gradually augment in volume till they assume the aspect of a typical sporozoon; the nuclear chromatin divides and sub-divides into a great number of little bodies around which a fine zone of protoplasm is disposed. Segmentation completed, each of these little bodies elongates, assuming a typical filiform appearance; great numbers of such filaments are then seen within the capsule all equally furnished with a distinct nucleus and disposed in various ways around masses of granular substance of greater or less size, in which it is not possible to recognise any structure. These are sporozoites and residua of segmentation. At this point of development, which may be observed in parasites which have reached a very variable size—for instance, in the largest sporozoa of 80μ diameter, or even more, as well as in parasites less than half that size—the evolution of these organisms in the middle intestine is completed. The capsules rupture and the sporozoites are disseminated through the body of the mosquito, and finally accumulate within the cells in the tubules of the salivary glands of the insect. When this has occurred the anopheles becomes capable of infecting a healthy individual with æstivo-antumnal malaria by its bite, a fact which has been clearly demonstrated experimentally. This marvellous life-cycle, which is in perfect accordance with that described by Ross in the case of the proteosoma of birds in the grey mosquito, is not completed in a nearly uniform time as occurs with the forms of the same parasite in the homeothermal host (man), but in a very variable period, lasting at a temperature of about 30° C. from 10 to 12 days, and at a temperature of from 18° C. to 20° C., more than double that time.

These facts being established (we omit details for the sake of brevity) we turned our attention to a study of the same cycle in tertian and quartan parasites, which cycle the preliminary observations made with Grassi had shown us is completed in the same mosquitoes of the genus anopheles. Both the parasites of tertian and of quartan fever have two life-cycles, one completed in man, the other only initiated in man and completed in the anopheles, which might therefore be called respectively the human or fever-producing cycle and the anophelian cycle.

As regards the development of the tertian gametes in the anopheles we shall merely state that it is completed in the same manner as is that of the crescent bodies, but that it differs in some evident morphological characters principally in the first stages of growth, so that only in these is it possible to make a differential diagnosis with certainty between the forms of tertian origin and those of semilunar origin. The duration of the development likewise depends chiefly on the temperature, occupying a period more or less within the same limits as in the case of the semilunar parasites. On this point we have little to add to what we published recently. We may mention, however, that we have noticed also in the tertian parasites the formation of the so-called "black bodies" which are mostly found in anopheles that have been infected for rather a long time (more than 10 days) and generally inside ruptured capsules, although capsules apparently whole are also to be found full of "black bodies" of different forms and sizes, elongated or rounded, and representing probably a product of degeneration of the contents of the sporozoon.

The sporozoites are disposed in the salivary glands similarly to those of semilunar origin. The salivary glands are two in number, each composed of three tubules which join together by means of their small ducts to form a common excretory duct. Of these three tubules the central one differs notably from the lateral ones in being shorter and containing epithelial cells of a hyaline aspect; while the others present cells filled with granular or even filamentous contents, especially at the bottom. At first sight this filamentous substance might be confounded with sporozoites. It is, of course, easy to recognise the sporozoites in coloured preparations in which the little nucleus is clearly displayed, but even in the fresh specimen it is impossible for a practised eye to commit the error when once familiar with the uniform size and typical shape of the sporozoites. In this connexion we should mention that in some cases typical sporozoites are seen in the salivary glands incurved so as to form a ring, strongly recalling the well-known annular forms found in human blood. Drawings of some of these ring-like bodies are given in our recent work, and we consider as quite unwarranted the doubt lately expressed as to their identity with sporozoites by Grassi, who gives no reason for such a doubt.

Whilst the development of the semilunar and tertian gametes in the anopheles may easily be followed the study of those of quartan fever presents considerable difficulties. Although we made many attempts, only in two patients did we obtain positive results, or rather only from these two cases did we succeed in infecting mosquitoes.

In passing we may note that even with tertian and semilunar parasites the anopheles sometimes fail to become infected, although the patients whose blood they were made to suck appeared quite suitable for the experiment. This might be due to many reasons. In the case, for example, of the semilunar bodies—if these are not mature or if, on the contrary, they have already grown too old in their human host—it may happen that no further development occurs; but even when the gametes are adult and mature (as may be ascertained by the facility with which in ordinary preparations they are transformed into flagellate bodies) it may still occur that in some of the anopheles no development takes place. And considering that we have met with some anopheles which were not infected even after having bitten suitable patients four or five times in succession we are obliged to conclude that the reason of the failure must be sought for in a complete immunity which some of these culicidæ enjoy.

Returning to quartan fever, we must say that with some patients constantly negative results are obtained. This led us to think at first that possibly the host preferred by the quartan parasites was not the anopheles claviger, with which in general we had experimented, but perhaps another species of anopheles or one of the culicidæ. But this suspicion was not borne out by other considerations. In the first place tertian and quartan fevers are always, or nearly always, found together in the same malarious localities (the well-known instance quoted by Trousseau being exceptional), thus rendering it unlikely that the host elected by the quartan should be a different mosquito from that preferred by the tertian parasite. In the second place we have had opportunities of observing that in some spots where quartan fever prevails—e.g., in a hamlet near the Tre Fontane—only anopheles claviger and various specimens of anopheles bifurcatus were to be found. We therefore repeated our experiments with the anopheles claviger, varying the conditions, or at least making use of patients who had been suffering from quartan fever for various periods, keeping the mosquitoes at different temperatures, &c. The results were that with recent quartans infection of the anopheles was not obtained. We experimented on at least five patients, some of them with numerous parasites, keeping the mosquitoes at a high or medium temperature and using a great many of them, but always without result. The attempt also failed with patients who had had the quartan fever for many months. On the other hand, we obtained some positive results from patients with very old quartans. One patient who was ill for about a year, whose blood, repeatedly examined, showed only quartan parasites, was bitten by 56 mosquitoes bred from larvæ in the laboratory (which, therefore, could not have been infected previously from man). In eight of these, kept in the warm chamber at 22° C., quartan parasites developed, all the stages of which we were able to follow up to the mature capsules with sporozoites.

The quartan parasite in the anopheles follows the same developmental cycle as the tertian and semilunar. The young forms are distinguished by the characters of the pigment and by their appearance; the adult forms with completely developed sporozoites were seen from 18 to 21 days after the bite. The reason of the negative results must be looked for, in our opinion, in the great scarcity, and in many cases in the absence, of gametes in the blood of quartan patients. It appears as if the quartan parasite had adapted itself so well to the parasitic life in man remaining

in his blood for years, as is well known, in spite of all therapeutic measures, that only rarely, and after a prolonged sojourn in its human host, does it develop those forms which are capable of continuing its life in the outer world. This scarcity of gametes, from which arises the difficulty of infecting the anopheles, explains likewise the relative rarity of the quartan as compared with the other varieties of malarial fever.

It does not appear to us admissible that, to obtain the development of the quartan parasites in the anopheles, a different temperature from that in which the tertian and æstivo-autumnal parasites accomplish their development is a necessity; in fact, nearly all the cases of quartan observed by us in the Hospital of Santo Spirito had contracted the fever in the summer or autumn—that is to say, under the same conditions of temperature and surroundings as the greater number of the tertian and æstival cases.[6] It would, however, be desirable to ascertain what the most favourable temperature is for the development of the quartan parasite in the anopheles. Judging from the observations made in the case above-mentioned, which gave the greatest number of positive results, one would say that the most favourable temperature is about 20° C. But further researches would be necessary before a positive statement could be made.

We have hitherto passed over the study of the first phases of development of the malarial parasites in the anopheles, in regard to which Grassi has recently published a short preliminary note.[7] The results of our observations as far as the semilunar bodies are concerned are as follows. The flagellates form rapidly in the intestines of the anopheles, so that impregnation must occur very quickly, but not for many hours after the anopheles has sucked the malarial blood can any changes worthy of notice be perceived in the round impregnated bodies (impregnated macrogametes). After from eight to 10 or 12 hours (the mosquitoes being kept in a warm chamber at 30° C.) one part of the round body becomes differentiated, forming, as it were, a small segment of a sphere and presenting in the fresh specimen a perfectly hyaline appearance. In the other part of the body the pigment is seen collected. From the hyaline portion there now protrudes a prolongation, likewise hyaline, its extremity rounded or somewhat attenuated, which little by little lengthens out, sometimes remaining quite straight, sometimes curving in a hook shape at its free extremity. At this stage of the development we have a figure composed at one extremity of a cylindrical, thinner, somewhat pointed part, and at the other extremity terminating in a sphere, which latter gradually becomes smaller as the cylindrical part grows until when development is complete it has disappeared. At this point the so-called vermicule is completely formed. As has been said, the pigment in the first stages of formation, lies only in the sphere described, and chiefly round its periphery; subsequently it migrates towards the cylindrical part where it tends to collect. In the well and fully-formed vermicule the pigment is found, at any rate in those seen by us, near to the pointed extremity. The protoplasm does not present an entirely homogeneous appearance, some (two) clear spaces being visible in it.

Studying these various stages of formation of the vermicule by Romanowsky's method it is found that the nuclear chromatin is more abundant in it than in the impregnated macrogamete and is disposed in the form of a ball of thread, the nucleus lying at the rounded extremity. In the protoplasm, which is stained blue, clear spaces are visible which have the appearance of vacuoles. In the first phases of development the chromatin presents the same characteristics and occupies the centre of the pigmented sphere. From this description it is evident that the so-called vermicules of semilunar origin present essentially the same characters as the vermicules of the proteosoma described by Koch.

These different phases, it is to be noted, were not seen by us succeeding each other in the same preparation; but by examining various preparations containing the different forms described we have, so to say, reconstructed the process. On this account we consider it more than probable that immediately the blood is removed from its favourable environment—the middle intestine of the anopheles—the process of formation of the vermicule is arrested. At a later period, after about 40 hours, the parasites are seen to have emigrated to the epithelium or more within the intestinal parietes, where they assume elongated (fusiform) or ovoid forms, recalling the fusiform or ovoid bodies of semilunar origin found in human blood.

This much, then, we now know (leaving out of account morphological details) of the development of the malarial parasites of man in the anopheles. All three species of malarial parasite, distinguishable with certainty from each other, adopt as host the same species of mosquito. Do they preserve intact the distinguishing characters of their species? To this question we have returned an affirmative answer, relying not merely on morphological data—that is, on the possibility of distinguishing in the mosquito the various species of malarial parasite, at any rate in some phases of their development—but also on the results of experiment. In fact, we had seen with Grassi that anopheles, after having sucked blood containing crescents, on subsequently biting a healthy person communicated to him the æstivo-autumnal infection; and recently we have made a corresponding test with tertian parasites showing that anopheles, after having bitten a tertian patient, become capable of inoculating tertian fever into a healthy person. Seeing that we had kept these anopheles infected with tertian blood at a temperature of about 30° C. this experiment allows us to exclude the possibility that the tertian parasite may be transformed into the æstivo-autumnal through the agency of the high summer temperature; in other words, it authorises us to exclude the hypothesis of a *seasonal polymorphism*, as it has been called, of the malarial parasites, by which theory we might think to explain how it happens that after the mild tertian fevers prevailing in the spring there should follow in the beginning of July the summer tertian or the pernicious fevers. Thus even after their passage through the anopheles the species of malarial parasites remain distinct and are not become transformed one into another.

Besides this result our inoculation experiments carried out with anopheles permit us to affirm that *a single infected mosquito* is capable of inoculating malaria into man. The knowledge of this fact has a great practical importance. We may even say more—namely, that a single mosquito by successive bites can infect several people; in fact, on examining some of the mosquitoes employed in our experiments after they had bitten the healthy subject, who had subsequently taken the fever, we have still found sporozoites in the salivary glands and mature capsules with sporozoites in the intestine, proving that, even if at a single bite the anopheles empties all the contents of the salivary glands, the glands may still become affected afresh. And, more than this, since it may occur that two species of parasite may develop in one and the same mosquito—for instance, an æstival and a tertian parasite—the two, as we have proved, remaining distinct, it can well happen that a single anopheles may inoculate a mixed infection—e.g., æstival and tertian. Indeed, it is well known that mixed infections of æstival and tertian fevers are by no means rare in Italy.

In view of these facts recently added to our knowledge, and from which it follows that the parasites of human malaria have two necessary hosts, man and anopheles, the study of a malarious locality and of a malarial outbreak must be approached from a new direction. Thus to explain in a complete manner the course of an epidemic of malaria it would be necessary to study, firstly, the malarial individuals; secondly, the malarial mosquitoes; and, thirdly, the places in which the larvæ of the anopheles develop, or that which constitutes a malarial soil in the traditional sense of the expression. The study of the malarial individuals ought, of course, to be made with the object chiefly of establishing as accurately as possible the time at which they took the infection; then the anopheles of the locality should be examined in order to learn what occurred in them during the same period; and, finally, these two orders of facts should be compared for the purpose of ascertaining what relation might exist between them. Such an investigation we have endeavoured to make since the spring of 1899. until the outbreak of the annual malarial endemic in the district of Ostia, a locality known to be highly malarious, in spite of the improvements which have been carried out there. The following is a short account of the results of this inquiry and of the inferences which we have drawn from them in regard to the practical measures likely to prevent infection.

[6] Grassi considers that the quartan parasites do not develop in the anopheles when the temperature is elevated. This view would be opposed to the epidemiological facts stated above.

[7] According to Grassi the zigotes assume very various forms "more or less recalling the radiæ, sporocysts, and cercaria of the trematodes," &c.—Atti dell' Accademica dei Lincei, Sept. 17th, 1899.

With respect to the study of the malarial patients we may say at once that the observations made this year go to confirm what we already knew from the experience of preceding years. In winter as a rule only *relapses* of æstivo-autumnal, quartan, and tertian fever are observed. As the season advances the relapses of æstivo-autumnal fever become more and more rare, until in the spring it is most difficult to find a patient with crescents; indeed, in the district of Ostia, notwithstanding repeated search, we did not succeed in finding a single case. On the other hand, relapses of tertian and quartan continue to occur right through the spring up to the commencement of the new malarial season, which begins in the first week of July with a sudden increase in the number of patients, among whom, besides many common tertians, are found the first cases of the new season's summer tertian. During the spring some rare cases of first attacks of common tertian are met with. These have been perhaps rarer this year than in past years. But although the possibility undoubtedly exists of contracting a primary infection of common tertian in the spring the *fact* remains that the malarial season proper, with its fresh outbreak of primary attacks, does not commence till the beginning of July and does not terminate till the end of the autumn.[8] This holds good for all the varieties of malaria as much for the common tertian as for the summer-autumn and the quartan.

A methodical examination of the patients admitted during that period to the Santo Spirito Hospital has led us to the same conclusion. From the first half of April till the first half of May the admissions to the bospital were relapses of tertian and quartan and, besides, four cases in which crescents were found. From May 21st to June 20th we examined the blood of 42 tertians, of five quartans, and of only one patient with crescents. The tertians, except two or three, had all had fever during the previous year; the quartans were all relapses; the patient with crescents had suffered from fever since the previous June. From June 20th to June 30th the patients were very few—seven tertians, one quartan, and five æstival—of which latter three were cases of first attack and two were cases of relapse. The last two patients had suffered from fever at irregular intervals since October of the previous year and showed crescents in their blood. At the beginning of July began, as usual, the influx of patients with primary infections—in fact, during only nine days (from July 1st to July 9th) we examined the blood in 26 cases of common tertian, 17 of which were, however, those of patients who had suffered from fever in the previous year and in whom, therefore, it was not possible to be certain whether we had to do with a relapse or a re-infection. During the same period the patients with æstivo-autumnal fever numbered 27, of whom certainly 17 had primary attacks.

From this examination of the patients admitted to the Santo Spirito Hospital we therefore drew the same conclusions as from our inquiry among those in the Campagna of Ostia. The only difference is that among those received into Santo Spirito Hospital we found some crescents (very rarely, it is true), while during the same period we found none in the Campagna. This may have been owing to the fact that only the peasants which have the gravest forms of relapse and the largest number of parasites take refuge in the hospital, whilst those which remain in the Campagna have so few parasites that the crescents are very difficult to find.

Let us now turn to the observations made contemporaneously on the anopheles, premising that in the whole district of Ostia (as in all the other places where, as, for instance, at Porto, the first tentative experiments with mosquitoes were made several years ago) the mosquito which almost exclusively prevails is the anopheles, and more especially the species anopheles claviger. In the months of March, April, and May we found anopheles in the houses, in the stables, and also under the bridges, generally with mature ova which for the most part were deposited after the mosquitoes had been brought to the laboratory. We found the same at Porto and at the Tre Fontane. In the month of June we began to find anopheles infected with malarial parasites, but only in small proportion—on an average about 3 per cent. of those caught in inhabited localities. Of those, on the contrary, caught in localities far from any habitation—for example, in a house near the small lake at Castel Fusano, in which there was at the same time a perfect swarm of larvæ—none were infected with the parasite of malaria, although they frequently contained other parasites—as, for example, a special brown sporozoon described briefly by Grassi and us, filariæ of at least two species, &c. It is thus evident that the few malaria-infected mosquitoes met with had taken the parasite from patients suffering from relapses of fever in whose neighbourhood they were living.

During the harvest season in June and beginning of July the number of infected mosquitoes remained very much the same. Wherever people congregated there also the anopheles gathered. For instance, the harvesters slept in the open until June 22nd, but on that date a large company of them were housed in a big granary which served them as a dormitory. On the 23rd, after a long search, a single anopheles was found in the granary; on the morning of the 24th eight were captured; and on July 1st no less than 366. Of these 90 were examined and only three were found to be infected, one of them with mature bodies and sporozoites in the intestine. Subsequently the number of infected anopheles increased at a rapid rate. It is instructive in this connexion to study what took place in an encampment of labourers (corn-threshers) near Ostia (on the Calabresi estate). The work there commenced on June 21st and continued till the beginning of August. About 42 men took part in it regularly (besides others of the floating population who could not be taken into account). Of these some had fever in the previous year and until the work commenced had suffered from relapses of tertian; in none were crescents found. Naturally we cannot exclude the possibility, however, that one or other may have had an extremely small number in his blood. Of the anopheles collected in the huts of seven of these people on July 1st two out of seven were found to be infected; of those collected on the 9th and 10th two out of 17; of those captured on the 17th 15 out of 32, or about 40 per cent.; and on July 20th the number of infected anopheles had risen to 11 in 17, or about 64 per cent., some of them presenting ruptured capsules and mature sporozoites. It is to be noted that the anopheles captured during the same period in the stables or at a distance from human habitations were, as a rule, not found to be infected. At the end of July and the beginning of August nearly all the men who had slept in these huts were affected with æstivo-autumnal or tertian fever. Evidently they had been infected by the mosquitoes which had invaded their huts and which had in their turn taken the parasites from those amongst the labourers who were suffering from relapses of fever. The progressively increasing number of anopheles found infected explains in the clearest manner, it appears to us, the final outbreak of the disease amongst nearly all the labourers.

It would thus appear from the above observations that the outbreak of the malaria endemic in its severe form at the beginning of July can be satisfactorily explained by the presence of anopheles which have become infected by the cases of fever relapses which are to be met with in May and June. Certain difficulties, however, present themselves to the mind which we cannot for the moment easily overcome. For instance, how are we to explain the great number of cases of æstival fever in the beginning of July, so many of which are certainly primary attacks, whilst in June the patients through whom the mosquitoes must have become infected had, so far as one could ascertain, the tertian variety of fever? It may be that the existence of crescents in some of these patients escaped our notice, a thing easily possible, since part of the population was a fluctuating one. But, even granting this, it is evident that in order to clear up the difficulty completely further researches are necessary.[9]

[8] Celli and Delpino: Contributo allo Studio della Epidemiologie della Malaria (Supplemento al Policlinico, Sept. 1st, 1899).

[9] The most common form of mixed infection, according to our experience, is that of æstivo-autumnal and tertian. The two kinds of infection do not manifest themselves simultaneously in the patient, but succeed one another; in fact, we have frequently seen patients with æstivo-autumnal fever, although residing in a locality free from malaria, suffer a relapse of common tertian, and, further, observed patients with æstivo-autumnal fever, in whose blood the æstival parasites were numerous, show also a very few tertian parasites without the clinical course of the disease being modified. These facts convince us that many of the patients who present themselves at the hospitals at the beginning of July with æstival infection apparently pure have been in reality inoculated likewise with tertian parasites. But the æstival infection develops first and alone, first of all because, as we know, its period of incubation is in general shorter than that of tertian fever; we also know that in the mixed infections one of the species of parasites always predominates and gives its stamp to the clinical picture, the other species developing when the first is temporarily or definitely exhausted. These considerations, together with what we know of the

Naturally, the new malarial season once fairly started, the continuation of the epidemic is easily explained by the passage of the hæmosporidia from man to the anopheles and from the latter back again to man.

Finally, coming to the third subject of our researches—namely, the study of the localities in which the anopheles develop—it is necessary to recognise the fact that at Ostia, in spite of all the recent improvements, there exist all the conditions favourable to the production of the malarial mosquito. The district of Ostia is intersected by a dense system of canals which collect the water of the lowest levels and convey it to the elevating machines by which it is emptied into the sea. This system of canals consists of a main channel with secondary channels leading into it. Now in all the secondary canals, and in the part of the principal canal farthest from the machines, where there grows a rich vegetation of reeds and algæ, we found, from the beginning of June onwards, an immense number of larvæ of the anopheles. The larvæ were absent in the part of the principal canal nearest to the machines, where the vegetation was scanty or wanting, and where the action of the machines kept up a considerable current. Everywhere else, wherever the water moved very slowly or tended to stagnate—which in summer is almost the rule, because the machines on account of the low water-level only work in an intermittent way—the development of the larvæ was most vigorous. Another very favourite breeding-place of these larvæ is in the neighbouring small lake on the estate of Castel Fusano. We found larvæ very numerous everywhere from the beginning of June onwards till the middle of July, when they were fewer; and they were again numerous there and elsewhere in the Campagna, especially in the small lakes at Porto, in the months of September and October up to the time of the last rains. These facts explain in an entirely satisfactory way why the drainage works at Ostia, in spite of the removal of the marshes, have not, from a hygienic point of view, achieved their object.

And now, what practical conclusions can be drawn from these data with respect to measures of prophylaxis against the infection? These are abundantly evident. Indeed, everyone in Italy who has made a study of the subject in the light of these new researches has insisted from the first that the careful treatment of the malarial patient constitutes one of the principal tasks of social hygiene. We ourselves, in a short article published last April, were careful to note that the energetic treatment with quinine, from the commencement of the infection, of the æstival fevers not only reduced the dangers of relapses to a minimum, but had evidently a great importance for general prophylaxis, since the parasites by its means could be prevented from developing into those forms which continue their life in the anopheles. The treatment of the malarial patient ought, therefore, to be carried out systematically and energetically in the same manner as is practised when countries are invaded by other epidemic and contagious diseases. And yet we see here in Italy the peasants of our country districts suffering for years from the disease abandoned to themselves and continually disseminating the infection. This could be put to the test of experiment by treating all the patients in some circumscribed area systematically throughout the winter and spring from the date of their first febrile attack (thus reducing relapses to a minimum) in order to see subsequently what the behaviour of the infection might be in the new malarial season—that is to say, from the beginning of July onwards.

We urge that the treatment should be carried out energetically from the date of the first febrile attack because we know that quinine, although it can interfere with, and even prevent, the development of the young crescents, has no evident action on those already matured. Indeed, we have several times seen since July of this year that crescents from the blood of patients under the influence of quinine may complete their life-cycle in the anopheles in the normal manner.[19] It is true that an ideal prophylaxis would be attained by removing the conditions which are necessary to the development of the anopheles in the malarial areas. Limiting ourselves to a consideration of the district of Ostia which we have studied we hold that such an object might, at least in part, be obtained by keeping the canals clear of the excess of vegetation, by removing the obstacles which in some of them retard the flow of water, and by working the elevating machines more regularly so as to maintain a certain degree of velocity in the current. By these means the immense production of the larvæ of the anopheles might be at any rate diminished. But it is not our intention to occupy ourselves with the question as to the method best adapted for attaining the end in view; this is a task which does not concern us. We confine ourselves to indicating the fundamental points which ought to guide those who devote themselves to a practical solution of the problem, those being a knowledge of the localities in which the larvæ of the anopheles live and develop and of the reasons why they thrive in these places.

Note.—We have stated in the above paper that nearly all the quartan patients observed by us in the Hospital of Santo Spirito had contracted the fever in the summer and autumn—that is to say, under the same conditions in regard to temperature and surroundings as are required for the development of æstivo-autumnal and the greater number of tertian infections—and we have inferred from this that the anopheles must in general become infected with quartan parasites under the same conditions of temperature as those under which they become infected with crescents and the gametes of tertian fever. This is not opposed to the fact which has long been known that the majority of quartan cases are met with in our hospitals in the autumn and winter—that is, in the cold season. Indeed, if the history of these patients be closely inquired into it is found that in general they have been residing in the Campagna during the hot season and have taken the disease in a form at first not characteristic of the quartan type, but that subsequently a relapse occurred, occasioned by the cold weather, and that this relapse ran a typically quartan course.

Rome.

greater pathogenic power of the æstival parasites, can be utilised for explaining, at any rate in part, the facts above mentioned.

[19] The same facts have been noted independently by our colleagues Gualdi and Martirano.

VOLKMANN'S ISCHÆMIC PARALYSIS; ITS TREATMENT BY TENDON-LENGTHENING.

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IT is probable that few only are familiar with the title of this paper. Examples of the disease are happily rare, and the name is not to be found in our text-books. Yet the affection is one of serious gravity and hitherto has been found little amenable to treatment. I propose, therefore, to record a case in which great benefit has accrued from lengthening the contracted tendons, not only by enabling lost movements to be regained, but also by restoring the affected muscles to a seemingly more healthy state. In describing the case I hope to bring the salient aspects of the disease forward and to point out the causes which induce it. Volkmann's own account of it may then be considered.

A boy, aged four and a half years, was first brought to my notice and admitted under my care in St. Mary's Hospital on Nov. 5th, 1898. In August he had fallen on his left elbow and sustained a transverse fracture of the lower end of the humerus. Separation of the lower epiphysis was not, however, excluded from the diagnosis. For some inscrutable reason the limb was put up in the flexed position with anterior and posterior splints on the forearm. All seemed going on well the next day and the splints were not disturbed, but when the child was brought to the casualty room a few days later there was found to be total loss of power of the fingers and wrist. Immediately below the fold of the elbow the pressure of the end of the splint had caused a superficial slough, which became detached in the course of four weeks and left an open wound which healed by granulation. In the meantime the limb was secured on a single posterior splint, and when this was abandoned at the end of four weeks the parents were instructed to manipulate and rub the arm, for an increasing tendency to contraction of the fingers had been noticed and the wrist also was becoming more and more flexed. On one occasion under an anæsthetic a fruitless attempt was made to straighten the fingers and hand. Such was the story related to me.

When I first saw the child, three months after the accident, the arm was supported in a flexed position midway

between pronation and supination. The site and surroundings of the scar below the elbow were exquisitely tender, and there was tenderness of the whole anterior surface of the forearm also, so that the child could hardly bear to have his limb examined. There was extreme flexion at the wrist and the fingers also were flexed into the palm. So great indeed was the contraction of the flexor muscles that extension of both fingers and wrist was hardly possible even with much force, but the joints were clearly unaffected. Strong flexion of the wrist had but small influence over the extensibility of the fingers. Anæsthesia was partial only, involving the ulnar distribution in the hand, and there was some suspicion of wasting of the first dorsal interosseus. The flexor muscles felt peculiarly unyielding to pressure and decidedly firmer than natural. With the exception of the nervous affection which has been named I could detect no median, ulnar, or musculo-spiral paralysis, and I attributed the slight ulnar paresis to local injury to the ulnar nerve at the site of the fracture, and possibly to the pressure of callus which was to be felt at the lower end of the humerus. My own belief was that there had in reality been a separation of the lower epiphysis. An examination under an anæsthetic threw no further light on the condition, nor was the contraction of the flexors in any way lessened. That this deplorable state of things was in some way the result of splint pressure there could be no doubt, and in all its aspects the case was exactly like two other cases which I had had the opportunity of seeing.

This, then, being the state of the limb, and massage, electricity, and movement being each and all without remedial influence, it was thought that lengthening of the flexor tendons gave fair promise of benefit, and accordingly, on Dec. 20th, 1898, the tendons having been exposed by raising a rectangular flap immediately above the wrist were each in turn split longitudinally, severed to right and left at the opposite ends of each incision, extended, and sutured with the finest silk in the usual way. This part of the procedure was by no means easy. The diminutive size of the tendons in the small arm of a little child made it very difficult to fix the sutures, and I had slight hope that successful union would follow. I was not sure, moreover, that in every instance the divided tendon was joined to its own partner, and it is highly probable that a superficial flexor may have been attached to one of the deep tendons. This was quite unavoidable. In any case I thought that it would not materially affect the ultimate result. Exposure of the muscles enabled us to judge of their condition. They gave the impression of being stiff and unyielding, firmer than natural, and as if their structure had been changed—not at all as if they were affected by some spasmodic contraction of nervous origin. This, indeed, was their state as I have already endeavoured to describe it when estimated by manipulation through the skin, and it suggested that there really was some alteration in the physical constitution of the muscle fibres themselves and probably also of the connective tissue around and between them. The hand and arm were now secured in the flexed position, and the wound healed by first intention. After a fortnight we ventured to move the child's fingers and it then appeared that considerable union of tendons must have taken place. Tentatively, therefore, day by day, and each day with increasing boldness, both arm and fingers were extended, and at the same time massage and electricity were brought to bear upon the affected limb. Improvement was very slow and the patient left the hospital in February, 1899, with a feeling of disappointment on our part that it had not been more decided, but with the hope that much might yet ensue. The child was to attend as an out-patient for electrical treatment and from Dr. Wilfred Harris, under whose care he has since been, I learn that there was at first very decided reaction of degeneration, but that recently this condition is not so marked. Reference will be made again to the electrical phenomena when considering the causation and underlying structural changes of this remarkable form of paralysis.

I next saw the child at the end of July and was happy to note distinct signs of improvement. That, with the one exception of the forefinger, the tendons had united there could be no doubt; tenderness of the limb was much less and the wrist and arm could be extended without anything like as much associated flexion of the fingers as had been remarked when the patient left the hospital. The mother was urged to continue her attendance at the hospital with every hope of still further improvement. When seen again at the beginning of October so great had been the progress that it was hard to believe that we had the same limb before us. All tenderness had gone. The forearm could be completely extended, the wrist and the hand could be voluntarily put in the extended position, flexion of the fingers was easy, and the little fellow could make a fist. The forefinger only was at fault, the flexor profundus alone acting on it. Furthermore, the muscles of the arm seemed to have lost that peculiar sense of resistance which had formerly characterised them. I had no longer any hesitation in holding out a much more favourable prognosis as regards the usefulness of the limb, believing that still greater improvement would surely be noticed as the limb in the natural process of growth increased in size. I feel justified, moreover, in placing the case on record now, sufficient time having elapsed to admit of a fair estimate of the result of operation.

Turning now to a consideration of the causes which induce this form of paralysis there is a consensus of opinion that in some way or other it is the prolonged pressure and fixation of the limb in splints which give rise to it. Thus Anderson[1] says: "It is a result of prolonged immobilisation of forearm fractures by any form of apparatus that intercepts the free circulation of blood through the muscles and nerves of the part." He seems in this extract to accept the view put forward by Volkmann as to the ischæmic origin of the affection and that it is not due primarily to a nervous lesion. On this point there is room for difference of opinion and the opinion of Volkmann himself may first, and very rightly, engage us. I find that the earliest reference made to it by him was in a footnote to a paper on inflammation of the muscles where he says[2]: "The severe contraction of the hand after too tight binding of the forearm after fracture belongs in part in all probability to such a process of inflammatory muscle-contracture and not to primary nerve-paralysis from pressure. The resultant *main en griffe*, as it is termed, has a very bad prognosis. The contraction of the fingers and hand remain so pronounced in spite of electrical treatment, passive motion, and forcible extension under an anæsthetic that amputation may in the end have to be resorted to. Complete recovery or even marked improvement I have never seen; and only in one instance, after unwearied trouble and long-continued treatment, have I noticed a diminution of the contracture and slightly better movement. The contracture comes on very rapidly and in a few weeks may attain to such a degree that the finger-nails bore into the flesh of the palm. In paralytic contracture no such acute contraction is ever seen." The next paper to which I will refer is by Kraske,[3] a pupil of Volkmann, and since distinguished in other spheres of surgery, in 1879, on the changes found in transversely striated muscles after exposure to extreme cold. His observations are based on the microscopical examination of the muscles of two legs which had been amputated for gangrene the result of some hours' exposure to extreme cold. He described widespread necrobiosis of the contractile substance, complete loss of the nuclei in many of the primitive fasciculi, and the absence of striation and a granular appearance of the fibres. Reparative changes were also distinctly visible, and then he writes: "The appearance of the muscle tissue corresponds closely to the changes which are seen in the muscles of a limb which has been for a time rendered bloodless by circular constriction. The ischæmia, induced in the one case by lowered temperature and in the other by circular constriction, determines a partial necrobiosis of the contractile substance, to which is added some precedent inflammation in the perimysium internum and regenerative processes in the surviving muscle fibres."

It is unnecessary to dwell further on the microscopical changes which are to be found in muscles which have been deprived of blood. The clinical phenomena are here of more concern, and a précis may be given of the conclusions at which Volkmann had himself arrived and which are to be found in his paper on "Die Ischaemischen Muskellähmungen und Kontracturen."[4] He there relates how the observation of a considerable number of cases in the course of several years had led him to believe that the paralysis and contracture, the result of too tight and too long fixation, were due to a direct effect upon the muscles themselves rather than to any nerve lesion. The following are his propositions: 1. The paralysis and contracture are of ischæmic origin and

[1] Fingers and Toes, p. 65.
[2] Krankheiten der Bewegungsorgane, 1875, p. 846.
[3] Centralblatt für Chirurgie, 1879, vol. vi., p. 193.
[4] Centralblatt für Chirurgie, 1881, No. li.

dependent on the deprivation of arterial blood. The simultaneous venous congestion which is often seen appears only to hasten the onset of the paralysis. 2. The paralysis depends on the fact that the muscle fibres perish from prolonged want of oxygen. The contractile substance coagulates, breaks up, and finally disappears. Rigor mortis is in fact induced in the affected muscles. 3. It is especially characteristic that paralysis and contraction arise simultaneously, not as in paralysis of nervous origin where contraction is a later phenomenon and of gradual onset. 4. From the earliest moment and in quite recent cases the muscles assume the state of rigor mortis and there is the greatest obstacle to extension of the limb. 5. By contraction of the material thrown out in the attempts at repair the rigidity and contracture of the limb are made worse. 6. Ischæmic paralysis and contracture of the same nature are also seen to follow the application of Esmarch's bandage, injury to the greater vessels, and exposure to extreme degrees of cold. 7. The degree of paralysis and contraction depends upon the length of time that the blood-stream has been arrested. If the ischæmia has been extreme the most serious consequences may follow in half a day, or even less, while symptoms of a high grade of severity may result from slight constriction and pressure of several weeks' duration. This is most common after fractures of the radius. 8. The prognosis is bad, and in the worst cases involving the hand and fingers the condition is absolutely irremediable. It is better in the case of the lower limb, for here tenotomy may be practised. The slighter cases may be benefited by energetic treatment with massage, &c. 9. Mechanical treatment is practically useless. In recent cases one would endeavour to extend the muscles under an anæsthetic; but in those of long standing any attempt to do so would be found to break the bones or tear the tendons before the muscles would yield.

So far Volkmann, in unavoidable abbreviation, and with the single exception of Anderson's work already referred to I have failed, even with the invaluable help of Mr. Plarr, Librarian of the Royal College of Surgeons, to find aught else in medical literature upon this interesting subject. That this singular form of paralysis is due to the combined influences of pressure, fixation, and ischæmia there can hardly be a doubt, nor is there any doubt that my own case was an example of it. The rarity of the condition is probably one reason why so few cases have been placed upon record; but it is not unwarrantable to assume that some have not seen the light because, in the words of Anderson, the paralysis is "a reproach to surgery, since a careful observation of the hand and fingers during the use of splints will always give due warning of the danger."

It is not, however, by any means so certain which are the structures upon which continuous pressure exerts this injurious influence. In the observation of my own case I could never believe that it was simply a nerve lesion with which we had to do. The slight ulnar paresis was obviously the result of a trifling injury to the ulnar nerve at the site of injury to the bone, and there was no reason for thinking that the pressure of the splints could have been specially exerted upon this one nerve. If upon any, the median was surely more exposed to pressure, but there was no special evidence of injury to it, and as pointed out by Volkmann the simultaneous origin of the palsy and the contracture was altogether unlike the effect of gross lesion to a nerve trunk. But the electrical observations of Dr. Wilfred Harris show indisputably that nerve elements had not escaped injury. After describing the reaction of degeneration which he discovered, he says, "Any ischæmic condition would, I imagine, damage the nerve-end-plates as well as the muscle and one might expect, I should think, some reaction of degeneration." Mr. Anderson tells me that this view coincides exactly with his own as given in a previous quotation. Dr. Harris adds in a later communication: "The fact of the great reduction to faradaism in the flexor muscles when I first saw the case suggested to me a nerve lesion, perhaps intra-muscular, and does still, since in acute myositis there are no electrical changes until the late stages when atrophy, if any, sets in. Erb, too, states positively in his book that primary muscular conditions do not cause reaction of degeneration, which is in his opinion proof of nerve lesion. But I know nothing of ischæmic myositis and probably Erb did not either and the reactions may very well be a part of the condition as you suggest. The obvious answer to the difficulty would I think be supplied by experiment." I have ventured to repeat here what Dr. Harris has written to me, for he speaks with an authority on such matters to which I cannot pretend. But nothing that he tells me is, I believe, opposed to the view which I would provisionally hold as to the causation of this particular form of paralysis and contracture, that it is not primarily or even in the main due to a nerve lesion but that it is due to the combined effects of pressure, immobilisation, and greatly diminished blood-supply therefrom upon the muscular elements, the connective tissue elements, and the nervous elements which are met with in every muscle throughout the body. That pressure alone, or immobilisation alone, or deprivation of blood alone could bring about the results which are seen is not nearly so likely as the combination of all three, and there is no part of the body on which they can be so readily brought to bear as in the case of the forearm bound up and negligently left bound up after fracture. May the publication of this case be the means of making the evil consequences of such ill-treatment more widely known.

Lastly, as to the tendon-lengthening which was practised here. It seemed to me that it offered the best chances of amelioration of the distressing condition, and from personal experience of it in other instances and for other purposes I felt that the operation was one upon which we might rely. Originally performed and recommended, I believe, in this country by Anderson, and a year later in America by Keen, the operation has become a recognised procedure of much value in surgery, and has doubtless been used by many surgeons. Keen[5] employed it in a case of post-hemiplegic contracture of the flexors of the fingers in a lady 25 years of age, and lengthened four tendons of the deep flexors, five of the superficial and those also of the two carpal flexors, of the flexor longus pollicis, and of the palmaris longus with some measure of success; and Anderson[6] records a case of a girl, aged 17 years, with flexor contraction the result of some injury to the arm in childhood for whom he lengthened the tendons with much benefit. I am further indebted to my friend Mr. Anderson for the opportunity of reading the accounts of two other cases by Dr. Colgan and Dr. Wilson respectively, but they have no special bearing upon the subject of tendon-lengthening in such a condition as was seen in my own case. Akin to it, though owning a different cause, were the cases of Anderson and Keen; but there is, I believe, no case on record in which it has been practised in Volkmann's ischæmic paralysis. The result has far exceeded expectation, and I take it that the great improvement is due not alone to the mere fact that the tendons have been made longer, but that by their lengthening an increased range of movement has been made possible in the affected muscles. Muscles are meant for movement, and movement is an essential element in the treatment of any such affection as the peculiar contracture seen in this disease. Massage and electrical stimulation are also without doubt of inestimable value, but they are likely to fail of their purpose unless some movement is possible at the same time. At any rate, speculation apart, the result of the operation in this instance has been so satisfactory as to justify me in commending the adoption of the same method to the notice of surgeons.

HYPOTHERMIA.[1]

BY E. B. HULBERT, M.D. DURH., M.R.C.S. ENG., L.R.C.P. LOND.

A MAN, aged 36 years, married, the father of three children, was admitted into University College Hospital under Dr. Charlton Bastian (whose clinical clerk I happened to be at the time, and for whose kind permission to make use of the notes of the case I am deeply indebted) on April 16th, 1887, complaining of drowsiness and occasional frontal headache of about two years' duration. He had had scarlet fever when he was a lad and soft chancre ten years before coming under observation, but he denied syphilis. There was no history of nervous disease in the family. He

[5] Transactions of the College of Physicians of Philadelphia, 1891.
[6] Loc. cit., p. 58.

[1] Being a contribution to a discussion on Temperature in Health and Disease, read at a meeting of the Windsor and District Medical Society on Dec. 20th, 1899.

had been for some years a chemist's assistant, but had latterly been dismissed from his situation in consequence of his marked drowsiness, which at times led to his falling asleep over his meals and when at work, and because he was not always responsible for his actions. Thus on one occasion he was found on the doorstep of a strange house far from home, and on being questioned could give no account of himself and had no recollection as to how he arrived there.

As the man remained in the hospital, with the exception of about ten weeks, until his death on Jan. 2nd, 1888, the notes of the case are naturally voluminous, and the following epitome of his leading symptoms may suffice. Delayed cerebration; occasional mild delirium, diurnal or nocturnal, and at times of a restless type; speech slow and scanning; the skin temperature was obviously depressed; pin-point pupils, reacting to accommodation but not to light; knee-jerks and ankle clonus were absent; no definite spasms or paralysis, either of motion or sensation, until a late period in the case, when generalised twitching movements of the limbs and face occurred; during the same time there was noted want of control over the sphincters; the pulse was regular, of fair volume, the rate varying, directly as the temperature, between the extreme limits of 36 and 170 per minute; the respirations also varied in the same manner from 10 to 48 per minute and at the close were of the Cheyne-Stokes type. The somnolence, always present, was variable in degree but increased as time wore on, and the patient finally died in a comatose condition. The diagnosis made was that of some diffuse degenerative change in the brain, possibly sclerotic in character, and beginning chiefly in the pons and medulla

A most careful post-mortem examination was made and numerous microscopical sections were cut from the cerebrum, cerebellum, pons, medulla, &c., but no gross lesion was discovered in any part of the body.

The interest of the case is chiefly centred in the records taken of the temperature, which was taken on 88 days, commencing on Oct. 5th, 1887, several observations, even as many as 11, being made daily; on only 18 days was the temperature found to register above 98·4° F. The rectal thermometer, which was used for the majority of the readings, was made by Hawksley and was very carefully compared with a standard instrument registered at Kew, made by Casella, and great care was taken to avoid erroneous observations, thermometers being not infrequently placed simultaneously in the mouth, the rectum, the axilla, and even in the urethra. From Oct. 6th to the 16th inclusive the temperature was not accurately recorded, as the ordinary clinical thermometer used was not marked below 95°. The same happened on Nov. 2nd and 3rd, and again from Nov. 9th to the 14th; the rectal instrument on this date recorded 83 3°, and on the same day, without obvious cause, the temperature rose 12·6° in nine consecutive hours, reaching 95·9°. Two days later it sank 13° in 16 hours, the thermometer left in the rectum for half an hour marking 82·3°. On the next day the temperature was slightly lower, and on the following day the minimal temperature in this case was recorded—viz., 81·6° in the rectum (half an hour's observation)—and simultaneously a surface instrument placed on the chest-wall for two hours registered 75·5°. At this stage a hot bath was given, the temperature of the water being gradually raised from 98° to 105°, and the patient's temperature rose 13·1° in 67 minutes and 19 5° in 18 hours. It then became slightly raised above normal for a day or two and again descended, a reading of 90·2° (skin of the chest one hour) being obtained on Nov. 21st. The descent continued with fair uniformity, successive readings of 91·5° (axilla), 89·1° (axilla), 88·3° (rectum), and 85 7° (rectum) being obtained. An hour spent in a hot bath again produced a rise of 13·6°, but the effect was only temporary, 85·5° (rectum) and 85 3° (rectum) being noted. Here the temperature rose somewhat rapidly, and shortly after death marked 104·8° in the rectum.

The literature on the subject of subnormal temperature appears, on the whole, to be scanty, and it is certainly, according to my experience, widely diffuse. A brief epitome may, therefore, not be entirely out of place.

Erichsen[2] says that in fracture of the lower cervical region the temperature may rise to 111° or may sink to 81°, but that the cause is not well understood.

Roberts[3] enumerates amongst the conditions producing subnormal temperatures shock, collapse, severe injury to the upper part of the spine, some diseases of the brain or spinal cord, starvation, severe hæmorrhage, and some chronic wasting diseases—e g., cancer. Regarding cholera, he says that in the stage of collapse the temperature in the mouth ranges from 79° to 88°, in the axilla from 90° to 97°, but that it reaches a much higher level in the vagina and rectum. Also, "a very low temperature has been noted in carbolic acid poisoning and in sclerema neonatorum." He states, "Should the temperature fall below 93° death almost always results."

Russell Reynolds[4] corroborates certain of these statements.

Bristowe[5] says: "In collapse—the result of severe injury—the temperature even in the rectum may fall (Wagstaffe) as low as 82·15°."

Quain[6] states: "A temperature of 71·6° has been observed in sclerema neonatorum." And again, "The whole range of temperature within which life can well be maintained is comprised between 90° and 110°.

Landois and Stirling[7] mention Löwenhardt as having found that "in paralytics and in insane persons several weeks before their death the rectal temperature was 86° to 87·3°." Also, "Beckterew found in dementia paralytica before death 81·5° in the rectum; the lowest temperature observed and life retained was in a drunken person—75·2°[8] (Reinke, Nicolaysen)."

Fagge[9] says: "A great lowering of temperature by *force majeure*, as Liebermeister terms it, is well seen in persons picked up insensible in the streets during cold weather. Cohnheim alludes to cases of this kind in which the thermometer in the rectum has not risen above 86°, 79°, or even 75°. The pupils are then dilated[10] and sluggish, whilst the pulse and the respiration are greatly reduced in frequency, but unless things have gone too far for recovery to take place such persons under suitable treatment regain their normal temperature in a few hours, or even pass into a condition of reactive pyrexia." Regarding the stage of collapse in cholera he says: "According to Goodeve a thermometer placed in the mouth indicates from 79° to 82°. In the axilla, however, the temperature is seldom below 93° or 94° and in the rectum or vagina it rises through the period of collapse, reaching 100°, 102°, or even 104°."

Gould[11] quotes a case recorded by Duffy in which the temperature in the mouth and axilla marked 84°. The patient was a negress, aged 35 years; she aborted, and death took place on the following day.

Osler[12] treats the subject at greater length. Amongst conditions giving rise to a subnormal temperature he refers to: (*a*) Acute alcoholism, especially when aggravated by exposure to cold. Thus are explained the lowest reported temperatures. He mentions a patient who was admitted under these conditions with a temperature of about 75°; ten hours later the temperature had not risen to 91°. (*b*) Cerebral hæmorrhage. "Here it is often subnormal" (Bastian). He quotes a case in which it sank below 95°. (*c*) Heat exhaustion, especially when combined with physical exertion. It may be as low as 95° or 96°. (*d*) Acute tuberculosis. (*e*) Ague (cold stage). The skin temperature may be low. (*f*) Pernicious malaria—the algide stage. (*g*) Chronic tuberculosis. He quotes a case in which the temperature was 95°. (*h*) Tuberculous meningitis. At the close the temperature may be as low as 94°. (*i*) Uræmic convulsions—after the attacks.

Finally, Wunderlich, in his monograph on Medical Thermometry, published by the New Sydenham Society, as the result of 16 years' assiduous work in this field, deals still more elaborately with the subject. He says: "Exceedingly low temperatures are very commonly met with in the following: In the remissions of a remittent fever; in consequence of loss of blood or powerful evacuations; in the course of defervescence when this is excessive, and sometimes in the death struggle." Treating of collapse, he observes that the temperature very seldom sinks below 91 4°. He defines "collapse temperatures" as those below 96·8° and classifies them thus: (*a*) deep fatal algide collapse below 92·3°; (*b*) algide collapse from 92 3° to 95°. In these

[2] Science and Art of Surgery, ninth edition.
[3] The Theory and Practice of Medicine, second edition, p. 178.
[4] A System of Medicine, vol. i., p. 691.
[5] The Theory and Practice of Medicine, sixth edition, p. 116.
[6] A Dictionary of Medicine, vol. i., p. 1600, article "Temperature."
[7] Human Physiology, second edition, vol i., p. 467.
[8] Locality of observation not recorded.
[9] The Principles and Practice of Medicine, second edition, vol. i.
[10] The pupils were at all times markedly contracted in the case now recorded.
[11] Anomalies and Curiosities of Medicine.
[12] The Principles and Practice of Medicine, last edition.

circumstances it is possible to save life, but the patient is in the greatest danger; (*c*) moderate collapse from 95° to 96 8°; this is in itself without danger. He quotes Fleury as having observed the temperature of a subject in a cold bath sink to 93 2°, or even to 84·2°. Later he says: "Although in certain cases of cholera temperatures of 78·8°, or even lower, have been observed on the surface of the body we may be almost sure (from other observations in the same disease) that the rectal and vaginal temperatures were considerably higher." Again: "Löwenhardt [3] has published four cases of insanity in which lower temperatures occurred than in any hitherto observed. Before death, and indeed for several days, they showed 77°, 85·1°, 74·7°, and 82 4° They were very old people who got out of bed in the coldest time of the year, and ran about naked, and from their dirty habits were constantly being bathed, and who took hardly any food; in one case the pulse was only 45, and in another only 23 per minute." He quotes Magnan as giving a vaginal temperature of 78·8° in a drunken woman who lay out exposed to sleet all night. The temperature became normal in two days. Wunderlich states[14] that the lowest temperature which he had seen followed by recovery was 92·3° (the pulse beating 62 times in the minute). This was an instance of "collapse of defervescence" in enteric. Again, referring to cholera,[15] he observes: "The cutaneous temperature even in the axilla during the algide stage is, as a rule, diminished, sometimes, indeed, very greatly so, yet not often below 95°. The temperature under the tongue may be still more diminished. In the stage of asphyxia the temperature there seldom exceeds 87 8°, and even in cases which recover may fall to about 78 8°. If it fall below this recovery would appear to be impossible." A little further on[16] he quotes two cases, reported by Fischer, of injury to the cervical cord in which temperatures of 93·2° (rectum) and 86·3° (axilla) were recorded; and likewise a case (Wagstaffe) of fracture with dislocation of the sixth cervical vertebra where a temperature of 92 3° was recorded on admission which sank to 81·7° in the ensuing 45 hours, the patient dying three hours later. Later still,[17] he refers to the influence of inanition, especially when aggravated by exposure, loss of blood, vomiting, diarrhœa, exposure to cold, &c. Just before death the temperature may be very low, especially in the syphilitic marasmus of children, of which he gives an instance with a temperature of 77° in the rectum. He also notes a case of ordinary marasmus in which the temperature was 83 4°, and declares on Roger's authority[18] that the axillary temperature is very low in congenital induration of the areolar tissue (sclerema) of new-born children. Roger found that in 29 such cases the average temperature was 87 8°, and of these in seven cases it marked less that 78 8°

Greenhow [19] has reported an axillary temperature of 84°, but the nature of the case is not stated, and included in the charts at the end of Wunderlich's remarkable monograph are three examples of subnormal temperatures—Fig. 10, temperature 92·3°, typhoid with collapse (this patient apparently recovered); and Figs. 75 and 76, temperatures 95° and 95·1° (both these patients died from acute miliary tuberculosis).

Windsor.

[13] Loc cit., p. 204.
[14] Loc. cit., p. 208.
[15] Loc. cit., p. 421.
[16] Loc cit., p. 424.
[17] Loc. cit., p. 423.
[18] Loc. cit., p. 428.
[19] Brit. Med. Jour., 1870.

A MODE OF OPERATING IN CASES OF APPENDICITIS,

ADAPTED FOR USE ON ANY DAY OR AT ANY STAGE OF AN ACUTE OR SUBACUTE ATTACK, THOUGH NOT INDICATED IN EVERY CASE.

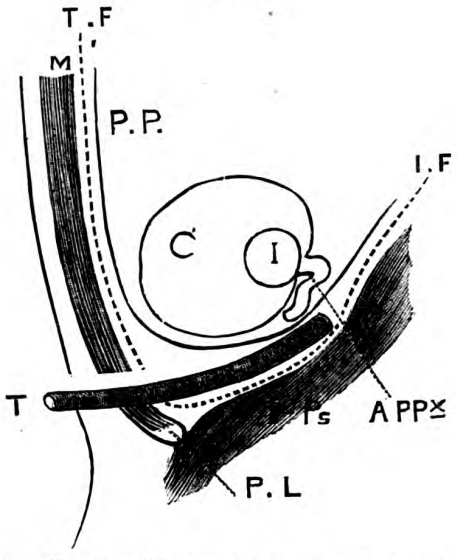
BY C. B. KEETLEY, F.R.C.S. ENG.,
SURGEON TO THE WEST LONDON HOSPITAL.

WITH reference to Mr. C. Mansell Moullin's interesting paper, "Early *v.* Late Operation in Cases of Inflamed Appendix," which appeared in THE LANCET of Dec. 16th, 1899 (p. 1657), and to Mr. James Berry's valuable letter on the same subject in THE LANCET of Dec. 30th (p. 1857), I would call attention to the circumstance that both these gentlemen when writing of "early operation" for appendicitis evidently mean one which opens the general peritoneal cavity and removes the appendix. I wish to describe another mode of early operation which has, I believe, certain advantages.

I would say previously that to some extent I share Mr. Berry's belief that early operations for the removal of the appendix are occasionally performed which result in the loss of life which patience might have saved. But the cases of this kind which have come under my observation have never been *very* early operations. None had been operated on in the first 36 hours. Such a rule as that of waiting until the fifth day I should strongly object to. I believe that more cases operated on from the fifth day to the tenth day are fatal than any others. But that may be because many physicians who do not call in the surgeon till the fifth day would not call him in at all if the symptoms were less serious than those of general peritonitis or acute intestinal obstruction. Therefore I feel, and always have felt, the force of what is really the point of Mr. Moullin's paper—viz., Are we still to fold our hands and leave to chance so many cases the course of which we cannot foresee with certainty? When Mr. Berry writes that, "provided that the patient be kept *absolutely at rest* in bed and not disturbed by purgatives or enemata or other injudicious treatment" diffuse peritonitis rarely supervenes, he is probably right. An exceedingly able and practical physician used to make this view the basis of a firm opposition to *all* surgical intervention of any kind and at any time. A few years ago he suddenly veered to the other extreme, driven thither, I suspect, by a run of ill-luck. Delirium, obstinacy, disobedience, the feeling that "a good motion would relieve all the symptoms," fussy relatives, careless nursing, have all been known to disturb the perfect rest, &c., prescribed for these cases. Another danger is that of heavy-handed palpation of a small collection of pus or of a recent extravasation. Tenderness generally prompts the patient to protect himself from this, but when he is well dosed with opium that protection may be lost. The argument in favour of early intervention is not dependent on statistics, which, as Mr. Berry himself shows, may be easily manipulated. Still less does it rest on Mr. Moullin's personal statistics, whatever they may be.

The mode of operating which I believe to be at all times safe, whether on the first or last day of an acute, a subacute,

FIG. 1.



Rough diagram to illustrate the operation. T. F., Transversalis fascia. M., Muscular and aponeurotic layers of abdominal wall. P P., Parietal peritoneum. C., Cæcum. I, Ilium I. F., Iliac fascia. APPx, Appendix vermiformis. I-Ps., Ilio-psoas muscle. P. L., Poupart's ligament. T, Drainage-tube.

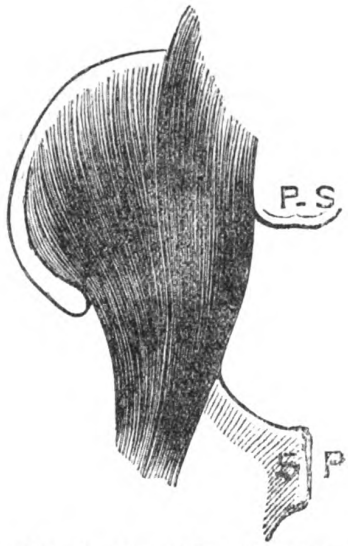
or a chronic attack (I do not say that it is at all times and in all cases indicated) may be described as follows. It takes into consideration the path by which the pus, when pus forms, usually mounts to the inguinal region of the

abdominal wall and it goes to meet it. At the same time it keeps as often as possible outside the peritoneal cavity.

The surgeon proceeds somewhat as if he wished to tie, extra-peritoneally, the common iliac artery. 1. The skin is incised above the anterior superior iliac spine and the outer half of Poupart's ligament, in a line parallel to the latter. 2. The external oblique aponeurosis is divided to the extent of the skin incision. 3. The deeper muscles are penetrated as much as possible by separation of their fibres and towards the outer part of the skin incision by cutting with scissors. 4. The transversalis fascia is divided. Hæmostasis is effected by the way customary with the surgeon operating. 5. The peritoneum is carefully separated from the iliac fascia, the surgeon at the same time palpating for the *deep surface* of the appendix or for the inflammatory thickening around it. 6. A strong light is thrown into the depths of the wound and signs of inflammatory infiltration of the tissues such as indicate the neighbourhood of pus are looked for. 7. If pus is found the infiltrated tissues are carefully torn open with two pairs of dissecting forceps, not cut or roughly punctured. 8. Whether pus is found or not two drainage-tubes of medium calibre are carried to the bottom of the wound. If a collection of pus is swabbed out the greatest gentleness should be employed. It is better not to use the douche or syringe.

Some critical person may say, "Why this is the ordinary mode of opening an abscess secondary to appendicitis." He will be mistaken. In the common operation for opening such an abscess, step 5 of my operation, which is all-important, has sometimes been performed roughly by the pus which has come to meet the surgeon. In my operation step 5 is performed by the surgeon who is going to meet the pus or, at least, to search for the appendix, and not waiting for some fifth, sixth, or other particular day when it may be the good pleasure of the pus to come to him, unless it should in the meantime prefer to spread with a burst all over the peritoneal cavity or elsewhere.

FIG. 2.



P. S., Promontory of sacrum. S. P., Symphysis pubis. A, Iliacus. C and B are on the psoas. The triangular area A B C indicates roughly the place in which the peritoneum is raised from the iliac fascia.

If in separating the peritoneum from the iliac fascia the former should be accidentally torn, use the opening for the purpose of an exploratory laparotomy, then close it with a suture and protect it with a thin fold of iodoform gauze wrung out in a solution (1 in 2000) of warm sublimate and continue the operation. If the appendix does not occupy its usual position behind and beneath the cæcum, or if the cæcum itself is abnormally placed, I need not say that indications of this may often be found before the skin is cut at all. If the cæcum and appendix are high up towards the iliac crest the parietal incision may be extended upwards, and, finally, a lumbar incision made for the drains (or one of them) which may still, with care, be kept extra-peritoneal. If the appendix is unusually near to, or even internal to, the brim of the pelvis it may be possible to reach it by directing the deep dissection rather inwards towards the pelvic brim. If the appendix, in spite of inflammatory thickening, floats free in the peritoneal cavity and the latter shows no sign of infection, I see no reason why the appendix should not be excised, whatever the day be, the first, second, or any other. If it is the centre of adhesions, possibly bounding pus, and the thickened mass floats comparatively free in the abdominal cavity then (1) if it can be done without tension, bring the inflamed mass and fix it by sutures through healthy tissues to some part of the parietal wound and leave that part of the wound open; (2) if the above course cannot be followed without dragging on the bowel either carry a drain down to the inflammatory mass or leave it alone altogether. Do not tear open the adhesions and remove the appendix if the patient is at the time in the throes of an acute or subacute attack, but wait till the temperature is normal or nearly so, watching the patient narrowly, giving him no opium, and re-opening the abdomen at once should signs of extension of the mischief appear.

There are two facts bearing on the above recommendations to which I would call attention. One of these is the remarkable tendency which pus and even fæces have to find their way out of an opening in the anterior abdominal wall if they have a chance of access to it, and in apparent opposition to gravity. I used to think, till experience taught me the contrary, that such infectious and polluting materials preferred to gravitate into the pelvis. Perhaps they would do this, but the pelvis is already fully occupied with intestines and other organs which behave as if they had a prior right there and resist displacement. Their resistance is, of course, overcome when there is intra-peritoneal fluid which cannot find a way out through some recently made parietal wound. The second fact is the impunity with which a limited part of the peritoneum may come into contact with septic fluid, provided that the latter is speedily and completely wiped off with sublimate swabs or carbolised sponges. Somewhat allied to this is the safety with which intestine may roll into the cavity of a pelvic abscess a few minutes only after that cavity has been thoroughly scraped, swabbed, and cleansed. No sensible person, of course, would leave them there, but I have been obliged more than once to leave intestine to form part of the wall of an abscess cavity so treated, because the abscess wall itself, when radically dealt with, no longer sufficed to shut off the general peritoneal cavity. No harm resulted, except once a temporary fæcal fistula leading into the small intestine. In this case a rectal fistula opened into the abscess cavity before operation and made permanent purification of it impossible.

In the last few years I have frequently operated on the principles above enunciated. A striking example of their application was the case of a middle-aged sergeant of police in the West London. His condition was at the time alarming; he had a distended abdomen, sickness, frequent pulse and respiration, and a temperature of 104° F. I reached the deep surface of the thickened mass around the appendix but found no pus. However, the tip of the palpating finger smelt distinctly of putridity. Drainage-tubes were passed in and the temperature fell at once, within 48 hours pus flowed, and within a fortnight a fæcal concretion came away. Ultimately I removed the appendix, more because it was necessary for him to return to duty within a certain time than for any other reason. This case impressed me because of its striking resemblance to cases in which I had seen intra-peritoneal operation with removal of the appendix during an acute attack result fatally. Nevertheless, had my patient been the subject of general septic peritonitis at the time the simple operation above described would not have saved him. The general peritoneal cavity itself would have had to be dealt with through a median incision and with counter openings.

I wish to add that I have had no experience of operating by any method on acute cases of appendicitis within 36 hours of the onset. I envy alike Mr. Mansell Moullin and Mr. Berry the possession of medical friends progressive enough to give the former the opportunity of operating on these early cases and the latter that of letting them alone

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PRESCRIBING ALCOHOL *versus* OUR OWN INTERESTS.

BY FREDERIC C. COLEY, M.D. DURH.

WHERE well-to-do patients are concerned it is often our duty to recommend entire and permanent abstinence from all stimulants when regard to our own interests would suggest a prescription more in accordance with the patient's tastes and prejudices. But when we have to do with the working classes we shall be very short-sighted if we do not perceive that duty and self-interest more commonly point in the same direction. Let it not be assumed that in what I am stating I suppose a low state of morality in the medical profession. I am merely calling attention to facts which indicate that what is to the advantage of the community in general tends also to the profit of the medical profession in particular.

We have heard much of late about the abuse of hospitals by people resorting to them who are well able to pay for medical treatment. Now the practical question is not, how much does a man earn, but how much has he available for such purposes as paying for medical treatment for himself and family whenever that happens to be required? A lurid light is thrown on this question by the very carefully elaborated statistics of Mr. Rowntree which show that working-class families spend on an average 6*s*. a week on alcoholic liquors. If we could take out of the reckoning the many thousands of teetotal families who spend from choice nothing on alcohol and the very poor who from necessity spend very little the average expenditure of those families who indulge freely in alcohol would of course be found to be much more than 6*s*. a week. Nor is this all. Many employers of labour complain that large numbers of men who make good wages do not make nearly so much as they might, simply because they devote two or three days a week to idle drinking.

Now it is no doubt true that some people who have the money to pay for medical treatment prefer to apply to a hospital from mere stinginess. But it is more to the purpose that working people who waste more than 6*s*. a week per family cannot do otherwise than depend upon charity for medical treatment when they require it. So that although a radical change in the habits of these families in regard to drink would not *necessarily* improve their relations with the medical profession it is impossible for that desirable result to be brought about without it. It follows, therefore, that it is to the interest of the rank and file of the medical profession to encourage the practice of total abstinence with all their might. I am not going to suggest that we should all straightway "sign the pledge" and become members of the British Medical Temperance Association—though we might take more suicidal steps than either of these. But this we can easily do: make it a settled rule of our practice never to prescribe alcohol unless we are convinced that no safer remedy will produce the desired effect, and never to prescribe it at all for trivial ailments. Whenever we believe that alcohol is necessary and no other remedy will serve as well, then it is prudent to avoid the ordinary commercial forms of alcohol and prescribe rectified spirit, to be dispensed in a medicine bottle and flavoured as may seem desirable. In this way only can we secure scientific accuracy in the strength and dose of the stimulant and we materially lessen the danger of the use of the drug being continued after the need for it has ceased. And we should never forget one very strong argument in favour of the course which I am recommending—viz., that the mere presence in the house of any of the ordinary forms of alcohol may be a dangerous temptation to other members of the household beside the patients for whom it was prescribed.

But we need not, and ought not, to be content with merely avoiding the prescription of alcohol except in extreme conditions and even then taking special precautions lest our prescription might do harm directly or indirectly. We should take every possible opportunity of using our whole influence to enforce the conviction that the habitual use of alcohol is not only unnecessary but positively unfavourable to health and long life. The statistics of life insurance companies and friendly societies will furnish us with ample justification for taking this position.

It does not admit of doubt that if the whole of the medical profession would act upon the principles just suggested before long some millions of pounds would be diverted from the liquor trade to more desirable channels, and the result would be a great gain to all concerned except the liquor traders. And even they would lose very much less than the community as a whole would gain. For the enormous indirect loss from alcoholism by the ways of sickness, and idleness, and imprisonment, and general inefficiency, brings no gain to anybody. Until this stupendous waste of money and the power to earn money is greatly diminished a very large part of the working classes must be more or less dependent upon charity in times of sickness. And medical charity is the kind which is most readily sought by people who would not think of asking for charity in any other form. Hence the problem of the inadequate remuneration of the medical profession and the drink problem are very closely related.

But there is a more altruistic aspect of the drink problem which should appeal with especial force to medical men. The prevention of phthisis and other forms of tuberculosis is a matter in which we are all most keenly interested. Overcrowded, ill-ventilated, dark, and dirty tenements are just the places where the tubercle bacillus finds its victims and spreads readily from one to another. And they, going out and scattering their infective expectoration in railway carriages, &c., become dangerous to others whose homes are too airy and cleanly to give the bacillus much chance to live outside of the human body. The prevention of tuberculosis is hence mainly a question of improved dwellings for the people. In London the housing of the working classes is a problem beset with special difficulties. But in most other places it is simply a question of £ *s*. *d*. It hardly needs pointing out that less than 6*s*. a week (the average amount shown to be wasted on drink by the families of the working classes) is needed to make the difference between the rent of two crowded rooms in a filthy, unhygienic tenement house and the rent of a decent home in a fairly wholesome neighbourhood. It follows that nothing is likely to have such a decided influence in the prevention of tuberculosis as the general adoption of the practice of total abstinence from alcohol.

The majority of the medical profession know the ways of working men well enough to be quite aware, from their own observation, that a working man who does not abstain from alcohol altogether commonly spends much more upon it than he can well afford, even though he may not deserve to be called a drunkard. We ourselves may be fortunate enough to possess an income which places us above the necessity for close consideration of economy, and we may believe ourselves indued with such self-control that we feel no fear that we shall be tempted to excess. But we ought not to forget that our working-class patients are very differently circumstanced: they cannot afford to waste money and it would be hard to find a poorer investment for their wages than spending them in drink. There is nothing more likely to draw a working man away from the practice of total abstinence than "doctor's orders" thoughtlessly given.

I shall make no apology for attempting to show that in taking the course which is manifestly to the advantage of the whole community we are also likely to benefit ourselves. The man who fails to do his duty because his interest is opposed to it is a rascal. But the best of men may find it easier to do his duty when he knows that material advantage to himself is likely to follow.

Of course, all this is dead against Dr. Reid's theories about alcohol and heredity. According to him the way to secure sobriety for the human race some thousands of years hence is to let alcohol have its own way for the present, and (with the aid of those beneficent eliminators of the unfit, poverty, and starvation, and tuberculosis, and crime) get rid of all who have "an inborn capacity for delighting in it." I do not suppose that most of my readers will feel that the necessary sacrifice of this delightful dream of the future is a fatal objection to my suggestions for present action. Some of us may venture to doubt whether Weissmann's facts are sufficient to support his own theory. But the inverted pyramid of inference which Dr. Reid has tried to balance upon Weissmann's dogma would topple over even if the foundation upon which he has rested it were firm as rock.

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DIET IN TYPHOID FEVER.

BY R. W. MARSDEN, M.D., D.P.H. VICT., M.R.C.P. LOND.
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THE plea for a less restricted diet in typhoid fever which was advanced by Dr. A. G. Barrs in the *British Medical Journal* for Jan. 16th, 1897, does not seem to have evoked that response to which it is probably entitled. Feeling with him that it is advisable to alter our rules in this respect, I have ventured to record the results obtained in 200 unselected cases of typhoid fever. Perhaps the word "unselected" is hardly quite correct, for, in order to be sure of the exact stage of the disease at which the various changes in diet were made I excluded all cases which had not been admitted during the acute febrile period. By this means also, the diagnosis has been verified clinically, and the possibility that the positive serum reaction was due to a recent attack of the disease has been negatived.

Before considering these cases it is interesting to inquire what has been the origin of the present accepted method of diet in typhoid fever. The history of medicine shows only too well how the profession as a whole can proceed along the wrong path, and I venture to affirm that with regard to this disease the method of diet is still in the stage of evolution and that simple and stereotyped as the present teaching is it will yet give way to a more rational and less restricted system. Until well into the present century fever, looked upon as an entity, was regarded as due to general or topical inflammation and its treatment consisted in a rigorous system of depletion, one of the factors in the depletion being low diet or even total abstinence from food. The first advance was made by Dr. Graves,[1] who wrote: "I am convinced that the starving system has in many instances been carried to a dangerous excess and that many persons have fallen victims to prolonged abstinence in fever." Though proud of his innovation he further says that one must not fall into the opposite extreme of overloading the stomach, as under such circumstances "gastro-enteric irritation, tympanitis, inflammation and exasperated febrile action are the consequences." Not believing in the separate entity of typhoid fever no specific rules are obtained from Dr. Graves's teaching, but for fever in general it is found that he allowed well-boiled gruel, toasted bread, and then animal jelly or broth. He makes no mention, however, of the time for giving solid food, though he records instances where "an incautious indulgence in the use of animal food was followed by a fatal result," and where the partaking of beefsteak at an early period of convalescence from fever was followed almost immediately by a relapse and death from enteritis in 36 hours. A little later Trousseau[2] accepting Graves as his guide, gave definite rules for dieting this disease, and apparently instituted the present method, for, after inveighing against the previous system of starving, he says: "Care must be taken not to fall into the opposite extreme of those who are not afraid to give solid food at the beginning and during the course of continued fevers." He even says that it must be given "always in small quantity and in the liquid form," and insists, at the decline of the fever, on "the necessity of restricting the patients to light farinaceous food," giving as his reasons for this teaching the statement that the medical attendant thus avoids "bringing on attacks of indigestion, which, though they may not cause serious gastro-intestinal mischief or (as sometimes happens) fatal peritonitis, may nevertheless lead to relapse or may retard restoration to health." The first time-limit was apparently given by Murchison[3] who, though he allowed "milk, eggs, broths, jellies, bread and milk, custard, sago, &c.," during the acute stage, yet specified that during convalescence "notwithstanding the cravings of the patient's appetite, the diet must be restricted to such articles as milk, eggs, farinacea, custards, light puddings, &c. Meat ought not to be allowed for at least seven days after the cessation of pyrexia and before meat is given it is well to try for a day or two a piece of boiled sole, smelt, or whiting. It is perhaps well to observe in passing (1) that the above diet for the acute stage is more liberal than that which is usually allowed; (2) that it is too liberal for the severest cases, in which the patients can only be fed by pure fluids; and (3) that in a case of any severity, even by the graduated system which I have adopted, seven days may be too short a period in which to receive meat other than minced. The exact rules followed at present, and which it is unnecessary to mention, seem to have been evolved shortly after the appearance of Dr. Murchison's work. They are given in detail by Dr. Fagge[4] and apparently repeated by subsequent writers.

It would thus seem, as Dr. Barrs has pointed out, that there are no exact observations to show that "solid food *per se* is bad and liquid food *per se* is good in febrile states," and though we are told that during fever the secretion of saliva and of gastric juice is diminished, yet illustrations as to the ability such patients show for digesting food make one agree with Stokes[5] that "no matter what Beaumont might say about the stomach not digesting when the patient had fever, in thousands of cases patients in fever digested remarkably well, required food, and derived benefit from it." Dr. Stokes gives an amusing incident where a lady caused much excitement amongst her medical attendants by partaking of salt beef and cabbage though in a febrile state, and concludes that "there can be little doubt that in many cases of advanced fever a greater latitude in the use of food might be adopted with advantage." The continuance of such a "restricted diet" in typhoid fever must therefore stand or fall upon the verification or refutation of the statements made since the time of Trousseau, that too early a recourse to solid food is likely to entail harmful consequences, for, if this were true, then all would admit that "it is absolutely necessary to resist their demands for food, when, as is usually the case, they have a craving appetite."

Before proceeding further, I think it advisable to give an idea of the method upon which these 200 patients were dieted. It will thus be possible to dispel the idea that by solid food is meant a liberal supply of beefsteak, &c., and it will further allow one to form an estimate theoretically of the chances of harm accruing from the changes proposed. In the first place, I wish to express myself as upholding the necessity for the retention of definite rules in the dieting of typhoid fever. As a matter of fact, the dietary for these 200 patients has been almost identical with that usually allowed, though it has been much altered in its application. Thus all patients have received milk only at first and have passed through the usual stages with greater or less rapidity according to their condition. The patient in a mild case without contra-indication would receive on successive days bread-and-milk with custard, fish with mashed potato, chicken, bread-and-butter, and, finally, minced meat, remaining at this stage until convalescence was well established; whereas in a severe case peptonised milk alone or with meat juice, &c., might have to be continued well into the "period of convalescence." Speaking broadly, the individual patient and his condition have been alone considered and slight exacerbations of temperature or occasional irregularities of the bowels have not *per se* caused the withdrawal of the food when no evidence existed of a distinct causal connexion. Practically I agree with Dr. Barrs that the patient's wishes constitute a most important help, and would add that his actions are an almost infallible guide. For a patient in the so-called "typhoid state" to ask for food is incredible, but even short of this condition so long as the tongue is dry no one would think of complying with a request for solid food if it were made. On the other hand, if a patient says that he is hungry or expresses a wish for an addition to his food and an examination reveals no reason to doubt the genuineness of his feelings a beginning would be made, though the exhibition of any whim or of early satiety and disinclination to eat with avidity that which was allowed (be it bread-and-milk or minced meat) would be taken as an indication that the request had been premature, and under such circumstances no increase in the diet would take place. It should be distinctly understood that on no occasion has solid food been forced upon a patient. As a rule, if they have not been the *vis a tergo*, they have at any rate accepted cheerfully what has been given, and never since the adoption of this system have I experienced the groaning and grumbling which used to be so marked a feature during early convalescence when their legitimate cravings were resisted. Taking now the evidence of my own 200 cases an

[1] Clinical Lectures on the Practice of Medicine, edited by Neligan.
[2] Lectures on Clinical Medicine.
[3] Murchison on the Continued Fevers.
[4] Principles and Practice of Medicine.
[5] Continued Fevers.

examination of them shows that in 100 cases fish[6] was allowed prior to the termination of defervescence; in 36 cases it was given on the day on which defervescence might be said to be complete, even though the temperature was not settled; whilst in 64 cases it was given subsequent to the completion of the defervescence. If, however, one takes the day on which, the evening temperature being normal, a period of 24 hours' normal temperature followed, then in 151 cases fish was given before that day, in 16 cases coincidently with it, and in 33 cases subsequently to it—viz., in 12 cases one day after, in three cases two days after, in 10 cases three days after, in five cases four days after, in two cases five days after, and in one case eight days after.

What evidence is there that evil effects have followed the change? The various injurious consequences of a too early administration of solid food which have been advanced are (1) diarrhœa, (2) hæmorrhage, (3) perforation, (4) pyrexia, and (5) relapse.

1. *Diarrhœa.*—If the etiology of diarrhœa is considered we find that it is probably proportionate to the severity of the attack (Louis), that it has not a necessary relation to the extent of the intestinal lesions (Fagge), that it is worse when the colon is ulcerated (Addison), and that it is due chiefly to the associated catarrh (Osler). Of these various factors the last only can be conceived as being capable of being affected by diet, and one would not expect to obtain other evidence of its production than the occurrence of vomiting, unusual abdominal fulness or uneasiness, or increased action of the bowels. Vomiting and increased abdominal discomfort have been marked only by their total absence, whilst, as regards diarrhœa, in 61 cases it was absent throughout; in 29 cases, though it was present at the time fish was given, there was no interference with its steady improvement; and in 107 cases in which it was present at some period of the attack, though not at the time when fish was given, there was not the slightest evidence of its recrudescence. There remain three cases only. In one of these cases an attack of diarrhœa had apparently just ceased when, fish being given, a return of loose motions occurred; in the second case increased action of the bowels seemed to follow and steadily get worse, but after a few days it became evident that one was dealing with a relapse; and in the third case the patient was at the time at the height of a moderately severe attack of the disease. The known variability of the symptoms, I think, allows of the conclusion that in these three instances the apparent connexion was a pure coincidence and it can therefore be said that careful dieting with solids at an early stage does not produce diarrhœa or give evidence of acting as an irritant to the intestinal mucous membrane.

2. *Hæmorrhage.*—This is more common in the severe cases, especially when there is much diarrhœa, and is due either to the separation of the sloughs or the presence of fungating sloughs, or to the associated hyperæmia. Its greater frequency, if there is a general tendency to hæmorrhage, or when there is a family predisposition to this particular complication, or, again, its relation to age, need not concern us. By direct irritation only could one imagine food to assist in the production or aggravation of the above factors, but this has already been shown not to have occurred. This conclusion is supported by an examination of the cases for hæmorrhage, since of the six patients in whom it was noted in four it occurred before any solid food had been given, whilst the other two had been taking solids from shortly after admission, yet hæmorrhage did not occur until the end of the third and fourth weeks and was, moreover, slight in each instance. It will be noted that the percentage of hæmorrhage—viz., 3 per cent.—is somewhat low and that in none of the cases was it fatal. This is what would be expected when it is remembered that the most copious hæmorrhages are met with chiefly in the worst attacks with much diarrhœa, and that in these cases an advance to solid food is not likely to have occurred.

3. *Perforation.*—The same considerations apply also to perforation, the one complication probably which has more than any other been responsible for the continuance of the present *régime*. In this series of 200 cases there is not a single case of perforation, yet this complication has been more than usually prevalent during the period of their collection. This one fact, that in not a single instance where perforation occurred had an advance to solid food been made, would tend to make one doubt the statement that "there is certainly no relationship between this accident and the severity of the disease."[7] Of the different etiological factors "the taking of indigestible food" may be dismissed at once from a consideration of the dietary I have mentioned, whilst of the other factors—meteorism, vomiting, and most important of all a direct extension of the necrotic process through the whole thickness of the intestinal wall—it is impossible to conceive of any connexion except by directly acting as an irritant, for I have already stated that on no occasion has there been the slightest evidence of abdominal fulness or of vomiting as a result of the alteration in the diet.

4. *Pyrexia.*—Perhaps the mildest accident which can happen, but the one which is supposed to occur most frequently, is the production of an exacerbation of pyrexia, the so-called febris carnis. Now in typhoid fever it is well recognised that the most surprising variations in temperature may occur, apparently without cause, in patients who have been kept on milk, and I would therefore submit that the exacerbation of temperature so often described as occurring shortly after the giving of solid food is probably in most instances a pure coincidence unless the change has been made too suddenly, and further that if the exacerbation is only temporary and unaccompanied by other symptoms one is not therefore justified in continuing the practice of starvation. I use the term "starvation" advisedly for, like Dr. Barrs, I was compelled to give solid food in the first instance to a patient whose temperature would not settle and who, despite the most liberal use of nourishing liquids—beef essences, eggs, &c.—continued to sink until in desperation I ordered solid food and this was followed by a speedy and steady improvement. Now, considering the 200 cases, in 180 cases there was not the faintest evidence of any alteration in the temperature, in 11 cases a temporary exacerbation occurred after, in two cases there was the appearance of an increase in the morning and evening oscillations, whilst the remaining seven cases were connected with relapses which I shall next consider. Such a record cannot, I think, be in favour of the prolonged continuation of fluid diet in all cases.

5. *Relapse.*—Relapse or recrudescence occurred in 48 of the 200 cases. Of these in 12 instances it was "intercurrent," in nine it was "spurious," and in the remaining 27 it was "true." As the percentage for relapse has been variously estimated from three to 18 the above number, giving 13 5 per cent., is by no means excessive. A more important consideration is the relationship which the occurrence of the relapse bears to the giving of solid food. In considering relapses I have included the "intercurrent" and the "true" and have discarded the "spurious," all of which were probably due to complications such as constipation, &c. Taking, then, the 12 "intercurrent" cases in 11 of them the relapse occurred before the food had been changed, and six of these were followed by a "true" relapse beginning at periods of six days, 10 days, 13 days, or more after the giving of solid food. In the remaining case the relapse was apparently coincident with the giving of fish. Of the 27 cases of "true" relapse the onset took place at periods varying from 0 to 20 days after the day on which solid food had been commenced. The relative numbers and days are shown by the following list. In three[8] cases the onset occurred on the same day, in one case it occurred one day after, in one case two days after, in two cases four days after, in two cases six days after, in three cases eight days after, and in 15 cases from nine to 20 days after. With such variability it is obviously unfair to ascribe the occurrence to the food, and one must perforce conclude that the single "intercurrent" relapse, and the three "true" relapses, whose onset was apparently coincident with the giving of fish, did not own this as their causal connexion. It is of course generally agreed that a relapse must be due to a re-infection of the blood, and further "since, if the patient happens to die a few days later, the intestinal lesions are found to be so far advanced that they clearly must have begun before the obvious relapse set in,"[9] one is justified in concluding that there is less possibility of causal connexion

[6] Though I am personally of opinion that the articles of diet which I have previously mentioned are quite interchangeable and that a beginning could be made with any one, yet in my own cases the order which I have given was observed and I have therefore chosen the day for fish as the day on which solid food was begun, not considering that boiled bread-and-milk, custard, and farinaceous puddings could be included in this category.

[7] Osler: Principles and Practice of Medicine.

[8] All three cases occurred immediately on defervescence from primary attack.

[9] Fagge: Principles and Practice of Medicine.

when the relapse immediately follows than when its onset is delayed one or two weeks.

We are still ignorant of the factors concerned in the production of this re-infection, but I think some peculiarity in the individual patient or in the micro-organism will yet be shown to play a prominent part, since there seems to be a great tendency in families to one type of attack, and the prevalence of different complications, including relapses, seems to vary considerably in successive epidemics.

I think that from a review of these 200 cases it must be concluded that a careful system of dieting, such as I have mentioned, has no injurious consequences and when one considers the benefits obtained—viz., more rapid recovery, diminished risk of surreptitious feeding with possibly harmful substances, lessened tendency to bolt food when allowed without proper mastication, and, finally, lessened tendency to asthenic complications as post-typhoid anæmia, gangrene, &c.—one must admit they there is no justification for resisting a craving appetite in the manner at present in vogue.

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A SIMPLE AND TRUSTWORTHY METHOD FOR THE QUANTITATIVE ESTIMATION OF MERCURY IN URINE.

BY DR. SCHUMACHER (II.),

AND

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AACHEN (AIX-LA-CHAPELLE).

IN 1895 A. Jolles in Vienna published a memoir[1] entitled "A Simple and Delicate Method of Qualitative and Quantitative Estimation of Mercury in Urine." In the introduction Jolles gives an account of the methods hitherto proposed and adopted and comes to the conclusion that none of them fulfil the conditions which are essential in a practically useful analytical method—namely, the combined properties of simplicity and speed in working, with trustworthiness and accuracy in the results. Jolles then details a method for which he makes the claim that it combines these advantages. He recommends the use of metallic gold (which he obtains in granular form by an ingenious process) so as to form an amalgam with the mercury, when the latter is precipitated by the addition of stannous chloride. The use of the granular gold Jolles holds to be a great advance on former methods in which zinc, brass, wool, copper wire gauze, &c., were used. It readily takes up the mercury when this is precipitated by stannous chloride, and is then present in finely divided particles and in the "nascent" state. The whole operation according to Jolles takes at most 20 minutes.[2] In order to test these statements we prepared granular gold strictly according to the directions given by Jolles and with it made experiments, by his method, on mercurial solutions of different strengths. It was evident, however, that in no instance did complete amalgamation take place. As soon as the stannous chloride was added to the solution of bichloride of mercury, which was heated to 70° or 80° C., a more or less distinct clouding occurred, or a greyish precipitate of metallic mercury. The mixture was thoroughly stirred, shaken, and gently heated for a long time in order to bring the gold and mercury as much as possible into intimate contact, but in the end it always remained turbid, an evidence that the mercury had not been fully taken up by the gold. The mixture was allowed to settle and we tried to amalgamate with the granular gold the grey to black-coloured mercury which had all settled on the bottom. This only took place partly. A comparatively large quantity of free mercury always remained over.

We therefore consider it certain that it is impossible to effect a complete amalgamation of small quantities of mercury with gold in fluid media. Firstly, it was evident that the grey to black turbidity did not depend upon combinations with the tin; moreover, we took care that there was an excess of hydrochloric acid always present both in the clear, filtered solution of stannous chloride and in the mercurial solution. In many trials, which we varied in every possible way by the use of gold in smaller or larger granules, in the finest spongy form, and finally in "leaf" form, we obtained no better result. After our experiments we therefore cannot agree with Jolles's conclusions. L. Böhn[3] recommended another method of quantitatively estimating mercury in the urine which Rud. Winternitz published[4] and improved upon.[5] Winternitz obtained good results with his method, but it is hardly practical, both on account of the technical details in carrying it out and also on account of the length of time, from three to four days, which it requires. As our object was the estimation of the amount of mercury in the urine of syphilitic patients we needed a method which would combine the accuracy of Winternitz's method with the practicability and rapidity of that of Jolles. We therefore thought that we should attain our purpose if we could suitably combine the two methods mentioned. We then tried to obtain a complete union of the two metals by bringing the metallic gold for as long a time and as thoroughly as possible in contact with the solution containing the precipitated mercury. With this object in view we made a U tube of hard (potash) glass and partly filled it with the granular spongy gold. On one limb of the tube a bulb was blown to prevent small particles of gold from being carried over mechanically with the fluid. With the like object we placed two little glass rods in both limbs of the tube. We poured in corrosive sublimate solutions of different strengths, mixed with hydrochloric acid and stannous chloride. We tried it both warm and cold and poured it in both quickly and quite slowly, and even drop by drop, but we always found that the fluid which came through was more or less clouded with fine particles of precipitated mercury.

We arranged some quantitative analyses as follows. We weighed the carefully dried tube before running in a solution containing a known weight of mercury. After the solution had been slowly passed through we washed out the tube with water, alcohol, and ether, then dried and again weighed it. The difference of weights gave the weight of the metallic mercury which the gold had taken up. It was then again evident that a complete amalgamation of the two metals never took place as the weighings showed a loss of from 30 to 50 per cent. This method, then, as well as that of Jolles seems only useful for qualitative and not for quantitative analyses.

It may be mentioned that we used yet another form of gold, the so-called "true gold leaf," instead of the spongy granular gold of Jolles for filling the tube, but with this also we obtained no better result. It yet remained to prove that the turbidity of the fluid which came over was really due to mercury. We allowed the fluid to settle, and brought the grey to black deposit into prolonged contact with some granular gold, and then poured off the liquid. The gold amalgam was washed with water, alcohol, and ether, and then dried and heated in a test-tube with a small piece of iodine. A reddish-yellow ring of mercuric iodide was formed. We finally succeeded better when we combined R. Winternitz's method of amalgamation with mechanical filtration in the following manner. We prepared a small tube thus: a piece of hard glass tubing (Jena potash glass), with walls that were not too thick, was drawn out at one end in the flame of the blowpipe into a narrower part, and in this portion a thorough mixture of asbestos and "true gold leaf" was placed. We chose true gold leaf so as to get the gold in the finest possible state of division. The mixture was made by rubbing together pure white asbestos and pure gold leaf, washing out with hot hydrochloric acid, hot water, alcohol, and ether, and drying. In the lower portion of the wide part of the tube immediately above the narrow part we put a thick plug of asbestos to prevent any fragments of gold getting through and over it the layer of the mixture. The tube was then connected with a suction bottle, which was in turn connected with a water exhaust-pump. After these preparations, followed by a further thorough washing out with hydrochloric acid, water, alcohol, and ether successively, the apparatus was dried by gently heating with a small Bunsen flame and aspirating a constant stream of air dried by passage through concentrated sulphuric acid. The tube was weighed and the following three experiments were made.

[1] Monatshefte für Chemie. Band xvi., 1885, pp. 684–692.
[2] Op. cit., p. 689.
[3] Zeitschrift für Physiologische Chemie, Band xv., pp. 1–36.
[4] Archiv für Experimentelle Pathologie und Pharmakologie, 1889.
[5] Archiv für Dermatologie und Syphilis, 1889, pp. 783–828.

In the first experiment a solution of corrosive sublimate containing six milligrammes of mercury was poured into about 200 cubic centimetres of a heated mixture of distilled water, stannous chloride, and hydrochloric acid, and after allowing it to stand a little the resulting cloudy fluid was aspirated through the filter-tube. The filtrate was clear and remained so after 12 hours, with the exception of some little shreds of asbestos, which had escaped. The tube was carefully washed with warm water, alcohol, and ether, and with hydrochloric acid to get rid of the tin. By means of a suction pump a stream of dry air was drawn through for some time, and by very gentle warming the tube freed from all moisture. The weighing gave 5·2 milligrammes mercury instead of the six milligrammes which had been passed through. On heating the tube to redness a deposit of mercury formed in the narrow neck, which gave the typical reaction with the vapour of iodine. In order to test whether we could get a good result by simple filtration through asbestos we made an experiment in every way similar to the foregoing, but without using gold. We obtained only 3·4 milligrammes of mercury from the six milligrammes passed through. The loss was evidently due to the long continued passage through the tube of a stream of air heated gently in order to dry it. Some pieces of asbestos that were black to start with became obviously lighter in colour: thus a partial volatilisation of the mercury took place. An explanation of the ready volatility of the mercury in this experiment is that here the mercury existed as a free metal instead of being present when gold was used in the amalgam which the latter forms at once, and which requires a greater degree of heat to become decomposed, consequently the mercury present in the free uncombined condition in the asbestos filter is more easily volatilised at a proportionately lower temperature than the mercury contained in the gold amalgam.

The second experiment was conducted in the same way as the first, except that five milligrammes of mercury in about 300 cubic centimetres of water, hydrochloric acid, and stannous chloride were used in order to have a dilute solution. We found 4·3 milligrammes of mercury as the result of the weighings. Here also the slight loss was accounted for by the fact that some little pieces of asbestos were carried through. We therefore altered our procedure in the following manner. Instead of weighing the tube twice, once before filtering the mercurial solution and once with the mercury, so as to weigh the mercury directly, we calculated it indirectly from the loss of weight of the tube after heating it to redness. The tube was weighed after passing the mercurial solution and drying as before. It was then heated to redness and again weighed.

In the third experiment four milligrammes of mercury were dissolved in 500 cubic centimetres, thus making a very dilute solution. The quantity found by this method was 3·7 milligrammes of mercury. From this experiment our method seemed practical, but nevertheless a slight loss occurred in our process which would be of importance in working with still smaller quantities of mercury.

In order to remedy this defect we endeavoured to obtain the gold in yet finer sub-division than we had in the mixture of asbestos and gold leaf and we discovered an excellent material for our purpose in the hitherto unknown "gold asbest," in which the gold is deposited in molecular subdivision on fibres of asbestos. To prepare this substance we dissolved chemically pure gold in aqua regia, and heated it to drive off the chlorine and oxide of nitrogen and until the solution of gold chloride contained only very little free acid. In this solution we placed clean, fine, fibres of asbestos and allowed them to drain after they had been soaked through with the somewhat concentrated solution of gold. Then they were dried in a porcelain dish on the sand bath. The dish was gradually heated over the flame, whilst from above a stream of hydrogen (which had been purified by being passed through permanganate of potash and liquor potassæ and dried with sulphuric acid) was introduced by means of a porcelain tube. After about 15 minutes the reduction of the gold chloride was complete and the asbestos appeared partly coated with finely divided particles of glistening gold. It was cleaned with diluted hydrochloric acid and then dried.

The preparation of "gold-asbest" by means of the double chloride of gold and ammonium which we tried, both with and without the use of hydrogen, is not to be recommended. We now used the "gold asbest" prepared after our method for filling our filter amalgam tube. We finally found that the most practical way was to put a thick pad of asbestos in the narrowest part of the tube, over this a layer of "gold asbest," then a layer of granular spongy gold, and finally a second layer of "gold asbest." Experiments gave the following results.

—	Experiment I.	Experiment II.	Experiment III.
Decimilligrammes of mercury in the form of corrosive sublimate in each litre of water	40	30	20
Decimilligrammes of mercury found	41	30	20

We afterwards worked with still more dilute solutions :—

—	Experiment I.	Experiment II.
Decimilligrammes of mercury added to each one and a half litre of water	20	20
Decimilligrammes of mercury found	21·5	20

These experiments show distinctly the usefulness of our method for quantitatively estimating mercury in very weak watery solutions of corrosive sublimate. They should be carried out in the following way.

The dilute mercury solution should be heated on the water bath to about 70° C., then mixed with about 50 cubic centimetres freshly prepared, clear stannous chloride solution. After the solution has cooled a little it is aspirated through the filter amalgam tube already described, which is then washed with moderately warm diluted hydrochloric acid and afterwards three or four times with warm water. Finally, the water is got rid of with alcohol and ether, and the tube, after a slight warming at about 40° C., is dried by drawing a stream of dry air through it. The mercury forms a grey ring varying in tint from light to dark in the "gold asbest" layer in the tube. After drawing the air through for a quarter of an hour the tube is perfectly dry and is then weighed. Afterwards it is again connected with the stream of dry air and heated to redness in the Bunsen flame. After a little heating a precipitate of metallic mercury forms in the narrow part of the tube. The tube is left in the dry air apparatus until cold and then again weighed. The difference between the two weights gives the weight of mercury which was present in the solution filtered.

After obtaining such accurate results with watery solutions of corrosive sublimate by our method we did not hesitate to apply it to urine. Two milligrammes of mercury in the form of corrosive sublimate were mixed with a litre of normal urine free from mercury and the whole was warmed on the inverted condenser with hydrochloric acid and chlorate of potash till steam was given off in order to destroy the organic substances. The somewhat cooled urine was passed through a folded filter and stannous chloride and hydrochloric acid were added to the clear filtrate. From this point the working was exactly as described above. It appeared, however, that some organic substances which had not been destroyed were thrown down with the mercury in the asbestos. On ignition empyreumatic smelling gases escaped and the loss on heating showed 6 4 milligrammes instead of two miligrammes. We had then to devise some means of getting rid of the organic substances which remained after the first treatment with chlorate of potash and hydrochloric acid. We succeeded by repeated thorough treatment with chlorate of potash and hydrochloric acid, by which, it is true, some loss often occurred on account of the copious frothing. At times an almost explosive compound of the chlorate of potash and the organic substance was formed on warming.

Two experiments in which care was taken that there was no loss gave the following results: (1) 40 decimilligrammes of mercury were added to one litre of normal urine, and 36 decimilligrammes of mercury were found; and (2) 20 decimilligrammes of mercury were added to one litre of normal urine and 19 decimilligrammes of mercury were found. We now made extensive experiments with urine containing mercury from syphilitic patients, and finally employed our method, after many technical alterations and improvements, in the following way. One litre of urine in a two-litre retort flask of potash

glass was placed on the water bath and from 15 to 20 grammes of chlorate of potash were added together with about 100 cubic centimetres of strong hydrochloric acid. The mixture was warmed until the development of the chlorine was made apparent by the mixture becoming lighter in colour. It is advisable to attach a short inverted condenser. By the action of the nascent chlorine the organic constituents are for the most part destroyed and the mercury which is presumed to be in combination with them is changed into bichloride of mercury. The retort was then taken from the water bath and allowed to stand for 12 hours in order that the chlorine might act on the organic substances for a sufficiently long time. Afterwards it was again gently warmed and about 100 cubic centimetres of clear stannous chloride solution (prepared by warming excess of tin in concentrated hydrochloric acid and filtering through a hard filter) were added. After cooling a little it was filtered through an asbestos filter by means of the exhaust-pump and slightly washed. The asbestos filter was prepared from pure shredded asbestos on a porcelain filter which was placed in a moderately sized ordinary glass funnel. What adhered to the sides of the funnel was washed down with slightly warmed water from the wash-bottle, otherwise it adhered very firmly. The deposit, which along with the organic substances containing the mercury, together with a little hydrate of potash and some water, was placed in a retort holding about 300 cubic centimetres, into which it was entirely transferred by washing the funnel with warm liquor potassæ. The retort was placed in the water bath, slightly warmed, and allowed to cool. The organic substance was thus brought into solution and the action of the chlorine later was more thorough and took place quite quietly. Then (*after the cooling*) some crystals of chlorate of potash and concentrated hydrochloric acid were added. The chlorine formed destroyed the remainder of the organic substances entirely, and the mercury was all brought into solution as chloride. The solution was then filtered, best with the suction-pump (through a small filter plate on which there was a round close-fitting filter-paper, washed with as little water as possible). Afterwards the warm solution was mixed with from 10 to 20 cubic centimetres of stannous chloride and filtered through a filter amalgam tube filled with "gold asbest" and finely divided granular gold. The smallest particles of mercury were retained by this. The filter tube was then washed with diluted hydrochloric acid and water and afterwards three times with alcohol, then three times with ether, well dried in the dry air stream by which it was warmed a little at the start, and weighed till the weight was constant. Then the mercury was volatilised, the air current being again passed through. It had to be heated strongly as the "gold asbest" was a very bad conductor of heat, and the heating had to go on till the gold amalgam was thoroughly decomposed and the mercury entirely driven off. The tube was then weighed again till the weight was constant. The weight of the mercury contained in the sample of urine was the difference between the two weights. Three test experiments made by this method gave the following results:—

—	Experiment I.	Experiment II.	Experiment III.
Mercury (decimilligrammes) added to each litre of normal mercury-free urine	25	44	0
Mercury (decimilligrammes) found in urine	28	37	5

A series of three experiments was then made with pathological urine, each litre of which on an average of many analyses contained 20 decimilligrammes of mercury.

—	Experiment I.	Experiment II.	Experiment III.
Decimilligrammes of mercury added per litre	30	40·5	67
Decimilligrammes of mercury already present	20	20	20
Totals	50	60·5	87
Decimilligrammes of mercury found	60	55	77

We think that these figures sufficiently prove the usefulness of our method with respect to accuracy, and it can be carried out in a proportionately quick and easy way when once one has the apparatus for its performance, so that, with sufficient practice, three or four analyses can be made in 24 hours. Our method is very well suited to carrying out an extensive series of experiments which we have undertaken on the amount of mercury eliminated in the urine of persons who were undergoing a course of inunctions.

In conclusion we can confidently state that the method in the case of urine containing at least one milligramme of mercury per litre, by proper and careful work, according to our directions, gives absolutely accurate results. The results, as shown in the figures supplied, in cases where the urine contained less than one milligramme per litre, are only approximate. Our method has the advantage over that of Winternitz of being considerably quicker and easier in carrying out, and over the method of Jolles of being more certain and accurate with almost the same readiness and facility in working. The presence of an iodide does not interfere with the results obtained.

PROTRACTED GESTATION.

BY JOHN PHILLIPS, M.B., C.M., L.R.C.P. EDIN.

THE question of the duration of pregnancy being of considerable interest, not only from a medico-legal point of view, but also from that of general practice, I venture to report what I believe to be an authentic case in which it was prolonged to much beyond the usual period.

My patient was a primipara and unmarried. Intercourse was declared to have taken place on one occasion only—Sept. 6th, 1898—the girl's age at that time being only 16 years and four months. Her menstrual periods had occurred at regular intervals and they usually lasted about a week. Her last period had occurred in August, 1898, and had entirely ceased by the 24th of that month, this being the first day on which she considered herself "well," and it was from this date that I calculated the probable duration of pregnancy. In consequence of her missing her next two periods in September and October her aunt with whom she lived took her on Oct. 24th to a medical man in London, to whom the girl confessed, when questioned, that she had had intercourse, and he expressed the opinion that she was most probably pregnant. This proved to be the case and in April of the present year she came under my observation, and I was asked to attend her in her confinement, which I calculated would take place somewhere about May 29th, this being the usual average period of 278 days from the cessation of her last menstrual period (August 24th, 1898), from which I reckoned. Instead, however, of the confinement occurring at the expected time she not only went through the whole of June without a single pain, but labour did not set in until July 13th, on which date the pains began at 6 P.M.—*323 days after the cessation of her last period and 310 days after the date of coitus*, the child being born on the following day at 4 30 P.M. There is not the slightest doubt that no menstrual period occurred subsequently to that in August, as in addition to the girl's own statement her aunt, who always looked after her linen and who consequently always knew when her niece was unwell, declares that there "was not a stain" subsequently to the August period. During the entire pregnancy the girl had excellent health and there were no pains of any description prior to the onset of labour, which was perfectly normal and the presentation the usual cephalic one. Unfortunately at the time I had no opportunity of having the child (a female) weighed as it was sent away to be nursed almost immediately after its birth (within three hours), but although well proportioned and of good size it did not seem at all unusually large.

The late Dr. Matthews Duncan in his book, "Fecundity, Fertility, Sterility, and Allied Topics" (p. 348), is inclined to disbelieve in any case of supposed protracted gestation unless the size and weight of the child are above the average, considering that increased growth must follow lengthened gestation, but this cannot be taken as proved and, as Dr. Playfair points out, even if it be admitted the fœtus may have been originally small, so that at the end of the protracted gestation it may be of no more than the average weight and

there is certainly no reason to believe that the fœtus must necessarily be large simply because it has been retained longer than usual in the uterus.

This case, then, which lasted 323 days after the cessation of menstruation, is thus a parallel to the four instances reported by Simpson in which, reckoning from the same period, gestation was prolonged to 319, 324, 332, and 336 days respectively, and other instances as curious may be found scattered through obstetric literature. The case, however, becomes more exceptional and interesting when we consider the prolonged interval which elapsed between the date of actual intercourse and the onset of labour—310 days. Of the 46 cases reported by Dr. Matthews Duncan, who probably devoted more consideration to this subject than any other writer has done, he calculates an average interval between what he calls insemination (intercourse) and parturition of 275 days and other authors give other estimates—from 271 to 276 days. The longest of the series of cases recorded by Dr. James Reid in which he reckoned from a single coitus was 293 days and this he believed to be the extreme limit. Leishman, however, mentions one in which the interval was 295 days and Hedrich has recorded the case of a primipara who was delivered on the three hundred and ninth day after intercourse, whilst of those cases in which the duration of gestation has been determined by the death or departure of the husband Sir James Simpson reports one lasting 313 days and Dr. Hewitt another lasting 308 days. In more recent times Mr. Woollett reports[1] the case of a girl, 16 years of age, in whom gestation lasted 315 days from the date of coitus. In this case, however, labour pains occurred on the two hundred and eightieth day but passed off again, and another observer—Dr. R. McBride—has reported another case in which there was an interval of 295 days between a single intercourse and the occurrence of labour. It will thus be seen that the case of 310 days which I report is somewhat exceptional, and cases like these are of considerable importance from a medico-legal point of view.

In cases of contested legitimacy the English law and also the American, leaves the subject of the duration of pregnancy an open question, each case being decided on its individual merits, but in France and also in Austria a possible limit of 300 days is allowed, and this is extended to 302 days in Prussia.

There are still many practitioners who disbelieve in cases of prolonged gestation simply because they have not met with them in their own practice. There can, however, be little doubt not only that they occur, but that they probably do so with more frequency than is generally supposed.

Southsea.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

POISONING BY CORROSIVE SUBLIMATE IN A PREGNANT WOMAN;

RECOVERY; DELIVERY OF TWINS AT TERM; POST-PARTUM HÆMORRHAGE.

BY M. D. EDER, M.R.C.S. ENG., L.R.C.P. LOND.

ON March 11th a primipara, over 30 years of age and six months pregnant, took by accident two grammes (30 grains) of corrosive sublimate in powder with a draught of water. I saw her some three hours later. There were great pain in the mouth, throat, and abdomen, persistent vomiting, and considerable collapse. The lips, mouth, tongue, and pharynx were much injured. The stomach-pump was not used, but large quantities of white of egg in water were given assiduously. A quarter of a grain of morphia was injected hypodermically and warmth was applied, and later hypodermic injections of ether were resorted to. The following day the vomiting had ceased, the fresh symptom being diarrhœa with bloody mucus. The same treatment was pursued and small quantities of milk and beef-tea were given at short intervals. As soon as the patient was out of danger antiseptic mouth-wash and gargles were used. In about a month the patient was able to take solid food. No œsophageal stricture had resulted.

On July 4th I received an urgent call to the same patient. She had been in labour since July 1st. There was general œdema of the legs, vulva, arms, and face so as to make her quite unrecognisable. I was told that she had been thus swollen for two months but had not sought medical aid. The waters had broken, but nobody knew when; the presentation was normal. With the aid of forceps a full-term male child was delivered. Abdominal palpation showed another child with normal presentation. After waiting half an hour, good labour pains having returned, I ruptured the membranes and in a few minutes a dead female child was born. The placenta came away almost immediately by itself. The uterus contracted well, the pulse remained bad, but I was obliged to leave for other work. Some two hours later I was recalled to find my patient in a critical condition from post-partum hæmorrhage, a furious hæmorrhage taking place when I arrived. The radial pulse was not to be felt. The hæmorrhage was controlled by bimanual compression of the uterus, or rather by the one hand inside the uterus. As soon as hot water was obtainable hot douches were given and $\frac{1}{100}$th of a grain of ergotinine citrate tabloid was administered hypodermically. The bleeding was controlled and a transfusion of some two quarts of saline solution was given. The patient rallied considerably after this and fortunately no further hæmorrhage occurred. Her condition was critical for some days, but eventually a good recovery was made. The œdema entirely disappeared before she was out of bed. My requests for a sample of the urine at the time and since then have not been complied with.

Palmira, Cauca, Republic of Colombia.

[1] Brit. Med. Jour., vol. ii., 1886.

A CASE OF ENORMOUS NASAL AND POST-NASAL POLYPUS; PARALYSIS AND DEATH.

BY ATUL CHANDRA MUKHERJI, C.M.S.,
IN MEDICAL CHARGE, RAI DOORYA PROSAD GHOSE BAHADOOR' CHARITABLE DISPENSARY, SOLAGHUR (DACCA).

A MAHOMEDAN male, aged 20 years, was brought to me in May, 1896, with an enormous nasal polypus which, distending the upper part of the nose to such an extent as to produce amaurosis of the left eye (from pressure) and enlarging the nasal bridge to four inches in width when measured from eye to eye, passed down the left nostril and almost occluded his mouth—so much so that it was difficult to feed him even with a spoon. Finding all other measures fail I advised removal by operation at Dacca which he declined to submit to. I then suggested minor surgical intervention, but as the tumour was more or less cartilaginous and some portion of it might have intruded into the cranial cavity and implicated the anterior lobe of the brain I did not feel justified in operating, and the patient ultimately died, but a fortnight before he died complete paralysis, without coma or loss of intellect, supervened, and during the 11 days just preceding his demise he had incontinence of urine and fæces. No post-mortem examination was allowed.

BRISTOL DISPENSARY.—The annual report of the committee of this institution has just been issued and shows that during 1899 there were 10,835 patients treated who, with 1165 remaining at the end of 1898, made a total of 12,000. During 1898 there were 10,176 patients treated. The report adds that during the past year medical assistance has been given in 25 difficult midwifery cases and the three beds at the Bristol Convalescent Home are much appreciated by the patients.

NEW WORKHOUSE INFIRMARY AT LISKEARD.—At Liskeard on Dec. 30th, 1899, the new infirmary erected in connexion with the Liskeard Workhouse was formally opened by Mr. Preston Thomas, the Local Government Board Inspector. The building contains 60 "Lawson Tait" beds and has been erected at a cost of about £5500. Mr. Henry Chaplin, M.P., President of the Local Government Board, telegraphed "congratulating the guardians on the excellent work they have accomplished on behalf of the sick poor of their union."

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

A CASE OF CHRONIC MIDDLE-EAR SUPPURATION WITH THROMBOSIS OF THE LATERAL SINUS IN WHICH THE INTERNAL JUGULAR VEIN WAS NOT LIGATURED; RECOVERY.

(Under the care of Mr. ARTHUR H. CHEATLE.)

THROMBOSIS of the lateral sinus occurring during the course of otitis media may have either of two pathological causes. On the one hand, it may be due to the passage of micro-organisms from the middle-ear through the wall of the sinus; thus a thrombus is formed, which contains the bacteria which have given rise to it; this clot readily breaks down, and therefore in these cases there is a very great probability of the occurrence of embolic pyæmia. On the other hand, the blood may clot in the lateral sinus, owing merely to a "spread of the inflammation" from the surrounding structures; in this case the coagulation is probably the effect of the transudation of toxins, and the clot so formed is firm and has little or no tendency to become disintegrated. It is not possible to distinguish clinically between these two conditions until some infective manifestation occurs, such as a pyæmic embolus; but a rigor is very suggestive and is quite sufficient to justify ligature of the internal jugular vein. A case somewhat similar to the one recorded below has been published by Röpke.[1]

A boy, aged 14 years, attended at King's College Hospital on June 26th, 1899, complaining of pain round the left ear and of vomiting. 18 months previously he had had a discharge from both ears which "was stopped." On two occasions since then he had suffered from ear-ache, but there had not been any discharge. Five days before being seen at the hospital he had pain in his head and commenced to vomit. The pain, which was at first intermittent, had become continuous. The vomiting had caused great distress, and as no food could be retained he had rapidly lost flesh. Two days before admission the ear had discharged with some relief to the pain. Giddiness had been complained of for two days. A marked shivering fit occurred during the night before the visit to the hospital. The boy looked wasted and anxious and was extremely restless. He was sensible and answered questions readily. On walking he had a tendency to walk towards the right. The tongue was white, furred, and moist. The temperature was 100·2° F. and the pulse was 104. An offensive brown discharge came from both ears, a perforation being present in Shrapnell's membrane on each side. There was no bulging of the posterior superior deep meatal wall in the left ear, nor did the auricle stand out, and there was no redness or swelling behind it. Marked tenderness on pressure was present behind the mastoid process and below the ear where glandular enlargement could be felt. The heart and lungs were normal. Mr. Cargill reported that papillitis was present in both discs equally.

A few hours after admission the patient was placed under chloroform. The antrum was found to be full of granulations and cholesteatomata. On laying the antrum into the middle-ear the malleus and incus were found, both carious. The attic and middle-ear were then thoroughly cleared. On examining the walls of the antrum a discoloured and softened patch of bone was found in the posterior, leading directly to the lateral sinus. The sinus having been exposed for over an inch of its length it could be seen that it was occupied by a firm clot which was dark in colour except at the point of infection, where it was slightly yellow and evidently breaking down. As giddiness had been a marked symptom the cerebellum both in front of and behind the sinus was thoroughly explored but with no result. The dura mater, which had been incised, having been stitched up with catgut the sinus was laid open for the whole of its exposed length and the clot was turned out. As the clot for some distance above and below the point of infection was dark-coloured and firm it was decided not to tie the internal jugular vein but to clear the thrombus out as far as possible from the wound. For this purpose a sharp spoon was first carefully passed downwards, no bleeding occurring. A gauze plug having been prepared the spoon was passed backwards towards the torcular; after some clot had been gently removed a free gush of blood took place, shooting out a healthy-looking mass of clot fully one and a half inches in length. The bleeding was easily controlled by the plug. The whole wound was then packed with iodoformed cyanide gauze. The operation occupied one and a quarter hours. An hour after the operation a rigor occurred, the temperature reaching 102·4°. From that time the progress was steady and uneventful but slow. On July 10th, as the hospital was closing, the patient was transferred to St. George's Hospital under the care of Mr. Marmaduke Sheild, who kindly looked after him until he was sufficiently well to be moved to the convalescent home.

Remarks by Mr. CHEATLE.—That ligation of the internal jugular vein is not always necessary in thrombosis of the lateral sinus is well recognised, but no guiding rule has been laid down. Young[2] has described a case in which recovery took place without ligature of the vein, and no doubt many surgeons have had the same experience. Bronner has related a case in which the clot as seen through the wall of the sinus looked healthy throughout, and it was therefore left unopened with a happy result. It seems that if healthy-looking clot can be seen well below the breaking-down area ligation of the vein is not necessary; but in order that such a condition may be found it must be well recognised that *one* rigor demands instant operation. A rigor does not necessarily mean that there is septic thrombosis of the sinus, for in a case under the care of Dr. Urban Pritchard in King's College Hospital a severe rigor occurred as a result of an acute empyema of the antrum, and no further bad symptom followed after removal of the outer wall and evacuation of the pus. But it cannot be too strongly insisted upon that there should be no waiting after a rigor has occurred during the coming of an acute or chronic middle-ear suppuration; the antrum should be at once opened and the sinus examined. An interesting point about the case related is that although the boy was perfectly well the optic neuritis was present at least three months after the operation. The giddiness which was such a marked symptom was due in all probability to disturbance of the intracranial circulation owing to the occlusion of the sinus.

GUY'S HOSPITAL.

A SUCCESSFUL CASE OF REMOVAL OF A PACKING-NEEDLE FROM THE DESCENDING COLON; RAPID DISAPPEARANCE OF INTRA-PERITONEAL ADHESIONS.

(Under the care of Mr. N. DAVIES-COLLEY.)

BY means of the Roentgen rays much assistance can be obtained in the localisation of a metallic foreign body, but a single skiagram will in many cases not be sufficient to indicate the depth from the surface. A second skiagram taken in a different direction may supply the required information, but the best method is to employ Davidson's localiser, for by its use the exact position can be readily found. Occasionally no trace of a metallic body may be found on a photograph, although the body is certainly present, and a good instance of this was described in THE LANCET of Feb. 5th, 1898, when Mr. J. H. Morgan removed a piece of stay busk from the stomach of a man; no skiagraphic shadow of the piece of metal was found because it had been lying in a position perpendicular to the sensitive plate. The rapid disappearance of peritoneal adhesions which occurred in the following case is certainly remarkable.

A married woman, aged 36 years, the mother of nine children, the last of whom had been born 15 months, was on April 12th, 1899, admitted into Guy's Hospital under the care of Mr. Davies-Colley with obstinate constipation and a painful swelling above the front half of the left iliac crest. Her

[1] Archives of Otology, vol. xxv., No. 4.

[2] Glasgow Medical Journal, October, 1899.

bowels had always been troublesome and she had sometimes gone three weeks without any action. About seven months previously she had swallowed a packing-needle stated to be about four inches long. She did not suffer much afterwards, except that she had pain at first in the upper part of her chest and then in the right iliac region. Two months before admission she noticed the present swelling. Of late she had had increased constipation and there had been no action of the bowels for four days. She had also had severe paroxysms of pain in the left side of her abdomen which came on suddenly without any cause and lasted sometimes for an hour. They "doubled her up" so that she could neither stand nor sit. She had also for a fortnight been unable to walk, the left leg appearing to drag behind.

On admission the patient was seen to be a thin, pale woman with a tender, firm swelling above the front half of the iliac crest, two or three inches in diameter. The limits of the swelling were ill defined. There was no redness or œdema, and fluctuation could not be felt. The abdomen generally was little if at all distended. The rectum was ballooned. She suffered from severe attacks of pain in the swelling, which usually came on at night. It was difficult to examine the swelling properly because it was so tender, but from the firm resistance in the centre Mr. Davies-Colley concluded that one end of the needle was embedded in the parietes at this point. Under the x rays the needle was visible lying in a nearly vertical position, but its distance from the surface was not ascertained. On the 15th an anæsthetic was given and after feeling the hardness in the middle of the swelling Mr. Davies-Colley cut down through the muscles expecting to find the point of the needle. There was some fibrinous exudation upon the transversalis muscle. At this depth, however, he thought it best to stop his dissection as he could no longer feel the projection through the tissues. It seemed to him most probable that the needle had been pushed back into the intestine, and that if so there was a fair probability of its passage per anum. The incision was brought together with sutures, but some suppuration followed, and a granulating wound was left. On May 12th the patient had not passed the needle, and she still suffered from pain and tenderness about the wound. A good radiogram had been taken which showed that the needle lay vertically about half way between the middle line and the outline of the flank. Its lower extremity was reckoned to be two and a half inches from the surface, and its upper extremity a little further back.

Under an anæsthetic Mr. Davies-Colley first tried to feel the needle but could not. He then, having scraped the granulation from the unhealed wound, increased the size of the incision, and slowly dividing the tissues, freely opened the peritoneal cavity. He had to cut through two or three layers of fibrous tissue and hardly any muscle. The peritoneum was thicker than normal but nowhere adherent to the viscera. At the back of the abdominal cavity beneath the wound there could now be felt the point of the needle through the wall of the descending colon. In order to draw the colon well out of the wound the incision had to be enlarged considerably. The walls of the bowel were thick and its surface was somewhat rough. After making a small incision upon the point of the needle it was easily pushed out. Only a trace of fæcal matter came with it. Mr. Davies-Colley then cleaned the adjacent bowel and after drawing the edges of the incision together with two Lembert's sutures of fine silk, he returned it into the abdomen and sewed up the parietal incision. The wound healed rapidly and the patient went out well on June 7th. The needle was four inches long and more than one-eighth of an inch thick, and its point was rather blunt.

Remarks by Mr. DAVIES-COLLEY.—I have thought this case worthy of record, because it would seem that upon the admission of the woman the point of the needle had penetrated the wall of the colon and the deeper layers of the abdominal parietes. Presumably at that time the descending colon was adherent to the parietal peritoneum. Nearly a month afterwards, when I operated a second time, I found the deeper layers of the abdominal wall and the peritoneum thickened by fibrous tissue, but there was no trace of adhesions between the bowel and the parietal peritoneum except a little roughness in the wall of the colon and the thickening of the peritoneum. I think, therefore, that during the short period of four weeks the adhesions which previously existed must have been completely absorbed.

ROYAL HOSPITAL, HASLAR.

A CASE OF CEREBRAL HÆMORRHAGE PRESENTING SEVERAL UNUSUAL FEATURES; NECROPSY.

(Under the care of Fleet-Surgeon G. J. IRVINE.)

IT is difficult to account for the occurrence of a hæmorrhage in the following case, for all the usual causes appear to have been absent. The fact that coma did not supervene until nearly five days after the appearance of the hemiplegia is difficult of explanation. The case well deserves to be put on record. For the notes of the case we are indebted to Surgeon M. McDougall, R.N.

A stoker, aged 19 years, was admitted into the Royal Hospital, Haslar, on Oct. 6th, suffering from disease of the brain. The patient had always been considered healthy. On the 4th he went ashore and in the afternoon complained to his friends of a bad headache. In the evening he suddenly became paralysed on the right side of the body; he did not lose consciousness at all. On the next day he was seen by a medical man and was described as lying in a state of semi-consciousness all day. There was no history of injury. On the 6th—i.e., two days after the beginning of the illness—he was admitted into the hospital under the care of Fleet-Surgeon G. J. Irvine.

On admission the left arm, the left leg, and the lower part of the left side of the face were found to be completely paralysed. The patient was quite conscious. It was 30 seconds at least before he answered questions, his replies being perfectly rational. There was no aphasia. The knee-jerks, ankle clonus, and superficial reflexes were entirely absent on both sides of the body. There was complete hemianæsthesia of the left side of the trunk, the left limbs, and the left side of the neck. Sensation appeared to be increased on the right side. He lay listlessly in bed, his face being directed straight to his front. There was most marked deviation of the eyes to the right. His tongue was dry and covered with cracked brown fur. He was passing urine and fæces under him. The pulse was 100, of average volume and compressibility. The heart's impulse was in the fifth space in the nipple line; an extremely faint systolic bruit was heard at the apex. The respiration was slightly quickened, otherwise being in no way abnormal; the pupils were equal in size and slightly contracted; both reacted to light.

On Oct. 7th the patient passed a very restless night, not sleeping at all and continually pulling the bedclothes off. He complained of pain in the head, otherwise his condition was similar to that on admission. On the 9th he was less slow in answering questions. He had difficulty in swallowing, most of the milk escaping through his lips; there was no regurgitation through the nose; the pupils were much contracted, the breathing was shallow and 20 per minute, the pulse was fairly full at 80, and the temperature was 98° F. On the 10th the patient had a good night, sleeping peacefully all night long. In the morning his pulse was very feeble, 160 per minute. The entry of air into both lungs was very bad indeed. There were a few very fine râles over both pulmonary bases. He seemed to be a little brighter than previously and answered questions almost immediately in a listless sort of way. At midday the patient was much worse; great difficulty was experienced in getting him to swallow. He was quite conscious. The pulse was very rapid and the breathing was very shallow. At 4.30 he was unconscious. His pulse was uncountable and felt like a very rapid feeble flickering—it must have been considerably over 200 a minute. The breathing was very slow and gasping; there was no stertor. At 5 P.M. the patient died.

Necropsy.—A large oval clot, semi-organised, measuring two inches by one inch by one inch, was found in the right lateral ventricle. The veins over the hemispheres were much congested. There was a thin area one-third of an inch thick of yellow softening around the clot. No lesion of the arteries at the base or on or in the brain was discoverable. The heart weighed 19 ounces, the mitral valve admitting one finger but not two. There were no vegetations or roughening whatever on the mitral or other valves, the absence of which seemed to point to a congenital stenosis of the mitral valve. No aneurysm or sign of emboli was found.

Remarks by Surgeon MCDOUGALL.—The following points about the case are thought to be of interest: (1) severe

cerebral hæmorrhage in a patient aged 19 years; (2) the absence of any apparent cause for the hæmorrhage; (3) the absolute hemianæsthesia; (4) the condition of the heart; and (5) the absence of coma until the very end.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Ophthalmoplegia Externa complicating Graves's Disease.—Action of Tetanus Toxin on Nerve-cells of the Cerebral Cortex.

A MEETING of this society was held on Jan. 9th, Mr. THOMAS BRYANT, the President, being in the chair.

A paper was read for Dr. FRANCIS WARNER, who was unavoidably prevented from being present, on a case of Graves's Disease complicated by Ophthalmoplegia Externa. The patient was a sparely built woman, aged 43 years. Her symptoms commenced with diarrhœa in January, 1890, which lasted for nine months. About 1894 there were much weakness, tremor of the hands, prominence of the eyes, and a few months later goitre appeared. She then took thyroid extract tabloids and continued them for some time. In 1893 there was partial loss of power in walking, and the goitre appeared to have subsided about this time. When seen in January, 1899, there were some palpitation and occasional shortness of breath, but no goitre; weakness, tremor, and pains in the limbs were her principal complaints. The patient was not aware of the limitation of her eye movements. Both eyes were equally prominent. Von Graefe's sign was well marked and pupillary reactions were normal. The movements of the eyes were very limited, but not equally so in each eye nor in all directions. There was marked tremor but no incoördination. There were no indications of syphilis. No marked change occurred while she was under observation. Dr. Warner referred to a case which he had published in the Transactions of the Society, vol. lxvi., which was under his care in 1882, in which the same symptoms existed in a more marked degree after subsidence of the goitre, accompanied by paresis of the face and muscles of mastication, together with severe gastric crises and much mental disturbance. The patient died in St. Thomas's Hospital in 1884, and the sequel of her case was recorded by Dr. Bristowe in his "Diseases of the Nervous System," p. 69. No distinct brain lesion was found. Mr. Arthur Maude published nine cases of Graves's disease in St. Bartholomew's Hospital Reports, vol. xxvii., 1891, and one of these patients developed sudden left facial paralysis, and two days later ophthalmoplegia externa of the left eye. Cases of partial paralysis were recorded as occurring in Graves's disease by several authors in the Transactions of the Ophthalmological Society, 1886.—Mr. JAMES BERRY asked whether there was any evidence that the patient was hysterical. Some observers had associated ophthalmoplegia externa with hysteria. Indeed, Ballet, in an exhaustive monograph on the subject, had made three groups of cases: (1) ophthalmoplegia externa with Graves's disease; (2) ophthalmoplegia with hysteria, but without Graves's disease; and (3) ophthalmoplegia with both Graves's disease and hysteria. He was under the impression that "hysteria" played a very important part in both of these conditions. He was sorry that Dr. Warner had not raised any of the interesting questions relating to the pathology or treatment of Graves's disease. The theory of its sympathetic origin, though still held by some, was, he believed, entirely erroneous, and no progress would be made until this was put aside. It was this theory which had lead to the adoption of dividing the sympathetic for the cure of the disease, but the good results, if any, had been very dubious. One patient whom he (Mr. Berry) had seen died a few hours after operation with an extremely rapid pulse. Boissou had published 27 cases of operation on the sympathetic, but only 15 of these were typical cases of exophthalmic goitre and only two of them could be described as having undergone cure. Experiments on animals were very fallacious in this domain, and in man the relief obtained by division was at most only temporary, and the event very doubtful. One of the advocates of the operation had said that he would only advise it if the cornea were in danger of sloughing. But there was at least one case which had sloughed after the operation of dividing the sympathetic. Turning to the question of pathology of the exophthalmos there were still men who believed it to be due to dilatation of blood-vessels behind the globe. But if the vessels of the orbit were congested why were not those of the conjunctiva hyperæmic? Yet these vessels were not more vascular than normal. Cases in which there was known to be venous and arterial congestion of the orbit there was always hyperæmia of conjunctivæ. The enlargement of the thyroid gland was also said to be due to the same cause, but post-mortem examination showed no dilatation of vessels. These were not larger than in ordinary parenchymatous goitre. The operation of division of the sympathetic was based on erroneous theories and he was unable to support the practice.

Mr. ALEXANDER G. R. FOULERTON and Dr. H. CAMPBELL THOMSON communicated a paper giving the results of an Investigation into the Nature of the Changes produced in the Nerve Cells of the Cerebral Cortex by the Action of Tetanus Toxin. The experiments of Wasserman and Takaki were first referred to. These experiments had demonstrated the fact that nervous tissue possessed the property of being able to apparently neutralise the toxin of tetanus. Wasserman and Takaki, in explanation of their results, had adopted Ehrlich's theory as to the chemical interaction of toxin and antitoxin to form an inert substance, just as an acid and a base combine to form a neutral salt. And the cells of nervous tissue, being of all cells the most susceptible to the action of the toxin, were assumed to be the seat of the most active production of the specific antitoxin. Roux and Borrel, following up the same lines of investigation, had confirmed the results of Wasserman and Takaki, but had explained these results in a different way. Roux and Borrel believed that the apparent neutralisation of the tetanus toxin by nervous matter was not due to its chemical interaction with a specific antitoxin, but rather to an inhibition of it by the nervous tissue comparable with the special affinity for a stain displayed by a particular tissue element. On the whole, the balance of evidence appeared to be rather in favour of the view adopted by Roux and Borrel. The questions with which the present investigation was more particularly concerned were: (1) Was the functional disturbance in tetanus the result of, or accompanied by, structural alterations in the nerve-cells of such a nature that the change could be demonstrated by microscopic examination? and, that being so, (2) were such changes specific in their character? A number of experiments were carried out in which the cerebral cortex was examined after the inoculation of tetanus toxin in rabbits, guinea-pigs, and mice. The doses of tetanus toxin varied and the animals were killed at different periods of time after the inoculation. The brains were removed immediately after death and hardened in a formalin solution; the sections were stained by a modification of Nissl's process with methylene blue. In all the animals definite changes in the staining reaction of the motor cells were found. The earliest changes appeared to take place just outside the borders of the nucleus, which presented a granular speckled appearance, while the nucleus and nucleolus retained their normal appearance. There was usually also at this stage some pallor of the cell body close to where the axon arose. These central changes gradually progressed; the outline of the nucleus at first became blurred and indistinct, and finally was completely lost. The periphery of the cell body also underwent changes which were manifested by the appearance of a darkly stained edge which contrasted strongly with the pale central area. This deep staining at the periphery was a very constant condition and was generally in evidence as soon as there was definite pallor in the centre. The nucleus in this stage was often quite indefinable; the nucleolus remained well marked, though often irregular in outline; and the cell body was altogether swollen and altered in contour. While Mr. Foulerton and Dr. Thomson believed that this description gave a fair idea of the typical appearances according to the intensity of the change, there were certain variations met with which probably represented other stages of the same process. In some the early changes appeared to occur in the neighbourhood of the axon, and this area assumed a pale granular appearance, while the central part still remained normal. In others the deeply stained area which usually borders the cell body became of much wider extent, and the cell body appeared to be divided into two parts, one of which was pale and the other very dark. The changes were thus not absolutely constant in their character, but, as might be expected, appeared to vary somewhat with the amount of the initial dose of toxin and wi h

the length of the period of intoxication. The different appearances of the nerve-cells in these experiments were, however, believed to represent different phases of the same morbid process, subject to the influence of the two factors already mentioned. Sections of the motor area of the cerebral cortex showing these changes were demonstrated under the microscope. As the result of these experiments the following conclusions were formulated. (1) Certain definite histological changes were produced on the motor cells of the cerebral cortex by the action of tetanus toxin; (2) with efficient doses of the toxin such changes were of constant occurrence; and (3) whilst the occurrence of a change of some sort was constant the exact histological appearances produced varied with differences in the accompanying factors relating to time and dose. The investigation had been conducted more particularly with reference to the nerve-cells of the motor area of the cerebrum, but evidence had been obtained that similar histological changes occurred in cells of other portions of the cerebral cortex and also in the cerebellar cortex. It was at present impossible to say whether the changes described in tetanus were absolutely specific. But whilst definite nerve-cell changes had been found to occur after the inoculation of animals with other bacterial toxins, such changes were readily distinguished from those which were obtained with the tetanus toxin. The motor disturbance which occurred in tetanus appeared, then, to be the result of definite changes in the constitution of nerve-cells of the motor areas of the spinal cord and cerebral cortex; and the incubation period in tetanus must be regarded as the time which would necessarily elapse before sufficient toxin to produce, in the case of a motor nerve-cell, motor disturbance had been taken up from the circulating blood and fixed and accumulated in the cell substance.—Dr. FREDERICK E. BATTEN asked whether the temperature might have any effect in producing the changes described. Pyrexia produced changes in the cerebral cells which somewhat resembled those described by Mr. Foulerton and Dr. Thomson. Doubtless they had excluded that fallacy. Mr. Foulerton and Dr. Thomson had found these changes not only in the motor area and cerebellum but in other parts of the cortex. But in tetanus the intellect remained clear. How was this clinical fact to be explained? If the frontal region were affected they ought to get psychical effects. He had lately examined the brain and spinal cord of a child who had died from tetanus neonatorum, using the methods of Marchi and Niessl, as well as every other method employed by Mr. Foulerton and Dr. Thomson, but the results as regarded any changes in the cerebral cells were absolutely negative. The child seemed to be about to recover and it was not until three weeks from the onset of the disease that he died, so it might be said that he was on the road to recovery, but certainly there were none of the changes described. Dr. Batten found it somewhat difficult to differentiate these changes described by Mr. Foulerton and Dr. Thomson from those due to other toxins, such as glanders or pneumococcus. But he quite admitted that a very large experience was required for the adequate study of cerebral histology and the differentiation of changes due to pyrexia, tetanus, &c., and therefore such contributions as those before the meeting were extremely valuable.—Mr. FOULERTON, in reply, said that the temperature of the animals experimented on had been taken three times a day throughout, and in no case had it risen more than 1½° above normal at any time. In the rabbits the temperature had usually, and always for several hours before death, been normal. The possible fallacy of post-mortem changes had been very carefully excluded, for the brains, in 12 instances out of 14, had been taken out directly after the animal had been chloroformed and placed at once in the preservative. Mr. Foulerton and Dr. Thomson felt certain that these changes were not the same as those produced by pneumococcus, glanders, and the other infections tried.

MEDICAL SOCIETY OF LONDON.

Excision of the Vesicula Seminalis.—Operative Treatment of Uterine Fibroids.

A MEETING of this society was held on Jan. 8th, Dr. F. T. ROBERTS, the President, being in the chair.

Mr. C. MANSELL MOULLIN read a paper based on two cases in which he had Excised the Vesicula Seminalis. In both cases the operation was performed for tuberculous disease extending upwards from the epididymis. The patients were young adults. The testis, which had in each case been involved for some time, was removed through an inguinal or inguino-scrotal incision and the cord divided as high up as possible. The patient was then placed in the lithotomy position and the under surface of the prostate and the base of the bladder were exposed through a modification of Zuckerkandl's incision. The vesicula seminalis and the termination of the ejaculatory duct were then dissected out. In one instance a small intervening portion of the vas deferens was left behind. In the other, two ligatures were placed upon the cord in the groin, one upon the vas deferens by itself and the other upon all the other structures, and the whole of the remaining portion of the vas was extracted through the perineal opening. There was very little bleeding in either case. The wounds were packed with iodoform gauze and the external sphincter was sutured to the centrum tendineum. One healed up without inconvenience; in the other, in which the ejaculatory duct had been torn out from the urethra, a small urinary fistula persisted for some months, a few drops coming through on micturition. There was no fever in either and the action of the external sphincter was not impaired in any way. Mr. Moullin strongly advocated complete removal of the vesicula seminalis and vas deferens in every case of tuberculous disease of the epididymis in which the vesicula could be felt distinctly through the rectum, with the view of clearing out the whole disease and of giving the patient one more chance of recovery before the bladder became hopelessly involved, and probably saving him from a serious and otherwise ultimately fatal disease.—Mr. F. SWINFORD EDWARDS remarked on the novelty of the subject. He had not performed the operation, but he had seen one case operated on. It was done for tuberculous disease of the vesicula. The operation was not a simple one. It certainly required a good deal of time and probably entailed considerable hæmorrhage. It had occurred to him that the vesicula might be brought into view better by an operation of a modified kind resembling Kraske's operation for excision of the rectum. He would like to ask Mr. Moullin if he would recommend the procedure in cases of gonorrhœal vesiculitis? He had treated one such case satisfactorily by a kind of massage through the rectum. He would also like to ask what was likely to be the result of such operations. Would any variety of fistula be likely to be left? He congratulated Mr. Moullin on bringing the subject to the notice of the profession.—Mr. F. C. WALLIS thought that Mr. Moullin had not sufficiently alluded to the difficulties which attended such an operation. These were very considerable and a less experienced operator than Mr. Moullin would find himself in grave difficulties. He would be glad if Mr. Moullin would refer to this in his reply.—Mr. MANSELL MOULLIN, in reply, said that he did not think there were any very great difficulties provided the patient was placed in the lithotomy position with the buttocks well raised. It was surprising how well the structures came into view. In old men difficulties with the prostatic plexus might arise, but the hæmorrhage was not serious in younger subjects. The structures to divide were singularly few. Moreover, he had found that pressure, applied over the pubes above the symphysis in young subjects, especially those affected by tuberculous disease, could drive the base of the bladder and vesicula right down to the perineum. He referred to a case on which he had operated for gonorrhœal vesiculitis which had been under observation for 18 months. The operation was more difficult than those he had referred to in his paper because of the adhesions. The patient had been variously treated before without success, but this treatment of removal was efficacious. He very much doubted whether the structures could be more completely exposed by a modified Kraske's operation and this would involve a more severe degree of shock and a much longer operation. He thought the vesicula could be exposed better by a semilunar incision such as he had described.

Dr. W. J. GOW read a paper entitled Some Remarks on the Operative Treatment of Uterine Fibroids. The operation chiefly referred to was abdominal hysterectomy with intraperitoneal treatment of the stump, and the remarks were founded on 47 cases of this operation performed by him on cases of fibroid. The indications for the operation were, he said, closely bound up with the mortality from the operation. So long as this remained as high as 10 per cent., or even less, the operation must necessarily be restricted to cases where life was threatened. If the mortality were low it might fairly be advised in cases where the symptoms were sufficiently severe to cause invalidism.

Among the 47 cases recorded without selection by him of abdominal hysterectomy for fibroids where the stump was treated intra-peritoneally there was only one death, giving a total mortality of slightly over 2 per cent. The fatal case was due to secondary hæmorrhage occurring 36 hours after the operation. There were in the series 39 consecutive cases of recovery. He advised that after the uterine arteries had been tied, a precautionary ligature, including the outer fourth of the stump on either side, should be employed. By this means all oozing or spouting from the stump was checked. Such ligatures did no harm. The real essential to success was complete asepsis and complete control of bleeding vessels. He also urged the desirability of the simplification of abdominal operations. One assistant was all that was necessary and six sponges and six pairs of pressure forceps were usually amply sufficient. The fewer people engaged within the circle of the operation the better. He considered that it was most desirable to leave one or both ovaries, as in this way the climacteric changes took place slowly instead of suddenly. In four of his cases of hysterectomy a pyosalpinx was present on one or both sides, but no bad consequences followed. In only one of these cases was drainage employed. The presence of adhesions proved to be the most serious complication at the time of the operation, on account of the risk of hæmorrhage when they were torn through. He supported the view that of all the radical operations for fibroids abdominal hysterectomy with intra-peritoneal treatment of the stump was the best, and this operation might in the future be confidently expected to give a mortality of not more than 1 or 2 per cent.—Dr. GEORGE F. BLACKER congratulated Dr. Gow on his brilliant results—results which certainly had not been exceeded in this country, if indeed they had in any other. The question of operation on uterine fibroids had undergone very great alteration of late years, and if the mortality of abdominal hysterectomy could be reduced to that of ovariotomy, or lower, it would revolutionise their methods of treatment. The worst complication of the operation itself was undoubtedly the presence of adhesions. He referred to a case which had been admitted moribund. Abdominal hysterectomy was attempted but it was found to be impossible. At the necropsy they found a large fibroid with three-quarters of a pint of pus in its interior. The method of operating he had followed was that of Kelly. He preferred the intra-peritoneal method of dealing with the stump.—Mr. F. C. WALLIS remarked that he had helped Dr. Gow in many of his operations and he believed that the extreme simplicity of his methods constituted the chief source of his success. In some operations he had seen it was surprising what an immense number of instruments, assistants, sponges, &c., were employed. This greatly increased septic risks.—The PRESIDENT remarked on the extreme importance of adhesions in all operations of this kind.—Dr. GOW, in reply, said that undoubtedly adhesions constituted the chief source of danger at the operation as they gave rise to oozing. This led to operating against time, for nothing could be done until the uterine artery could be got at. He had a prejudice against packing the pelvis with gauze. Draining, though rarely necessary, became necessary under these circumstances, when adhesions were very plentiful. His main objects in bringing the subject forward had been to advocate the operation as a means of relief in bad cases of fibroid and to emphasise the intra-peritoneal method of dealing with the stump.

OBSTETRICAL SOCIETY OF LONDON.

Treatment of Rupture of the Uterus by Packing the Tear with Iodoform Gauze.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 3rd, Mr. ALBAN DORAN, the President, being in the chair.

Dr. HERBERT SPENCER read a paper on four cases of Rupture of the Uterus Successfully Treated by Packing the Tear per vaginam with Iodoform Gauze. They were the only cases in which he had adopted this method of treatment and the only cases which he had known recover. All the others (about eight in number) had died in a few hours from shock and hæmorrhage or in a few days from sepsis. Twice he had performed abdominal hysterectomy with a fatal result. After quoting some remarks which he made in the "Obstetrical Transactions" for 1897 upon the great danger of the operation of abdominal hysterectomy in patients suffering from shock consequent upon rupture of the uterus he expressed the belief that the mortality from rupture of the uterus might be lessened by the use of gauze packing. Having alluded to the advocacy of gauze packing by others he expressed his own views, for the purpose of discussion, as follows. In the treatment of rupture of the uterus—1. Abdominal section was rarely required and almost solely in cases where the fœtus had passed completely or in great part into the peritoneal cavity. It should be performed rapidly under local infiltration anæsthesia and should be followed by flushing of the peritoneal cavity with normal salt solution and by suture of the tear, if possible, or, if this be not possible, by packing the tear with iodoform gauze and draining by the vagina or abdomen. 2. Abdominal hysterectomy was hardly ever necessary; when the broad ligaments were so much damaged as to endanger the vitality of the uterus vaginal hysterectomy should be performed. 3. All incomplete tears implicating the broad ligament and most complete tears should be treated by packing the rupture per vaginam with iodoform gauze after removing clots and fluid blood.

Dr. PETER HORROCKS thought that a very strong distinction should be made between cases of laceration of the cervix and rupture of the body of the uterus. In two of Dr. Spencer's cases the laceration had not penetrated the peritoneal cavity. Such cases often did well without any gauze packing, and indeed without any treatment at all, and the chief point was to stop hæmorrhage and to see that everything was done aseptically. He had had several cases in which the peritoneal cavity had been opened by the rupture and the results had been highly satisfactory in recent years. He attributed this not alone to the packing by gauze but to the fact that the labours had been conducted aseptically. He gave details of a case in which the rent was sewn up, but the patient died in 48 hours. In another case he had put in two stitches so as to draw the gaping wound together somewhat and then he packed with sal-alembroth gauze, which was removed every 12 hours under chloroform for the first few days and once a day afterwards. The patient made an excellent recovery, but one of the stitches gave trouble and had to be removed nine months later; she had since had a living child, the labour having been brought about at the eighth month. He gave details of three other successful cases in which sal-alembroth gauze was used and tincture of iodine solution as a douche. In his opinion Dr. Spencer had left the gauze in too long and that the best treatment in cases which could not be treated in the way above-mentioned was to open the abdomen and to sew up the tear with sterilised silk. He gave details of a case in which this had been successfully done and the patient recovered, although the abdominal wound burst open and the bowels protruded on the tenth day. He saw no reason to change sal-alembroth gauze for iodoform gauze.

Dr. G. E. HERMAN said that the suture of a ruptured uterus was useless unless the edges of the wound were brought accurately together throughout its whole length; one or two sutures far apart were worse than useless. In cases in which complete suture of the wound could not be done he thought packing with iodoform gauze was the best practice. If the rent was so situated that packing with gauze was impracticable he thought that vaginal hysterectomy would give the patient the best chance.

Dr. A. H. N. LEWERS said he had had a case of rupture of the uterus at the London Hospital about 18 months ago in which iodoform gauze packing was adopted and the patient, though very ill for a week, recovered. Dr. Lewers believed that iodoform gauze varied a good deal in strength and except when the less highly iodoformed gauze was employed there was a good deal of danger of iodoform poisoning; he had of late used carbolic gauze in the peritoneum with satisfactory results.

Dr. DRUMMOND ROBINSON was much interested in the subject. He had had three cases of ruptured uterus under his care. In one case the patient died within a couple of hours from a complete rupture. The other two cases recovered. The first of these was an incomplete rupture into the left broad ligament; there was very little hæmorrhage at the time or afterwards. No drainage was employed and the patient recovered. The second successful case was that of a multipara, of about 40 years of age, delivered by forceps. The tear (a complete one through the cervix and lower segment anteriorly) was packed with cyanide gauze. The

patient was very ill for a fortnight but subsequently made a good recovery and had given birth to another child quite normally. A few days after the rupture a sinus developed at the umbilicus; this healed up in a few days.

The PRESIDENT said that absorption of iodoform caused rapid pulse, which was very confusing, as it might be taken as a symptom of sepsis. Many foreign authorities objected now to iodoform or any other chemical antiseptic agent in packing wounds. Did Dr. Spencer hold that the iodoform in gauze was an active antiseptic germicidal agent?

Dr. HERBERT SPENCER, in reply, said that two of his cases were complete ruptures and two were incomplete. The distinction between laceration of the cervix and rupture of the body of the uterus could not be sharply drawn; most cases of the latter did actually involve the cervix. Slight cases of laceration of the cervix up to, or even beyond, the vaginal insertion were of small importance; but where, as in his two cases, the cervix and lower segment were lacerated so extensively as to admit the half-hand into the broad ligament and there were much hæmorrhage and shock the danger was great; the extent of the laceration in the uterus was of less importance than the extent of the laceration of the vessels and tissue of the broad ligament; he had known death to occur where a cervical laceration was so short as not to involve either os. It was his experience and belief that these severe incomplete lacerations actually killed more women than the complete ones. He wished again to emphasise the great danger of abdominal section in rupture of the uterus and agreed with the remarks of Dr. Herman as to the uselessness of partial suture. He considered it undesirable to inject an irritant like iodine solution into the peritoneal cavity and dangerous to give chloroform and change the gauze every 12 hours. Iodoform gauze might be left in for six days or longer. The cases related by other speakers strengthened his belief in the value of gauze packing; though iodoform gauze was not free from risk he believed that in anæmic cases like those under discussion it was less dangerous than cyanide or carbolic gauze or even sterilised gauze which would not long remain aseptic in the vagina.

The following specimens were shown:—

Dr. T. W. EDEN: (1) Adenoma of the Uterus; and (2) Cast of the Uterus.

The PRESIDENT (for Dr. PAWLIK of Prague): (1) Photograph of Primary Cancer of the Fallopian Tube; and (2) Macerated Fœtus successfully removed from the Abdominal Cavity two months after Spurious Labour.

Mr. J. D. MALCOLM: Bilateral Pyosalpinx, Communicating.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 4th, Mr. H. E. JULER, the President, being in the chair.

The PRESIDENT showed a case of Orbital Exostosis. The patient, a young woman, had first come under observation in 1892, when there was a small, hard, nodular mass in the inner angle of the left orbit fixed to the nasal process of the superior maxillary bone. It had blocked the nasal duct, causing a mucocele, and the lower canaliculus was slit up. In 1894 the tumour seemed to be a little larger. No change seemed to have occurred since 1897; there was slight proptosis and the eyeball was displaced to the outer side, but there was no diplopia. Opinions were invited as to the desirability of removing the tumour.—Mr. E. W. ROUGHTON advised the removal of the tumour and thought that the best instrument for the purpose would be the surgical engine.

Mr. FRANCIS JAFFREY showed a case of Coccygeal Teratoma. It was that of a female child, aged six months, one of twins, who was admitted into the Belgrave Hospital for Children in September last with a large tumour in the coccygeal region, which was partly fluid and partly solid, and which at first sight appeared to be either a spina bifida or a dermoid, but on closer examination proved to be a case of teratoma. On examination the skin was found to be very thin in parts and on grasping the swelling a lobulated mass could be felt. The tumour had increased in size since the admission of the child into the hospital. It had been tapped twice and some fluid like turbid beer had been removed; this fluid was examined at the Clinical Research Association who reported that from chemical analysis it was quite evident that the fluid was not cerebro-spinal in origin. It contained none of the albumose characteristic of that fluid, nor, on the other hand, did it correspond to amniotic fluid. The cyst in question had probably arisen in the usual manner of congenital cysts in that region—viz., as representative of an attempt at another embryo.—Mr. RAYMOND JOHNSON did not regard the evidence that the tumour was a teratoma convincing. It was probably one of the more common multilocular cystic tumours occurring in this region. The tumour probably extended up between the sacrum and rectum and its removal would involve a more extensive operation than the child could at present stand.

Mr. HUBERT PHILLIPS showed a case of Deformity of the Left Arm in a youth, aged 17 years. There was considerable shortening of the humerus and what appeared to be the upper extremity of that bone was seen projecting on the inner side of the arm when the biceps was called into action. One extraordinary feature of the deformity was the fact that nothing abnormal was noticed by the parents or others until the patient fractured his right arm about nine years ago. With regard to treatment Mr. Phillips considered that surgical interference was not only not called for but that it would be absolutely injurious, as the arm was a most useful one in every way.—Mr. E. W. ROUGHTON and Mr. JACKSON CLARKE regarded the deformity as the result of a fracture of the upper part of the shaft of the humerus which had united at an acute angle.—Mr. PHILLIPS, in reply, agreed with this opinion.

Mr. JACKSON CLARKE showed a man, aged 37 years, who sustained a severe Compound Comminuted Fracture of Both Bones of the Left Leg in July last. A segment of the tibia measuring three inches in length had to be removed because it was quite separated from its periosteal connexions and was contaminated by dirt from the roadway. An incision was made over the lower part of the fibula and several fragments of this bone were removed in order that the two remaining segments of the tibia could be approximated and fixed by a suture of silver wire. The limb was treated by the open method and recovery was uninterrupted. A portion of the silver wire that had been exposed in the inner wound became gradually surrounded by callus. The patient had now a useful limb in which three inches of shortening was compensated for by a raised boot. Three months after the accident Mr. Clarke allowed the patient to walk with the help of lateral supports of iron fitted into the boot below and extending to the knee above. Six months after the fracture a skiagram was taken and although abundant firm bony callus was present the skiagram showed no trace of it.—In reply to Mr. JAFFREY Mr. CLARKE said that he hoped to have skiagrams taken from this case from time to time in order to help to settle the point as to when the consolidating bony callus became recognisable. Mr. Clarke had no doubt that the union was bony and not fibrous; the appearance of mobility noticed by Mr. Raymond Johnson, he thought, was due to the proximity of the ankle-joint.

Dr. JAMES TAYLOR showed two cases illustrating the Results of Anti-syphilitic Treatment in Syphilitic Disease of the Brain. The first was that of a woman whom he had brought before the society 18 months previously and who at that time had right-sided hemiplegia following typical Jacksonian epilepsy. The patient had been treated with iodide of potassium and mercury with complete success. The second case was that of a man who was at first believed to be suffering from ordinary epilepsy. The attacks were, however, followed by left-sided hemiplegia, headache, and optic neuritis. Iodide of potassium was given internally and mercurial ointment used as an inunction. After a considerable time the fits ceased and the other symptoms improved, but recurred with cessation of the treatment. The latter was resumed and now the patient only presented a very slight degree of weakness, especially in the left leg, and occasional faint attacks.—The cases were discussed by the PRESIDENT, Mr. JACKSON CLARKE, Dr. L. G. GUTHRIE, and Dr. G. A. SUTHERLAND, and Dr. TAYLOR replied.

Dr. LEONARD GUTHRIE showed a case of Tabetic Ophthalmoplegia. The patient was a man, aged 65 years, who seven months previously had suddenly developed ptosis of the left eyelid with crossed diplopia and external strabismus. For 12 months he had suffered from weakness and unsteadiness of gait, giddiness, and tremors of the head and the right arm. Two years ago he had had some kind of a fit attended by momentary loss of consciousness, but no similar attack had occurred since. He had had a chancre followed

by non-suppurating bubo and severe sore-throat at the age of 24 years. He had been for six months under observation, during which time the ptosis had become less marked, but the left eyeball deviated outwards as before and could not be moved upwards or inwards beyond the mid-line. Quite recently the right eyeball also could not be moved inwards beyond the mid-line or upwards, but its movements outwards and downwards were unimpaired. The pupils were moderately contracted and reacted little, if at all, to light. Accommodation could not be tested owing to loss of convergence. The knee-jerks present six months ago had gradually disappeared. The patient's gait had become more ataxic and Romberg's symptom was now manifest. Sensation was unaffected except that the ulnar nerves behind the inner condyles were abnormally insensitive. He had some difficulty in holding his urine. There were no lightning pains. Dr. Guthrie considered that the diagnosis of tabes was now obvious, although six months previously the presence of tremors and the absence of any definite signs of the disease, including that of lightning pains, had created doubt as to the nature of the case. He drew attention to the frequent occurrence of paralysis of the ocular muscles as pre-ataxic symptoms. Such cases of ocular paralysis usually came under the notice of ophthalmic surgeons and were frequently cured, or the paralysis spontaneously subsided, perhaps years before other signs of tabes appeared.—The PRESIDENT and Dr. JAMES TAYLOR discussed the case and agreed upon the frequency of ocular paralysis in the early stages of tabes. Dr. Taylor had seen a number of such cases at the London Ophthalmic Hospital and had usually found the knee-jerk still present. The paralysis was usually transitory, but it might be permanent and was then probably due to nuclear changes.

Mr. E. W. ROUGHTON exhibited a case of Congenital Dislocation of the Hips. The patient, a man aged 20 years, showed the characteristic appearances of a bilateral dislocation.—Mr. JACKSON CLARKE remarked upon the favourable results which had been obtained in the treatment of this deformity in early life by Lorenz's bloodless method — Dr. G. A. SUTHERLAND and Dr. J. TAYLOR also spoke and Mr. ROUGHTON replied.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.

The Open-air Treatment of Consumption.

AT the December meeting of this society, Dr. C. E. BEEVOR, the President, being in the chair, the following discussion on the Open-air Treatment of Consumption took place.

Dr. CLIFFORD BEALE opened the discusssion, pointing out that while fresh air had from the earliest times been recognised as an essential to the successful treatment of tuberculous diseases it had of late become more evident that purity of air whether in open or enclosed spaces was the first consideration. The highest physiological perfection among human beings was to be found amongst peoples who lived in the purest air. Impurity might be organic or inorganic, but of these the organic contaminations were by far the most important as being direct feeders of the micro-organisms infesting the air passages. Inorganic contamination was for the most part injurious as the carrier of micro organisms and of organic matters. The tuberculous patient suffered from the effects of the toxin produced in the formation of the tubercle and no remedy short of an antitoxin capable of annulling the effects of the poison within the body could be expected to have any curative effect. To prevent the entrance of the bacillus and to deprive it of the surroundings in which it flourishes must be the main aim of treatment. Air in enclosed spaces occupied by one or more animals, human or otherwise, must be more or less contaminated. Hence tuberculous patients should be kept away from crowded spaces and taught to regard such places as direct feeders of the disease. The living rooms must be kept free from stagnant air and should be well flushed with fresh air at all times when unoccupied. In the early stages the disease resembled a battle where bacillary attack had to be met by physiological defence and the defence was at first in superior strength. Opportunity had to be seized to assist that defence while it was still strong. Hence the vital importance of placing the patient under strict hygienic rules at the outset. Exercise, sleep, and food had all to be regulated and systematised and more attention was paid to such a system if it was written or printed in full for the patient's guidance. Medical supervision to see that the system was adhered to was an essential without which the formulation of rules was useless. Treatment was best carried out away from the home, but banishment to foreign surroundings was not essential. The length of time required was best left indefinite. It was always difficult to get the patient to see the necessity for making a sacrifice of time and money in the early stages when he did not feel really ill, but with the experience of recent times such a sacrifice should be urged in all really incipient cases.

Dr. F. R. WALTERS expressed his complete agreement with Dr. Clifford Beale's admirable summary of the principles of open-air or hygienic treatment of consumptives. The following remarks would be limited to such treatment in sanatoria and similar institutions. The open-air treatment did not merely consist in exposure to fresh air while leaving the patient to his own devices, but was a combination of hygienic remedies requiring judgment and experience and calling for more or less continuous supervision by the resident medical officer. The treatment was educational and progressive—a species of training, mental and physical. The amount and nature of exercise must be determined partly by observation of actual results in each case; and the same with other hygienic remedies. Treatment in a sanatorium had the advantages common to all hospital treatment, viz., those which arose from coöperation and from the supervision of a number of more or less similar cases by one medical man in the same place, greater economy, and greater efficiency. The disadvantages were purely sentimental in any properly managed sanatorium. Although the locality was by no means a matter of indifference and most of our urban chest hospitals were ill suited for the open-air treatment, the Hampstead Chest Hospital was exceptionally favoured in its position, and the results there had been very satisfactory. The dense fogs did not usually reach the hospital and thin white fog was not found to do harm. The winter cold was no drawback, and night air was also found to be quite harmless. Some of their patients had slept out of doors continuously in a tent or on the balconies with distinct advantage. The arrangement of the wards in a double row was a drawback, as it was more difficult to ensure free ventilation from back to front. The new galleries would, however, be a great help. Prolonged treatment for 12 months or more was nearly always essential in dealing with poor people. As this long period could not usually be passed in the chest hospitals these should become affiliated with country sanatoria and the patients should be sent on as soon as they were able to travel. The true function of a chest hospital was to give "first aid" to the consumptive, the bulk of the treatment being carried out in a suitable country place.

Dr. EDWARD SQUIRE said that the "open-air treatment" of consumption was a development of the treatment of hygienic measures which tended to strengthen the resisting power of the tissues against the effects of the tubercle bacillus. It had long been recognised that attention to hygienic requirements was one of the best means of preventing tuberculosis in the individual, and the principle of the "hygienic treatment" might be expressed in the words which he quoted from a book which he published seven years ago:—"The hygienic rules so important as preventive measures are equally necessary conditions in the treatment of the disease." Of these requirements pure air was undoubtedly one of the most essential, but the food and clothing, the proper proportion of exercise and rest, and methodical regularity of life required careful attention. It was in special institutions such as hospitals and sanatoria that these requirements could be most completely provided, for in these the patient was subject to rules, and supervision ensured obedience to the regulations. But many cases could not, and some would not, enter an institution, and those who were admitted could not be kept indefinitely. Hygienic treatment at home, which was the special subject he had been asked to speak about, could be carried out with great advantage, although rarely with the completeness which was possible in a sanatorium. He had had most encouraging success with such treatment. Rules must be drawn up and written out or printed regulating the daily life of the patient, giving information about ventilating his rooms and the disposal of the sputa, stating the times and quantity of his meals, the times for rest and for exercise,

&c. To ensure the carrying out of details the personal supervision of the medical attendant was needed, and a nurse who had some experience of the treatment was valuable. It might be desirable for the patient to leave home and he had obtained good results by advising the patient to move from place to place "chasing the sunshine," staying a few weeks in one place and selecting suitable parts of the country. One disadvantage of home arose from the wish of the patient's family to spend some part of the day with him, for they sometimes found his rooms too freely ventilated for their liking and persuaded him to sit in a close atmosphere, perhaps in the evening, when all the family met in one room, with the gas lighted and the curtains drawn. Although it was only in the early cases that they might hope for a cure, advanced cases were the better for hygienic treatment, and not only was the patient's condition improved, but attention to hygiene diminished the risk to other members of the household. They might not be able to ensure perfect hygienic conditions in the home, but that was no reason for saying that the treatment was impossible at home. If they could not get all the hygienic requirements which they wished they should at least get for their patients as many as they could, and he had seen benefit result from even such a modified hygienic treatment as was possible amongst those who were not too well off and who could not leave London. Hygienic treatment did not absolutely replace drug treatment—drugs might be needed to assist appetite, to relieve cough, or to procure sleep. Finally, he would emphasise the necessity for early diagnosis, since cure was only possible in the early stage; when there was any suspicion of possible tuberculous mischief to examine the chest fully and methodically. Failure to detect early disease was, he believed, more often due to incomplete examination than to inability to appreciate the slight but distinct physical signs which indicated commencing tuberculosis in the lungs.

Dr. CHOWRY-MUTHU in the course of his remarks referred to the sanatorium treatment of phthisis as carried on at Ventnor. He said the open-air treatment was in the experimental stage in this country. Though beset with difficulties it could be successfully carried out in England. The secret of success in treatment depended upon thorough organisation, strict attention to each detail, the strong personality of the medical attendant, and his wisdom in distributing the different elements, as pure air, good food, exercise, rest, &c., according to the needs of the individual patient—in short, in directing and controlling the whole movement. He pointed out that the open-air life led by the ancient Greeks was one of the factors that contributed to their health and intellectual greatness. An indirect result of the agitation for fresh air in health as well as in disease would be the extension of the principles of the new treatment to every-day life. There would be larger and more commodious schools for children, better houses for the poor, wider streets, and more open spaces.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a pathological evening on Dec. 21st, the President, Dr. D. Burgess, being in the chair, the following microscopic and macroscopic specimens were exhibited and briefly discussed. Microscopical preparations: Dr. A. Anderson: Typhoid Bacilli in the Urine of a Typhoid Patient.—Dr. Arthur J. Hall: (1) Various Pathological Sections from Specimens sent to the Laboratory; and (2) Blood Films stained by Various Methods.—Dr. J. Robertson: Malaria Parasites in Different Forms of Malaria and in Mosquitoes.—Dr. G. Wilkinson: Sections and Culture Preparations of Malignant Pustule.—Macroscopical Specimens: Mr. C. Atkin: (1) Intussusception with Gangrenous Gut; (2) Relapsing Appendicitis (two specimens); (3) Epithelioma of the Tongue; and (4) Epithelioma of the Lip (two specimens).—Dr. Burgess: (1) Tuberculous Meningitis; (2) Tuberculous Tumour of the Pons; (3) Hydatid of the Lung; (4) Aneurysm Rupturing into the Trachea; (5) Typhoid Ulcers; and (6) Heart: Calcareous Coronaries.—Dr. W. T. Cocking: (1) Pulmonary Abscess; and (2) Unusual case of Fibrosis of the Pleuræ and Pericardium.—Mr. A. W. Cuff: (1) Bronchial Cast from case of Plastic Bronchitis; and (2) Tumour Cerebelli.—Mr. R. Favell: Carcinoma of the Cervix complicated by Pregnancy; Successful Hysterectomy.—Dr. Arthur Hall: (1) Ichthyosis Hystrix Linearis; (2) Lardaceous Kidney; (3) Lardaceous Spleen; (4) Secondary Carcinoma of the Lung and Diaphragm; (5) Specimens Illustrating Dissemination of Tubercle from Old Caseous Bronchial Glands; (6) Alimentary Canal from a case of Nitric Acid Poisoning; and (7) Various Specimens of Heart Disease.—Mr. Arthur Hallam: (1) Tuberculous Nephritis, Nephrectomy; (2) Epithelioma of the Tongue; (3) Relapsing Appendicitis (two specimens); and (4) Scirrhus of the Breast.—Mr. H. Lockwood: (1) Calculus formed round a Hairpin removed from a Female Bladder; and (2) Foot with Ulcerating Tophi requiring Amputation.—Mr. R. J. Pye-Smith: (1) Sarcoma of the Femur; (2) Fracture of the Radius; (3) Ruptured Appendix; (4) Epithelioma of the Penis (two specimens); (5) Dermoid Cyst of the Intestine; (6) Tubercle of the Larynx; and (7) Carcinoma of the Pancreas and the Liver.—Dr. Robertson: (1) Tuberculous Spleen (Pig); (2) Tuberculous Udder (Cow); and (3) Tuberculous Pericardium (Ox).—Dr. W. J. N. Vincent and Dr. R. W. Gilmour: (1) Tuberculous Tumour of the Pons; (2) Dura Mater from Pernicious Anæmia; and (3) Ulceration of the Aorta from a Needle in the Œsophagus.—Dr. Sinclair White: (1) Fibroma Uteri (two specimens); (2) Carcinoma Uteri (two specimens); (3) Scirrhus of the Breast (five specimens); (4) Carcinoma of the Intestine (two specimens); (5) Kidney (Pyelonephritis); (6) Ruptured Kidney, nephrectomy; (7) Sarcoma of the Kidney; and (8) Epithelioma of the Penis (two specimens).—Dr. G. Wilkinson: (1) Malignant Pustule; (2) Melanotic Sarcoma of the Skin; (3) Sarcoma of the Head of the Tibia; (4) Cystic Kidneys; (5) Old Blood Cyst Removed; and (6) Ovarian Cyst.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 5th, Dr. J. B. Ball, the President, being in the chair.—Mr. Percy Dunn in a feeling and appreciative speech proposed a vote of condolence and sympathy with the family of the late Sir James Paget, an honorary member of the society.—The proposal was seconded by Mr. Swinford Edwards and carried unanimously.—The Secretary read the report of the committee appointed at the ordinary meeting on Dec. 1st to organise a scheme for gratuitous attendance on distressed families of soldiers. The committee reported that 203 members of the society had written offering to coöperate in the scheme. Of these replies 44 were from consulting physicians and surgeons and from men practising in various special departments. The remaining 159 were from men in general practice.—Mr. L. A. Bidwell read a paper on Surgical Treatment of Dilated Stomach. The principal causes of dilated stomach were: (1) cicatricial contraction of the pylorus; (2) malignant disease; (3) adhesions outside the pylorus; (4) gastroptosis; (5) spasm of the pylorus; (6) floating kidney on the right side; and (7) atony. Only the first three of these various conditions were discussed at length by Mr. Bidwell. With regard to diagnosis, the following principal methods of examining the stomach were advocated: (1) inspection; (2) palpation; (3) percussion; (4) auscultation; (5) intubation; (6) artificial distension of the stomach with gas; and (7) chemical examination of the stomach contents. The indications for operation on the dilated stomach were: (1) pain usually localised to the pyloric region and felt in the back; (2) signs of dilatation of the stomach; (3) vomiting of solid food; (4) absence of free hydrochloric acid from the vomit; (5) some emaciation; and (6) obstinate constipation. The surgical procedures which were undertaken for the relief of dilated stomach were—for malignant diseases: (1) pylorectomy; and (2) gastro-enterostomy. In non-malignant stenosis: (1) pyloroplasty; (2) gastro-enterostomy; (3) Loreta's operation; (4) pylorectomy; and (5) division of the adhesions. In neurotic cases: (1) lavage; (2) massage; (3) gastropexy; and (4) an operation for diminishing the capacity of the stomach by folding in a portion of the redundant wall. The paper was illustrated by 16 cases operated on by Mr. Bidwell and arranged in tabular form. 11 were cases of malignant disease; five of these died within a fortnight, the remaining living some months. There were five cases of non-malignant stricture which were all cured by operation. Of the malignant cases seven were gastro-enterostomies with three deaths, three were pylorectomies with one death, and one was a case of pyloroplasty which proved fatal.—Remarks were made by the President, Mr. Swinford Edwards, Mr. C. B. Keetley, Mr. McAdam Eccles, and Mr. R. Bevan.—Mr. L. A. Bidwell briefly replied.

Reviews and Notices of Books.

System of Diseases of the Eye by American, British, Dutch, French, German, and Spanish Authors. Edited by WILLIAM F. NORRIS, A.M., M.D., and CHARLES A. OLIVER, A.M., M.D., of Philadelphia, Pa., U.S.A. Volume IV., Motor Apparatus, Cornea, Lens, Refraction, Medical Ophthalmology. With 51 Full-page Plates and 211 Text Illustrations. London and Philadelphia: J. B. Lippincott and Co. 1900. Pp. 949. Price 21*s.* net.

THE first section of the book is by Professor Edmund Landolt of Paris and deals with the Anomalies of the Motor Apparatus of the Eyes; it has been well translated by Dr. C. M. Culver of Albany, U.S.A. After some preliminary observations of a general character Dr. Landolt, who, it is well known, has long been engaged with the study of the ocular muscles, describes each in turn and shows by strongly marked black and red lines the relative position of the double images in paralysis of each muscle, which is a considerable help in effecting the diagnosis of these difficult cases. He gives a drawing of an instrument that he has devised, and to which he has given the name of "ophthalmotrope," by which the movements of the globe under the several muscles and the effects of their paralysis can be identified. Dr. Landolt gives a recommendation that will, as he says, avoid promenades with a lighted candle—namely, to leave the flame *in situ* and to change the position of the patient's head, so that to make him look upward his face is directed downward, in order to make him look downward his face is directed upward, and in order to cause him to look to the left his face is turned towards the right. He considers that there are three methods of measuring the amount of deviation or strabometry, first by means of the corneal reflex, secondly by means of tangents, and thirdly by means of prisms. In regard to the etiology of the paralysis of the ocular muscles Dr. Landolt omits the lesions of the nerves in their intra-cerebral course and of their nuclei because these are elsewhere fully described. He gives as the most common causes of paralysis pressure occasioned by hæmorrhage, by exudations accompanying meningitis, and by tumours. In addition he enumerates as occasional causes syphilis, rheumatism, inflammation of the cellular tissue of the orbit, and congenital defects. Lastly, he alludes to some exceptional and perhaps unique causes, such as cystic degeneration of the pineal gland, inflammation of the mucous membrane of the antrum of Highmore, dental caries, serous degeneration of the muscles in progressive anæmia, and to those obscure cases which occur after hysterical diphtheritic attacks, in poisoning by lead, after the use of diseased meat, from excess in tobacco and alcohol, and as an accompaniment of tabes dorsalis, cases of all of which conditions are to be found scattered in medical literature. Dr. Landolt discusses at considerable length the use of prisms as a means of correcting the distressing symptom of double vision. These, though theoretically very valuable, in practice are much limited in their application in consequence of their weight, when exceeding 3° for each eye. In the operative treatment he is a strong advocate for tenotomy of the muscle of one eye, conjoined with advancement of the opposite muscle in the other eye; thus, to take an extreme case, in total paralysis of the external rectus of the left eye, he would perform an energetic advancement with resection of the external rectus on the diseased eye and a simple advancement of the same muscle on the unaffected eye. If the effect is not then satisfactory the tenotomy of the internal rectus of the diseased eye would be added. For the determination of insufficiency of convergence and the degree of insufficiency Dr. Landolt has devised an instrument consisting essentially of a Herschel's double prism, two prisms of equal power being set in a frame which enables them to revolve, and either to neutralise or to double the effect of each. The angle of deviation produced is marked by a scale. The whole of this long section is worthy of study, written as it is by one whose knowledge and experience are exceptionally large.

The section of Diseases of the Cornea is written by Dr. J. P. Nuel of Liége and Dr. Thomas H. Fenton of Philadelphia. Affections of the cornea constitute about one-third of all ophthalmic diseases and as they frequently lead to impairment of vision are therefore amongst the most important of those diseases. The article opens with a quite original and very interesting description of the microscopical appearances following clean cuts of the cornea in the rabbit, commencing two hours after the lesion, and particularly interesting as showing the conditions that obtain at the close of the second day when a layer of epithelial cells continuous with those on the surface of the cornea lines the whole surface of the cut. The valuable investigations of Leber and Metchnikoff on the changes that occur as the result of the penetration of pathogenic microbes into the substance of the cornea, such, for example, as the production of œdema and of a zone of leucocytes to limit their action, the latter possibly possessing a dialytic substance to aid the action of the macrophagic cells, which constitutes so important a chapter in general pathology and the details of which are so clearly visible in the transparent tissue of the cornea,—are all very fully described.

In regard to the treatment of pannus it is a matter for regret that a page should have been wasted on the use of jequirity. It is just one of those remedies that is proposed as a novelty, is employed by a few surgeons, and failing or found actually to do harm quickly falls into desuetude. We doubt whether of the younger generation of ophthalmologists one in 20 has ever employed it, and there are very few amongst the older generation who would recommend it. There are good illustrations of hyaline degeneration (or colloid of the cornea) and of the appearances presented in the band-shaped affection of the cornea. No reference is made to the subject of transplantation of the cornea.

The chapter on Diseases of the Lens is written by one of the editors (Dr. William Norris) and, as might be expected, is very complete, especially in the part dealing with the pathology of cataract, which is illustrated by numerous drawings. Dr. Norris gives many illustrations representing different forms of cataract, some sufficiently common, others like the "axial cataract" of Bach—exceedingly rare—as well as a variety of forms of zonular cataract. Dr. Norris has worked through the literature of the subject with great care. Many instructive drawings are also given of the conditions left after extraction has been performed. The operative procedures for the removal of cataract are briefly but very sensibly described. He considers that the extraction should be accomplished through a wound situated near the periphery of the cornea of moderate size and without iridectomy, unless circumstances render it advisable. He applies a light bandage for a few days only and practises in every detail great gentleness and great cleanliness. He mentions, without approving of the proceedings, the application of sutures to the wound and the washing out of the anterior chamber. In the treatment of secondary cataract no reference is made to the glaucomatous conditions which are not unfrequently excited by this apparently trifling operation and which require prompt and energetic treatment, whilst the liability to their occurrence should have been dwelt upon if only to suggest caution to the young practitioner in the adoption of this proceeding. We have no space to do more than refer to the subsequent sections which deal with the Relations of Ophthalmic Diseases to the General Affections of the System, as with Lesions of the Circulatory System, by Dr. O. Haab of Zürich, translated by Dr. William Zentmayer of Philadelphia; with Organic Diseases of the Brain and Spinal

Cord, by Mr. Henry Swanzy of Dublin; with Disorders of the Secretory and Excretory Organs, by Mr. J. B. Lawford of London; with the Acute Infectious Diseases, by Mr. John B. Story of Dublin; with Dysentery, Cholera, and Continued Fevers, by Dr. J. Santos-Fernandez of Cuba, translated by Dr. Daniel Guitéras, United States Navy; with Hysteria, by Dr. M. Parinaud of Paris, translated by Dr. Casey Wood of Chicago; with Graves's Disease and Herpes Zoster, by Mr. Jonathan Hutchinson, jun., of London; and with Functional Neurosis, by Dr. Myles Standish of Boston. The last four articles in the volume are: the Toxic Amblyopias, by Dr. George Schweinitz of Philadelphia; the Entozoa of the Human Eye, by Dr. Maximilian Salzmann of Vienna, translated by Dr. H. V. Würdemann of Milwaukee, Wisconsin, U.S.A.; Simulated Blindness, by Dr. S. Baudry of Lille, translated by Dr. Frank Marlow of Syracuse, New York, U.S.A.; and lastly, the Ocular Signs of Death, by Dr. A. Gayet of Lyons, translated by Dr. Edward Ellett of Memphis, Tennessee, U.S.A. Each of these articles constitutes a kind of monograph on the subject under consideration. Thus, in Dr. Baudry's article on Simulated Blindness no less than 60 methods of discovering it are enumerated, many, of course, being only modifications of the method by prisms, but they throw an amusing sidelight on the frequency with which loss or impairment of vision is simulated in countries where conscription is enforced. The volume is extremely well edited and is, like each of its predecessors, a valuable addition to English ophthalmic literature.

The Hæmorrhages of Pregnancy, Parturition, and the Puerperium: the Treatment of Puerperal Eclampsia by Saline Infusions, with Notes of 17 Cases. By ROBERT JARDINE, M.D. Edin. Edinburgh: W. F. Clay. 1899. Pp. 76, with two Illustrations. 8vo. Price 1*s.* 6*d.*

THESE lectures upon Hæmorrhages were given by the author at the Glasgow Maternity Hospital, while that upon Eclampsia was read before the Edinburgh Obstetrical Society. Dr. Jardine has had some experience in dealing with cases of bleeding complicating pregnancy and also in treating cases of eclampsia, and his views are therefore of interest.

In the treatment of inevitable abortion he recommends emptying the uterus in all cases as soon as possible, and he thinks that chlorate of potash is a useful drug in the treatment of cases of habitual abortion. In the cases of accidental hæmorrhage in which he examined the placenta he invariably found it degenerated. We are not told, however, what kind of degeneration was present or whether the diagnosis was confirmed by the microscope. An interesting case of accidental hæmorrhage apparently due to the use of a Champetier de Ribes's bag is reported. The bag was introduced for the purpose of inducing labour in a case of contracted pelvis and burst before it was quite full. The patient became greatly collapsed, and as in withdrawing the bag a tremendous gush of blood followed the cervix was manually dilated and the child delivered. The cervix was badly torn during the delivery of the child and the patient died two and a half hours later. Dr. Jardine is inclined to blame the bag and he says that the case contradicts the statement that no bad effect has been produced by its use. A rubber bag such as was used in this case is in no sense of the word a Champetier de Ribes's bag, one of the most important properties of which is that it is covered with silk or some similar substance and is non-elastic. If badly-made rubber bags are used such unfortunate results will, no doubt, ensue, but if a proper Champetier de Ribes's bag be employed with due precautions no such accident as happened in this case is likely to occur. The method adopted at the Rotunda Hospital of plugging the vagina in cases of external accidental hæmorrhage with the membranes unruptured is not regarded as good treatment. In cases where interference is necessary the author advises dilatation of the cervical canal and delivery, due care being taken not to lacerate the cervix. In bad cases of concealed accidental hæmorrhage Dr. Jardine is inclined to try Porro's operation.

A table of 150 cases of placenta prævia is given. Of these 40 were complete and 110 partial—viz., lateral and marginal. Of the 40 complete seven died, or 17·5 per cent., while of the 110 partial 13 died, or 11·8 per cent. In the last 100 cases only six deaths occurred. Of 153 children 91 were born dead.

Where the cervix is undilated plugging the vagina is recommended, and where the cervical canal is sufficiently dilated to admit two fingers bipolar version. The author has plugged the uterus successfully in three cases of severe post-partum hæmorrhage, and he thinks this mode of treatment preferable to the use of perchloride of iron.

Full details are given in the last chapter of 17 cases of eclampsia treated by saline injections. In most of the cases equal parts of sodium chloride and bicarbonate of potassium were used of the strength of one drachm to the pint of water. In five of the later cases acetate of soda was substituted for the potash salt. Dr. Jardine employs intracellular injection and has had no trouble at the site of injection in some 50 cases. He has lost his faith in morphia and is inclined to attribute the fatal results in two of his cases to its use. In all the cases other means of treatment besides the saline injections were employed. Five of the 17 cases ended fatally, one dying from a ruptured duodenal ulcer. Marked diuresis was set up by the saline injections. The statement that the amount of urea and uric acid eliminated was markedly increased after the injections is hardly warranted in view of the small number of the cases in which a quantitative estimation was made and in the absence of all details as to what amount and what kind of nourishment the patients were taking.

Analytical Records
FROM
THE LANCET LABORATORY.

VARIOUS SELECTED WINES.

(INNES, SMITH, AND CO., 83, HIGH-STREET, BIRMINGHAM.)

THE following wines have been selected especially, we have been informed, for medicinal use. The samples included a variety ranging from champagne, port, and claret to Australian and Hungarian wines. The analyses of the various wines resulted as follows:—Champagne Jules Delporte, Bouzzy, Reims: extractives, 3·67 per cent.; mineral matter, 0·11 per cent.; alcohol, by weight 12·38 per cent., by volume 15·30 per cent., equal to proof spirit, 26·82 per cent.; sugar, 1·92 per cent.; tartaric acid, 0·60 per cent.; and acetic acid, 0·09 per cent. This is an agreeably effervescent wine of delicate vinous character and free from excess of sugar and acidity. Though "dry" it is of a pleasant fruity character. It retains its sparkling character satisfactorily. French Red Wine No. 1: extractives, 2·56 per cent.; mineral matter, 0·24 per cent.; alcohol, by weight 9·36 per cent., by volume 11·61 per cent., equal to proof spirit 20·35 per cent.; sugar, 0·09 per cent.; tartaric acid, 0·52 per cent.; and acetic acid, 0·15 per cent. This wine is practically free from sugar and is of light alcoholic strength. It was sound in condition and possessed a delicate bouquet and taste characteristic of the esteemed wines of the Medoc district. French Red Wine No. 2: extractives, 3·05 per cent.; mineral matter, 0·21 per cent.; alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent.; sugar, 0·15 per cent.; tartaric acid, 0·49 per cent.; and acetic acid, 0·12 per cent. This wine is somewhat fuller than the one just described and may be

regarded as of the Burgundy type. It possesses excellent bouquet and flavour. It is free from excessive acid taste and is "smooth" and "round" to the palate. It is well adapted for restorative purposes. Hungarian Red Wine: extractives, 2·34 per cent.; mineral matter, 0·24 per cent.; alcohol, by weight 8·29 per cent., by volume 10·30 per cent., equal to proof spirit 18·04 per cent.; sugar 0·23 per cent.; tartaric acid, 0·53 per cent.; and acetic acid, 0·14 per cent. This is a characteristic wine of a quite light alcoholic strength and of delicate flavour and aroma. It is a pure wine with no additions. Australian Red Wine: extractives, 3·52 per cent.; mineral matter, 0·32 per cent.; alcohol, by weight 13·15 per cent., by volume 16·24 per cent., equal to proof spirit, 28·46 per cent.; sugar, 0·32 per cent.; tartaric acid, 0·44 per cent.; and acetic acid, 0·24 per cent. This is a typically good Australian wine, fuller bodied and containing more alcohol than the French wines described above. It is a wholesome wine and from its robust character should be useful as a recuperative taken regularly in definite quantities. Moselle No. 6: extractives, 2·14 per cent.; mineral matter, 0·18 per cent.; alcohol, by weight 8·64 per cent., by volume 10·73 per cent., equal to proof spirit 18·81 per cent.; sugar, 0·25 per cent.; tartaric acid, 0·67 per cent.; and acetic acid, 0·07 per cent. This is a high-class wine, peculiarly delicate in character both as regards flavour and bouquet. Its freedom from volatile acidity is a satisfactory feature. It is an agreeable light wine, well adapted for dietetic purposes. Portuguese Red Wine: extractives, 9·20; mineral matter, 0·22 per cent.; alcohol, by weight 17·25 per cent., by volume 21·19 per cent., equal to proof spirit 37·13 per cent.; sugar, 7·56 per cent.; tartaric acid, 0·34 per cent; and acetic acid, 0·07 per cent. This is a wine presenting the analytical features of a good port from the Alto Douro. It is fruity in character and "clean" to the palate. It is smooth to the taste and free from harsh spirit. It is a good specimen of port wine and well suited as a restorative and stimulant in special instances. Our analyses and examination of these wines show that the selection is the result of good judgment.

LONDON STOUT.

(FINDLATER, MACKIE, TODD, AND CO., FINDLATER'S CORNER, LONDON-BRIDGE, S.E.)

The results of analysis of this stout were as follows: malt extractives, 7·10 per cent.; mineral matter (alkaline phosphates), 0·25 per cent.; alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent. The sample was ripe yet free from excess of acidity, and possessed a mild and soft flavour. It is an excellent type of this well-known nourishing malt liquor, having the advantage of a comparatively low alcoholic strength.

CHLORETONE.

(PARKE, DAVIS, AND CO., 21, NORTH AUDLEY-STREET, GROSVENOR SQUARE, LONDON, W.)

Chloretone is an interesting compound which is formed by the interaction of chloroform, acetone, and an alkali. It is a white crystalline compound having a camphor-like odour and taste, and may be melted and sublimed at the body temperature. The sublimate occurs in white glistening needles. It burns with a greenish flame and leaves no residue. On heating with sulphuric acid a smell like formaldehyde is evolved. A solution of chloretone rapidly reduces Fehling's solution. It is, however, only slightly soluble in cold water, but is very soluble in strong alcohol, and is permanent in dilute solutions of the acids and alkalies. Chloretone appears to be a hypnotic, an analgesic, and a sedative, and is administered in tablet form, the dose being from six to 18 grains. It may also be used as a local anæsthetic in minor surgery in the same way as cocaine by the infiltration method. It has been used further with satisfactory results as a general anæsthetic in experimental physiology and pharmacology. The claims made in favour of this new hypnotic, analgesic, and anæsthetic are important and merit attention. An account of its clinical use and results is published in the Journal of the American Medical Association of Sept. 23rd, 1899.

GLUTEN BREAD AND BISCUITS.

(BONTHRON AND CO., 50 AND 52, GLASSHOUSE-STREET, REGENT-STREET, LONDON, W.)

We have received no less than 19 specimens of gluten bread and biscuits illustrating the variety of foods made especially for the requirements of the diabetic patient by the above bread and biscuit makers. We have satisfied ourselves that one and all are either free from starch or else contain a minimum quantity. We welcome the attention which has been given to this subject by Messrs. Bonthron and Co., who as the result of their labours have been able to produce an astonishing variety of diabetic foods which, while suitable physiologically for the diabetic patient, leave little to be desired on the score of palatability. Amongst the articles examined were gluten bread, gluten comfits, gluten lunch biscuits, gluten rusks, dinner-cobs, coffee biscuits, gluten charcoal (adapted for fermentative dyspepsia), almond dessert biscuits, almond drops, and others. This selection gives the physician and the patient a wide variety of foods from which to choose, and the patient will be grateful to know that while adhering to definite diet he is not bound to keep to one kind of food of which sooner or later he becomes so tired.

NEW TABLOIDS AND SOLOIDS.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Amongst the recent tabloids added to an ever-expanding list may be mentioned the tabloid effervescent salicylic acid, containing three grains of the physiologically pure salicylic acid. The tabloid placed in water produces a briskly effervescing draught which renders the administration of salicylic acid agreeable. The specific action and uses of salicylic acid are well known in rheumatism and gout. Another interesting addition to the list of tabloids is the tabloid of potassium chloride, containing 20 grains of the salt, which is suggested for the use of gouty patients in lieu of common table salt. The potassium salts appear to offer an advantage over the sodium salts in administering to the saline treatment of gouty conditions. The tabloid admits of easily being crushed into powder at the table. We have also received specimens of the soloid potassium permanganate and alum, each soloid containing three grains of potassium permanganate and five grains of alum. The combination is a useful one, since alum preserves the permanganate in an active condition, while it acts also readily, of course, as an astringent. Under these circumstances the value of this soloid will be recognised.

OXYDOL.

(OXYDOL, LIMITED, 56, BERNERS-STREET, LONDON, W.)

According to our examination oxydol is a solution of peroxide of hydrogen which is remarkably permanent. As is well known ordinary solutions of peroxide of hydrogen soon diminish in strength until nothing but water remains. On the other hand, oxydol keeps for quite a long time, as our analyses have shown when directed upon specimens which we have kept in the laboratory some months. This is a distinct advantage since the powerful antiseptic properties of the preparation are due to peroxide of hydrogen. It has been shown that peroxide of hydrogen is useful in a wide number of applications, but chiefly as an antiseptic in contact with suppurating surfaces. The same agent has been used internally in typhoid fever, in dysentery, and in gastric disorders and infantile diarrhœa, its specific action being doubtless due to its antiseptic property or to its nascent oxygen. According to our analyses oxydol may be relied upon as a permanent and pure solution of hydrogen peroxide. The impurities found were less than 0·05 per cent. and may be referred to chlorides.

THE LANCET.

LONDON: SATURDAY, JANUARY 13, 1900.

THE recurrence of influenza in an epidemic form is a national evil of great importance. At any time such a disease constitutes a public inconvenience. Readers of Mr. DISRAELI'S letters written about the year 1837 will remember the frequency with which he alludes to the attacks of this indiscriminating foe as disabling first one distinguished person and then another. But at a crisis like the present, when every available man—and woman too—is wanted, when a strain is put on our resources of labour and skill, it is, to say the least, specially inconvenient. It is well that the public should realise this, as it rests with them largely to determine the limitations of the spread of the disease. They should realise that the medical profession is helpless in this respect. It can do much, very much, to mitigate the severity of the disease and of its principal symptoms, and not a little, if its authority be recognised, to avert its worst consequences. But to prevent its spread and its diffusion it can do little apart from the intelligent coöperation of the public.

The use of disinfectants in an amateurish and dilettante fashion is worse than useless, for it leads to a false sense of security and to the neglect of real measures of efficacy for restricting attack. The public must realise the fact that the disease is spread by persons having it, or who have recently had it, and possibly by articles that have been in contact with them in their sickness. The personal factor in the dissemination of the disease is the principal one. There is considerable doubt about the atmosphere, save that in the immediate environment of the patient, having any large share in the matter. There is much in the disease which makes it difficult for the public to act on this view. The sharp but short character of many of the cases, the absence of the requirement of notification by the State, the apparently quick return to comparative health after the short attacks, all tend to make the average patient ignore the fact that he is more or less an infected person—and he acts accordingly. He will go to his business, or his church, or his club, or his evening party—perhaps the most effective medium of all for the spread of such an infection—or hold his reception, as if nothing had happened; and, what is equally strange and true, his friends, in other respects intelligent, will go to his reception, or urge his return to business or his presence at a dance, as if he were a perfectly safe and sanitary person. Such recklessness arises from an inadequate conception of the part played by personal intercourse in the transmission of the disease. The ethics of infection are never very strong in the public mind. The selfishness of human nature is painfully assertive. As soon as the infectious patient feels within himself that his restoration to health is nigh, freedom of action is desired and no fine consideration of risk to others comes into play. If others for their part do not display selfishness enough to exclude him from their company that is their affair. This is true of far graver diseases than influenza, and of diseases the infectiousness of which has been known to all without doubt and for a very long time. But in the case of influenza the result of such carelessness is very widespread, for influenza attacks patients of all ages and, unlike most other infections, attacks them repeatedly.

We are witnessing this winter a most extensive epidemic of the disease. On the present occasion the proportion of deaths to the number of cases is not so great as in some former epidemics, but the disease has never been more typical in its manifestations—its rigors, sharp febricular pains, prostration, and depression. We do not propose in this article to go into any discussion of the scientific aspects of the disease and its treatment. Our object is to impress on our readers the advisability of making the public comprehend that it lies to a great extent in their own power to curtail the number of cases. If the sufferers are isolated, as they would be in the case of other infectious diseases, and if social intercourse is suspended till time and the proper means of disinfection have had a fair chance of rendering patients harmless to others the present rate of general infection will not be maintained. A little intelligence and common sense in individuals and households, and an early application to the medical practitioner for advice as to the prevention of fresh cases, may save many households from extreme inconvenience. It needs to be insisted on, when such heavy demands are being made on the nation at home and abroad, that to neglect proper precautions is unpatriotic as well as foolish.

IN THE LANCET of Dec. 2nd last we published a brief abstract of the important inaugural address recently delivered in London by the President of the Incorporated Society of Medical Officers of Health. Dr. NEWSHOLME, the well-known health officer of Brighton, very wisely availed himself of his accession to the presidential chair to discuss one of the most important topics which could engage the attention of a body of scientific men responsible for the safety of the public health. In his "Contribution to the Study of Epidemic Diarrhœa" Dr. NEWSHOLME has discussed a mass of information which will prove interesting and instructive to health officers everywhere, and we believe that the great labour which he has expended on the calculation and tabulation of the statistics of diarrhœa mortality, as well as in the arrangement of the numerous charts which illustrated his address, will be appreciated by the society over whose deliberations he has just been elected to preside.

In common with previous inquirers Dr. NEWSHOLME is perplexed by the absence of uniformity which characterises the nomenclature of the subject. What diseases are and what are not to be included under the head of diarrhœa is the question which demands an answer at the very outset. From the report of a special committee recently presented to the Incorporated Society of Medical Officers of Health we learn that "the classification of deaths from diarrhœa is at the present time in such a state of utter and hopeless confusion as to render the statistics of diarrhœa deaths, and consequently of zymotic death-rates, in different localities misleading and altogether useless for comparison."

This confusion would appear to be due partly to the employment by medical men of multiple names to designate the same disorder, and partly to their recently developed tendency to use the terms "enteritis" or "gastro-enteritis" in place of "diarrhœa" on the ground that the latter is the name of a symptom rather than of a disease. It is perhaps scarcely realised by certifying practitioners that by thus changing the name of a well-known disorder they are destroying the value of their certificate for the purposes of vital statistics and consequently of preventive medicine. In viewing the methods adopted at the General Register Office for ascertaining the diarrhœa mortality in the more important English towns Dr. NEWSHOLME offers some reasonable suggestions which are worthy of official notice; but he by no means fails to recognise the high value which in recent years has come to attach to the archives of Somerset House. "The returns of the Registrar-General," he says, "have been consistently compiled for a long series of years on a uniform system, and although this does not entirely eliminate errors caused by the carelessness or lack of intelligence of local registrars who contribute their returns to the central office, there can be little doubt that diarrhœal death-rates for the great towns, calculated from the Registrar-General's data, are fairly comparable in each year with one another. In this respect they differ widely from diarrhœal death-rates compiled by local medical officers of health without any exact rules to guide them." Dr. NEWSHOLME takes exception to certain of the rules laid down by the authorities at Somerset House for the guidance of local registrars in filling up returns. It would be difficult, he thinks, to justify the exclusion of deaths from enteritis, whilst admitting those from enteric catarrh as properly belonging to the diarrhœal class of disease. On this point we are unable to agree with Dr. NEWSHOLME. It occurs to us that whilst "enteric catarrh" is an indefinite and, as far as we know, unauthorised term, which finds no place in the official list of causes of death and may therefore be referred to diarrhœa without danger of confusion, "enteritis," on the contrary, is a well-defined disease, and is recognised as such by the Royal College of Physicians of London who include it in their nomenclature amongst diseases of the digestive system and thus eliminate it altogether from the zymotic group. To class as diarrhœal all deaths certified as from enteritis simply, without mention of its specific character, would, in our opinion, lead to hopeless confusion in the official returns of causes of death published by the General Register Office. Whatever be the explanation of the fact it is certain that the custom of medical practitioners in certifying deaths caused by diarrhœa has of late come to differ so widely that it is impossible for the health officer to ascertain even approximately the extent to which the disorder prevails in the district for which he is responsible. And this uncertainty will continue so long as medical men are without authoritative guidance concerning the names which should be used to distinguish this affection. We therefore regard as of hopeful omen the recent appeal of the Incorporated Society of Medical Officers of Health to the Royal College of Physicians of London for a definite judgment as to what names should be used and what names avoided by medical practitioners in certifying deaths due to epidemic diarrhœa.

Dr. NEWSHOLME, like many other experienced sanitarians, believes that increase of diarrhœa mortality is nearly related to what he calls "increasing urbanisation of the population"—that is, of course, to the overcrowding of dwellings on area, the pollution of air, soil, and water, and the various other evils which this condition implies. It i not surprising that London in the last two centuries should have suffered from diarrhœa so much more severely than it does now, for London was in those days far more urban than it is now. Its streets were narrower and there were more courts and alleys. The window-tax was in force, houses were full of effluvia from the "vaults" in the basement, and the whole soil of the city was full of organic impurities derived from both the living and the dead. "It is not difficult," remarks Dr. NEWSHOLME, "to work out points of resemblance between the state of matters in Old London and in some of our modern manufacturing towns." But it does not appear that mere density of population as such bears any constant ratio to diarrhœal mortality. The municipal borough of Brighton, for example, has a greater density than any of the other great English towns, with two exceptions, and yet there are 17 other English towns with a higher death-rate from diarrhœa. Upon one point, at any rate, experienced observers seem to be in substantial agreement, namely that epidemic diarrhœa, as a fatal disease, occurs among the labouring classes everywhere in excessive proportion. In England, by reason of our want of statistics concerning class-mortality, in which respect we are sadly behind Ireland, it is difficult to prove this, but the ordinary death returns of different parts of London, Manchester, and some other great towns clearly indicate that those districts whose social status is the lowest are the very districts which year after year experience the highest mortality from diarrhœa. After discussing the effect of high temperature combined with deficient rainfall on the prevalence of diarrhœa Dr. NEWSHOLME proceeds to summarise the results of his experience by expressing the belief that epidemic diarrhœa, like enteric fever, is a filth disease, although he recognises important points of contrast between the two diseases. He thinks that, apart from the fact that enteric fever is a disease more particularly of adults who are in the habit of taking infected food not eaten by infants, the clue to the difference of incidence of these diseases will be found in the view that the causation of diarrhœa is most closely associated with surface pollution of the *soil*, whilst enteric fever depends for its cause on less superficial pollution of the *subsoil* from leaky drains as well as from privy middens.

In treating of the etiology of epidemic diarrhœa Dr. NEWSHOLME naturally refers to the classical writings of Dr. BALLARD and especially to his preliminary report of 1888. It is to be regretted that the mass of information concerning this subject, which Dr. BALLARD collected and analysed with characteristic ability during the closing years of his life, should never have seen the light. We have it on reliable authority, however, that although Dr. BALLARD did not live to complete his final report the manuscript still exists in a forward state of preparation, and we believe that arrangements may even yet be made to preserve and publish it, if only a suitable editor could be

found who would devote the necessary time and attention to the task. We commend this matter to the consideration of the Medical Department of the Local Government Board, who are thoroughly conversant with the merits of Dr. BALLARD'S scientific work.

Finally, with regard to the immunity from diarrhœa commonly believed to be enjoyed by breast-fed children, Dr. NEWSHOLME expresses the belief, founded on local experience in Brighton, that such immunity is not so absolute as might have been expected—a fact which seems to emphasise the possibility of infection by dust, apart from food. And with respect to adult epidemic diarrhœa, which although it does not figure largely in our death returns is extremely prevalent in hot summers, Dr. NEWSHOLME thinks that much of it is similarly due to the infected dust of our city streets and alleys swallowed apart from food. Nor should the possibility of personal infection be ignored. Multiple cases in the same house he has found to be fairly common. Occasionally adults are infected by infants, sometimes the reverse. When we remember how common are secondary and tertiary cases of enteric fever in houses where unskilled nurses are employed to nurse the first patient, it is not surprising that the same should hold good for diarrhœa.

THE recent decision of the Queen's Bench Divisional Court in the case of LOGSDEN *v.* BOOTH brings within the Common Lodging Houses Acts the numerous shelters in London which since the decision of the case BOOTH *v.* FERRET have been exempt from the administration of the police and afterwards of the London County Council. This last decision is of so much importance to the sanitary administration of London and of many other communities that it deserves the attention of every person who interests himself in the welfare of the poorest class in our large cities. It was to the amelioration of the condition of this class that Lord SHAFTESBURY devoted his life, and it was due to him that the regulation of common lodging-houses has become one of the most important duties of municipal authorities. It is now nearly 50 years since the first Common Lodging Houses Act was passed and the conditions which existed before that time, and with which it was framed to deal, are personally known to but few of those who are alive at the present time. There are abundant records of these conditions, and the state of the numerous houses in which the poor and the vicious herded together without any control being exercised to prevent the grossest overcrowding or to to ensure any approximation to cleanliness should never be forgotten. The Act of 1851, however, began at once to put limitations upon these conditions, and Parliament was prepared within two years to amend a measure which was "the first successful effort that had been made to reach the very dregs of society—the first to penetrate to the deepest dens of vice, filth, and misery." The Common Lodging Houses Acts have worked well in England and have had a marked effect in raising the standard of the conditions under which the poor live. Philanthropic effort has, speaking generally, well supported the administration of the law, but philanthropic effort has in one respect struck the hardest blow against these Acts. It was argued that numerous persons existed who had not the threepence or fourpence available for the rent of a bed in a common lodging-house, that these persons had better be housed less satisfactorily than in a common lodging-house than not be housed at all, and hence have grown into existence the numerous shelters where for one penny or twopence the poor may lie down upon a mattress on the floor in close juxtaposition to each other, the ordinary requirements as to cubic space being disregarded.

We need not enter here into any discussion of the problem whether on the whole these agencies were not doing a useful work by their efforts to deal with the miserable beings who crowded into the shelters. The question which has to be considered is whether the standard of the accommodation which they provide is lower than ought to be permitted in any English community. Hitherto it has not been possible for any such standard to be fixed, for, owing to the decision of the Court of Appeal in the case of BOOTH *v.* FERRET, these shelters have not been deemed to be subject to the law relating to common lodging-houses. They were, indeed, exempted from such control by reason of their being conducted for the purposes of philanthropy and not for the purposes of profit. It is interesting to observe that when the late Lord Chief Justice gave this ruling the principal ground upon which he based his judgment was that, whereas it was necessary to protect the lodger from the desire of the keeper of the lodging-house for profit, no such protection was needed against the possible shortcomings of the philanthropist, who might be trusted to make such provision for his lodgers as was necessary without control by statute or regulation. Experience, however, has shown that "motive" is an insufficient safeguard and that the philanthropist, pressed as he no doubt is by the difficulties of finance, may take too low a view of the requirements of humanity. The decision in the case of LOGSDEN *v.* BOOTH reverses the previous decision. The present Lord Chief Justice, Mr. Justice BIGHAM, and Mr. Justice DARLING are unanimously of opinion that inasmuch as the Common Lodging Houses Acts are sanitary Acts, the fact that a house, used as a common lodging-house, is carried on for philanthropic purposes does not exempt it from the provisions of those Acts. Hence houses occupied by the poor, the rooms of which are used in common by persons strangers to each other, whether carried on for the purposes of philanthropy or of trade, must meet the requirements of the common lodging-house regulations.

This decision at once raises the question whether the standard required in common lodging-houses is to be retained or whether it is to be reduced to a level which in London would enable the small sum of twopence to provide all that is required by law. In other words, are the shelters to be improved to the level of the cheaper common lodging-houses or are the common lodging-houses to be allowed to sink to the position of shelters? This is a most important question. While undoubtedly the administration must not aim too high, the public have a right to demand that they shall be protected against the evils which may result to the community if the accommodation be of too inferior a character. The requirements of air-space and of cleanliness must be met. If these requirements be too much relaxed there will always be risk of disease, which has its

origin in overcrowding and dirt, occurring in the community. It will be interesting to observe how this problem will be solved, how the conflicting interests of finance and sanitation are to be reconciled. That there will be no hasty decision we are satisfied, for the subject must require study, but we have no reason to doubt that every effort will be made to ensure the existence of wholesome conditions in all shelters however small may be the fee the lodger pays.

IT is seldom that we have read a more interesting case as regards its clinical, pathological, and forensic features than that of Shaw and the Railway Passengers Assurance Company, which was recently submitted for decision to a tribunal of medical men, consisting of Dr. F. J. SMITH and Mr. A. J. PEPPER, representing as arbitrators respectively the claimant and the company, with Dr. MITCHELL BRUCE as umpire. For an account of the arbitration proceedings we are indebted to the *Buckingham Express* of Dec. 9th, 16th, and 23rd. JAMES SHAW, a butcher of Finmere, insured his life with the defendant company for £500. On Sept. 25th he was thrown from his cart, a wheel of which passed over his right loin. The injury he received was evidently severe, as he had to be conveyed home in a vehicle. No bones were broken, but there were symptoms of serious internal lesion from which, after a partial rally, he died in 10 weeks. He was 45 years of age and weighed between 15 and 16 stones. Both lay and professional witnesses deposed to his having enjoyed good health up to the date of his injury. He was seen by Dr. JOHN CHEESMAN shortly after the accident and was attended by him during his fatal illness. After 10 days he appeared somewhat better, but the improvement did not continue. On Oct. 19th he became rapidly worse. Dr. F. BUSZARD of Northampton, who was consulted, advised an incision to be made into a soft swelling in the pelvis, but only blood and blood-stained serum escaped. Eventually obstruction of the bowels supervened and death ensued a few days later. An inquest was held. Dr. CHEESMAN and his partner, Mr. F. DUKE, conducted the post-mortem examination. A soft mass weighing about a pound was found in the pelvis behind the peritoneum. This had no obvious attachment to the structures around, and was considered to be a blood-clot. Dr. CHEESMAN was of opinion that "the obstruction was due to a mass of blood coming from laceration of blood-vessels, caused by the accident." Mr. DUKE concluded that there had been "injury to vessels behind the kidney," and discovered "no evidence of disease anywhere."

After the inquest Mr. DUKE handed to Mr. G. H. DE'ATH, the company's local medical man, a portion of the "clot" which had been removed, and the latter gentleman gave it to Mr. WEBB, a chemist, who put it in spirit and addressed it to the Clinical Research Society of London. Mr. DE'ATH sent a telegram to Mr. J. H. TARGETT, intimating that something had been forwarded for his examination. Mr. TARGETT selected a portion of the mass and gave instructions to the assistant at the Clinical Research Laboratory to prepare a microscopical section. Only one slide was examined by Mr. TARGETT, who concluded that the substance was a sarcoma. Unfortunately the slide was not kept and the remainder of the alleged "clot" was thrown away, so that there was no chance of further investigation. Upon receipt of Mr. TARGETT'S report the insurance company very properly resisted the claim, on the ground that death was apparently due to disease and not to the injury. The policy of insurance contained what is termed an aggravation clause—i.e., a clause which held that the accident must be the proximate cause of death or that even though the accident might have accelerated death, if disease which of itself would prove fatal existed before the accident the company would not be liable. In the above case there could be no doubt that death was hastened by the accident. The arbitrators had to decide: (1) was the substance removed from the pelvis of the deceased man a blood-clot or a sarcoma? and (2) if a sarcoma did it exist prior to the accident? Dr. BUSZARD, Dr. CHEESMAN, and Mr. DUKE, the medical men who had personal knowledge of the clinical features of the case, and the two latter of whom conducted the necropsy, were firmly convinced that the mass was a blood-clot. In support of their opinion Dr. W. BULLOCH, lecturer on pathology and bacteriologist at the London Hospital, was heard. For the company Dr. WASHBOURN and Mr. PLIMMER (pathologist and bacteriologist at St. Mary's Hospital) appeared, and Mr. HERBERT PAGE and also Mr. TARGETT aided the arbitrators by their evidence.

To a non-professional person the headline in the *Buckingham Express*, "Doctors' Disagreement," would seem quite a rational presentment of the tale told by the experts on the two sides, but to a medical man and a pathologist who knows the difficulty of the subject—for medicine is not an exact science—the evidence as given on one side and the other would not appear, after all, to be utterly irreconcilable. We certainly should hesitate to affirm from the examination of one microscopical slide that a section is one of sarcomatous matter and not granulation tissue. On the assumption that the substance in the case under consideration was a sarcoma a question of vital importance to the issue at stake was, could the growth have attained the size it did in ten weeks?—i.e., could it have originated after Sept. 25th, when the man was thrown from the cart? A subsidiary question, but one of very considerable importance, also presented itself—can a sarcoma be started in a blood-clot, or in the inflammatory exudation following physical injury to the tissues? The fact that there was such divergence of opinion as to whether the mass was a clot or a new growth is sufficient warrant for the assumption of its rapid formation. We are acquainted with a case in which a recurrent sarcoma grew at the rate of more than an ounce a day, so that obviously it was possible for the mass, if a sarcoma, found by Dr. CHEESMAN and Mr. DUKE to have reached a pound in weight in ten weeks. Dr. DENNIS of New York has collected statistics which show how frequently an injury is the starting-point of a sarcomatous growth, and the conclusion is probably accepted by every medical man who has had an opportunity of studying the subject. On the whole, then, we feel justified in subscribing to the finding of the arbitration court, which was in favour of the executors of the deceased.

Annotations.

"Ne quid nimis."

MODERN BULLET-WOUNDS.

THE descriptions which have prevailed hitherto in works on surgery of the lesions inflicted by bullets must be completely rewritten. The remarkable changes of recent years in the diameter and velocity of rifle-bullets have been followed by changes equally remarkable in the wounds produced by them. A few weeks ago we described some very interesting experiments which had been performed to determine the comparative effects of modern bullets, and the results were of great value because the experiments were comparative. These experimental results had to be tried on the touchstone of actual experience, and a very interesting letter from Sir William Mac Cormac (which is published in this number of THE LANCET) shows that the practical results fall far short in severity of what might have been expected as a deduction from the experiments to which we have referred. Sir William MacCormac is particularly well qualified to express an opinion on the severity of bullet-wounds, for he had excellent opportunities of observing the lesions resulting from bullets during the Franco-Prussian War, and he tells us that in most cases the damage done by the modern bullet, especially by the Mauser, cannot be compared in severity with that inflicted by the needle-gun or the Chassepôt. The slight severity of the injury has struck him with amazement. The projectile bores a small clean hole right through the part and the aperture of exit can hardly, if at all, be distinguished from that of entrance. The wounds are on the whole aseptic and heal readily under a simple antiseptic dressing. So rapid is the healing in most cases that instances have already occurred of men who had recovered from one wound and been discharged being re-admitted later for a second bullet-wound. When only the soft parts of a limb are perforated and no important vessels have been torn the shock at the time of infliction of the injury is but slight and recovery is rapid and complete. Sir William MacCormac cites a case where a Mauser bullet traversed both thighs, passing in front of one femur and behind the other. There was very little hæmorrhage and the man was able to run another 800 yards after receiving this injury. Even when a bone has been hit the bullet may make a clean hole through it without any splintering, or with very little. This is naturally more common in the case of flat bones, such as the scapula, than in the long bones. It has also occurred in the case of the bones of the skull. In many cases even when important structures have been in the line of the bullet no harm seems to have resulted. In one instance a bullet entered on the right side of the neck immediately behind the sterno-mastoid and an inch above the clavicle, and its point of exit was in a similar position on the other side. Some difficulty in swallowing and speaking followed, but this passed off almost completely in a very short time. In another case the shot passed through the left ilium just below the crest and emerged a little more than an inch below the ensiform cartilage. From the situation of the apertures of entrance and exit, and remembering that a Mauser bullet passes straight from one to the other, turning neither to the right hand nor to the left, we are justified in thinking that the bullet must have pierced the stomach, but no symptoms of any such injury appeared. The patient took his food from the beginning without any inconvenience and had a rapid and uneventful convalescence. In yet another instance, from the situation of the wounds and from the fact that a most obstinate constipation followed the injury, it is almost certain that the colon was perforated, yet no peritonitis arose. Not the least remarkable of the effects of the Mauser bullet is the very slight hæmorrhage resulting from perforation of the lung. There is generally a little hæmoptysis which soon ceases and convalescence ensues. Even when a comminuted fracture of a bone of a limb has been produced complete consolidation of the broken bone may result, though the fracture was necessarily compound. A striking case of perforation of a joint shows that only a slight synovitis may follow. This is in marked contrast to the havoc produced by a large-bore bullet. These results must produce a feeling of hopefulness in the treatment of modern bullet-wounds, for they show that in many cases a temporary interference with military service is all that is produced. To Sir William Mac Cormac the profession owes a deep debt of gratitude for his graphic pictures written from the seat of war. While helping his country he is at the same time making a solid contribution to our scientific knowledge.

MALARIA AND MOSQUITOES.

WE would draw the attention of those of our readers who are interested in the investigations which have been carried on by various observers as to the relation alleged to exist between malaria and mosquitoes to a paper by Dr. G. Bastianelli and Dr. A. Bignami published in this issue. We owe the translation of this paper into English to Dr. G. Sandison Brock. An excellent *résumé* is given of the present state of the question, which will be understood not only by those who have followed the accounts which have appeared from time to time in medical literature of the researches which have been conducted in malarious districts, but also by those who are not acquainted with the work already accomplished. Due credit is given to other observers. The æstivo-autumnal parasites are first considered and a sketch is given of the two life-cycles which they present, one of which is completed entirely in man and is the cause of the fever, while the other is only initiated in man and is completed in mosquitoes of the genus anopheles. All three species of malarial parasite, distinguishable with certainty from each other, adopt as host the same species of mosquito, and the authors of the paper proceed to discuss whether the parasites preserve intact the distinguishing characters of their species. An affirmative answer is returned to this question, relying not merely on morphological data, but also on the results of experiment, and it is shown how even after their passage through the anopheles the species of malarial parasite remain distinct and do not become transformed one into another. Further, it is affirmed that a single infected mosquito is capable of inoculating malaria into man, and even more, namely, that a single mosquito by successive bites can infect several people. It sometimes happens that two species of parasite may develop in one and the same mosquito—for instance, an æstival and a tertian parasite—the two remaining distinct, so that it can well happen that a single anopheles may inoculate a mixed infection. The combination of the two fevers is by no means rare in Italy. The knowledge of these facts is of considerable practical importance. It has been suggested that much may be done to mitigate the prevalence of malaria in a district by destroying the breeding places of the anopheles, but the above facts indicate how thoroughly that would have to be done in order to make any appreciable effect in the occurrence of the disease. The concluding paragraphs of the paper are particularly worthy of attention, for they refer to the measures of prophylaxis which should be taken against infection. It is insisted that the careful treatment of the malarial patient constitutes one of the principal tasks of

social hygiene. The authors maintain that the energetic treatment with quinine from the commencement of the infection of the æstival fevers not only reduces the danger of relapses to a minimum, but has a great importance for general prophylaxis, since the parasites by its means can be prevented from developing into those forms which continue their life in the anopheles. The treatment of the malarial patient ought, therefore, to be carried out systematically and energetically in the same manner as is practised when countries are invaded by other epidemic and contagious diseases.

ACQUIRED COLOUR-BLINDNESS.

IN the December number of the *Scottish Medical and Surgical Journal* Dr. George Mackay and Dr. J. C. Dunlop of Edinburgh publish a full description of the cerebral lesions observed in an instance of complete acquired colour-blindness, achromatic vision being at the same time retained. They believe this to be the first complete case of the kind that has been submitted to post-mortem examination. Verrey[1] has recorded a comparable case of acquired one-sided colour-blindness (hemiachromatopsia) examined post mortem. The patient in the present instance was aged 62 years, was a man of great mental capacity, and his colour-sense had always been good. He took a great interest in his garden and was able to appreciate the most delicate colours in flowers. In 1896 his health began to fail and he became anæmic. An affection of the sight was first noticed on Nov. 24th, 1897. On the previous day his eyesight had been as usual, but on the morning of the 24th he found himself unable to read his letters, and when out walking later in the day he was unable to recognise vivid colours in some children's dresses. On Dec. 23rd, 1897, he was examined by Dr. Dunlop and found to be completely colour-blind. All coloured objects appeared to be grey. He could not tell by sight whether a fire in the grate of his room was glowing or not. His distant form sense, as tested by Snellen's types, seemed good. On Jan. 26th, 1898, notes of his condition were made to the effect that the external aspect of his eyes was natural, there were no obvious signs of blindness, he recognised faces, and walked about freely. The pupils were of medium size, equal, reacting to light and on convergence. The optic discs were slightly senile and anæmic, but not atrophic. The fundus generally was healthy; the refraction was emmetropic. V.=$\frac{6}{12}$ Sn. with each eye separately. The colour sense was completely suppressed for all colours all over the fields, every colour appearing to be grey. The patient's intellect was clear, he had no word blindness, his memory of colours seemed good, and he was quite conscious of his lost sense. The diagnosis was double homonymous hemianopsia, complete for colour sense, incomplete for form sense about the point of fixation, probably due to symmetrical cortical lesions in or near the calcarine fissures, with perhaps slightly more extensive destruction of the right cerebral visual area than of the left. During the two months following this examination he acquired greater facility in reading, but there was no restoration of his colour sense. On April 17th he suddenly developed a right-sided hemiplegia and on April 22nd he died. Six illustrations of the cerebral lesions accompany the memoir, and the description of them is too long for quotation in full, but is summed up as follows: An atrophy of the posterior part of the temporo-occipital convolution on both sides, that on the right side having caused a greater destruction of tissue than that of the left side, but the atrophy of the left side had extended rather deeper than that of the right, having reached the floor of the lateral ventricle and a small portion of the grey substance of the calcarine fissure. On both sides the lower edge of the optic radiation was affected. The nature of the atrophy was found to be due to a hyaline degeneration of the adventitia of the vessels which had to a great extent cut off the blood-supply and had led to complete destruction of the proper nerve elements, both fibres and cells, of the affected portions of the brain. Dr. Mackay and Dr. Dunlop remark that in this case the total loss of colour sense was associated with a bilateral lesion of the fusiform convolution so well defined and symmetrical that it becomes difficult to avoid the conclusion that the grey matter of that convolution is probably concerned in the perception of colours.

[1] Archives d'Ophthalmologie, xvii., 1888, p. 289.

THE ELECTRIC CURRENT AS A CAUSE OF FIRE.

WE commented upon this subject in THE LANCET of Dec. 23rd (p. 1753), since which time a great deal of correspondence has appeared in the *Times*, and we have ourselves received communications upon the subject from electrical experts. It will be remembered that the origin of the discussion was an outbreak of fire which occurred in a domestic dwelling through evident defects in the system of wiring. It would appear that considerable controversy amongst electrical engineers has been held for some years as to the best and safest means of "wiring" houses. There can be little doubt that the best method would be to enclose the "leads" in pipes and thus absolutely prevent leakage. We have received pamphlets written by Mr. F. Bathurst, A.I.E.E., in which this method is urged as economical, efficient, and safe. Common gas barrel seems suitable for the purpose, but it must be carefully lined with some insulating material. Probably this procedure would add much to the expense of installation, but in view of the increasing number of accidents it would seem that something better must be adopted than wooden cases. Besides, there is a tendency on the part of electric-supply companies to increase the voltage on the services. This fact adds a very strong argument in favour of enclosing electric wires in pipes.

THE LATE SIR JAMES PAGET

AS we announced in our issue of Jan. 6th, the first part of the burial service for the late Sir James Paget was said in Westminster Abbey on Jan. 4th. Her Majesty the Queen, who was represented by Captain Phillips, Gentleman Usher, and Dr. T. Barlow, physician to the Royal Household, sent a wreath to which was attached a card inscribed, "A token of respect and esteem. Victoria R.I." The pall-bearers were Lord Lister, representing the Royal Society; Sir Trevor Lawrence and Sir Thomas Smith, representing St. Bartholomew's Hospital; Dr. Pye-Smith, the Senior Censor, representing the Royal College of Physicians of London in the unavoidable absence through illness of the President, Dr. W. S. Church. The Royal College of Surgeons of England was represented by Mr. H. G. Howse, Vice-President, and Mr. T. Bryant. The President, Sir William Mac Cormac, was, of course, unable to be present owing to his being at the seat of war in South Africa. Dr. Ince, the Regius Professor of Divinity, represented the University of Oxford and Sir Michael Foster represented the University of Cambridge. The principal mourners were Sir James Paget's sons and daughters, his nurse (Miss Finn), and one or two others. Professor A. R. Simpson came from Edinburgh as representative of the University. Dr. M. Beverley and Mr. H. A. Ballance attended as representing the staff of the Norfolk and Norwich Hospital and Dr. W. A. Elliston of Ipswich, the President-elect, attended as representing the British Medical Association. The body was interred at Finchley

Cemetery, where Dr. Francis Paget, Dean of Christ Church, Oxford, said the committal portion of the office. A large number of medical and other scientific men were present in the Abbey. A funeral is always an impressive sight and perhaps never more so than in the case of a medical man who has all his life fought a foe to whom he knows that he must one day himself succumb. The Abbey Church of St. Peter at Westminster has seen the obsequies of many famous men, but among medical men of few greater than James Paget since the day when the remains of Hunter were translated from the vaults of St. Martin-in-the-Fields.

STREET NOISES.

THE Birmingham magistrates held a meeting on Jan. 3rd at which among other subjects the powers of the city to deal with the nuisance of yelling newsboys were considered. Sir James Sawyer considered that the nuisance called for repression. Mr. Barradale said that there was a by-law dealingwith the matter, but that it was recently held by the Court of Queen's Bench that somebody must support the police and show that some passer-by or inhabitant was annoyed. The Chief Constable said that he was quite aware of the nuisance and had issued special orders but that it was very hard to catch the boys. He considered that new legislation was required. Sir James Sawyer related how he had entrapped five boys in half an hour. Birmingham may safely be left to deal with her own nuisances, but we must say that we should like to see the London County Council or the new municipalities created by the London Government Act do something in the matter. The County Council seem to consider themselves powerless. If, however, they can, as they have done, enlist the services of the police to arrest or deal with citizens whose dogs are not properly labeled, they could also enlist the police to stop newsboys who yell.

BACTERIOLOGY OF TYPHUS FEVER.

IN THE LANCET of Feb. 11th, 1899 (page 390), it was mentioned that Dr. Andrew Balfour and Dr. Charles Porter of Edinburgh had found a diplococcus in the blood in 19 cases of typhus fever examined during life and in seven cases examined post mortem. Since that time these gentlemen have much extended their research, and the December number of the *Edinburgh Medical Journal* contains a long article giving the results obtained by them in 43 cases of the disease in question, both in the acute and convalescent stages, and in 12 cases post mortem. In 40 cases the blood was taken while the fever was acute, ranging from the second to the fifteenth day; three cases were examined only after convalescence was well advanced. In 36 out of the 43—i.e., in about 88 per cent.—a diplococcus was found 1 μ in breadth and about 2 μ long. It was non-capsulated, non-motile, and did not possess flagella. It had, however, a marked oscillatory movement and could frequently be seen turning over and over in its long axis both in ordinary and hanging-drop preparations. It stained well with carbol-fuchsin, gentian-violet, and retained the stain in Gram's method. In cultivation experiments it was found that no growth took place when the blood was transferred directly to solid media, even when the surface of the medium was moistened with bouillon. Broth became cloudy but tended to clear by deposit. The deposit was greyish-white in colour when unmixed with precipitated blood. There was no pellicle and no odour was detected. On agar the growth was rapid and copious and had the appearance of a white streak. There was no gas-formation in glucose jelly. Milk was coagulated in 48 hours. Litmus broth showed acid reaction within 24 hours. The most favourable temperature for the growth of the organism appeared to be 37° C. In stab cultures growth occurred as a continuous streak or as small dots, was confined to the line of inoculation, and liquefaction took place from above downwards. Strange to say, the same organism was found in 40 out of 46 cases of enteric fever which were examined. Of the 12 typhus fever cases examined post mortem all but one yielded a diplococcus which by plate cultivation was isolated in nine out of the 11 cases. Microscopically and in culture it seemed to be the same as that obtained in the living blood, the only difference being that its growth on agar-jelly, and potato was, except in one case, pigmented. The streak was white or faint cream at first, but in the course of a few days gradually assumed a distinct orange yellow. The growth on blood serum was always white. Eight rabbits were inoculated with cultures of the diplococcus obtained from the living blood; with seven of them very little effect was produced; the eighth became ill next day and was in a dying state on the thirty-first day, when it was killed and typical diplococci were discovered in cultures made from its blood. 11 inoculations of rabbits were made with the post-mortem diplococcus; three of these were intravenous and proved rapidly fatal; the typical diplococcus was obtained after death. Inoculation of three monkeys and two guinea-pigs gave negative results. A fourth monkey inoculated with a culture of the diplococcus obtained from a typhus fever patient post mortem was unwell for about a fortnight, after which it regained its normal appearance; typical diplococci were cultivated from its blood. A fifth monkey was inoculated with a culture of the post-mortem diplococcus and was slightly ill for about a week but gradually recovered. Its blood yielded a culture of the diplococcus, and it was remarkable that whereas an organism with a pigmented growth on agar was injected that which was recovered gave a white growth exactly resembling the culture of the diplococcus obtained from the living blood of the typhus patients. The organisms obtained post mortem from the typhus patients appeared to be almost identical with that derived from the living blood, the only difference between them being that while the latter is apparently non-pathogenic and non-pigmented the former is pigmented and is moreover pathogenic, at least to rabbits.

OBEY YOUR MEDICAL MAN.

THERE recently passed away at Bromsgrove Mr. Henry Swinson, M.R.C.S. Eng., in his hundredth year. Soon after qualifying (he became a Member of the Royal College of Surgeons of England in 1825) he had an attack of hæmoptysis, and his medical advisers warned him that only by complete rest and freedom from exertion could he manage to maintain his health. He followed this advice with marked success, led a regular, placid life, and took walking exercise every day. Up to the last few months he was accustomed to walk from his house into Bromsgrove and back, a distance in all of three miles, almost daily. We have cited the case of Mr. Swinson as an instance of the advantages to be gained in certain ways by strictly following out the advice of a medical attendant. On the other hand, patients who have been doomed by their advisers have not only falsified the prediction but have done useful and honourable work. In our own profession there is the leading case of the late Sir Andrew Clark, who was elected to the staff of the London Hospital in 1854 with the remark from the medical staff of "Let Clark have it; he is only a poor Scotsman and has not long to live." Yet Clark lived until 1893 and saw all his colleagues at the time of his election pre-decease him. In another field we may recall the instance of Dr. Martin Joseph Routh, who was President of Magdalen College, Oxford, for 63 years, who died in his hundredth year, and who was the last Head of a House who habitually wore an official wig. The Oxford tradition is that Routh was elected President with an idea

that he would not live very long. This expectation was not fulfilled and if it had been the world would have been the poorer. Though we do not mean that it is always necessary to continue to obey one precept throughout a period of 75 years, yet it is right to remember that it is but little use to consult a medical man except with the intention of obeying him and to no class of men is this advice applicable more than to medical men themselves. The late Mr. Swinson's longevity forms a remarkable example of the value of obeying the medical man.

THE UNIVERSITY OF LONDON: THE NEXT MEETING OF CONVOCATION.

THE next meeting of the graduates who are members of Convocation will be held at Burlington-gardens on Monday next, Jan. 15th, at 5 P.M. An especial interest is attached to the meeting as it is possible that it will be the last meeting of Convocation in the present building and that the University will have taken up its abode at the Imperial Institute before Convocation reassembles in May. The new statutes, which are nearly complete, may be laid before Parliament in the next session. If this be so Convocation will have the duty in May of appointing its representatives on the Senate of the re-constructed University. They will be 16 in number in addition to the Chancellor of the University and the Chairman of Convocation, and eight of the 16 will retire every two years. The graduates will vote separately in the different faculties on signed voting papers. Many graduates have paid but little attention to the affairs of the existing University and are therefore not members of Convocation. If they wish to manifest increasing interest in the re-constituted University and to vote at the next senatorial election, their names, with a life composition fee of £1, or a yearly subscription of 5*s*., must be sent to the Registrar of the University not later than to-day (Jan. 13th).

PAROTITIS FROM PLUMBISM.

AT the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 8th M. André Petit and M. Hudelo read papers on Saturnine Parotitis—a condition which, though evidently well recognised by French writers, does not appear to have received attention in this country. In 1882 Comby described hypertrophy of the parotid glands in plumbism, and cases of parotid affection were brought before the society by Achard in 1896 and by Launois in 1897. Claisse and Dupré published an interesting study of the subject in the *Presse Médicale* for December, 1897. Further parotitis has been described in other intoxications—in copper by Chauffard and, more often, in iodide of potassium intoxication by Comby, Villard, Regnier, Balzer, Renault, and Salmon. M. Petit presented to the society a painter, aged 30 years, who first showed symptoms of plumbism in 1889, in the form of colic of which he had 11 attacks. In July, 1898, he had right radial paralysis from which he recovered in three months. In November, 1899, during an attack of colic the parotid regions became painful and swollen and five or six days later right radial paralysis again appeared. The patient presented himself at hospital on the fourth day when the parotid glands were found to be markedly swollen and tender. The overlying skin was normal. There was a blue line on the gums. M. Hudelo related a case in which acute unilateral supervened on chronic bilateral parotitis. A painter, aged 31 years, who had had several attacks of colic and who was suffering from extensor paralysis of the left hand, entered hospital on Nov. 10th, 1899. In February he began to feel pain in the parotid regions which was accompanied by some trismus but not by any swelling. A blue line was present on the gums. The parotid glands were swollen. On Nov. 14th he complained of acute pain in the right parotid region and the gland formed a projection of the size of a hazel nut, which on the 15th was of the size of a small walnut and on the 16th of half of an orange. The skin was tense and red and the temperature was 102·2° F. On the 18th the temperature had fallen to normal and the pain and swelling were much diminished. On the 20th the condition was normal. The mouth could then be minutely examined. Stenon's duct on the right side was indurated and at its orifice the mucous membrane was tumefied, blackish, and ulcerated. Under iodide of potassium the chronic enlargement of the parotid glands quickly disappeared. Two theories of saturnine parotitis have been brought forward—that it is due to irritation by the lead in process of excretion by the saliva, and that it is due to a superadded infection of buccal origin. In the second case the latter theory seems to be the more probable; in the first lead was found in the saliva.

THE BELLADONNA PLASTER CONTROVERSY.

SOME time ago a very interesting inquiry was undertaken with the view of ascertaining how far belladonna plasters complied with the requirements of the British Pharmacopœia. The results were not satisfactory, few of the plasters yielding on analysis the required one-half per cent. of belladonna alkaloid. Since this inquiry certain manufacturers have taken exception to the results because, first, they hold that the samples should have been compared with the standard of the United States Pharmacopœia which, however, appears to be very indefinite on this question. Secondly, a charge of inaccuracy was brought based upon the circumstance that the reports of different analysts varied as regards the quantity of total alkaloids contained in samples bearing the same numbers. Thirdly, it is stated that it was a gross error on the part of some of the analysts that they identified the alkaloids of scopolia carniolica as tropeines. Accordingly a new inquiry was undertaken and the results were published recently in a bulletin issued from the laboratory of the Inland Revenue Department by the Canadian Government. These results are not essentially different from those previously exhibited. The whole controversy should lead to a more definite requirement on the part of the United States Pharmacopœia in regard to the standard of alkaloidal strength of belladonna plasters.

COMPLIMENTARY DINNER TO MR. WATSON CHEYNE AND MR. G. LENTHAL CHEATLE.

ON Thursday, Jan. 4th, in the Whitehall Rooms of the Hôtel Métropole, a complimentary dinner was given to Mr. Watson Cheyne and Mr. G. Lenthal Cheatle on the occasion of their departure for South Africa. The assembly included members of the Council and of the Hospital Committee of King's College, and old and past and present students of the school, among those present being Professor A. Hughes (the chairman), Dr. W. D. Halliburton, Dr. Playfair, Dr. Burney Yeo, Dr. Crookshank, Mr. C. E. Layton, Mr. George W. Bell, Mr. C. Caudry, Rev. Dr. Ware, Mr. A. H. Morton, Mr. W. Rose, Dr. Curnow, Dr. N. Tirard, Mr. F. Lee, Captain V. Mathews, Dr. F. Willcocks, Mr. A. Carless, Dr. Urban Pritchard, Dr. Dawson Williams, Mr. P. T. Beale, Sir Hugh Beevor, Dr. W. A. Turner, Mr. L. V. Cargill, Mr. M. M. McHardy, and Mr. A. S. Underwood. The toast of "The Queen," proposed by the chairman, was most enthusiastically honoured, while the toast of "The Army, Navy, and Reserve Forces," also proposed by the chairman and responded to by Captain V. Mathews, was patriotically received. The toast of "The Guests of the Evening" called forth from Mr. Watson Cheyne and Mr. Cheatle words of thanks for the honour which had been

done them by their hospital. The Rev. Dr. Robertson proposed "King's College Hospital," to which Dr. Burney Yeo replied. During the course of the evening the two guests were chaired round the room by the students who afterwards called upon Mr. Cheyne to add to the musical portion of the programme, to which he responded by singing "Annie Laurie." On Saturday, Jan. 6th, the friends of Mr. Cheyne and Mr. Cheatle assembled at Waterloo Station to wish them God-speed and a safe return. The students of the hospital were there also and testified their affection and esteem for their departing teachers with no uncertain voice.

A VIEW OF SANITARY PROGRESS IN 1899.

OF the multitude of important public subjects which demand attention none, perhaps, appeal less to the notice of the average man than the vital ones of sewerage and water-supply. In passing through the streets of his native town when his progress is barred by the excavator he may murmur a few uncomplimentary remarks relative to the authorities having caused him some personal inconvenience, or, if a householder, the prospective addition of an extra shilling on the rates may add to the interest of the occasion; but as to constructive details, management of, or the final disposal of, the sewage, the average man is supremely ignorant and indifferent. All those of us, however, whose duty or inclination directs attention to these questions must have noticed that the year that has just passed has been one of exceptional activity throughout the country both in relation to water-supply and to questions of sewerage. Progress has been from time to time reported as to the practical inquiries of the Royal Commission on the Disposal and Treatment of Sewage, but the task of practical investigation is so great that it would be idle to expect the report to appear before some time has elapsed, but the mere taking of evidence has directed the minds of thinking men to the subject. The inducements held out in favour of recent methods introduced to assist in the disposal of sewage by bacterial agency have stimulated bewildered county councillors to borrow, often vast sums of money, for sewerage works, hoping thereby to escape from an incubus which grows yearly more insupportable. The ultimate results of these contracted debts, which frequently seem to be enormous in comparison to the individual populations, it is difficult to forecast, but judging by past experience it is to be feared that the works undertaken will not continue in a state of efficiency to the end of the term for which the loans have been advanced without very considerable future outlay. Another difficulty has been the increased demands for water made by growing population largely owing to the introduction of water-carriage as a means to sewage disposal. This and the wholesale pollution of our rivers and streams by the wastes from factories and by raw or inefficiently treated domestic sewage has driven local authorities to seek in districts remote from human habitation those pure supplies which, but for the previous neglect of all sanitary laws, would be by their own doors. To attempt to enumerate a tithe of the work at present contemplated or in hand would yield a list of formidable proportions, but our readers will readily recall the names of some of the many important works in progress. Whether the present rush by rural communities towards the water-carriage system, in imitation of our large towns, is a wise course and the true solution of their sewerage problem is perhaps questionable. Many whose opinions are worthy of very careful consideration by reason of the study devoted by them to this subject do not believe that this system of water-carriage is the "be all and end all" of a great question, as its votaries would have us to believe, for it is by no means difficult to conceive districts and conditions where such a system is undesirable. County councils are awkwardly placed as to obtaining independent information upon any other system, as the advice most easily available is from sources devoted entirely to the one so universally adopted. In this matter it is to be hoped that the inquiries of the Royal Commission on the Disposal and Treatment of Sewage will be of great assistance. It does not follow that because in some instances a dry system of collection and disposal has not been attended with brilliant success some such system may not yet be found infinitely preferable to one of water-carriage. Recent research has added largely to our knowledge of this subject, and many objections that previously seemed fatal to success have been removed.

DENTAL APPOINTMENTS AT GENERAL HOSPITALS.

IN THE LANCET of Dec. 23rd, 1899 (p. 1749) we published an annotation upon the above subject and in the two following issues, of Dec. 30th, 1899, and of Jan. 6th, 1900 (pp. 1858 and 62), letters appeared from correspondents who were interested in the matter. Generally the opinion seemed to be that where a medical school was attached so that the dental surgeon had to act in a teaching capacity as well as in a purely professional one, then he should possess a medical qualification as well as one in dental surgery. We have received a copy of a petition to the board of management of the London Hospital. The petition is signed by past and present dental surgeons, all of whom also possess medical qualifications, of the 12 great metropolitan hospitals having medical schools attached, and it approaches the board with a request that it may be made compulsory "at your institution for all candidates for the post of dental surgeon to be registered on both the Dental and Medical Registers." The petitioners further state that they are unanimously of opinion that dental surgeons whose duty it is to teach medical students or practitioners shall have received at least the additional medical education implied in the conjoint diplomas. They conclude by stating that "something more is necessary in the person of a teacher at a hospital than that he shall have passed the ordinary pass examination that entitles him to practise." We need not recapitulate the arguments that we have so recently set forth upon this subject, but will only express a hope that the two metropolitan hospitals which at present consider it sufficient for their dental surgeons to possess only a dental degree will reconsider their position.

SPLENIC ANÆMIA.

THE *American Journal of the Medical Sciences* for October contains an important article by Dr. B. W. Sippy on Splenic Anæmia, a disease of which but a very limited number of cases have been recorded and which has only recently attracted much attention. A man, aged 45 years, went to hospital. He had always enjoyed good health until three and a half years previously when he noticed a swelling in the left hypochondrium and became easily fatigued and short of breath. He complained of slight nausea, vomited occasionally, lost appetite, and suffered from diarrhœa. Then he became rather constipated and had chilly sensations now and then, followed by fever. Epistaxis began two years previously and often recurred. The feet became swollen a month previously to examination. The tumour in the left side gradually grew. He lost about 25 lb. in weight and could walk only a short distance without experiencing fatigue and dyspnœa. There was a slight sub-icteric hue of the skin and conjunctivæ. The mucous membranes were pale. The inguinal glands were slightly enlarged. The lower limbs were œdematous to within a few inches of the knees. There was slight œdema of both wrists. The spleen was greatly enlarged, extending to within three fingers' breadth of the pubes. The liver was enlarged, extending to

within one and a half inches of the umbilicus. Splenic leukæmia was diagnosed, but examination of the blood showed that the diagnosis was not correct. There were 1,740,000 red and 5214 white corpuscles per cubic millimetre; the hæmoglobin was 30 per cent. The leucocytes showed the following relations: polynuclear neutrophiles, 66·4 per cent.; eosinophile, 10·8 per cent.; transitional forms, 3 per cent.; large mononuclear, 4 per cent.; and small mononuclear or lymphocytes, 25 per cent. Splenic anæmia was therefore diagnosed. The patient was kept in bed and iron, arsenic, and bitter tonics were given. Pallor and œdema gradually increased and ascites appeared. Death took place at the end of four months. At the necropsy the spleen weighed 5·2 lb. The section was red, firm, and uniform. Microscopically the reticulum of some of the Malpighian corpuscles was increased and a few showed considerable sclerosis. The liver weighed 6·2 lb.; there were slight increase of the interlobular connective tissue and marked infiltration of lymphoid elements. Splenic anæmia shares in the general obscurity surrounding the allied disease of leukæmia and the other varieties of pseudo-leukæmia. The splenic enlargement appears to be the primary change and the anæmia secondary, for the former in all the reported cases has preceded the latter, in some for a period of a year. Moreover, recovery has taken place in five cases after splenectomy. Medical treatment appears quite unable to arrest the fatal progress of the disease.

TREATMENT OF GRAVES'S DISEASE.

IT is notorious that hitherto the treatment of this disease has been most unsatisfactory. The way is open for any therapeutical suggestion on the subject and we gladly notice a paper to be found in the *New York Medical Record* of Dec. 2nd, 1899, by Charles L. Minor, M.D., Ashville, N.C Dr. Minor entitles his paper "Two Cases of Graves's Disease successfully treated as Intestinal Auto-intoxications." It was read before the Mississippi Valley Medical Association in Chicago. After an interesting allusion to the two theories of the origin of this disease—the neurogenic and the thyrogenic and inclining to the latter theory—he gives the details of two cases treated, and in one case, if not in both, safely cured on the theory that the disease has its origin, in some cases at least, in an intestinal auto-intoxication. Dr. Minor in a footnote alludes to Dr. C. M. Allan's case of Graves's disease following influenza which was much benefited by the administration of large quantities of bile (pig's, in the form of Burroughs and Wellcome's tabloids).[1] Dr. Minor's first case was a fairly typical one. The patient was a young woman, aged 22 years, and she was not neurotic. Her childhood was healthy save for frequent attacks of tonsillitis. In her seventeenth year she had typhoid fever, with no sequelæ; also ague of tertian type. Prior to 1893 her digestion was good, though she was subject to constipation and her appetite was capricious. In 1893 she went, on account of malarial attacks, to Massanetta Springs where she began to suffer acute attacks of indigestion with violent pain in the lower abdomen about two hours after meals, not accompanied with diarrhœa, and generally traceable to indiscretions of diet, favoured by the patient's tastes and the style of living in her home where over-rich and highly-seasoned dishes were the rule. After much social over-exertion in 1895 she developed a very typical chlorosis. In the autumn of 1896 a rapid heart action, apparently the result of much exercise, was noted. In January, 1897, the diagnosis of Graves's disease was made and she went in February of that year under the care of Dr. Osler. All the ordinary remedies were tried without effect. In May she came under Dr. Minor's care, with a pulse of 130, nervous irritability, symptoms of intestinal fermentation with over-distended intestines, thyroid visibly enlarged, especially on the left side, and a moderate degree of exophthalmos. After failure with ordinary remedies Dr. Minor acted on the theory of the intestinal origin of the disease. He ordered a strictly regulated diet—the exclusion of all sugars, careful limitation of starches, a few simple green vegetables, such as "squash" and spinach, with underdone meats or chicken. Tea, coffee, hot breads, made dishes, condiments, and candy were all stopped. Meals at regular hours, with quiet and repose, but not rest in bed, were ordered. Lactate or albuminate of iron was given, with anti-fermentative mixtures, such as salol, resorcin, beta-naphthol, and guaiacol carbonate, not forgetting an occasional dose of calomel. But the chief remedy against intestinal fermentation was intestinal lavage with hot water (from 100° to 105° F.), allowing from one quart to a gallon of water to flow slowly into the rectum till the whole colon was full. This was at first used nightly, then at longer and longer intervals, and was not finally abandoned for about a year. In about six weeks all the principal symptoms were improved. Dietetic indiscretions were invariably followed by a return of the symptoms. By June, 1898, she was completely restored, and in October, 1899, reported herself completely well, with a pulse of 80, and able to ride a bicycle for 25 or 30 miles. In the second case, that of a married woman, a fast eater and a gourmand, similar treatment was equally effective. She remains well at the end of two years. Of course, we cannot generalise on the strength of two cases, but they are full of suggestion, and the profession will soon determine its applicability to the average cases of this disease.

[1] THE LANCET, August 26th, 1899, p. 555, &c.

THE UNIVERSITY OF LONDON: ITS REPRESENTATION IN PARLIAMENT.

NO one demurs at the proposition that the medical degree of the University of London as at present constituted marks its possessor as a finished physician as far as the discrimination of examiners and the scope of written and oral cross-examinations can form tests of knowledge. The University has upon its roll of graduates a long list of first-class medical men and a considerable list of eminent ones, so that it is particularly a constituency which might be expected to send to Parliament a medical man. All who follow public affairs must see that medical questions, or, at any rate, questions with a distinct medical side to them, bulk largely in the affairs of the country, yet the medical profession is but poorly represented in the councils of the country. In the House of Lords we have but one peer and in the House of Commons a mere handful of members. We say this without detracting from the merits of the present medical members of Parliament, who are good men individually but too small a body collectively to make much impression upon their fellows. The elevation of Sir John Lubbock to the peerage, a well-earned honour which has long been expected for him, gives the University of London an opportunity of sending a new member to the House of Commons, and medical men everywhere will feel as we do—that a medical man should be selected, if only because of the high medical position which the graduates of the University hold. Two candidates are before the constituency already—Dr. Busk, the Chairman of Convocation, and Dr. W. J. Collins, a late Chairman of the London County Council. Dr. Busk is a commissioner under the London University Commission Act, and therefore has the constitution of the reorganised university at his fingers' tips, while his public record shows him to be a man of the highest general and legal attainments. But in our opinion what may be called the domestic side of London University requires no

voice in Parliament, while St. Stephen's has certainly little need of further legal acumen. Dr. Collins, as a medical graduate with a good scientific position and record and as a public man who has exhibited in his capacity of chairman of the London County Council tact, judgment, and administrative skill, is certainly a strong candidate, but we do not consider that he possesses exactly the qualifications to fit him to sit in the House of Commons in succession to Robert Lowe (Lord Sherbrooke) and Sir John Lubbock as representative of London University. As is well known he is at variance with accepted scientific belief on the question of vaccination. Whether he is or is not opposed *in toto* to vaccination or whether it is only compulsory processes of inoculation that are distasteful to him is beside the point. The general feeling among medical men that the University of London ought to be represented by a medical man surely implies that the Member of Parliament for the University should be an embodied expression of the highest medical opinion. This is what Dr. Collins—an exceedingly clever man, a tried administrator, and an earnest worker in the cause of medicine and public health—is not; and the objection is a serious one.

THE QUANTITATIVE ESTIMATION OF SMALL QUANTITIES OF MERCURY IN URINE.

IT is often desirable to be able to determine the exact quantity of mercury in urine, as when mercury is being administered medicinally or in toxicological practice. We publish this week a somewhat lengthy description of a method which has been devised by its authors with, as they state, both speed and accuracy in view. The method depends upon the fact that stannous chloride when added to solutions of mercury salts reduces them to metallic mercury in a finely suspended condition, and that gold assists by forming an amalgam in collecting together the metallic particles thus obtained in suspension. The method, briefly, is to add stannous chloride to the very dilute mercurial solution and then to pour the resulting mixture on an asbestos filter containing gold. Gold alone is not sufficient to completely extract the suspended mercury according to the authors' experiments. The asbestos is prepared by soaking it with gold chloride and carefully igniting the material, when a residue of finely divided gold remains. The filtrate is clear and the whole of the mercury is retained by the gold asbestos. The asbestos may be dried and weighed and then ignited, the loss equalling the mercury in the given quantity of fluid such as urine. The method is very ingenious, but to us it appears unnecessarily complicated for the simple end in view. We have found that by merely using the terminals of a battery the mercury in the urine may be completely separated in a short time even when present in very small quantities.

THE chief surgeon to the American forces in the Philippines has cabled to the Surgeon-General at Washington that three cases of bubonic plague have occurred among the natives.

MEDICAL FEES UNDER THE POOR-LAW.—At a meeting of the St. Germans (Cornwall) Board of Guardians held on Jan. 4th the chairman stated that Mr. Preston Thomas, who had acted as arbitrator between the board and Mr. Gill, district medical officer, had given his decision in favour of the guardians. As reported in THE LANCET of July 29th, 1899 (p. 278), Mr. Gill had attended one of his club patients for a compound fracture of the leg; the man eventually became a pauper patient of Mr. Gill, and as the case required much care he asked the guardians for extra fees. The board at first allowed Mr. Gill £5 but afterwards, saying they had doubts about the legality of the course, decided not to pay the sum. This naturally caused friction between the guardians and the medical officer and it was eventually decided to appoint an arbitrator.

THE WAR IN SOUTH AFRICA.

IT is not merely that the war is uppermost in men's minds, but it seems to fill them, for little else is talked about. Even the busy practitioner's thoughts must oscillate between the war and the influenza epidemic. If the South African Republics had been arming and preparing for years (even anterior to the Jameson raid) for this rebellion, how has it happened, it is asked, that the fact was unknown, or if known, why was it ignored, seeing that it could have but two meanings—namely, a menace to or war with this country? The Government would probably reply that if any step had been taken at that time to demand an explanation from the Boer Government the Opposition would immediately have treated their action as only calculated to force the Boers into war, and the nation would in all probability have backed them in that view. It must be admitted that there is some force in that argument, seeing that a policy of patience and forbearance was once the dominant cry, whereas it is now quite the reverse. But if the Government was convinced that the facts were as they were and that they could only lead to one logical conclusion, how was it that they had not the courage of their opinions? A strong and decided course of action if adopted long ago would probably have averted war altogether, and it certainly would have put us into the best and most favourable position for successfully undertaking it. Further, war having become inevitable after the Boer ultimatum, why was not a large and continuous supply of troops and guns sent out and accumulated in South Africa with the view of carrying out a well-defined strategical object by means of a concentrated force, instead of allowing our strategical plans to be frustrated as they have been, owing to the necessity of dividing and crippling our army in its efforts to relieve so many besieged garrisons? There cannot be much doubt that all our present difficulties in this South African campaign have arisen in this way. The generals and troops have found themselves face to face with the most difficult and complicated situations. They have done their best under the circumstances; the troops have fought with a spirit, pluck, and valour that have never been surpassed, and under very trying conditions. It is, however, as easy to be wise after the event as it is useless to expect explanations at this time.

We are writing with the news from Ladysmith fresh in our minds. No one can read of the splendid and successful efforts of that garrison in its defence without a flush of pride and without cherishing the hope and belief that it will continue to hold out until it is relieved. Ladysmith is not by any means a Plevna. It is in reality and by natural position relatively a weak place for defensive purposes, but this renders its defence all the more praiseworthy and gratifying. "The enemy," Sir George White summarily states, "were repulsed everywhere with very heavy loss." Experience, however, warns us not to assume that the Boers will accept this as final. The immediate future of the war, at any rate, depends upon the result of Sir Redvers Buller's battle which many believe imminent. The position held by the Boers is one of great strength and it will require all the strategical and tactical skill of Sir Redvers Buller and his generals and a supreme effort on the part of the troops to carry it and relieve Ladysmith. We do not know whether the requisite transport is present or if all the arrangements have yet been completed, which, it goes without saying, must be complete before the attempt can be made with a reasonable and well-grounded assurance of success. Should it prove successful it will probably prove the beginning of the end, for the neck of the military power of the Boers will be broken.

We do not think that the extraordinary conditions of the warfare in South Africa have ever been realised in the way they should have been. Wherever the British forces have encountered the Boers in the open field they have beaten them and they have, again and again, even driven them out of strong positions. But for the first time in warfare, so far as we know, our troops have had to attack an invisible enemy armed with the best and most destructive weapons that modern science can devise. As an officer with Lord Methuen's force has graphically described it: "Perhaps you think it is easy to see a Boer, but it isn't. We have fought four tolerably big battles against them, but few of us have seen a single Boer. He is the invisible enemy. He lies in the grass, deep down in a trench, or behind a rock

and spits death at us all day long, but we never see who is killing our men. An English soldier of imaginative mind might come to think of the enemy as a sort of nineteenth-century invention—a vapour like the colourless smoke of the new powder—or a demon or an essence." The Boers' tactics and method of fighting are traditional with them and they are always mounted, but these facts, curiously enough, seem to have been lost sight of, for the force sent against them were at first weak in mounted infantry, cavalry, and artillery. What with the sickness and the number of wounded in Ladysmith, the decreasing food supplies, the pressure of military duties, and the nervous tension which the strongest and bravest soldiers must experience under the conditions of life in that garrison, it speaks well for the discipline and fortitude of the troops that they have so far been able to repel all attempts at storming the place.

The general health of the army keeps very good. There is, however, as might be expected, a considerable amount of sickness incidental to hard field service anywhere—the more important diseases being enteric fever and dysentery. The climate is good, and we learn on all sides that wounds do well in South Africa. Transports keep arriving at the Cape and large additions are being made to the strength of the British force. The various Red Cross societies are working successfully in unison with the regular army medical services and are able to render very effective supplementary aid in different directions to that afforded by the regular supply branches of the army. The difficulty on war service not usually owing to any lack of material or equipment—for there is an abundance of stores of all kinds—but arises from the question of their distribution, so as to have them present at the place and moment they are wanted and of the particular kind required.

As our readers are aware, the nation shows no sign of wavering in its determination to carry on the war to a successful issue and the spirit and enthusiasm evinced in this country, in the colonies, and in India are remarkable and impressive. Not only are troops being sent from our colonies but field hospitals are being fully equipped in *personnel* and material, the display of generous patriotism being unanimous.

We would call particular attention to the very interesting and instructive notes kindly forwarded to us by Sir William Mac Cormac from the seat of war. The account given by him of the results of serious bullet wounds will come as an astonishing revelation to many surgeons.

(NOTES FROM SIR WILLIAM MAC CORMAC.)

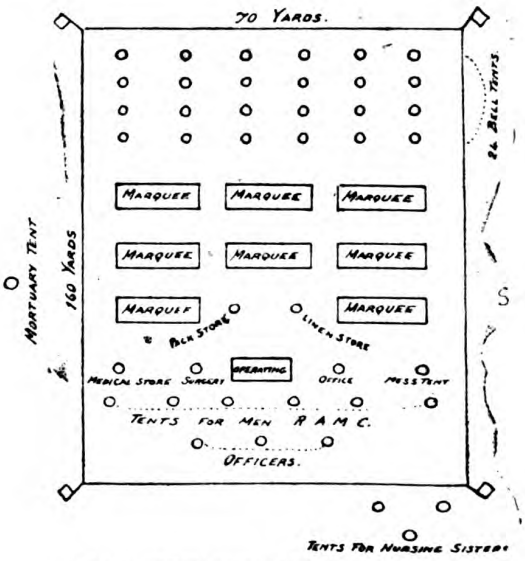
(*Continued from page 59*)

THE Fort Hospital at Pietermaritzburg is in charge of Lieutenant-Colonel Johnstone, R.A M C. There are under his command a varying number of officers of the Royal Army Medical Corps and five civil surgeons, also a staff of army nursing sisters, assisted by civil nurses and volunteers. This hospital originally consisted of 90 beds, but the number has now been increased to 550 by converting some barrack-rooms in the vicinity into hospital wards. More barrack-rooms are daily being suitably equipped, so that the number of beds available for sick and wounded (including 50 beds at the College Hospital, 70 at the Assembly House, and 50 at Grey's Hospital) is being increased until the total number of 1020 is reached. The situation is a commanding and healthy one on the top of a hill just outside the town, a site partly occupied in old days by a fort. There was no operating-room in the original hospital, so a suitable ward has been converted into one. The messhouse of the officers of the 5th Lancers has been converted into an officers' hospital, the anteroom and large messroom making two beautifully ventilated and comfortable wards.

The many paths in the hospital compound are still obstructed by barriers of barbed wire and barricades. These were constructed about a fortnight ago on the occasion of a threatened attack by the Boers on Pietermaritzburg. This scare impeded to a great extent the equipment of the hospital, as the whole of the *personnel* had to be transferred at very short notice to the College Hospital, the fort being completely deserted as a hospital and occupied by troops. On the retirement of the Boers beyond Estcourt a return journey of the hospital stores had to be made and much changing was needful, but the equipping has gone on rapidly since. There is, besides, within easy reach at Durban the hospital ship *Spartan* with 130 beds, and a register is kept of the transports to which the sick and wounded may be sent as well, and of the available medical staff and nurses. The ambulance is capable of taking 92 sick and wounded—82 lying down and 10 convalescents. Colonel T. J. Gallwey, the Principal Medical Officer, thinks this considerable provision is not altogether adequate to the possible requirements should a great battle be fought shortly on the Tugela river.

No. 4 Stationary Field Hospital arrived at Frere on the evening of Dec. 11th. It was detrained immediately and a site was chosen in the immediate vicinity of the railway line as being a convenient place for entraining the wounded. This hospital is to be the first stationary hospital on the lines of communication and will be the refuge of the sick disgorged by the four field hospitals with the four brigades as the latter move on in the fighting line. The next stationary hospital will be at Estcourt. Several of the bell tents were equipped ready for the reception of sick on the evening of arrival. By noon on the following day most of the tents were equipped and ready and had already received about 40 sick from the brigade field hospitals. This hospital consists of a fully equipped field hospital with the addition of eight large marquees, as is shown in the plan (see Fig. 1.) Its

FIG. 1.



Plan of No. 4 Stationary Field Hospital at Frere.

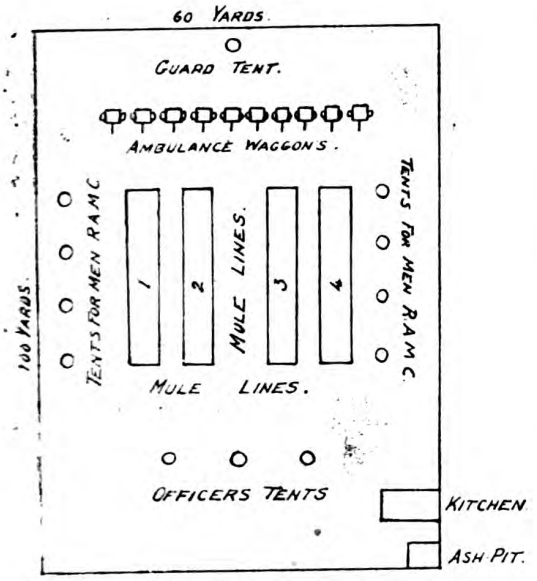
arrangement has been designed by Major R. Kirkpatrick, R.A.M.C., who is in command. The other officers are Major Mallins, Captain F. A. Symons, Lieutenant Simson, of the R.A.M.C., and Lieutenant-Quartermaster Short. There are 38 non-commissioned officers and men of the Royal Army Medical Corps, including compounders, cooks, &c., and also two army nursing sisters. At 4 P.M. on the evening of Dec. 11th this hospital (packed in trucks on a special train) was making its way into the railway station at Frere, and at the same hour on the 12th, a hospital ready for 150 sick (or more) distinguished by the Geneva Cross flag, occupied the ground. When the expected action on the Tugela river takes place there will be a body of 1200 civilian stretcher-bearers, under the command of regimental officers, whose duty will be that of conveying the wounded half way from the fighting line to the hospital, the first half of the journey being performed by other bearers of the same variety attached to the bearer companies. Each stretcher will be supplied with a squad of 25 bearers, this large number being told off so as to provide for frequent relief during a journey of possibly 30 miles. This arrangement has been devised by Colonel T. J. Gallwey, R.A.M.C., who has experienced the usefulness of this plan in Egyptian warfare. The country surrounding the Tugela river is so rough that the carriage of seriously wounded men by mule ambulance waggons would be extremely distressing to the patients. Each bell tent is supplied with four stretchers, each patient having a stretcher, mackintosh sheet, knife, fork, spoon,

basin, &c. The marquees are equipped with eight stretchers each and are reserved for the more serious cases.

We (myself and my secretary, Captain F. A. Symons, R.A.M.C.) put up our tents in the rear of the stationary hospital, arranging for our own cooking, &c. We have also been provided with mules and carts for our own use which are following us from Pietermaritzburg in charge of a sub-conductor of the Army Service Corps. We therefore form a separate little unit of our own, free to move as we like, taking up our headquarters at No. 4 Hospital. The water here is very scarce and muddy and requires careful boiling or filtering before use. Baths at present are practically disallowed.

Dec. 12th.—Our mules and carts arrived this morning, but are not yet ready for use as the wheels of the carts have become injured. Through the kindness of Major Ricketts, R.A.M.C., commanding No. 2 Bearer Company, we obtained the use of an ambulance waggon for to-day. This waggon is drawn by 10 mules. It is a 10-feet canvas-covered, heavily built waggon, fitted with two front seats and two side seats running the length of the waggon. These seats are well cushioned and the side ones may be turned up when not in use, so that two stretchers can be placed on the floor of the waggon. The outside is painted with a large red Geneva cross and the waggon also carries a Red Cross flag on a staff. Our waggon was driven by two Kaffirs, one handling the reins and the other wielding a huge whip like an 18-ft. salmon rod. We were also accompanied by two sergeants of the Royal Army Medical Corps. We first visited No. 2 Brigade and inspected the encampment of the field hospital and bearer company attached thereto (see Fig. 2).

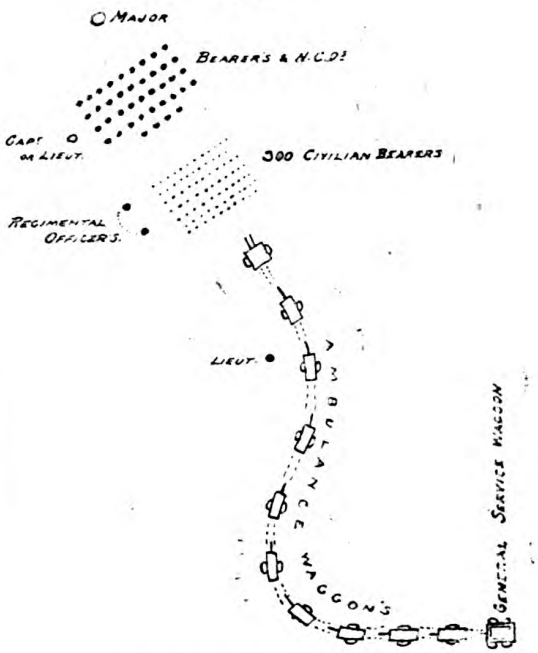
FIG. 2.



Plan of a Bearer Company Encampment.

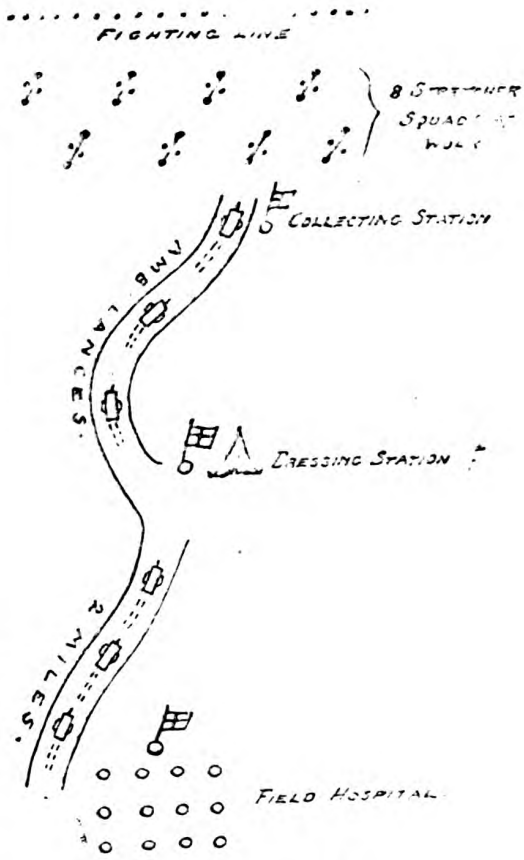
These always work together and move with their brigade in action. The bearer company pick up the wounded, dress their wounds as well as possible, and send them on to their own field hospital. No. 2 Bearer Company is under the command of Major Ricketts, R.A.M.C., the two other officers being Lieutenant Palmer, R.A.M.C., and Lieutenant Wroughton, R A.M.C. This company is of the usual service strength and equipment, and its description applies to the other companies with this division. The officers and sergeant-major are all mounted. There are 32 bearers, making eight stretcher squads, and these, with the remainder of the company, performing the different duties described in the list below, march in front. These are followed by the water cart and then come 10 ambulance wagons. These bearer companies march into action (each with its own brigade), form their own collecting and dressing stations, pick up the wounded, apply first-aid dressings, pass the wounded to the rear through the collecting and dressing stations they have formed, and thus complete the transit of the wounded from the front line to the field

FIG. 3.



Plan of a Bearer Company on the March.

FIG. 4.



Plan of a Bearer Company in Action.

hospitals. The following plans will serve to explain their movements (see Figs. 3 and 4). The 300 civilian bearers mentioned above are shown as accompanying the company.

Strength and Distribution of a Bearer Company.

Major	1	Corporals	6
Lieutenants	2	Privates	8
Sergeant-Major	1	,, as cooks	3
Quartermaster-Sergeant	1	,, as bearers	32
Compounder	1	,, as servants	3
Sergeants	4	,, as supernumary	1
Bugler	1	Total	64

300 civilian bearers.

The field hospital of the 2nd Brigade is under the command of Major J. C. Culling, R.A.M.C., the junior officers being Captain H. J. Parry, Captain J. W. Jennings, Lieutenant J. W. Leake, and Lieutenant and Quartermaster H Spackman, R.A.M.C. It consists of the ordinary field hospital of 100 beds, about 40 of which are at present filled with cases of local complaints. These patients are being sent to No. 4 Stationary Hospital as soon as possible so as to allow the field hospital to move off with its brigade. After inspecting the hospital, which has been already carrying on its duties here for a fortnight, we again set forth in our waggon and drove to the 4th Brigade. Here we found the field hospital and bearer company encamped and arranged in exactly the same manner as those of No. 2. The field hospital is under the command of Major G. T. Goggin, assisted by Major F. S. Heuston, R.A.M.C., and two lieutenants. The bearer company is commanded by Major E. O. Milward, R.A.M.C. We found them all ready for a sudden departure and fully equipped and prepared for all emergencies of the field.

We then drove away in the direction of a hill about three miles distant from which we were told we could see the Tugela river and the Boer tents on the far side. The ground is very undulating and extremely bumpy for an ambulance waggon, which latter fact proved to us the efficacy of the 2400 bearers engaged by Colonel Gallwey.

On a hillock we espied as we went along what appeared to be a deserted encampment. This proved to be the place where a small party of Boers were suddenly disturbed at their meal about a fortnight ago by our troops. They evidently departed in a great hurry, for our sergeants ran up the hill to the spot and returned with two excellent chairs, ten good dinner-plates, a soup-tureen, vegetable-dish, and two stirrup-irons. The soup-tureen especially is now being made most useful for our little mess in camp, which Captain Symons and I run together. We reached our hill in time and were rewarded by seeing a most beautiful valley with the Tugela river running through it. About 15 miles away are the large range of hills in a dip of which lies Ladysmith. Chieveley railway station is indicated by a zinc-roofed house and a clump of trees. Some Boers' tents could be seen with glasses on the hills between us and Ladysmith and the camp of the Fusilier Brigade was situated about a couple of miles from Chieveley. The Naval Brigade have some guns at Chieveley and the Boers have some also on the hills across the river, the noise of which can easily be heard at Frere Camp.

If the expected battle comes off at Colenso, on the river, we shall easily be able to see the whole panorama from this little hill.

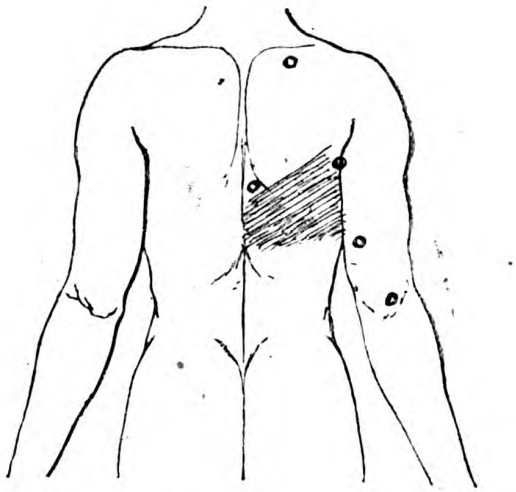
On our way back to camp we viewed the upturned armoured train and the grave of the poor fellows of the Dublin Fusiliers killed at the time of that disaster. The iron protection plates are pierced with many shell holes and the trucks themselves have rolled down the bank and are upside down. Numerous soldiers were employed in breaking off small fragments of iron work to take away as mementoes. Within 20 yards of the train is situated the grave of those killed. It has been very neatly covered over with cement by the Border Regiment, in which by means of inserting cartridge cases they have inscribed the following:—"Here lieth the remains of the men of the Dublin Fusiliers killed in the armoured train on Nov. 15th, 1899. R.I.P." The grave is neatly railed off by wire fencing and a wreath is on the top with a paper attached, on which is written—"A mark of respect from the Connaught Rangers." A party of soldiers stood round the spot sadly reading the inscription, the whole situation making a most pathetic scene and bringing home most vividly the sadness of war and the probable death still to come. We also inspected the remains of the iron railway bridge at Frere, the back of which is completely broken.

Dec. 13th.—The naval and Boer guns boomed away in the distance from daylight until about 9 A.M. We went again to our hill, but all was then quiet, and the Boers are reported to be retiring. Three out of the four brigades moved on to-day at 1 P.M., their destination being Chieveley, and unless the Boers are really retreating from Colenso, we expect to see the battle early to-morrow morning. The field hospitals have moved on with the brigades, and we saw one of them, fully packed, move off with all its baggage and tents, to be probably re-erected this evening at Chieveley. All the medical arrangements are fully complete in readiness for a big battle at any hour. The mail goes to-night and this report with it.

There are many interesting cases here at present. One cannot help contrasting with amazement the comparative harmlessness of the injuries so frequently inflicted with the Mauser rifle bullet with the frightful extent of the damage done by those of the needle-gun and the Chassepôt. To anyone familiar with the wounds caused by these weapons many of those inflicted by the Mauser rifle might be regarded as being somewhat of the character of a "pin-prick." Quite a large proportion of the wounded, in fact, have returned to duty, and several patients whom I have seen have been wounded for the second time at another engagement.

Private ——, aged 22 years, was wounded by a Mauser bullet at Beacon Hill, Estcourt. He states that the bullet came from a distance of 2000 yards. It entered his back at about one and a half inches above the middle of the spine of the left scapula. A short time after being wounded he suffered from slight hæmoptysis. A tender area of about two and a half inches in diameter, showing marked emphysema, made its appearance around the right nipple. His chest was skiagraphed and the conclusion thereby arrived at by Dr. Irvine (the civil surgeon in charge of the case) was that the bullet, having entered the left lung at the point above described, travelled across the thorax until it met the fourth right rib; it then changed its course upwards behind the third rib and was found embedded in the second interspace

FIG. 5.



The five external wounds are indicated. The shaded area indicates effusion.

parallel with the ribs, the base of the bullet being nearer the skin than the point. An incision was made by Dr. Irvine along the upper border of the third rib about two and a half inches external to the nipple line, cutting through the pectoral muscle and external intercostal muscle. The bullet was then extracted without any difficulty from between the two layers of intercostal muscles. The hæmoptysis ceased after the operation, and the patient now presents no symptoms whatever. The wounds are healed.

Private —— of the 2nd West York Regiment, aged 26 years, was wounded by Mauser bullets at Willow Grange on Nov. 23rd, receiving the following wounds: first, two perforating gunshot wounds of the right arm, entering at the outer side of the arm at one and a half inches above the

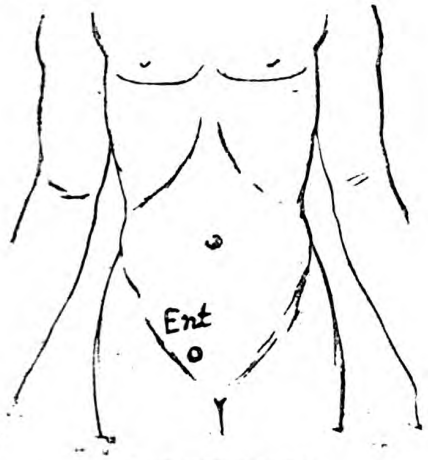
external condyle. The bullet ran up through the triceps, the exit being at the junction of the upper three quarters and lower quarter of the arm, about one inch posterior to the sulcus behind the outer border of the biceps on the inner side. It then entered the axilla a little posterior to the apex, and this wound can be probed for an inch. No bullet is discoverable either by probe or by x ray. He received, secondly, two wounds on the back—one just internal to the superior posterior angle of the right scapula, and another slightly to the right of the sixth dorsal vertebral spine. Possibly these four wounds, being more or less in line, were made by one bullet and the one opposite the sixth dorsal by another, and that this accounts for the chest symptoms. On admission to the hospital there were acute pain in the epigastrium and the lower costal region on the right side and increased vocal fremitus over the right lower costal region, and it was found on examining the patient on Dec. 1st that there was an area of effusion at the right base posterior to the angle of the scapula (see Fig. 5). There was paralysis, but no anæsthesia of the right lower extremity. This anæsthesia is improving, as is also the costal pain. The patient states that he first received the arm wound and subsequently that in the back. Civil Surgeon Irvine, who is in charge of the case, conjectures that the bullet entering at the sixth vertebra may have injured the pleura and lung, and that all the other wounds were caused by the first bullet. No bullet has as yet been discovered in the lung by means of the x rays.

Private —— of the 1st Manchester Regiment, aged 27 years, was hit at Elandslaagte by a Mauser bullet, the entrance wound being at the right side of the neck at the posterior border of the sterno-mastoid an inch above the clavicle, and the exit wound being at an exactly similar position on the left side of the neck. On admission the patient could not swallow properly or speak on account of pain in the larynx, but these symptoms rapidly improved, until at present, beyond a slight difficulty in swallowing, he is perfectly well.

Private ——, of the 2nd Gordon Highlanders, aged 26 years, was wounded by a Mauser bullet at Elandslaagte. The bullet entered the external surface of the left thigh at the junction of the upper and middle thirds. It passed transversely through the extensor muscles in front of the femur, emerging about an inch lower down than the entrance wound. It then entered the right thigh on the same level, passed behind the bone, and emerged on the outer side at the same level. There was hardly any hæmorrhage, and the patient completed the charge (of about 800 yards) after receiving these four wounds.

Private —— of the 2nd Gordon Highlanders, aged 22 years, was wounded by a Mauser bullet at Elandslaagte.

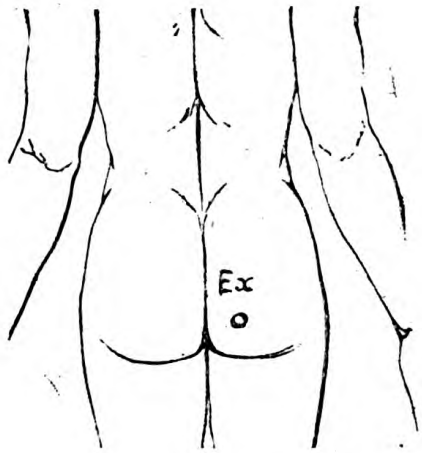
FIG. 6.



Shows entrance wound.

The entrance wound is an inch above the symphysis pubis and one inch external and to the right (see Figs. 6 and 7). The exit wound is one inch above the level of the anus and about two and a half inches external to the middle line in the right buttock. After being wounded he ran for about one-third of a mile without inconvenience. There was hardly any hæmorrhage, but the right testicle swelled up within an hour. He suffered for about a fortnight with pain at the root of the penis and on defecation, but there was no blood in the stools and he has now perfectly recovered.

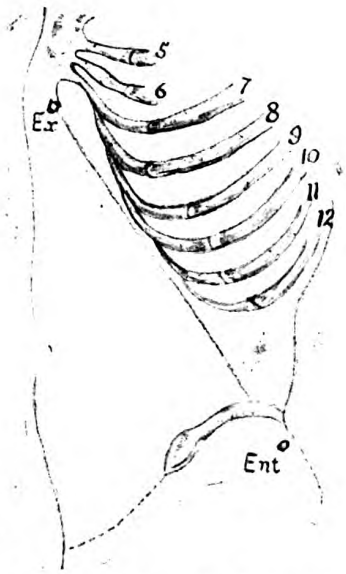
FIG. 7.



Shows exit wound.

Private —— of the 2nd West Yorks Regiment, aged 20 years, was wounded by a Mauser bullet from a distance of about 1500 yards (?) at the battle of Willow Grange on Nov. 23rd. There is a perforating wound of the abdomen. The bullet entered half an inch external to the posterior superior spine of the left ilium and pierced the ilium (see Fig. 8). The wound of exit is situated one and an eighth

FIG. .



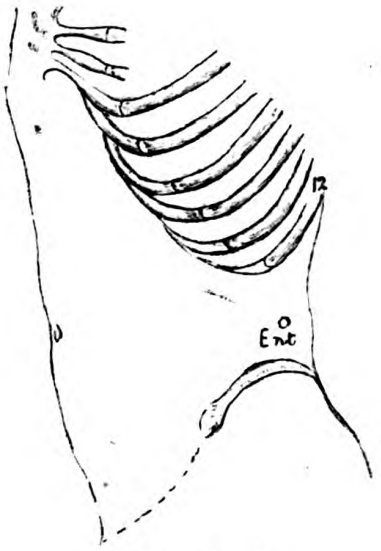
Shows both entrance and exit wounds. The dotted ack suggests that the stomach was traversed.

inches below the level of the ensiform cartilage and one and three-eighths inches to the left of the middle line. It would seem that the bullet must undoubtedly have passed through the stomach. The wounds healed by first intention and the patient has suffered no inconvenience in any way, having eaten his food ever since the wound was received. He is now convalescent.

Private ——, of the 2nd West York Regiment, was

wounded by a Mauser bullet from a distance of 600 yards (?) on Nov. 23rd at Willow Grange (see Figs. 9 and 10). The bullet entered at two and a half inches above the crest of the left ilium, four inches from the spinal column. The exit wound is situated one and a half

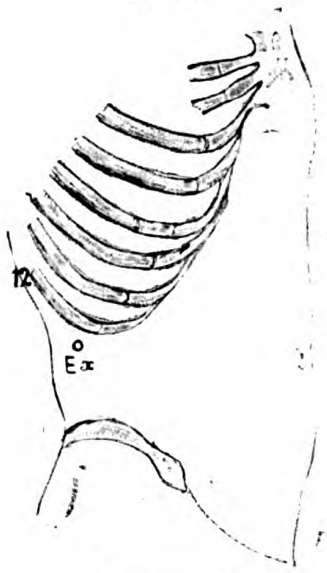
FIG. 9.



Shows entrance wound.

inches posterior to the anterior extremity of the twelfth rib on the right side. The wounds healed by first intention. The bowels have not been moved since the receipt of the wound and enemas have had no effect as the patient cannot retain them. Sulphate of magnesia and calomel have also been tried without effect. The

FIG. 10.

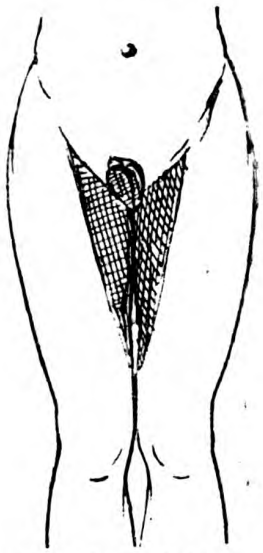


Shows exit wound.

patient states that he fell down immediately he was shot as his legs gave way, and on attempting to rise he found that his legs were disabled. On admission to the hospital it was found that both legs were partially paralysed but that sensation was not affected. The patient could control his bladder, but could not feel his urine passing away through the urethra on micturition. The paralysis in the lower extremities has been slowly disappearing, but it still exists to some extent in the left leg. There is, however, at present, a well-marked hyperæsthetic area on the inside of both thighs and in the perineal region (see Fig. 11). The colon and rectum still remain paralysed, no improvement having yet taken place, but sensation has returned in the urethra. From the relationship of the wound of entrance to the colon (and the present percussion resonance) there seems no doubt that the colon has been perforated.

A private of the Dublin Fusiliers was wounded at Talana on Oct. 20th. The bullet entered an inch above the root of the nose. The exit was at the junction of the frontal and

FIG. 11.



The shaded area indicates hyperæsthesia of inner surface of thighs and under surface of scrotum.

squamous portion of the temporal bone on the right side, about one and a half inches above the outer margin of the orbit. The bones were drilled without any fracturing, the entrance and exit wounds being exactly the same size. The brain substance protruded. The wounds were dressed with dry boric dressing on the field. The patient suffered no inconvenience whatever and the wounds were completely healed by the fourth day. Civil Surgeon Mate who records the case, states that he last saw the patient on Nov. 4th walking about the ward apparently perfectly well.

An officer was wounded at Talana on Oct. 20th. The bullet passed through the left antrum of Highmore, making its exit through the mastoid process on the same side. On Nov. 3rd the entrance wound had healed, but small spicules of bone had been removed from the exit wound. The patient was doing very well and suffered very little inconvenience except that of deafness on the left side.

Private ——, of the 1st Devon Regiment, was wounded on Oct. 21st at Elandslaagte at a distance of 400 yards. The entrance wound was in the left knee one inch below and one and a quarter inches behind the tibial insertion of the semi-membranosus. The bullet passed through the tibia and the knee-joint and made its exit through the external condyle of the femur, one and a quarter inches above the articular surface and in the middle of the antero-posterior diameter. Simple synovitis followed the wound, but the apertures healed by first intention. The synovitis is still slightly present.

A private was wounded at Estcourt on Nov. 23rd. The entrance wound was immediately below the ninth left costal cartilage and the exit wound was between the seventh and eighth ribs on the right side in the mid-axillary line. There was considerable shock and internal hæmorrhage was suspected. Laparotomy was performed by a civil surgeon from Johannesburg in the middle line above the umbilicus. When the abdominal cavity was opened it was found that the bullet had ploughed its way along the upper surface of

the liver, making a groove close to its anterior border, the length of which was about two and a half inches. There evidently had been very little hæmorrhage. The peritoneal cavity was washed out with saline solution and a strip of iodoform gauze was placed in the groove and brought out through the abdominal incision, thus forming a drain. This was removed on the following day. The abdominal incision was closed in three layers with silk and silkworm gut. A week after the operation, when the patient was last seen, he was progressing very favourably.

A private in the West Yorks Regiment was wounded at Willow Grange on a Thursday. The bullet entered the nape of his neck on the right side, opposite to the third cervical spine, one and a half inches from the median line, and emerged at the inner canthus of the left eye. Some loose pieces of bone, probably portions of the ethmoid, were picked out, but the man suffered no practical inconvenience. He sat up the same evening, on the next day he was reading the paper and smoking, and on the Saturday he was going about without any complaint of any kind.

In a man, who was lying down at the time, a bullet entered about the middle of the supra-spinous fossa of the left scapula, emerging to the left of the middle line at the margin of the scapula at the level of the fifth costal cartilage. On the second day the patient had some hæmoptysis which continued slightly on the two following days. The patient had no other complaints and was sent to Pietermaritzburg.

A trooper was shot on the railway line at a point just opposite to where the stationary hospital now is. The bullet entered a little above the junction of the middle and upper thirds of the right femur, on its outer side, about four inches below the tip of the great trochanter. The bullet, which was fired at a long range, passed through the femur, causing much comminution, and was felt under the skin on the inner side at about the same level but well behind the artery. The bullet was removed and the result was the same as in an ordinary simple fracture. There was shortening by three-quarters of an inch.

Private —— of the 1st Dublin Fusiliers whilst standing on the cow-catcher of the armoured train on Oct. 15th was struck by a fragment of shell on the right arm. On the patient being seen by Lieutenant Briscoe half an hour after the receipt of the injury it was found that the greater portion of the arm was torn away, leaving the humerus bare for several inches, especially on the inner side. The vessels and nerves were torn through completely, the arm being attached simply by strips of triceps and skin. The patient was suffering greatly from shock. The amputation was completed by dividing the remaining tissues so as to make a cover for the end of the bone, which was sawn square off. The brachial artery was tied and a drainage-tube was inserted, which was left in for three days. On removing this tube secondary hæmorrhage took place. The wound was laid open and the brachial artery was again tied in the wound, the ligature having slipped. The patient afterwards made a perfect recovery.

A colour-sergeant in the West Yorks Regiment had a peculiarly fortunate escape at Willow Grange. A bullet pierced his haversack and struck his dinner-knife at half an inch from the haft, breaking it clean across, the remaining portion being twisted half round. It then traversed a tin of ointment, broke the heavy clasp-knife hanging from his belt, gouged an inch and a quarter out of his dispatch-book (three-quarters of an inch thick) which was hanging beneath the knife, and entered his hip for about one-eighth of an inch, carrying a piece of shirt with it and making a very superficial wound.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

The last engagement at Magersfontein swelled the list of wounded by 38 officers and over 460 men, the majority of whom reached here last week. The officers were accommodated in wards in the old station hospital, which has been incorporated into No. 1 General, and the men have been equally distributed between No. 1 and No. 2 General. I am glad to say that the wounds of the officers, with some few exceptions, have not been very serious and many are on the high road to recovery, the wounds being principally flesh ones of the extremities and in all these cases progress has been uninterrupted. Wounds of bones and joints, on the other hand, are more or less tedious and frequently require operation, the smashing power of the Lee-Metford being very apparent in contra-distinction to the clean perforated wounds caused by the Mauser. We have been obliged to open two more large wards for the accommodation of officers, besides taking a large portion of the Claremont Sanatorium for the less serious and convalescent cases. The latter institution is admirably adapted for the reception and treatment of the wounded, being situated in its own grounds and with every convenience for the comfort and welfare of patients. As there are at present no general hospitals in Natal we may expect a great number of wounded from the last battle at Colenso, which from all accounts seems to have been very disastrous as regards the number of casualties. We had a visit from Mr. Makins this morning; he was up at Modder River during the fight and had the opportunity of operating in several abdominal cases. He returns to-night up country in view of further engagements. The variety, and I may call it eccentricity, of the bullet wounds in this war—by this I mean the direction taken by the missiles and the marvellous escapes of big vessels and bones—would fill a good sized volume, but I have not, I am sorry to say, time to detail them and must leave it to those who have more leisure at their disposal. It requires a war like this to teach us how little damage (under favourable circumstances) a Mauser bullet through the lung seems to do. I have at present under treatment two such cases, one of which on admission had very slight hæmoptysis and spasmodic dyspnœa and the other simply presented no signs of lung injury whatever, though the course of the bullet was literally a penetrating one an inch above the right nipple in front, coming out slightly above the angle of the scapula behind. This patient, with the exception of slight shock when first wounded, has suffered absolutely no inconvenience and smokes his pipe with a philosophic calm which is interesting to watch. An amputation of the thigh in the lower third for traumatic aneurysm of the femoral is doing up to date quite well; another officer who, besides this injury, has a compound fracture of the right forearm and a nasty wound over the left orbit is making a bold bid for convalesence. Major R. W. E. H. Nicholson, R.A.M.C., has left us and Major R. W. Barnes has been put in charge of the officers' wards. These are the only changes in the *personnel* I have to chronicle, with the exception that our worthy Sergeant-Major Chalk has been promoted to the rank of lieutenant and quartermaster.

ASYLUM REPORTS.

The Retreat, York (Report for the year ending June 30th, 1899).—This institution has a unique and interesting history. In 1792 William Tuke, a member of the Society of Friends, became convinced that the methods of treatment of the insane, then prevalent, were unnecessarily harsh and severe. The foundation of an institution where the insane could be treated in a more humane and gentle way was decided upon, and in response to an appeal for support members of the Society of Friends contributed the funds necessary to provide "a retired habitation for 30 persons deranged in mind." In May, 1796, the present building (a central block with two wings) was opened. Subsequently, under the Lunacy Acts of 1845 and 1890, the Retreat has been registered as a "Hospital for the Insane." The government of the Retreat is vested in 40 directors, all of whom must be members of the Society of Friends. Four wings have been added since the building was opened—viz., a N.E. wing in 1812, a N.W. wing in 1827, a S.E. wing in 1852, and a S.W. wing in 1858. In 1881 an East Villa was built for gentlemen and in 1890 a West Villa for ladies. Voluntary boarders are received at the institution. The average number resident during the year of the report consisted of 166 patients—viz., 68 males and 98 females. The admissions during the year amounted to 37 and comprised 18 males and 19 females. The average weekly expenditure per patient, excluding the cost of new buildings, was £2 6*s.* 6*d.* The income from patients has been fully maintained and again exceeds that of any previous year. Owing to lack of space and consequent inability to admit many cases that applied for admission the admissions are slightly less than the average of recent years. Dr. Bedford Pierce, the medical superintendent, states in

his report that "rather more than one-half of the new patients admitted were deemed to be curable, but the remainder were decidedly unfavourable cases and had either been under care previously and failed to recover or were cases of long standing that had been treated privately. 13 of the new cases have had previous attacks and one lady has had no less than seven attacks before the present one. In 12 of the patients admitted there was evidence of an inherited tendency towards insanity." 11 patients recovered and were discharged, a ratio equal to 6 6 per cent. of the average number resident. There were 11 deaths to report during the year, a greater mortality than usual. The average age at death was 59 years, although two of the number were but 24 years of age. Two deaths were due to bronchitis and one each to pneumonia, phthisis, bronchopneumonia, general paralysis, and senile decay. One death (that of a female patient) was due to phosphorus poisoning. There was very little sickness among the patients or the staff apart from a few isolated cases of influenza. The principal event of the year has been the completion of the new buildings to provide a home for the nurses in June last. The cost of this has been estimated at about £2700, and donations towards the cost have amounted to £1887 up to the date of Sept. 11th last. Several structural improvements and additions to other parts of the building were arranged for at the same time and the total cost has been estimated to be slightly over £3900.

Glasgow District Asylum, Gartloch (Report for the year ending May 5th, 1899).—The average number of patients resident in the asylum during the year was 465 and comprised 236 males and 229 females. The total admissions during the year were 203—viz., 111 males and 92 females. Of these 140 were first admissions. Dr. L. R. Oswald, the medical superintendent, states in his report that seven of those admitted were over 70 years of age, two being over 85 years. "The nursing of these old people demands the greatest care and tact, for they are specially liable to accidents by reason of their frail condition and interfering ways. They must be kept apart from the acute and excited cases." Alcoholic intemperance is set down as having been the cause of the insanity in 50 of the persons admitted, but in many of these—as, indeed, in other cases—the illness was not due to one but to several causes, of which intemperance was the most prominent. "Intemperance, along with an enfeebled bodily condition, acting in conjunction with prolonged worry or mental strain, or following an influenzal attack, but with intemperance as the main factor," was the cause of insanity in the 50 cases referred to. General paralysis as a condition existed in 9 per cent. of the admissions, and in 16 per cent. a hereditary predisposition to insanity was established. The difficulty of obtaining reliable family histories was so great that it is considered probable that the proportion with hereditary taint was higher. During the year 98 patients were discharged as recovered, or 21 per cent. of the average population. Boarding-out, as a means of dealing with quiet and harmless cases, was largely practised during the year. 44 patients were thus sent out, but of that number seven were returned to the asylum for further observation. The deaths during the year numbered 38, or 8 per cent. of the average number resident. Of the deaths two were attributed to senile decay, three to cerebral hæmorrhage, seven to phthisis and tuberculosis, and 11 to general paralysis. There were 11 escapes during the year, seven of these being effected by patients on parole. The privilege of parole is extended to from 20 to 25 per cent. of the patients and it is much appreciated and seldom abused. Influenza visited the institution but it was not virulent; it lowered the health of many members of the staff, but was not in any case fatal. Work, especially out-of-door employment on farm and garden, for men and women has benefited many. The treatment of acute and curable cases by prolonged rest in bed has been practised with success. Recreation and treatment go hand-in-hand, the grounds adjoining the Loch affording a delightful summer resort for suitable cases. The Nurses' Home is now well on its way to completion and it is now ready for occupation.

Govan District Asylum, Paisley (Report for the year ending May 14th, 1899).—The average number resident during the year was 404, and comprised 203 males and 201 females. The admissions during the year were 342 in number, viz., 177 males and 165 females. 330 patients—171 males and 159 females—were first admissions. Of the 392 patients admitted 118 were transferred from other asylums. This high proportion of transfers is due to the increase of accommodation afforded by the new hospital block. This building, which practically completes the asylum, was formally opened on July 8th, 1898. 85 patients were discharged recovered, or 21 per cent. of the average number resident. 87 per cent. of all the recoveries took place within six months after admission. There were 12 re-admissions of patients who had been previously under treatment in the asylum. Mr. W. R. Watson, the medical superintendent, states in his report that there was no fatal or even very serious accident during the year. Satisfactory progress had been made in laying out the grounds and upwards of 120 male patients were regularly employed in this and other necessary outdoor occupations. The deaths numbered 44, or 11 per cent. of the average daily number resident. "This percentage is somewhat high, but when it is considered that 29 deaths were directly due to disease of the brain and spinal cord the numbers do not seem to call for any special comment here. ..... There were only two deaths from phthisis and these patients were suffering from advanced disease when received into the asylum." 14 deaths, the largest number due to any one illness, were attributed to general paralysis, four each were due to cerebral hæmorrhage and to cardiac disease, and two each to phthisis and to senile decay. The works for the disposal of the sewage by the bacterial method were formally opened on April 25th, 1899. The recently opened hospital section of the asylum for the special treatment of acute and curable cases has been liberally and suitably furnished and the arrangements of the building have been found to be well adapted to the purpose.

THE HEALTH OF RUSSIA, 1893-1895.[1]

THE most recently issued report of the Medical Department of the Russian Ministry of the Interior deals, not, as in previous issues, with the returns of a single year, but with those of three years. The three years in question are 1893, 1894, and 1895. During the first two the cholera epidemic, which had first reached Russia in 1892, was still active and in certain parts of the Empire very much more active than in the first year of its prevalence. Notwithstanding this fact the total recorded mortality in 1893 and 1894 was practically the same as (if anything, rather below) the average mortality of the three preceding years, though higher than that of 1886–88.

The population of the Russian Empire [2] in the years under review was estimated to be as follows:—

	1893.	1894.	1895.
European Russia	101,111,822 ...	102,664,841 ...	104,506,880
The Caucasus	8,177,452 ...	8,326,727 ...	8,599,593
Siberia	4,948,676 ...	5,006,773 ...	5,116,724
Central Asia	6,417,472 ...	6,554,495 ...	6,575,501
	120,655,422 ...	122,552,836 ...	124,798,698

It will be observed from these figures that the population has increased by over 4,000,000, or approximately 3½ per cent., in the course of two years. The increase is calculated by taking the difference between recorded births and recorded deaths in the period in question and adding the result to the number of the population at the beginning of the period. This natural increase in population was distributed over the three years in the following manner:—

	1893.	1894.	1895.
Recorded births	5,314,807 ...	5,479,213 ...	5,651,063
Recorded deaths	3,660,716 ...	3,774,488 ...	3,869,936
Natural increase...	1,654,091 ...	1,704,725 ...	1,781,127

It is pointed out in regard to the figures relating to the population of the empire that this method of estimating it in successive years has recently been shown to lead to results which are only approximately correct, and that almost certainly the figures here quoted are considerably above the truth. Thus, the population reckoned in this way gives for European Russia a population of 104, 506, 880

[1] Report of the Medical Department of the Ministry of the Interior, Part I. St. Petersburg, 1898.

[2] Excluding the Grand Dukedom of Finland.

at the opening of 1896, and (advancing to a later period than that covered by the report under notice) 106,200,000 at the beginning of 1897. But on Jan. 27th, 1897, a census of European Russia was taken by the method of actually counting heads, and in the result European Russia was found to contain only 103,631,340 inhabitants, or some 3 per cent. less than the estimated figure. This being so it is obvious that the birth-rates and death-rates calculated on the estimated figure are in reality below the truth.

In Central Asia and Siberia the population was reckoned at the time of the census in an indirect manner; the number of dwellings (houses, kibitkas, tents, &c.) was counted, and from four to six persons were supposed to dwell in each. The result was of necessity a mere approximation to the truth, and figures of birth-rates or mortality based upon it must be equally uncertain and may therefore be passed over without detailed notice.

In European Russia the birth-rate in the years in question was 46·1 in 1893, 46·4 in 1894, and 47·1 in 1895, or 46·6 for the average of the three years. The mortality, on the other hand, was 32·1, 32·2, and 32·5 in each of the three years, or 32·3 as an average for the whole period.

The following comparative table is published in the early pages of this report, showing the like statistics for the same period in the other countries of Europe:—

—	Birth-rate (per 1000).				Death-rate (per 1000).			
	1893.	1894.	1895.	Average, 1893-95.	1893.	1894.	1895.	Average, 1893-95.
European Russia...	46 1	46·4	47·1	46·6	32·1	32·2	32 5	32·3
Hungary	42·5	41·3	41 5	41·8	31·1	30·4	29·6	30·4
Austria	37·9	36·7	38·1	37·5	27·1	27·8	27·7	27·5
Italy...	36·8	35·8	35·1	35·8	25·4	25·2	25·2	25·2
Germany	36·7	35·9	36·1	36·2	24·6	22·3	22·1	23·0
France	23·1	22·3	21·9	22·4	22·6	21·3	22·3	22·2
Switzerland	28·4	28·0	28·0	28·1	20 4	20 6	19 7	20·2
Belgium	29·2	28·6	28·5	28·8	20 0	18·6	19·5	19·4
Holland	33 8	32·5	32·8	33·0	19·2	18·5	18 6	18·8
Scotland...	31·0	30·2	30 4	30·6	19·5	17·2	19·7	18·8
England	30·3	29·6	30·4	30·2	19·2	16·6	18·7	18·2
Ireland	23·0	22·9	23·2	23 0	17·9	18·2	18·4	18·2
Denmark	30·6	30·2	30·2	30·3	18·9	17·5	16·9	17·8
Norway	30·7	29·7	30·6	30·4	16·3	16·9	15·7	16·3
Sweden	27·3	27·0	27·5	27·3	16·8	16·3	15·2	16·1

A table of this kind presents many points of great interest. It will be observed that while Russia occupied the first position among the nations in regard to birth-rate with the remarkably high average of 46·6 births per 1000 inhabitants during the three years in question she at the same time had the highest death-rate. A general mortality of 32·3 per 1000 is a very high one and means that in many parts of the country that figure must be greatly exceeded. It is practically double the mortality which prevailed in Norway and Sweden at the same period and is 77 per cent. in excess of that recorded in our own islands. The excess of birth-rate over death-rate is, however, also remarkably high in Russia, and, accepting the figures as they stand, it would appear that that country is yearly adding by "natural increase" (or excess of births over deaths) from 14 to 15 persons to each 1000 of her population, while in England the natural increase is (or was in the years under review) only 12 per 1000 per annum, and in France it is reduced to a fraction of 1 per 1000, and in some recent years in the last-mentioned country there has been, not a natural increase, but a natural decrease of the population.

As was anticipated above, the death-rate in many parts of the country was much higher than that for the whole country. The highest death-rate recorded in any portion of European Russia in either of the three years was that in the Government of Samara in 1893, when the mortality was 50 per 1000. This high figure was doubtless caused by the epidemic of cholera in that year; but this Government has throughout returned an unusual number of deaths, the mortality there in 1894 being 38 5 and in 1895 44·0 per 1000 inhabitants. Siberia and Central Asia, statistics from which regions are, however, only approximate, returned comparatively low mortality figures, particularly the provinces of Semiretchinsk, Syr-Daria, and Turgai, where the death-rates varied between 17 6 and 20 per 1000.

The report explains the generally excessive mortality in the Russian Empire as being principally due to the extraordinary prevalence of zymotic or infectious disorders. With the exception of Hungary no other European nation suffers so widely from the principal zymotics. The explanation of this fact is not far to seek. Long experience in the west has shown that these diseases are to a very great extent controllable and some of them are almost preventable. But to control and prevent them requires many years' enforcement of strict sanitary legislation; it requires a permanent establishment of trained medical and sanitary officials and the introduction of extensive measures of sanitation—costly schemes of water-supply, of drainage, and the like—all of which imply an immense outlay of money extending over many years, and also a constant and detailed supervision by trained persons over the health conditions of every part of the country. For the present few of these essential factors in the fight with disease and death are possible in a country and population such as Russia and its inhabitants. Two and a half years ago we published, in a supplement to THE LANCET,[3] a very complete description of the sanitary service which has been organised in Russia, and it was pointed out there that the country is provided with a very admirable body of highly trained and able medical officers and sanitary officials and that a great deal had been done to cope with the most difficult problem of controlling the health of town and country. But it was also pointed out there—and the report now under review confirms the statement completely—that the natural difficulties to be overcome, the enormous area of the country, the scattered nature of the population, the character of the people (for the greater part an uneducated peasantry, living always in considerable poverty), and the climatic conditions—all tended to hinder the carrying out of public health measures and in many parts of the country have rendered it impossible to inaugurate even the simplest and least expensive of such measures.

A supplement[4] to the report under review has been published, subsequently to its issue, dealing with this question of the health of the towns in the Russian Empire in 1895. It is in the towns that most has been done of recent years to improve the state of the public health, but it is impossible to glance through the brief summaries of the conditions obtaining in the (about) 700 towns dealt with in this supplement and not be struck by the primitiveness of the sanitary arrangements described and by the general absence (with a few striking exceptions) of good water-supplies, good drainage systems, and of the other essentials to the proper health administration of a town. This being the case in the towns it is easy to conceive what the conditions must be in villages and in remote districts sparsely inhabited by oriental or half-savage nomad tribes.

The introduction to this supplement contains some interesting and instructive remarks on the progress of sanitary administration in Russia and elsewhere. It is pointed out that countries have usually passed through three periods in regard to their attitude towards preventive medicine. In the first period extraordinary measures to control diseases are only resorted to when some infectious disease has already become widely epidemic and is beginning to cause general alarm, or even horror, among the people. In the second period an advance is noted. Taught by experience in the past, early cases of any disease likely to become epidemic are noted by the authorities and measures are resorted to to try to extinguish the infection before it has given rise to a gigantic national or civic disaster. In the third period—the "sanitary period," to which most of the cultured nations have now advanced—a sanitary service is a permanent feature of the national or local organisation. Means for preventing the appearance of infectious disease and for doing away with those conditions which favour the prevalence of all disease, infectious or not, are constantly enforced, and it is recognised that the whole duty of governing authorities from a sanitary point of view is not confined to hurried and feverish measures aimed at the extinction of a few of the more strikingly fatal epidemic diseases.

[3] Medicine, Past and Present, in Russia. Supplement to THE LANCET August 7th, 1897.

[4] Report of the Medical Department of the Minister of the Interior "The Sanitary Condition of the Towns of the Russian Empire in the yea. 1895," St. Petersburg, 1899.

It is pointed out that the admirable effects of this system have up to the present been most clearly seen in England. "How fruitful the conduct of affairs on these principles," writes the author of the supplement, "may be is best seen in England, where, thanks to the constant regard for cleanliness of soil, water, and dwellings, such exotic diseases as cholera are not looked upon with dread, and where the mortality from typhoid fever, phthisis, and apparently from all other infective diseases, has been very greatly diminished." In Germany the effect of persistent and compulsory vaccination has almost exterminated small-pox. A measure of this sort in Russia would, it is pointed out, have saved over half a million lives in the seven years 1890–1897, to say nothing of the enormous amount of suffering from blindness and deformity which would have been avoided. The money loss to the country from this cause alone is enormous. Estimating the value of every Russian life at the low figure of 100 roubles (about £10 sterling; Farr estimated every English life at all ages at the value of £150; Rochard estimated every French life at 1037 francs, or rather over £40) small-pox has in those years cost Russia a sum of over 50,000,000 roubles. The loss from other infectious diseases is equally great.

Russia, it is admitted, is only on her way to the third or so-called "sanitary" period of her existence. Sanitary legislation is incomplete and is not the same in all parts of the country. With the introduction of local self-government in the form of *zemstvos* these bodies were granted powers of initiating compulsory public health measures, but there is no uniformity in the measures adopted. This, in the opinion of the author of this supplementary report, is one of the matters upon which reform is most needed. The description which follows, one by one, of the principal towns in the country is intended to form a basis for a new measure introducing a uniform sanitary law to be applicable to the whole country.

To return to the prevalence of zymotic diseases throughout Russia the following table is published indicating the extent to which that country is ravaged by these diseases in comparison with other European countries.

Deaths per 100,000 of the Population from Some of the Principal Zymotic Diseases.

	Small-pox.	Scarlet fever.	Diphtheria and croup.	Measles.	Whooping-cough.	Enteric fever.
European Russia* (1893-95) ...	53	114	147	87	66	88
Hungary (1892-94)	35	94	627	101	66	110
Austria ,, ...	20	53	123	42	65	47
Belgium ,, ...	28	16	52	60	53	35
Germany ,, ...	0·2	21	128	29	40	14
Italy ,, ...	7	22	54	37	25	49
Scotland ,, ...	2	20	42	55	53	19
England ,, ...	3	20	31	41	30	20
Sweden ,, ...	0·3	30	69	7	18	19
Holland ,, ...	6	14	34	20	31	20
Ireland ,, ...	0·5	11	20	25	26	20

* It is pointed out that in Russia, Scotland, England, and Ireland enteric fever is included among fevers of undetermined nature.

Figures relating to the sickness-rate from any disease are always, for obvious reasons, far from reliable, and they become still more so in a country where notification of disease is practised only to a small extent. This report contains certain figures of this kind and the most important of them are as follows. Of dysentery—apparently the most prevalent of all zymotic diseases in Russia—272,239 cases were reported, or 220 per 100,000 of the population. Of enteric fever 220,696 cases were recorded, of measles 194,972, of whooping-cough 197,643, and of diphtheria 190,117.

Out of a total registered number of cases of illness of 30,286,613 as many as 4,059,018, were due to infectious diseases (in which are included syphilis with 775,457 cases, other venereal diseases, phthisis, and pneumonia).

Before closing this brief notice of two instructive volumes it may be pointed out that while in the Russian Empire generally the births largely exceed the deaths, in a few places the reverse is the case. Excluding the exceptional year of cholera prevalence, 1892, a natural decrease of population has been observed in 20 towns. In eight towns, among which are Kazan, Samara, Saratof, and Simbirsk, an excess of deaths over births was observed in five out of the ten years 1887–1896. In the four towns, Astrakhan, Kazan, Saratof, and Simbirsk, the births in that decade numbered 158,687 and the deaths 164,875. A similar decrease has also been observed in some towns in the following governments: Voronezh, Kaluga, Moscow, Tula, St. Petersburg, Tambof, and Yaroslav.

PALERMO: ITS FUTURE AS A HEALTH RESORT.

"THE Golden Shell," as the great Sicilian seaport is picturesquely called, is at present acting as hostess to a number of British medical men, invited by her most prominent citizens to take note of her advantages as a winter resort for the invalid and as the seat of a new sanatorium for the treatment of tuberculosis on the lines proposed by Dr. Cervello, professor of pharmacology in the local university. Her claims to professional notice in both respects—as a winter city and as an advanced post in the "crusade against tuberculosis"—are familiar to our readers. Some years ago a Commissioner specially deputed by THE LANCET contributed to our columns an elaborate account of the many advantages—climatic, meteorological, and topographical—enjoyed by Palermo, and from time to time, in articles entitled "Italy's Opportunity," THE LANCET has indicated how the falling-off, conspicuous these last few seasons, in the favour hitherto shown by the English-speaking world to the French Riviera might be profitably utilised, not only by the Riviera Levante but by the Riviera Napolitana and the Riviera Siciliana. Again, our Rome correspondent[1] was the first to draw attention to the treatment of tuberculosis devised by Professor Cervello—a treatment consisting primarily of medicated inhalations, followed up by special dietetics and by such general therapeutics as the genial Palermitan climate, with its combination of marine and mountain air, is peculiarly fitted to reinforce. So encouraging had this treatment proved in Professor Cervello's hands that several of the most philanthropic of the citizens of Palermo—we may instance the enlightened and liberal Commendatore Florio and his right-hand man in all public-spirited enterprise, the Baron Fassini—founded a sanatorium for its more extended practice. The two undertakings, indeed—the development of the lovely Sicilian seaport as a winter city and the attraction created for her as a centre of expert treatment in pulmonary disease—form the "leit-motif" of the hospitality now extended by the Commendatore Florio and his friends to British medical men.

On their way to Palermo Signor Florio's guests—among whom may be mentioned Sir T. Lauder Brunton, Sir Walter Foster, Professor Clifford Allbutt, and Dr. Patrick Manson—made a brief halt in Rome and, escorted by Dr. Luigi Sambon of the University of Naples, whose connexion with the South Kensington Museum and the London School of Tropical Medicine peculiarly fitted him for the task, visited the chief scientific institutes attached to the Roman University. Interested in the recent work on malaria by Professor Grassi and Professor Celli and Dr. Bignami and Dr. Dionisi, they spent some hours in Professor Celli's Istituto d'Igiene and Professor Grassi's laboratory and then and there initiated reciprocal relations between the Italian "Società per lo Studio della Malaria" and the London School of Tropical Medicine. Another visit of an equally gratifying kind was made to the "clinica chirurgica" of Professor Durante, of the Roman University, where a case of very grave cerebral tumour on which Durante had operated 16 days before by the method associated with his name was seen in full convalescence. Thereafter the guests, under the guidance of Professor Durante, went over the Policlinico, or such portions of the vast building as are now completed. This magnificent edifice, described in

[1] THE LANCET, May 13th and 20th, 1899, pp. 1333 and 1398.

THE LANCET of March 31st, 1894, the creation of Dr. Baccelli, evoked much admiration for its architectural convenience and its unique arrangements for combining clinical with experimental observation and research. A final visit to His Excellency the Minister of Public Instruction (Dr. Baccelli) elicited the most cordial expressions of sympathy between the two medical schools, Italian and British, concluding by Dr. Manson's inviting Dr. Baccelli to participate in person at the opening next May of the London School of Tropical Medicine. His Excellency cordially accepted the invitation, subject, of course, to his having the necessary time at command, and he will, it is understood, not only honour the occasion by his presence, but will enhance the interest of the proceedings by an address on the subject of Malaria, presumably in its clinical aspects. On the next day the visitors left Rome for Naples, whence they embarked for Palermo.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

DURING the week ending Dec. 30th, 1899, 5040 births and 6700 deaths were registered in 33 of the largest English towns. The annual rate of mortality in these towns, which had shown a continuous increase from 18 9 to 27·5 per 1000 in the four preceding weeks, further rose to 30·6 in the week under notice The rates in the several towns ranged from 17·6 in Huddersfield, 19 4 in Burnley, 20 2 in Cardiff, and 21 3 in Halifax, to 39 3 in Wolverhampton, 39 5 in Preston, 42·1 in Portsmouth, and 49 7 in Plymouth. In London the rate was 35·2 per 1000, while it averaged 26 9 in the 32 provincial towns. The 6700 deaths from all causes in the 33 towns included 524 which were referred to the principal zymotic diseases, against 501 and 578 in the two preceding weeks; of these, 164 resulted from measles, 122 from diphtheria, 102 from whooping-cough, 52 from "fever" (principally enteric), 37 from scarlet fever, 37 from diarrhœa, and 10 from small-pox. The lowest zymotic death-rates were recorded in Croydon, Bristol, Derby, and Birkenhead; and the highest rates in Blackburn, Preston, Sheffield, and Hull. Measles was proportionately most fatal in Salford, Preston, Bradford, Sheffield, Hull, and Newcastle; whooping-cough in Portsmouth, Norwich, Salford, Blackburn, and Newcastle; and "fever" in Plymouth. The mortality from scarlet fever and from diarrhœa was not excessive in any of the large towns. The 122 deaths referred to diphtheria included 56 in London, 18 in Sheffield, six in Leeds, five in West Ham, and five in Manchester. The 10 fatal cases of small-pox in the 33 towns were all registered in Hull, and seven small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday, Dec. 30th, 1899. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2881, the numbers having decreased from 3578 to 2916 at the end of the six preceding weeks; 161 new cases were admitted during the week, against 277, 180, and 209 in the three preceding weeks. Influenza was stated to be the primary cause of 193 deaths in London during the week, showing an increase of 124 upon the number in the preceding week. The deaths referred to diseases of the respiratory organs in London, which had been 548, 646, and 968 in the three preceding weeks, amounted in the week under notice to 1172, and were 586 in excess of the corrected average. The causes of 108, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Leeds, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Halifax, and Sheffield.

In 33 of the largest English towns 7145 births and 6870 deaths were registered during the week ending Jan. 6th. The annual rate of mortality in these towns, which had increased from 18·9 to 30 6 per 1000 in the five preceding weeks, further rose last week to 30·9. In London the rate was 37·1 per 1000, while it averaged 26·8 in the 32 provincial towns. The lowest death-rates in these towns were 12·5 in Burnley, 17·2 in Cardiff, 17·6 in Gateshead, and 18·7 in Oldham; the highest rates were 40·5 in Croydon, 40 8 in Nottingham, 42·5 in Preston, and 44·9 in Brighton. The 6870 deaths in these towns included 506 which were referred to the principal zymotic diseases, against 578 and 524 in the two preceding weeks; of these 156 resulted from measles, 121 from diphtheria, 93 from whooping-cough, 55 from "fever" (principally enteric), 40 from scarlet fever, 34 from diarrhœa, and seven from small-pox. No fatal case of any of these diseases occurred last week either in Plymouth or in Gateshead; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Sunderland, and the highest rates in Salford, Preston, Sheffield, and Hull. The greatest mortality from measles occurred in Cardiff, Leicester, Salford, Preston, Huddersfield, Halifax, and Hull; from scarlet fever in Burnley; and from whooping-cough in Portsmouth, Norwich, Liverpool, Bolton, and Salford; the mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. The 121 deaths from diphtheria included 58 in London, 17 in Sheffield, six in Liverpool, five in Leeds, four in West Ham, and four in Leicester. Seven fatal cases of small-pox were registered last week in Hull, but not one in any other of the 33 large towns. There were eight small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 6th, against five and seven in the two preceding weeks; one new case was admitted during the week, against five and two in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2730, against numbers decreasing from 3578 to 2881 at the end of the seven preceding weeks; 186 new cases were admitted during the week, against 180, 209, and 161 in the three preceding weeks. Influenza was certified as the primary cause of 316 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had increased from 324 to 1172 in the seven preceding weeks, further rose last week to 1221, and were 558 above the corrected average. The causes of 99, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Leicester, Bolton, Newcastle, and in seven other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns the annual rate of mortality, which had been 20 0, 21·5, and 22 6 per 1000 in the three preceding weeks, further rose to 27·2 during the week ending Dec. 30th, 1899, and was 3·4 per 1000 below the mean rate during the same period in the 33 large English towns. Among these Scotch towns the death-rates ranged from 20 2 in Leith and 22 6 in Aberdeen to 34·2 in Greenock and 41·2 in Paisley. Of the 829 deaths in these towns 31 were referred to measles, 17 to whooping-cough, 17 to diarrhœa, seven to scarlet fever, seven to diphtheria, and six to "fever"; in all, 85 deaths resulted from these principal zymotic diseases, against numbers increasing from 69 to 84 in the three preceding weeks. The zymotic death-rate in these towns averaged 2 8 per 1000, being 0 4 above the mean rate during the week from the same diseases in the 33 large English towns. The 31 fatal cases of measles showed a decrease of six from the number in the preceding weeks, and included 19 in Glasgow, and three each in Dundee, in Paisley, in Greenock, and in Perth. The deaths from whooping-cough, which had been 18 and 12 in the two preceding weeks, rose again in the week under notice to 17, of which 11 were registered in Glasgow. The fatal cases of diarrhœa, which had decreased from 20 to 14 in the three preceding weeks, rose again to 17 during the week, and included four in Glasgow, four in Dundee, and four in Greenock. Of the seven deaths from scarlet fever four were recorded in Glasgow, where four of the six fatal cases of "fever," were also registered. The deaths referred to diphtheria, which had been two and three in the two preceding weeks, further rose during the week to seven, and included three in Glasgow, and two in Edinburgh. A marked increase in the mortality from diseases of the respiratory organs occurred, 253 deaths from these diseases being registered, showing an excess of 70 over the number in the preceding week and more than twice the number in the corresponding period of last year. The causes of 49, or nearly 6 per cent., of the deaths in these eight towns in the week under notice were not certified.

The annual rate of mortality in the eight Scotch towns, which had increased from 20·0 to 27·2 per 1000 in the four-

preceding weeks, declined again to 25·6 during the week ending Jan. 6th, and was 5·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·6 in Leith and 18·5 in Perth to 30·0 in Greenock and 35·2 in Paisley. The 792 deaths in these towns included 27 which were referred to measles, 17 to diarrhœa, nine to whooping-cough, six to scarlet fever, three to diphtheria, and two to "fever." In all 64 deaths resulted from these principal zymotic diseases, against numbers increasing from 69 to 85 in the four preceding weeks. These 64 deaths were equal to an annual rate of 2·1 per 1000, which was 0·2 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had been 37 and 31 in the two preceding weeks, further declined to 27 last week, and included 20 in Glasgow, four in Paisley, and two in Greenock. The deaths from diarrhœa, which had been 14 and 17 in the two preceding weeks, were again 17 last week, of which eight were registered in Glasgow, four in Dundee, and two in Edinburgh. The fatal cases of whooping-cough, which had been 12 and 17 in the two preceding weeks, declined again to nine last week, and included six in Glasgow and two in Aberdeen. The deaths from scarlet fever, which had been eight and seven in the two preceding weeks, further declined last week to six, of which four occurred in Glasgow, where the two fatal cases of "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 128 to 253 in the six preceding weeks, declined again to 236 last week, but were 113 above the number in the corresponding period of last year. The causes of 33, or more than 4 per cent., of deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 38·2 and 42·5 per 1000 in the two preceding weeks, declined again to 41·8 during the week ending Dec. 30th, 1899. The death-rate in the city during the four weeks ending on that date had averaged 40·3 per 1000, against an average rate of 27·8 in London and 19·8 in Edinburgh. The 280 deaths registered in Dublin during the week under notice were 5 below the number in the preceding week; of these, 22 resulted from the principal zymotic diseases, the numbers having declined from 72 to 38 in the six preceding weeks. These 22 deaths included 15 which were referred to measles, two to whooping-cough, two to "fever," one to scarlet fever, one to diphtheria, and one to diarrhœa. The zymotic death-rate was equal to 3·3 per 1000, the death-rate from the same diseases being 2·1 in London and 0·9 in Edinburgh during the same period. The fatal cases of measles, which had been 23 and 24 in the two preceding weeks, declined again to 15 during the week. The deaths from whooping-cough, which had been three and two in the two preceding weeks, were again two. The two fatal cases of "fever" showed a slight decline from the number in the preceding week. The mortality from scarlet fever corresponded with that in each of the three preceding weeks, while the deaths from both diphtheria and diarrhœa were less than they had been in any recent week. Of the 280 deaths in Dublin during the week 45 were of infants under one year of age and 92 of persons aged upwards of 60 years, the deaths of infants and of elderly persons being respectively nine and 17 in excess of the numbers in the preceding week. Eight inquest cases and seven deaths from violence were registered, and 89, or nearly a third, of the deaths occurred in public institutions. The causes of 28, or 10 per cent., of the deaths the city in the week under notice were not certified.

The death-rate in Dublin, which had been 42·5 and 41·8 per 1000 in the two preceding weeks, rose again to 50·3 during the week ending Jan. 6th. During the thirteen weeks ending Saturday last the death-rate in the city averaged 38·2, the rate during the same period being 22·8 in London and 18·6 in Edinburgh. The 337 deaths registered in Dublin during the week under notice were 57 in excess of the number in the preceding week, and included 18 which were referred to the principal zymotic diseases, against 38 and 32 in the two preceding weeks; of these, 10 resulted from measles, five from "fever," two from diarrhœa, one from whooping-cough, and not one from either small-pox, scarlet fever, or diphtheria. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 2·1 in London and 0·3 in Edinburgh. The fatal cases of measles, which had been 24 and 15 in the two preceding weeks, further declined to 10 last week. The deaths referred to different forms of "fever," which had been two, three, and two in the three preceding weeks, rose again last week to five. The fatal cases of diarrhœa, which had been five and one in the two preceding weeks, rose again to two last week. The mortality from diphtheria showed a decline from that recorded in recent weeks. The 337 deaths in Dublin last week included 47 of infants under one year of age and 119 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were in excess of those recorded in any recent week. Seven inquest cases and four deaths from violence were registered, and 102, or nearly a third, of the deaths occurred in public institutions. The causes of 19, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

EMENDATIONS IN THE ROYAL NAVY MEDICAL SERVICE.

WITH a view of obtaining the best surgical skill in our naval hospitals we understand that the Board of Admiralty have decided that a larger proportion of promotions to the rank of Deputy Inspector-General of Hospitals and Fleets shall be made by special selection with reference to this most important part of the duties of these officers.

We are also glad to learn that in future a Surgeon in the navy will attain to the rank of Fleet Surgeon after a period of 20 years in the service instead of after 20 years of full pay service as has previously been the rule.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified: — Surgeons: H. Spicer to the *Duke of Wellington;* M. Cameron to the *Northampton*, for the *Curaçoa;* F. C. B. Gittings to the *Mars;* G. E. Macleod and R. J. Mackeown to the *Europa;* and George A. S. Bell, to be lent to assist the Board of Army and Medical Officers in the physical examination of candidates for commissions in the Royal Marines; Fleet Surgeon S. Keays to the *Ramillies*.

ROYAL ARMY MEDICAL CORPS.

Captain G. A. T. Bray, from the Seconded List, to be Captain, vice M. L. Hughes, killed in action. Major F. J. Morgan has embarked for South Africa. Lieutenant-Colonel W. W. Kenny is appointed to the charge of No. 5 Stationary Hospital for South Africa.

INDIA AND THE INDIAN MEDICAL SERVICES.

Major D. G. Crawford, Officiating Civil Surgeon of the 24-Parganas, is allowed furlough for one year and six months. Lieutenant-Colonel T. Grainger, Officiating Civil Surgeon of Darbhunga, is allowed furlough for two years. Captain H. M. Earle, Resident Medical Officer, Medical College Hospital, Calcutta, is appointed to act as Civil Surgeon of Shahabad during the absence on leave of Lieutenant-Colonel W. Flood Murray until further orders. Captain H. J. Walton is appointed to act as Resident Medical Officer, Medical College Hospital, Calcutta, during the absence on deputation of Captain H. M. Earle until further orders. The services of the undermentioned officers are replaced at the disposal of the Military Department:— Major A. E. S. Searle, 14th Bombay Infantry, and Captain E. G. R. Wilkins, 14th Bombay Infantry. The services of Lieutenant H. H. Sproule, 1st Bengal Lancers, are replaced at the disposal of the Military Department. The services of Captain A. P. Bateman-Champain, 2nd Battalion, 3rd Gurkha Rifles, are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh for employment on plague duty. The services of Major A. R. W. Sedgefield (Bengal) are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh. The services of Lieutenant F. P. C. Keily, 1st Bombay Infantry, are replaced at the disposal of the Military Department. Lieutenant-Colonel B. M. Blennerhassett, R.A.M.C., to officiate on the Administrative Medical Staff of the Army with the temporary rank of Colonel.

VOLUNTEER CORPS.

Artillery: 1st Ayrshire and Galloway: Surgeon-Captain D. Lawrie resigns his commission. 3rd Lancashire: Surgeon-Lieutenant-Colonel A. A. Corte resigns his commission, with permission to retain his rank and to wear the uniform of the corps on his retirement. *Rifle:* 1st Volunteer Battalion the Northumberland Fusiliers: Thomas Woodman to be Surgeon-Lieutenant. 1st Volunteer Battalion the Royal Warwickshire Regiment: Alexander Henry McDougall to be Surgeon-Lieutenant. 1st Volunteer Battalion the Lincolnshire Regiment: Thomas Walter Alfred Daman to be Surgeon-Lieutenant. 1st Volunteer Battalion the Essex Regiment: Arthur Butler Harris to be Surgeon-Lieutenant.

VOLUNTEER INFANTRY BRIGADE.

Forth: Surgeon-Lieutenant-Colonel C. W. MacGillivray, the Queen's Rifle Volunteer Brigade the Royal Scots, to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade and to be seconded whilst holding the appointment.

TRANSVAAL WAR NOTES.

Mr. Langman, the treasurer of the Portland Field Hospital, has offered to equip a similar hospital entirely at his own expense. This offer, which may eventually cost Mr. Langman £15,000, has been accepted, and the donor's son (Lieutenant Langman) has been appointed treasurer and ordnance officer. Dr. Conan Doyle will act as medical secretary and registrar and Mr. Robert O'Callaghan as chief surgeon. Three other medical men will also be appointed on the staff of the hospital and on its arrival on the lines of communication a major of the Royal Army Medical Corps will be placed in charge for details, &c. It is expected that the hospital will be completed in time to start for South Africa early next month.

A hospital for the use of the Imperial Yeomanry in South Africa is in course of organisation by a committee of ladies in conjunction with the Princess of Wales. The total sum received in aid of this scheme now exceeds £13,500. Towards this amount the Prince of Wales gave £100 and the Duchess of York £25. Mr. A. D. Fripp has been appointed chief surgeon to the Imperial Yeomanry.

We learn that a "flying hospital"—i.e., a car fitted with operation case, splints, dressings, and a small supply of drinkable water—has been devised by Dr. Horace Manders. The car is drawn by two horses, can keep up with cavalry, and can go anywhere that horse artillery can go. It is intended that one of these cars should accompany the Imperial Yeomanry regiment which is just upon the point of starting. The cost will be raised by subscription.

As we announced last week, Sir William Thomson has been appointed one of the chief surgeons to Lord Iveagh's Irish Hospital. He will, we understand, be accompanied by Mr. George Stoker. Mr. A. R. Friel will take charge of the Roentgen ray apparatus. Captain W. T. Mould, R.A.M.C., is the officer selected by the War Office for attachment to the hospital for administrative purposes.

Surgeon-Major E. L. Freer (Army Medical Reserve) and Surgeon-Captain W. P. Whitcombe, both of the 1st Volunteer Battalion Royal Warwickshire Regiment, have placed their services at the disposal of the War Office and have been accepted for service in South Africa.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals and Fleets Garland William Langdon Harrison, on Dec. 30th, at "Hilton," Newton Abbot, Devon, from pneumonia following an attack of influenza. The deceased, who was 62 years of age at the time of his death, was the son of the late Dr. G. F. B. Harrison of Devonport and took the qualifications of M.R.C.S. and L.S.A. in 1858 and 1869 respectively. He entered the Royal Navy as surgeon in the former year and retired with the rank of inspector-general of hospitals and fleets in December, 1893.

Deputy-Surgeon-General David Cullen, on Jan. 4th. He served with the Army Medical Department from 1854 to 1869, with the 4th Light Dragoons, the 3rd Battalion Rifle Brigade, and the 17th Lancers. He was present at the siege and fall of Sebastopol and with the cavalry expedition to Eupatoria (medal and clasp and Turkish medal). He also received the medal and clasp for services during the Indian Mutiny, having been present at the final capture of Lucknow and in other operations.

Deputy Inspector-General of Hospitals Robert Hay, of the Royal Naval Hospital, Bermuda, on Dec. 2nd, aged 58 years. He became surgeon in 1863, staff-surgeon in 1877, fleet-surgeon in 1883, and attained the rank of deputy inspector-general in 1894.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 9th, Inspector-General W. H. Lloyd in the chair, the sum of £70 was distributed among the several applicants.

HOSPITAL ABUSE AT DUBLIN.

(FROM OUR SPECIAL COMMISSIONER.)

SOME members of the medical staff of the Children's Hospital, Temple-street, Dublin, have recently resigned because new rules and regulations have been imposed "to which no self-respecting member of the profession can submit." Such, at least, are the words used by the medical men concerned, and on inquiry these terms seem to be fully justifiable. The hospital in question was founded in 1872, and, as usual under the circumstances, was governed by a managing committee on which the medical staff was represented. The members of the medical staff were appointed for five years, with the right of being re-elected. This rule, however, was never applied. At the expiration of the five years no re-election took place: all the members of the medical staff continued in attendance. Thus from the very beginning a precedent was established by which this rule was left in abeyance. For instance, the actual senior consulting physician has been on the staff of the hospital since its foundation and yet he has never been formally re-elected. That the rule in regard to such re-elections should have remained in abeyance is perhaps to be regretted. There is a feeling in various parts of the country that hospital staffs should be changed more frequently; that there is a tendency to monopolise such appointments, and this deprives the younger members of the profession of chances of advancement. However this may be, that is not the point in dispute; and, in regard to the present difficulty, it is only necessary to bear in mind that, whether wisely or not, it has not been the custom at this particular hospital to re-elect the members of the medical and surgical staff. Of far greater importance, especially to the general public, is the fact that, when first established, the Dublin Children's Hospital was declared to be an unsectarian institution. Subscriptions were obtained from Protestants as well as from Roman Catholics; and, this being the case, the Corporation of Dublin was justified in voting a subvention to the hospital. It is true that no Protestant was appointed on the medical or surgical staff; but this might have been explained on the ground that Roman Catholics are in the majority and did not necessarily imply a spirit of sectarian intolerance.

In the course of time, however, a Roman Catholic congregation known as the Order of the Sisters of Charity took over the entire management of the hospital. It is difficult to understand how this can possibly have been done. Undoubtedly the subscribers are themselves not free from blame or they would not have quietly submitted to such an act of usurpation. Having once succeeded in their *coup d'état*, the sisters proceeded to govern the hospital as absolute autocrats, and one of their first acts was to silence the medical staff, which had no longer a voice on the board of management, for this board was abolished. The subscribers were also treated in an equally cavalier manner and they have now nothing whatsoever to say in regard to the management and control of the hospital. Further, these sisters have actually taken upon themselves the responsibility of appointing medical men to the staff whenever a vacancy occurred. Yet there is no guarantee that they possess the technical knowledge necessary for such a selection. But if they possess no technical knowledge, and if they have usurped their functions, one thing is very certain—they possess very great influence and power of patronage. Thus it required more than ordinary moral courage, and perhaps also independent means of existence, for a medical man to venture upon a protest. Like the original founders of the hospital, the sisters also established a rule for the appointment of the staff, which they likewise failed to enforce. The sisters' rule was that the members of the medical and surgical staff

should be appointed for three instead of five years as formerly, but it was generally understood that this was a mere matter of form, and that the question of re-appointments would not be raised. As a matter of fact, this question was not brought forward till quite recently, and some of the members of the staff have held appointments under this three years' rule now for six years, and the question of their re-appointment was not raised at the termination of the first three years. Thus it is claimed that the medical staff are justified in considering that this rule is in abeyance.

What with the apathy of the subscribers, the ignorance of the general public as to what was going on, and the timidity of the members of the profession, who stand in terror before the sisters lest a boycott should be organised against them, things might have gone on peacefully for some time longer. Recently, however, a difficulty arose between the sisters and the nursing staff. Members of the medical staff protested that a nurse had been unfairly treated; but the sisters will brook no criticism. Their ideal is passive obedience, so on Nov. 4th last the superioress of the sisters of charity in charge of the hospital wrote to the honorary secretary of the medical staff to the effect that "all members of the staff held their posts at the will of the sisters of charity," and that if they wished to be re-appointed it would be necessary for them to sign the following form:—

"I hereby accept the office of —— in the Children's Hospital for a period of three years from (date), and I undertake to fulfil the duties of that office and to hold it only as long as I comply with the rules and regulations made from time to time by the sisters of charity, who are the governing body of this hospital."

The medical staff on receipt of this letter naturally objected to the enforcement of limited terms of appointment, and this for the reasons explained above. But, and this is far more important, they saw in the sudden enforcement of a rule which had been in abeyance ever since the existence of the hospital a deliberate act of intimidation. They concluded that this was an attempt directed against the independent discharge of their duties to the patients. It was also an attempt to make the medical staff recognise in writing that the sisters were the governing body of the hospital and that they had a right to establish rules and regulations for the government of the medical staff. Thus, if at any time the subscribers entered a protest and claimed their right to control, the medical staff, as well as the sisters, would be compromised in the act of usurpation. But the sisters were careful not to give the medical staff time to consider fully their position and responsibilities. The letter of the superioress was written on a Saturday, and it was expressly stated that the answer must be forthcoming on the following Tuesday. The staff unanimously protested. So far there was no division of opinion; but when it came to the question of acting up to the opinions expressed only two members of the medical staff had the courage to refuse their signatures and to resign. These two physicians, who hold eminent positions in Dublin, were thereupon replaced by two junior physicians who are engaged in club practice. The members of the surgical staff submitted and signed the declaration imposed upon them by the sisters.

The matter will not rest here. The nurse whom the medical staff tried to shield from what appeared to be an act of gross injustice will probably take legal proceedings and the whole of this scandal will be laid bare. Then, perhaps, the subscribers will want to know what has been done with their money and how far the promise that the hospital should be unsectarian has been kept. But if the subscribers with whose money a hospital is brought into existence and maintained have an undoubted right to control the expenditure, the medical staff who subscribe in kind, by reason of the work they do, have an equal right to a voice in the management. The union of the East London and suburban medical practitioners have a rule, which they have been able to enforce in at least one instance, to the effect that 25 per cent. of the seats on the board of management of hospitals should be occupied by members of the medical staff of the hospital. Evidently the Dublin practitioners should also form a union by which they could obtain not merely proper representation on the management boards of the hospitals, but they would have an organisation to protect them against the mortal terror of the boycott which seems to paralyse individual members of the profession. While it is thus imperatively necessary that medical men should act in this manner if they mean to maintain their individual independence and the dignity of their profession the public at large should also insist on their rights. It is not only the subscribers to the Children's Hospital who have just cause of complaint, but every ratepayer in Dublin has a right to know what is being done in their hospitals. The Dublin Corporation subsidises this hospital, that is to say, it gives the ratepayers' money to the hospital, and the ratepayers comprise persons of all denominations, Christians and non-Christians, Jews and Protestants, as well as Roman Catholics. If the latter want a hospital to be controlled solely by the Order of the Sisters of Charity then let them collect the money required from Roman Catholics only and not accept grants from the public funds or subscriptions from Protestants. And, again, whatever respect may be due to the sisters of charity for the good work which they attempt to perform, what technical qualifications do they possess that they should take upon themselves the management of a hospital? What right have they to impose rules on the medical staff which in some instances are, in respect to the hours of attendance, very irksome? It may be objected that a lay board of management is not better informed technically, but that is precisely why the organised members of the profession have insisted that the medical staff, which is technically competent, should have a large share of representation on boards that manage hospitals. Then, again, if a lay board of management commits errors or wastes money—and this it must be acknowledged often occurs—they have at least a constitutional right to exist, they are elected by those who pay, and if matters are not properly managed the subscribers are free to elect other more skilful administrators. But the sisters of charity escape all control. They have, of course, their ecclesiastical superiors, but these latter do not represent the subscribers any more than do the sisters themselves, nor do they possess any better technical qualifications. Under such a system, screened as it is from all public control, investigation, or criticism, every form of abuse is possible. And this cuts both ways; for, if abuse can be committed and escape detection, it is also possible that accusations of abuse may be brought forward which are false, but the secrecy of procedure renders an effective defence or refutation difficult. However, it is not necessary to insist that experience has proved that publicity is the best guarantee of purity; and any attempt to usurp functions and to escape from criticism is quite contrary to the spirit of the age.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Special Training for Officers of the Indian Medical Service.—Infected Plague Areas in India.—The Progress of the Epidemic.—The General Mortality of Bombay and Calcutta.

WITH a view to securing a succession of officers highly trained in bacteriological work the Government of India, with the concurrence of the Secretary of State, has decided that a selected officer of the Indian Medical Service shall always be attached to the medical school at Netley for the purpose of undergoing training. The selection will ordinarily be limited to officers who have completed the prescribed time of military duty, and while on furlough have devoted at least a year to the systematic study of bacteriology and pathology or bacteriology and hygiene in a recognised school in Great Britain or on the Continent, and the selected officer will be attached to the Netley Medical School for one year, to be extended under certain circumstances to two years during which he will be granted extra leave, which will count as service in India on the pay and allowances admissible to him on ordinary furlough, and he will retain a lien on his Indian appointment.

A highly interesting experiment on the lines of Major R. Ross's investigations into the question of mosquitoes and malaria is about to be tried in Calcutta. Mr. J. Nield Cook has suggested to the chairman of the municipality that two men should be employed in Calcutta and the neighbourhood, under the supervision of a health officer, to hunt out the breeding-places of anopheles claviger, or the malaria mosquito, and destroy the larvæ with kerosene oil or permanganate of potash.

The following areas in India are still declared as plague infected:—(1) the Bombay Presidency, including Sind; (2) the Bellary, Salem, and Coimbatore districts of Madras;

(3) Calcutta and the Saran and Howrah districts of Bengal; (4) the Nagpur division of the Central Provinces; (5) the Mysore State, including Bangalore; (6) the Hyderabad State; and (7) the Hoshiapur district of the Punjab. Plague mortality is going up slightly in Bombay city and a slight recrudescence is reported in the Jullunder district of the Punjab, but everywhere else in India it continues to decrease. The total number of deaths from plague during the week ending Dec. 2nd was 1576, against 1946 in the preceding seven days. Calcutta returns 56 deaths, Saran district 13 cases and two deaths, Bombay city 159 deaths, Karachi two deaths, the rest of the Bombay Presidency 1159 deaths, Madras Presidency 10 deaths, the Punjab nine deaths, the Central Province 16 deaths, and Mysore State 166 deaths. In Bombay city, however, while the official returns indicate but a slight increase of plague the general mortality has been rising rapidly and ominously. There has been a rise of 90 deaths during the past week—viz., from 959 to 1049. The average weekly mortality is about 600. It is curious to note that last year plague became epidemic (100 deaths a week) in the third week of November. Nearly the same thing occurred again this year, the week's record being 135. An unusual occurrence at this time of the year is the prevalence of measles and small-pox, but these only account for 18 and 15 deaths respectively. Dysentery and diarrhœa account for some of the increased mortality, but it is tolerably certain that undiscovered plague is responsible for the greater part.

In Calcutta also there has been an ominous rise in the general mortality but the number of deaths from plague reported continues about the same. The death-rate is 37 1 per 1000 per annum against, 34 7, the mean of five years. Attempts are made in the local press to throw doubt on the existence of plague and to question the returns of the plague staff. It is true that comparatively few cases are seen during life but investigations indicate approximately the amount which still continues. There is a tendency everywhere to conceal deaths from plague. In addition to the deaths returned as due to plague there still continue to be a large number of suspected cases.

The long-disputed question about typhoid fever affecting the natives of India is almost settled. More exact observations than were formerly taken show that the disease, although not nearly so common as in the European population, does nevertheless exist among them. I pointed out some time ago that the disease is not only milder in character, but is characterised by the less-marked development of abdominal symptoms. It is very probable that typhoid fever has been in existence in India for very many centuries and that a great evolutional immunity has been effected by the elimination of those susceptible to it. This question of racial immunity by previous experience applies probably to nearly all diseases, and I have also previously pointed out the mortality and incidence of certain diseases affecting the British as compared with the native troops to illustrate this argument. The reports of the younger medical officers of the Indian Medical Service indicate that enteric fever is more common than is generally supposed while the senior officers seem to think it very rare or almost unknown. In this connexion it is interesting to note the large number of deaths which take place in a city like Calcutta after from 15 to 30 or more days of fever. Few of these cases come under accurate observation and when they do they are generally labeled remittent fever. The statistics of the gaols of India show 21 cases of enteric fever with seven deaths for 1896, and 34 cases with 15 deaths for 1897. As these cases have all been verified by post-mortem examination the figures are particularly trustworthy. They are undoubtedly very small compared with the immense gaol population, but then it is probable that a large number of mild cases passed unrecognised. The same thing applies to men serving in the native army.

Calcutta, Dec. 14th, 1893.

NEWPORT WATERWORKS.—The total expenditure by the Newport (Mon.) Corporation on the Wentwood Waterworks Scheme up to the present has been £188,508.

VACCINATION FEES.—At the meeting of the Tetbury Board of Guardians held on Jan. 3rd it was decided that the public vaccinator (Mr. W. Wickham) should receive 5*s*. for each successful vaccination in Tetbury and 7*s*. 6*d*. in rural parishes.

Correspondence.

"Audi alteram partem."

THE LATE SIR JAMES PAGET.

To the Editors of THE LANCET.

SIRS,—You have alluded to the great consideration which Sir James Paget always displayed towards those whom he met in consultation. Many years ago an instructive illustration of this came under my notice. I was seeing a patient suffering from, I think, some form of paralysis, but without any "surgical" feature, with an old practitioner in a southern suburb. He said that a month before he had got Sir James Paget to see the patient with him, and added in a half-apologetic way, "I always call in Paget whenever I can, because I know that, whatever the case is, the patient is safe and I am safe."—I am, Sirs, yours faithfully,

Queen Anne-street, Jan. 5th, 1900. W. R. GOWERS.

BORIC ACID IN FOOD.

To the Editors of THE LANCET.

SIRS,—Dr. Liebreich, in THE LANCET of Jan. 6th, makes a communication in which he assumes that an erroneous conclusion was arrived at in attributing serious illness to five individuals and the death of five fowls to the use of boric acid, which had been added as a preservative to the food consumed. Dr. Liebreich's assumption is based upon an experiment of giving boric acid in definite quantities to eight fowls without the manifestation of illness amongst them. In a subsequent paragraph, however, when criticising Dr. Annett's investigations, he says, in reference to the same: "All that these experiments prove is already known—viz., that animals finally succumb under the repetition of large doses."

Now this admission utterly destroys the value of Dr. Liebreich's experiment for the purpose of argumentative disproof of the toxic effects of boric acid in the cases I narrated. "Large doses" were unintentionally given in the preservative added to the food, and, further, the fowls that took most died, whilst those which devoured less recovered. But Dr. Liebreich himself evidently does not consider his experiment sufficiently convincing, because he has recourse to various suggestions to account for the results otherwise than by boric acid. In reference to some of these suggestions I may say that although the symptoms were very typical of poisoning by large doses of boric acid, including suppression of urine, &c., the desirability of considering other causes was not overlooked, and amongst other poisons, one of the most likely toxic bodies to be present in milk—viz., tyroxicon—was especially searched for but with negative results. On the other hand, large quantities of boric acid were found by the borough analyst in the crop and gizzard of one of the fowls. Boric acid was also found in the milk supplied by the dairyman and in the glacialene which the cook added to the milk. Add these facts to the admission of Dr. Liebreich—viz., "That it is known that large doses prove fatal to animals"—and I fail to perceive the error with which Dr. Liebreich taxes me. I ought to add, as Dr. Liebreich refers to vanilla, that this flavouring agent was used by the cook, but I am unaware of any poisonous effects which have been traced to this article when supplied in a pure state. With regard to "alarming the world," I sent no communication to the lay press on the subject, but simply brought the question before a meeting of the East Kent Medical Society for discussion and put the facts on record in my annual report. I trust that Dr. Liebreich does not attribute to me any desire for sensational publicity.

I am, Sirs, yours faithfully,

M. K. ROBINSON, M.D Erlang.,

Dover, Jan. 9th, 1900. Medical Officer of Health, East Kent.

"A CASE OF HÆMORRHAGIC ASCITES."

To the Editors of THE LANCET.

SIRS,—Since writing the account of the case which appeared in THE LANCET of Jan. 6th (p. 17) under this title there has been a case in the post-mortem room of the Bristol Royal Infirmary which presented some similar features. No

ascites was present, but there was intense congestion of the intestines over precisely the same area—that is to say, all the small intestine below the duodenum was affected, together with the ascending colon. The duodenum, the transverse colon, and the large intestine below it were quite free from congestion. Hæmorrhage had taken place into the small intestine, but the fæces in the large intestine were not mixed with blood. The veins of the mesentery were not distended as in the former case. The superior mesenteric vein and artery were free from all trace of ante-mortem thrombosis. The other abdominal organs were quite healthy, but the lymphatic glands in the mesentery were much enlarged. The heart and lungs were healthy. The case was that of a boy, aged four years, who was twice admitted under the care of Dr. Shaw during the space of three weeks. On the first occasion there was considerable abdominal distension with constipation. At the end of about a week, however, he left the infirmary apparently quite well, but was re-admitted three days before death complaining of pain in the back and in the abdomen. The facial expression was that of great collapse. He vomited occasionally, and the bowels were obstinately constipated, but the abdominal distension had not returned. The bowels had not been moved at the time of death.

As already mentioned, the area of congestion of the intestines was precisely the same in both instances. Although in both the congestion in great measure corresponded to the distribution of the mesenteric artery and vein, it did not do so absolutely, since in neither case the transverse colon showed congestion. The absence of thrombosis in the second case is interesting and suggests that the thrombosis in the small vessels of the liver in the first case was of secondary importance. Dr. H. D. Rolleston[1] refers to cases of intestinal hæmorrhage which suggest vascular occlusion, yet no such blockage can be found. He considers that these cases are possibly allied to the peritoneal sanguineous cysts, records of several cases of which I have collected and published in the Guy's Hospital Reports.

I am, Sirs, yours faithfully,

THEODORE FISHER.

"SOME POINTS IN LIFE ASSURANCE EXAMINATIONS."

To the Editors of THE LANCET.

SIRS,—I am glad to see from the letter by Dr. H. Crosby in THE LANCET of Dec. 30th, 1899, that he can name some few life assurance companies which have a question directly bearing upon suppurative ear disease. I was not unaware that a certain proportion paid attention to this detail. Those, however, who read my communication in THE LANCET of Dec. 16th will have seen that my chief point was the absence of any question regarding the temperature, whereas all offices require definite information regarding the pulse-rate. In the cases I quoted it was the slight rise in temperature which led me to postpone them, when in the one case suppurative ear trouble (fatal 10 days later) was discovered and in the other incipient phthisis. I am unaware of any company having a question printed regarding temperature, an omission which, in my humble opinion, is of vital importance. I am, Sirs, yours faithfully,

FRANCIS TAYLOR SIMSON.

Northumberland-avenue, W.C., Jan. 8th.

DIPHTHERIA AND MILK-SUPPLY: A FILTHY HABIT.

To the Editors of THE LANCET.

SIRS,—We all from time to time meet with cases of diphtheria where there seems complete proof that the infection has been conveyed by means of milk. In many cases where no association of the milk with a case of diphtheria can be proved this is attributed to infection from a disease in the cow caused by the same organism as human diphtheria. It seems to me possible that a habit I have noticed among milkers in country places may in many cases offer a simpler solution of the problem. Recent research has brought to light the fact that a micro-organism not to be distinguished from the Klebs-Löffler bacillus is to be found inhabiting the throats of many persons apparently in their usual health and pursuing their usual avocations. Old-fashioned milkers, specially old yardmen in country places, often moisten their hands with saliva before seizing the teats instead of moistening them with the first drawn drops of milk. It seems to me more than probable that by this means the bacillus of diphtheria may be conveyed from the throat of the milker to the milk. My attention was first drawn to this habit about two years ago on a farm in the East of England where an old yardman when giving me a lesson in milking directed me to begin operations thus. I have since found that this is quite a common custom, though it may be omitted when a visitor is present at the milking. I have never seen this point touched on, though it seems to me worthy of some attention. We are at this present time apt always to look to disease in the cow as the source of infection, though the connexion between disease in the cow and these cases of milk-borne diphtheria is often far from clear.

I am, Sirs, yours faithfully,

ETHEL M. N. WILLIAMS, M.D. Lond., D.P.H. Cantab.

Newcastle-upon-Tyne, Dec. 27th, 1899.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 4th, 1899, p. 1227, appears an article by Dr. J. M. Atkinson and Mr. J. Bell giving details of two cases of death under chloroform which seems to call for remark. It will scarcely be disputed that these deaths were not merely accidental concomitants of chloroform administration, but were actually due to the drug, in the sense that they would not have occurred had not chloroform been given. The points of interest appear to fall into two groups—first, those connected with the method of administration, and secondly, those connected with the cause of death. The instrument of administration was in one case a Krohne and Sesemann's inhaler and in the other a Skinner's mask. It is to the use of the former that I wish to draw attention particularly. Two deaths have recently been reported in THE LANCET as occurring when chloroform was given through this inhaler, and Dr. James Edmunds has in recent numbers written on the subject pointing out that it is perfectly easy to kill a man with chloroform out of a Krohne's inhaler. It cannot be too strongly insisted on that by no merely mechanical means can chloroform be given with safety.

A Krohne's inhaler seems to have this advantage—that the wastage of chloroform is minimal, so that most of the choloroform evaporated is absorbed into the circulation, and as a result of this the amount circulating in the blood is fairly accurately known. But to give chloroform or any other drug with safety one wants to know not the amount circulating in the blood but the effect which it is having on the tissues. Accurate dosage does not obviate the necessity of looking carefully for symptoms of danger resultant on the administration of the drug, symptoms which will arise with whatever accuracy of dosage the drug is given. In one of the cases under consideration the very use of the inhaler seems to have introduce a new element of danger. We are told that the patient gasped, the inhaler was removed, and she was discovered to be cyanosed. It cannot be doubted that the cyanosis had not been produced that instant, but the inhaler seems to have covered the face so that the cyanosis escaped notice till it was too late to combat it. If the use of the inhaler means any relaxation of vigilance in the search for symptoms of danger, it can do nothing but incalculable harm, and at its best it is little more than an economiser of chloroform.

As regards the cause of death in these two cases, as is usual the immediate impulse is to fix on the heart as the organ primarily implicated. In one case the opinion is definitely formulated that "the cause of death ..... appears to have been due to the action of chloroform on the cardiac ganglia paralysing them, they being in an abnormal state of susceptibility from some undefined cause"—an opinion for which there is not the slightest shred of evidence adduced. In the other case the report shows that the mind turned to the possibility of fatty degeneration of the heart, but this was found to be absent. Yet in both of these cases the description brings out strongly a common symptom pointing to the respiration as the means by which death was produced—I refer to cyanosis. Can cyanosis ever be compatible with primary heart failure? What does cyanosis mean but that capillaries and venules are distended with deoxygenated blood? If the heart fails primarily how can it drive the

[1] System of Medicine, Allbutt, vol. iii., p. 715.

blood into the capillaries and veins with sufficient force to distend them? The cardinal sign of heart failure is pallor due to the capillaries and veins being empty owing to the heart's beat not being sufficiently powerful to drive blood into them. Cyanosis means a heart of some vigour and is incompatible with primary heart failure. In these cases of death under chloroform I know of no cause for cyanosis other than obstructed respiration. In both of these cases the first sign of danger noticed was abnormal respiration and the patients ied from asphyxia. Obstructed respiration or asphyxia has its well-known stages—the stage of cyanosis or strongly beating heart and the stage of pallor or heart failure. If one considers that in asphyxia death occurs from heart failure, then one may consistently say that that was the event in these cases. The conditions are identical. Still, in both stages if the initial obstruction can be prevented death will not occur. The lessons to be learnt from these two deaths under chloroform are the usual ones: first, not to give chloroform by rule of thumb whether through an inhaler or not, but to be guided entirely by the symptoms produced; and, secondly, to keep the respiration normal both as regards regularity and free air entry. With these precautions chloroform may be given with safety.—I am, Sirs, yours faithfully.

CLAYTON LANE, M.D. Lond.,
Lieutenant, I.M.S.,

Camp Grinburn, Mishmi Field Force, Dec. 8th, 1899.

SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID FUND.

To the Editors of THE LANCET.

SIRS,—I shall be glad to be afforded the opportunity of making an appeal in your columns on behalf of those sick and wounded officers of all services whose means are inadequate to secure that efficient medical and surgical treatment which will often be needed to restore to them, after their return home, the health they have sacrificed in the service of their country.

Amongst the great number of officers who have unhappily been wounded or are suffering from disease contracted on service there will certainly be many who have small private means, and who are not in a position to command the skilled assistance they will urgently need. In many cases continuous treatment for long periods will be necessary. Though to offer assistance in such cases will be a matter of considerable delicacy, nevertheless, I feel sure that it will be generally felt that an attempt should be made to do so.

The undermentioned gentlemen have consented to act upon a General Committee, and to assist the objects of the scheme in every way within their power.

A fund has been opened to which I earnestly trust many of your readers will readily contribute. The provision of accommodation for convalescent patients is a part of our scheme, and I have already received several offers from private persons which I have no doubt that the Committee will be glad to entertain.

Subscriptions may be sent to Messrs. Coutts, Strand, London; the Duke of Abercorn, Hampden House, Green-street, W.; or to the Hon. Arthur Brodrick, 18, Eaton-square, S.W. (Hon. Secretary and Treasurer to the Fund, to whom enquiries may be addressed). Cheques should be crossed "Sick and Wounded Officers' Surgical and Medical Aid Fund." I am, Sirs, yours faithfully,

ABERCORN.

Hampden House, 61, Green-street, W., Jan. 11th, 1900.

COMMITTEE.

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"THE CONFERENCE AT NEWCASTLE AND THE MIDWIFERY QUESTION."

To the Editors of THE LANCET.

SIRS,—I cannot hope to satisfy the craving of Mr. Haydn Brown's forensic appetite but would like to lay before him the following points arising from his letter—points which I put forward eight or nine years ago and to which I have yet seen no satisfactory solution. Provided that every confinement case is to be once visited by a medical man, would the medical man be willing to go? It would mean an enormous increase in midwifery practice, a branch of practice which, as has been often pointed out, a very large proportion of men encourage as little as possible; it would mean being disturbed three or four nights for every one on which we are at present called out to a confinement. If going was a matter of choice many, in the country at any rate, would, I am sure, refuse. And could it be made compulsory, in either event how is the medical man to be paid? Then—and this to my mind is the chief objection to the proposal as made by Mr. Haydn Brown—would any practitioner care to accept the responsibility which would attach to him after visiting a confinement just once and in any stage? The responsibility for the safe conduct of the whole

case would certainly be transferred from the nurse to the medical man as soon as he had seen the patient; it may be wrong that it should, but I have no doubt but that it would, and this loss of responsibility by the nurse would react dangerously on her. Having sent for the medical man quite early in a case and he having pronounced all well, what responsibility would she feel for any untoward accident afterwards? Again, suppose, for instance, a fragment of placenta to be retained without the nurse knowing it, and that the medical man does not see the case until labour is presumed to be complete, of what good can his visit be and who will be held responsible when the patient develops septicæmia? Why, the medical man, of course. I cannot but think that the proposal for a visit from a medical man in every case and at any time the nurse may choose would shift responsibility from the very place where we want to place it. The suggestion in the Bill of the British Medical Association that the nurse should send when she thinks it necessary and on certain specified occasions appears to me to meet the case much more effectually.

I am, Sirs, yours faithfully,

Freshford, Jan. 8th, 1900. CHAS. E. S. FLEMMING.

THE UNIVERSITY OF LONDON ELECTION: THE CANDIDATURE OF DR. W. J. COLLINS.

To the Editors of THE LANCET.

SIRS,—In the unforeseen elevation of Sir John Lubbock to the peerage and with the possibility of the election caused thereby being rushed before Parliament meets, it is well that the medical graduates should consider carefully the claims of the two candidates who have already taken the field and between whom the running may possibly alone lie. In view of the large proportion which the medical bear to the non-medical graduates of the University, it would not be at all unreasonable that they should claim to be represented by one of their own body, and if a strong medical graduate, against whom no objection might lie, were put forward, he would probably receive the unanimous support of his fellow-graduates.

Of the two candidates referred to, one, Dr. W. J. Collins, is undoubtedly a strong one. He had a distinguished collegiate career and he has since shown administrative capabilities of the highest order. But he lies under the objection of having supported the anti-vaccination movement in a way which makes it very difficult to absolve his intelligence except at the expense of more necessary attributes. If his identification with anti-vaccination had been confined to his connexion for some years with the London Anti-Vaccination Society as one of its vice-presidents, and if it had ceased with the publication of the dissentient statement of himself and Mr. Picton in the report of the Royal Commissioners, his fellow graduates might perhaps have felt disposed to condone it. But it has not done so. From that time to this he has allowed himself to be put forward by the pamphleteers and letter-writers of the Anti-Vaccination League as one of the leading champions of their cult and as lending the mantle of his authority to the most preposterous mis-statements. And although he has been formally invited to dissociate himself from such a use of his name he has not thought fit to do so. He may assert, as he did at one of the meetings of the Anti-Vaccination Conference at Leicester in October last, that "he has never accepted the appellation of anti-vaccinator." But a man is known not only by the name he accepts but by the company he keeps. And when Dr. Collins is content to stand on the same platform, as he did at Leicester, with another member of his own profession who did not scruple to say that "the medical power of the Local Government Board" had been responsible for "one of the most damnable scenes that had ever been enacted in England, where the sanctity of the English home was invaded and where the wife's honour was sought to be taken away ..... in order that the glory of vaccination might be upheld," he will have some difficulty in persuading most people that he is not very unfortunate in the company he keeps whether he be an anti-vaccinator or not.

One of Dr. Collins's nominators is the editor of the *Vaccination Inquirer*, the organ of the Anti-Vaccination League.

I am, Sirs, yours faithfully,

Jan. 8th, 1900. A LONDON GRADUATE.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Christmas Festivities.

THERE has been no lack of the usual entertainments and festivities at the various hospitals in the city during this season. The staffs of the different institutions have thrown themselves with enthusiasm into the task of making the patients happier and brighter during their stay in hospital. On all sides their efforts have met with hearty and appreciative response and the settling down to every-day routine will be associated with many pleasant memories. An attraction at the General Hospital on Jan. 7th was the visit of the Chinese Ambassador, Sir Chihchen Lofengluh, accompanied by his suite. His Excellency expressed himself in good English and stated the pleasure which it had been to him to see how the patients were cared for and his admiration of the voluntary system which did such valuable work.

Deaths under Chloroform.

Two deaths under anæsthetics have recently been the subjects of inquiry by the city coroner. The first occurred at the General Hospital in the case of a child who was operated upon for hernia. The operation was completed when it was observed that the breathing had stopped, and all attempts to restore it were futile. Chloroform had been used. The second was that of a man, aged 61 years, a patient at the Queen's Hospital, the operation being for cancer of the jaw. The necropsy showed that death was due to asphyxia caused by collapse of the left lung. At the commencement ether and chloroform mixture was used and subsequently chloroform alone, the operation being necessarily a prolonged one.

Typhoid Fever.

Typhoid fever still continues to be rife. The number of cases increases daily. Indeed, since 1890 the number has almost trebled per annum. Various causes are assigned; no doubt sanitary defects and climatic influences have something to do in the way of factors. Under the auspices of the health committee of the city council Dr. C. K. Millard lectured on Jan. 5th on the Prevention of Infectious Diseases. The spread of knowledge by this form of teaching appeals to the intelligent and better-educated class of citizens, but it is hardly among these that the practical application is required.

Jan. 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh.

FROM the annual report of the University of Edinburgh it is seen that the total number of matriculated students during the past year was 2848; of these 1399 were enrolled in the Faculty of Medicine. The number of women attending extra-academical lectures with a view to graduation in medicine in the University was 85. The General Council of the University now numbers 8667. The total annual value of the University fellowships, scholarships, bursaries, and prizes now amounts to about £17,790. Of this sum £3500 is awarded in the Faculty of Medicine. A number of bursaries are in the gift of patrons, but the great majority of the University bursaries, prizes, &c., are awarded by the Senatus after competitive examination. In addition to the above sum a sum of upwards of £600, the income of the Earl of Moray Endowment Fund, is available annually for the encouragement of original research. Two new lectureships have been inaugurated during the year, the lecturers being Dr. Andrew Davidson, lecturer on diseases of tropical climates, and Dr. Allan Jamieson, lecturer on diseases of the skin. Dr. J. W. Ballantyne has been appointed for one year University lecturer on teratology and ante-natal pathology, and is to deliver his course of lectures in February. Two vacancies in the professoriate occurred during the year by the death of Professor Rutherford and by the resignation of Professor Prothero. The chair of Physiology has been filled by the appointment of Professor Albert Edward Schafer, of University College, London, while Professor Richard Lodge of the University of

Glasgow has been appointed to the chair of History. The John Usher Institute of Public Health is now in course of erection at Warrender Park.

"Nordrach-on-Dee."

A portion of ground 25 acres in extent has been purchased by the promoters of the proposed sanatorium for consumptives on Corsee Hill, Banchory. The price paid for the ground, which is the property of Sir Thomas Burnett of Crathes, is between £5000 and £6000. Building operations are to commence almost immediately. The building is estimated to cost £12,000.

Scottish Poor-law Medical Officers' Association.

In the annual report of the Scottish Poor-law Medical Officers' Association reference is made to several questions which came before Parliament last year, regret being expressed that the Association's Bill to amend the Local Government (Scotland) Act, 1894, introduced by Mr. Alexander Cross, M.P., was unfortunate in the ballot and never got the chance of a second reading. The Bill introduced by Mr. D. N. Nicol, M.P., suffered in the same way. Mr. Cross has again agreed to introduce the Bill of the Association next session. Dealing with the case of Mr. Lamont of South Uist, which has been often mentioned in THE LANCET, the report calls attention to Mr. Balfour's acknowledgment that if Scottish Poor-law medical officers had a power of appeal to the Local Government Board such a case as that of Mr. Lamont could not possibly have occurred. Questions in regard to tenure of office have also engaged the attention of the Association and have been brought by it before the British Medical Association. Sir Charles Cameron, M.P., has consented to become Honorary President for 1900. The annual meeting and dinner of the Association will be held at 36, Buchanan-street, Glasgow, on Jan. 19th. The secretary of the Association is Mr. W. L. Muir, 1, Seton-terrace, Glasgow.

The late Dr. George Elder.

Dr. George Elder, who died at his residence in Leopold-place, Edinburgh, on Jan. 6th, had a distinguished career as a student at the University and much might have been expected of him had his life been spared. He graduated as M.B., C.M. Edin., with honours, in 1891 and also gained one of the Vans Dunlop Scholarships of £100 per annum tenable for three years. In 1896 he took his M.D. degree and was also admitted a Fellow of the Royal College of Physicians of Edinburgh. At the time of his death he held the appointments of clinical tutor in the Royal Infirmary, assistant physician to Leith Hospital, and physician to the New Town Dispensary. Dr. Elder, who was only in his thirtieth year, was a native of the parish of Carnwath in Lanarkshire. He had contributed several articles to periodical medical literature.

Jan. 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Death-rate of Dublin.

THE death-rate of Dublin for the week ending Jan. 6th was exceptionally high, reaching 51 per 1000. The usual rate of 33 is so high by comparison with that of some cities that the increase to 51·3 may be regarded perhaps as an accidental exacerbation similar to that just now being experienced by London, but whatever the reason the figures can only be regarded as appalling.

Royal College of Physicians of Ireland.

It is announced that the sixth award of the triennial Reuben Harvey Memorial Prize will be made early in July, 1900. The prize is open to all students of the various schools of medicine in Dublin, and also to graduates or licentiates of these bodies of not more than three years' standing at the time of the award. The prize, value £25, will be awarded to the writer of the best Essay on Animal Physiology and Pathology. The essays, bearing fictitious signatures, are to be lodged with the Registrar of the Royal College of Physicians of Ireland, 6, Kildare-street, Dublin, on or before June 1st, 1900.

The Belfast Workhouse.

At the usual weekly meeting of the Belfast Guardians on Dec. 19th one of the members spoke of the horrible system of blackmail practised in the wards where wardswomen were in charge. He alleged a case in point where a young lad who was suffering from rheumatic fever was visited by his mother, and when she retired the woman in charge of the ward asked him if his mother had left anything for her. On his replying in the negative she abused him with bad language and, what was worse, deprived him of half his allowance of milk. The chairman asked that the matter should be left to the infirmary committee to deal with. It appears that there are over 600 able-bodied men and women in the workhouse and, as one of the Belfast daily papers points out, information is wanted as to the age, sex, and length of residence of these people. What is the cost of their keep and what is the value of their work? The present system is a wretched one, which stereotypes these able-bodied workers as a burden on the rates and it leads to patients being placed at the mercy of harpies like the wardswoman referred to. Her only punishment, if she can be identified, is to send her to the body of the house. The Poor-law system in Ireland is in a deplorable condition.

The Influenza.

Not since the early years of the present visitation of influenza has the malady been so widespread in Belfast and in the whole of the North of Ireland as it is now. Coincidently with this extraordinary recrudescence of the disease is the prevalence of the most variable and rapidly-changing weather. It does seem strange that after so many years' visitation of influenza we know so little as to the peculiar conditions which determine its assumption of an epidemic type as at present. Whole households are ill at once, business is being very much interfered with in Belfast owing to the illness of employés, and medical men are greatly overworked.

Extraordinary December Rainfall in Ulster.

The last month of 1899 has been a record one in Ulster in the amount of rainfall, for there was rain on 24 days, there being, in other words, only seven dry days. The total amount registered was 6·05 inches, and on one day (Dec. 28th) 1·21 inches fell. 1899 has been an exceptionally wet year, for 10·29 inches more of rain have fallen than in 1898, when the total rainfall registered was 33 07 inches.

Health of Belfast.

At a meeting of the Belfast Corporation on Jan. 3rd the general health of the city was reported to be good, the last monthly statement of the Registrar-General tabulating the death-rate of Belfast as 18 3 per 1000. The annual death-rate for 1899 was also the lowest upon record—viz , 22 per 1000. The epidemic of typhoid fever is practically over, there being only 54 cases notified in December. The chairman of the Public Health Committee, in his speech at the city council on Jan. 3rd attributed this subsidence of the enteric outbreak to the increased powers obtained by the water commissioners for preventing the pollution of the Belfast water-supply, and also to the energetic action of the Public Health Committee. With the introduction of the new Mourne water-supply he was confident that typhoid fever would become one of their rarest diseases. During the past three months 10 cases of small-pox have occurred. Owing to prompt measures being adopted the disease has not spread. The great want, the chairman said, was a proper hospital where such cases of small-pox, as well as suspicious cases, could be isolated. He was of opinion that at a very early date the corporation should construct a small-pox hospital at Purdysburn, as until this was done Belfast was not in a proper condition to resist a small-pox epidemic. Stringent efforts were being made to put cowsheds into good order and to improve the milk-supply of the city and to prevent the sale of milk affected in any way with tuberculosis. He hoped the rural authorities would combine with the city sanitary officials in this most important matter. New refuse destructors would shortly be in working order, and in a few years all the houses without proper accommodation would be provided with water-closets. During the past year 2734 new water-closets had been erected in old houses by the direction and under the supervision of the public health department. It is interesting to note that while the death-rate as compiled from the Registrar-General's returns for the three weeks ended Dec. 23rd is 18 3 per 1000 for Belfast, during the same period it was 41 5 in Dublin and 27·4 in Cork. The extraordinarily high death-rate of Dublin is attributed by Mr. T. W. Russell, M.P., to the overcrowding of the tenement houses.

Case of Anthrax.

An interesting case of anthrax is at present in one of Professor T. Sinclair's wards in the Belfast Royal Hospital. The patient, who is employed in a bone manure manufactory, came to hospital with a sore on the inner side of the left thigh. This consisted of a central depressed gangrenous patch, surrounded by a series of vesicles outside of which there was a corona of œdema. From the serum of the vesicles Dr. Lorrain Smith cultivated the anthrax bacillus. Professor Sinclair removed the local sore and the glands in Scarpa's triangle, which were enlarged, and tied the saphena vein. The glands fortunately only yielded on cultivation the staphylococcus bacillus, showing mere local irritation. The man has done well.

Portadown Water-supply.

A very influential deputation appeared before the Portadown Urban Council on Jan. 1st with a memorial signed by 1100 ratepayers in opposition to the proposed plan of taking the new water-supply from the river Bann. It would appear that a supply of water is an urgent necessity for Portadown and this can be obtained either from the river Bann or from Lough Neagh, into which the Bann flows. The commissioners asked Sir Charles Cameron to examine both supplies, and he did so, and reported that the water of the lake was superior to that of the river only in colour, being not so yellow. As the river source would be cheaper he reported in favour of it. He advised ample filtration with slow passage of the water through the filter beds. He reported that the Thames was subject to much more filtration than the Bann.' In this way the commissioners were guided in adopting the river source of supply. When arrangements as to plans are complete the commissioners will apply for a loan and this will lead to a Local Government Board inquiry.

Jan. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Officers for the Mercantile Marine.

A LAW passed in 1896 completely altered the organisation of the sanitary measures as hitherto existing in France and brought it into conformity with the decisions arrived at by the international conferences which had met at Venice, Dresden, and Paris. In addition to doing away with the vexatious system of quarantine and replacing it by strict sanitary inspection and a well-organised system of disinfection a special body of medical men for the mercantile marine was ordered to be set on foot. The steamship companies were to be obliged to have on board their boats a competent medical man selected from a list drawn up after a competitive examination in the pathology of foreign diseases, in bacteriology, in legal sanitary measures, and in methods for disinfection. The companies could choose their medical men from a list of those who had passed the examination, and such lists were posted at every port. Some companies were wise enough to see that if obedience to this order threw some slight extra expense upon them at the outset, yet that the presence of a duly authorised medical man would be of the greatest assistance to them in the event of an epidemic. Other companies, however, could not rise to this view and only looked at the extra expense, for before the passing of the regulations their boats only carried a medical student, who was paid a mere nominal salary or sometimes none, or else they carried no medical adviser at all. The regulations, therefore, were bitterly opposed by such as well as by those old practitioners who had been in the employ of the companies and who were either too old or too lazy to get up the knowledge required for the passing of the examination. The various Ministers of State concerned did nothing to stay the progress of the reform; the Minister of the Interior, under whom matters of public health come, agreed with the Minister of the Marine Department that a period of two years should be allowed for the new regulation to be duly made known to the service; but the Minister for Foreign Affairs, whose duty it was to notify the change to all consuls and agents concerned, was remiss in his duties. Dr. Reynés in an interesting article in the *Presse Médicale* quotes an instance as having occurred in the case of a Marseilles company which is in the habit of running boats to Genoa to pick up Italian emigrants who sail to America under the French flag. This company takes an Italian medical man as surgeon. The French consuls at Naples and Genoa who signed the ship's papers, and in so doing committed a breach of the regulations of 1896, have this excuse to offer, that they had never been officially informed of them. Dr. Reynés in his article makes a vigorous claim for the strict enforcement of the regulations as well as strict official recognition of the rights of these medical men who have to pass a very severe examination, who thereby gain what should be a privileged position but whose rights as a fact are merely nominally guaranteed. There are in all 250 of these mercantile marine medical men, of whom 150 form a society *de médecins sanitaires maritimes*, presided over by M. Borel and having its headquarters at Marseilles. It publishes a quarterly journal which deals with technical matters and professional interests. Dr. Reynés, who is Vice-President of the society, demands that the *médecins sanitaires maritimes* should be granted autonomy and independence. He is not satisfied that the medical man should be a simple servant of the company taken on and paid at the company's pleasure. If, for instance, the medical man should have to certify the existence of some disease in opposition to the interest of the company he has no liberty to speak out. If he is conscientious and certifies the case as suspicious he receives the formal congratulations of the Government and his *congé* from the company who fill his place with someone more complacent. This is a matter of considerable importance, for at present the medical man has to be very heroic when the question is one of either losing his place or neglecting his duty. Dr. Reynés demands that the medical man should be as much an agent of the State as are the post office officials on board, and that the company should have no right to dismiss him save, of course, in the event of his committing a grave breach of discipline while on board.

The Sale of Impure Ice.

The Prefect of Police is acting on the advice of the Council of Hygiene. The attention of the Council was drawn to the sale of impure ice by the occurrence, especially in summertime, of various gastro-intestinal affections, sometimes of an epidemic nature. These affections appeared to be due to the use of either natural ice collected from impure sources or of artificial ice made from dirty water. The Prefect of Police has decided that in future ice-sellers must stock and sell ice as being of two definitely distinct kinds. These must be distinguished by being ticketed as ice for eating purposes and ice for industrial purposes, and the former must be obtained from spring or sterilised water. In no case is the latter kind, which is not intended for internal consumption, to be substituted for the former under pain of a very heavy penalty.

The Disinfection of Telephones.

The Under-Secretary of State who is responsible for the posts and telegraphs, has, with a view to avoid the transmission of infectious diseases, just made an order that the receivers and transmitters of all public telephones shall be disinfected daily by being washed with a strong solution of carbolic acid. This concession to the principles of hygiene has been received with a certain amount of scepticism by medical men. The idea, they say, is excellent, but they take exception to the choice of a disinfectant, for carbolic acid has an abominable smell and is of very feeble microbicidal power.

Jan. 9th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

A Contre-coup to the "Holy Year."

FRESH from his successful vindication of Italian to a place among the languages officially recognised at the next International Congress of Medicine and Surgery, from his bidding godspeed to Professor Terni of Messina *en route* to Portugal and Brazil to make known the results of the intravenous injection of corrosive sublimate in pestis bubonica, and from his task of filling up 11 chairs left vacant in the University of Cagliari, the versatile and indefatigable Minister of Public Instruction has recently issued a circular designed as a corrective to the pro-Papal reaction supposed, rightly or wrongly, to be promoted by the celebration of the Holy Year. Recalling

the fact that the first Holy Year was instituted by Pope Boniface VIII. in 1300; that among those who repaired to Rome for the occasion was Dante Alighieri; that it was in that year the great Tuscan poet, profoundly impressed by the degeneracy of the age, conceived the Divina Commedia in which he laid the lines of that patriotic ideal which, after six centuries of vicissitude and struggle, has culminated in Italy's unity and independence,—Dr. Baccelli, in the circular aforesaid, invites all the schools and seats of learning throughout the kingdom to commemorate the opening year of the next century by special study of Dante with a view to wider academic competition on the many themes suggested by his poem—competition in which the successful candidates will receive prizes from the State on the award of its Department of Public Instruction. By the step thus taken Dr. Baccelli institutes a new jubilee—accepted by lay and clerical journals alike as a *contre-coup* to that of the Holy Year—and appeals to Young Italy to devote itself to the study of the national poem so as thereby to make itself proof against the Ultramontane influences arrayed on the side of the Vatican in antagonism to the work of Mazzini, Cavour, and Garibaldi. Without commenting on the political inspiration of the appeal the youth to whom it is addressed may safely be congratulated on the impulse thus imparted to the study of a poem which has always possessed the most powerful attraction, even fascination, for the liberally educated of every country, which in Germany and Great Britain has numbered among its interpreters and commentators members of all professions, including the medical, and which in the latter country alone can point to Dr. Barlow and to Dr. John Aitken Carlyle as quite *hors ligne* in knowledge of its tenour and in power to throw light on its obscurer passages. Always solicitous for the honour of the profession as compatible with the highest culture outside its special subject-matter, Dr. Baccelli, while taking what he holds to be a patriotic step against supposed obscurantism and reaction in Italy, is also proving once more that the most loyal devotion to the healing art and the sciences underlying it does not exclude appreciation of the *chefs-d'œuvre* of the human mind, whether these have come down to us from ancient or from mediæval times or whether they are inspired by the vicissitudes and the events of the day now passing.

Three Medical Worthies.

At Padua on Dec. 7th, at the ripe age of 86 years, died Lodovico Brunetti, emeritus professor of pathological anatomy. His was a striking personality, combining ardent prosecution of science with a "sense of citizenship" almost aggressive in its energy. He had often to differ from his colleagues in questions of academical discipline and once in a crisis of the kind he had an altercation with Professor Tamassia so "vivacious" that by order of the Procuratore del Rè he was put under arrest. The students, who idolised him, broke out into open rioting and for three days they maintained a "barring out," surrounded by troops and tolling the great bell (*campanone*) renowned in Venetian history. When the besiegers and besieged came to terms none of the university authorities recalled the excited youth to their studies with more effect than Brunetti, interesting them in the latest accessions to science, particularly in the recent discovery of the bacillus choleræ in which he made independent and valuable researches. Among the many distinctions he held was that of honorary professor of the Imperial University of Charkow; while the Committee of the Paris Exhibition of 1867 bestowed on him its "grand medal of scientific merit," and a few years later the Universal Exhibition of Vienna, also through its committee, honoured him with its medal awarded for contributions to biological science. One of his specialties was that of embalming the dead, a *métier* almost exclusively Italian. From among numerous competitors he was chosen to embalm the body of King Victor Emanuel and but for adverse circumstances would have performed the same service in the case of Pius IX. The Paduan University for 48 hours after his death was draped in mourning and on Dec. 9th he was followed to the grave by all the notabilities of the city and province, the *oraison funèbre* being delivered with his accustomed felicity and effect by Dr. Achille De Giovanni, the Rector Magnificus.—Another loss sustained by Italian medicine is that of Dr. Giovanni Zoia, Professor of Anatomy in the Lombard University of Pavia. A native of Mantua, he distinguished himself, side by side with the patriot and statesman Benedetto Cairoli, in his country's fight for independence. This effected he threw himself with equal ardour into biological study and rose to be one of the best anatomists and teachers of anatomy in the Italian kingdom. Three years ago he lost two sons by Alpine misadventure and the bereavement so preyed upon him that he was never the same man again. A long malady supervened to which he succumbed on Dec. 16th, regretted by all the Lombard school and, indeed, by the whole civic population in whose welfare he took a quite philanthropic interest.—The last and not the least eminent of the trio is Dr. Giuseppe Pinto, who died on Dec. 18th in the Hospital of San Giacomo, in the Corso, in his fifty-seventh year. He was a Roman of the masculine, almost severe, type, very accomplished in his profession and devoted to its history, in which he published a well-written volume by way of supplement to the master-work of Puccinotti. He held the post of *privat-docent* in that subject in the University of Bologna and afterwards he filled the chair of hygiene in the School of Agriculture in Rome. In this capacity he did excellent work towards the "bonificamento" of the Campagna, the reclamation of marsh lands, and the re-afforesting of upland tracts denuded by reckless tree-felling. Himself also a patriot who joined in the movement by which Rome became the capital of United Italy, he was an active and enlightened provincial councillor, ever foremost in mitigating the lot of the agricultural poor. His malady was, like that of Professor Zoia, a lingering one—cancer of the throat, for the treatment of which he had placed himself under the care of the clinical staff of the San Giacomo Hospital.

Jan. 6th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Military Governor of Cuba a Sanitarian.

THE appointment of General Leonard Wood as Military Governor of Cuba is an event of the greatest importance to the future health and prosperity of the people of that island. General Wood is a graduate of the Harvard Medical School, and was in the active practice of his profession at the time of the outbreak of the war with Spain. At the close of the war he was made Military Governor of the Province of Santiago, and at once organised and put in operation sanitary measures designed to exterminate the pestilential diseases which had rendered that city almost uninhabitable. Chief among the diseases which annually scourged the city of Santiago was yellow fever, and though the season was well advanced when Dr. Wood assumed control so radical were the measures of sanitary cleansing which he rigorously enforced that the appearance of the fever was much delayed and when it did appear the local authorities had it under complete control. Though General Wood now enters upon a far wider field of service the duties are practically the same as those which occupied his thought in the Province of Santiago, viz., the promotion of the public peace and the public health. It is believed that he will inaugurate in Havana and the towns throughout the islands the same rigorous measures that have proved so efficient in Santiago. The result cannot be doubtful. Yellow fever, small-pox, and other kindred diseases which annually decimated the population of Cuba and were a constant menace to the health of the seaport cities of the United States, will be exterminated in the islands.

The Army Ration.

Dr. Charles Smart, Deputy-Surgeon-General and an expert chemist, makes the following statement in regard to the army ration:—"The United States ration is the most liberal ration in the world; it is the best ration for the far north-west of this continent, whence come the sub-zero cold waves to sweep over the country from the upper strata of the atmosphere, and it is the best for the tropics when intelligently utilised. It is the product of the experience of several generations of army officers, and it is the part of wisdom to be slow in urging alterations at the suggestion of people who know that an excess of fatty food is not suitable for a dietary in the tropics and who have just discovered that there are 12 ounces of bacon in the soldier's ration. Under the present law and regulations as to the ration the soldier can have any variation of his diet,

within certain money-value limits, which his officers consider necessary for his well-being. His ration is fixed by law and it is a most liberal one, but his dietary depends upon the intelligent supervision of his company officers and the ability of his company cooks. If a change in the dietary is advisable it lies with the company commanders to carry it into effect. The elasticity of the ration is wonderful. It is so elastic that the soldier may verily eat his candles if he does not require them for any other purpose. He may leave the candles in the hands of the subsistence department and if their money value will pay for a can of peaches or a pound of rice or for so much of any other of a long list of articles kept for sale by the subsistence officers, he can eat his candles' component in the form of peaches or rice or any other of the purchasable things. So with the bacon. He is no more required to eat that because it is a part of the ration than he is asked to eat the candles, but he may transform it into some other kind of food which he likes better or which is better for him under the climatic conditions which affect him at the time."

Mortality from Diphtheria in New York before and after the Introduction of the Antitoxin Treatment.

The following statistics of the mortality from diphtheria before and after the introduction of the antitoxin method of treatment have been kindly furnished to your correspondent to Dr. John S. Billings, jun., Assistant Director of the Bacteriological Laboratory of the Department of Health. The tables show the number of cases, deaths, and mortality per cent. of diphtheria in New York City (boroughs of Manhattan and the Bronx) from 1891 to Oct. 1st, 1899.

Before the Introduction of Antitoxin.

Period.	Cases.	Deaths.	Mortality per cent.
1891...	5364	1970	36·7
1892...	5184	2196	40 6
1893	7021	2558	36·4
1894...	9641	2870	29·7
After the Introduction of Antitoxin.			
1895...	10,353	1976	19·1
1896...	11.399	1763	15 4
1897...	10,896	1590	14·6
1898...	7593	923	12·2
Jan. 1st, 1898, to Oct. 1st, 1898	4778	695	14·5
Jan. 1st, 1899, to Oct. 1st, 1899	5100	782	15·3

The following table shows the number of cases of diphtheria in New York City (boroughs of Manhattan and the Bronx) in which antitoxin was administered free of charge by this department and others in 1898 and 1899, with the number of deaths, mortality, and also the corrected mortality after deducting the cases already moribund when antitoxin was administered.

Period.	Cases.	Deaths.	Mortality per cent.	Moribund deducted.	There remain. C.	There remain. D.	Mortality per cent.
1898.	1494	206	13·7	81	1413	125	8 8
1899 (first nine months only).	1358	170	12 5	61	1297	109	8·4

Dr. Billings adds:—"During the summer of 1899 the department has been testing the so-called globulin diphtheria antitoxin. It was found by the chemist of the department that when antitoxic serum was treated with magnesium sulphate and heated the antitoxic substances were precipitated along with the globulin. In this way 90 per cent. of the antitoxic substances may be extracted from the serum. By replacing the magnesium sulphate with sodium sulphate the globulins and antitoxins are again rendered soluble. In this way very concentrated solutions of antitoxin may be obtained, and the department is now testing this globulin in the Willard Parker Hospital for Contagious Diseases, in order to determine whether its use is followed by rashes and the other occasional sequelæ of ordinary antitoxic serum.

Dec. 18th, 1899.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Health of Sydney.

THE report of Mr. T. H. Kendall, medical adviser to the Metropolitan Water and Sewerage Board, Sydney, for the quarter ending Sept. 30th, 1899, has just been presented to the board. The population of Sydney has materially increased since the corresponding quarter of 1898, and shows a greater increase than for any similar period during the previous four years. The increase is chiefly due to a decrease in the death-rate, the total number of deaths having been 1190 as against 1875 for the corresponding period of 1898. The mortality from diarrhœal diseases shows a very marked decrease, attributed by Mr. Kendall to the extension of the sewerage system. Diphtheria and tuberculosis have also claimed fewer victims, a result which is attributed to the drying of the soil brought about by the laying down of the sewers. To keep up the improvement Mr. Kendall insists on the necessity of destroying all garbage by fire in destructors. Typhoid fever has increased in prevalence, 108 cases being reported, as against 68 for the same quarter of 1898, and 34 for that of 1897. Many cases were traced to the milk-supply, and Mr. Kendall points out that Pasteurisation of milk is useless against infection in the milkshop and during delivery. Attention is called to the dangers lurking in the concoction known as "ice-cream," in which more and worse bacterial bodies are found than in concentrated sewage. This statement was brought under the notice of the Legislature by Dr. Ross and the Health Department replied that attention had been given to the matter, that the comparison with concentrated sewage could not be rightly made, and that the execution of the Adulteration Clauses of the Health Act was rigid so far as the Board of Health took part in it, but that the local authorities rarely took proceedings.

The Standard of Milk.

Some time ago, as stated in these columns at the time,[1] the New South Wales Board of Health fixed a milk standard. Recently the inspector of nuisances for Marrickville prosecuted a dairyman for selling milk which did not contain the quantity of butter fat required by this standard. The dairyman was fined by the stipendiary magistrate, but appealed to the Full Court, who reversed the decision on the ground that the milk was received by the inspector in absolutely the same state as that in which it left the cow and was not adulterated either by addition of water or the subtraction of cream, and as the dairyman had done all that could be reasonably required of him he was not liable to a penalty. Further, the purchaser had simply asked for milk, not for milk of the standard prescribed by the Board of Health, and he received milk, and the Health Act did not make the supplying of milk not up to the standard fixed by the Board an offence. In consequence of this decision by the Full Court Dr. Ashburton Thompson, President of the Board of Health, states that if the public wish to have a standard for milk the Legislature will have to amend the Health Act. The Board when fixing the standard was in some doubt whether it would be binding in a court of law.

Small-pox on s s. Nineveh.

When the s s. *Nineveh*, from London *viâ* the Cape of Good Hope, arrived at Fort Phillip Heads and was boarded by the pilot he was assured that she had a "clean" bill of health. The port health officer, Dr. Howard, on investigation differed from this opinion and diagnosed a case of small-pox in a steerage passenger. The ship's surgeon—whose name by a curious coincidence is Jenner—maintained that the disease was not small-pox. Dr. McLean, the other port health officer, supported the view of his colleague, and the vessel was quarantined. The vessel was allowed to discharge her Melbourne cargo into lighters and the passengers were put into quarantine, the mails were fumigated, and the vessel proceeded to Sydney. All the passengers at the quarantine station were vaccinated and two more undoubted cases of small-pox subsequently developed.

Outbreak of Beri-beri on Board Ship.

When Dr. McLean, port health officer for Melbourne, boarded the ship *Stirling* he found the captain, steward, and two seamen suffering from beri-beri, while the second mate

[1] THE LANCET, Feb. 11th, 1899, p. 413.

had died from apparently the same disease during the voyage. The vessel had an unusually protracted voyage from Archangel and the stock of vegetables gave out. The crew were served with rice and preserved potatoes. The rice was found on examination by Dr. McLean to contain a fungoid growth.

Appointments.

Dr. George Rothwell Wilson Adam has been appointed lecturer on obstetrics and diseases of women at the University of Melbourne in place of Dr. Balls-Headley, who has resigned. The university lecturer is *ex officio* a member of the honorary staff of the Women's Hospital, Melbourne. Dr. Adam is already on the staff of this institution by election, and it is doubtful whether a vacancy will now occur for the elective post.—Several changes have been made in the staff of St. Vincent's Hospital, Melbourne. Mr. F. W. W. Morton and Dr. R. A. Stirling have retired from the position of physician and surgeon respectively, and have been appointed to the consulting staff. Mr. W. F. Moore has been appointed surgeon in place of Dr. Stirling. Dr. Murray Morton and Mr. F. A. Newman have been appointed surgeons to out-patients, and Dr. J. F. Wilkinson and Dr. F. O'Sullivan, physicians to out-patients. The rest of the staff were re-appointed to their respective positions.

Dec. 1st, 1899.

Obituary.

ALEXANDER GRANT, F.R.C.S. EDIN.,

SURGEON-MAJOR, BENGAL ARMY (RETIRED); HONORARY SURGEON TO THE QUEEN.

MR. ALEXANDER GRANT, who has recently died in London at an advanced age, entered the Bengal Medical Service in 1840 and retired as surgeon-major soon after returning to England in 1861. His career was a distinguished one. He served with the 55th Foot during the Chinese war of 1841-42, and was officially thanked by his superior officer when the regiment returned to England. Having been appointed civil surgeon of Bhagulpore, he was ordered to join the army of the Sutlej in the first Sikh war. He subsequently became civil surgeon of Chapprah, and in 1849 was appointed surgeon to the Governor-General, which office he held till Lord Dalhousie's return to England in 1856. He had been appointed Presidency surgeon and surgeon to the Presidency General Hospital, Calcutta, a much-coveted appointment, and on his return from England, whither he had accompanied Lord Dalhousie, he held the important office of apothecary-general, and as such rendered valuable services in providing medical stores for the army in the field during the period of the Mutiny, for which he received the thanks of the Government of India and the Secretary of State. He had held the important office of President of the Medical Faculty in the University of Calcutta. Failing health compelled Mr. Grant to return to England in 1861, but he continued to do useful work and to take great interest in the service of which he had been so brilliant an ornament and to which he rendered such valuable aid by his influence with the great Governor-General, whose memorable despatch respecting the Indian Medical Service was based on the information furnished by Mr. Grant. Mr. Grant was much respected, trusted, and beloved by all who knew his sterling uprightness, unselfishness, and modesty, which were not less appreciated than his great abilities and unswerving devotion to duty. His memory will be cherished not only by the Indian Medical Service but by all who knew him in India, England, and elsewhere.

WILLIAM NEALOR THURSFIELD, M.D. EDIN., M.R.C.S. ENG., D.P.H. CAMB.

BY the death of Dr. Thursfield the department of public health has sustained a loss which will be deplored not less by his colleagues than by the members of the numerous sanitary authorities to whom he has rendered most faithful and ungrudging service during the past quarter of a century. William Nealor Thursfield was born in the year 1840 in Shropshire, the county with which his name and work will always be most closely associated. After leaving Marlborough College he entered at King's College where he came under the influence of Sir William Fergusson, and subsequently he joined the University of Edinburgh where he graduated M.D. in 1862, after having obtained his M.R.C.S. Eng. in the previous year. In 1877 he received the recently created D.P.H. Camb. During the first year after his graduation he held a commission at Netley which he resigned owing to the serious illness of his father, upon whose death he took medical charge of an emigrant ship to New Zealand. While in this colony he gathered together a most valuable collection of arms and implements.

Dr. Thursfield's first public health appointment was in 1870 when he was elected medical officer of health for the town of Wellington, in Shropshire, where he also engaged in general practice. In 1873 he was appointed medical officer of health to a large combination of urban and rural districts which were subsequently added to in number until he became responsible for the public health administration in some part or other of no fewer than seven contiguous counties. In 1897 he gave up these district appointments and was elected medical officer of health to the county of Salop. After the arduous labour entailed by his large combination of districts he looked forward to many years of good work, but anticipated in connexion with it less stress and anxiety. It is pathetic, therefore, to record that within a few months of his election to the county appointment he developed ataxic symptoms, so that until the time of his death on Dec. 19th last he could attend to his duties with increasing intermittence. The influence of every medical officer of health to a large district must of necessity extend far beyond his own immediate area of administration, but in the case of Dr. Thursfield that influence was extended in a manner that was unique, for the mere physical conformation of his district necessitated the constant employment of a qualified assistant. The experience gained by those gentlemen who were fortunate enough to be associated with him has always stood them in good stead, and they are now to be found carrying on public health work in various parts of Great Britain, as far north as the county of Lanark and down in the south in the county of Glamorgan. Dr. Thursfield was at one time a president of the Incorporated Society of Medical Officers of Health and of the Birmingham and Midland Branch of the society. In addition to his most valuable series of reports he contributed many papers upon subjects relating to his own special branch of practice.

JAMES HOWISON, L.R.C.P., L.R.C.S., L.M. EDIN.

A LARGE circle of medical friends and patients in the north will regret to hear of the death, in his seventy-seventh year, of Mr. James Howison of 33, Abbey-road, London, N.W. Mr. Howison was descended from a long line of medical men on the maternal side, representatives of three generations having practised in the city of Durham at the same time. He had also three uncles in the profession. He was for many years connected with the old Edinburgh Infirmary, where he held the positions of house physician, house surgeon, prosector of anatomy, instructor in the treatment of fractures and of bandaging, apothecary, and cupper. While at the infirmary he designed an inhaler which is known by his name and also a form of splint for club-foot. On leaving Edinburgh he held two appointments as physician in private families, and then he went to Darlington, where he was soon appointed honorary surgeon to the hospital—a position which he held for nearly 20 years. During the time when Darlington was the centre of the iron industry he was appointed surgeon to all the works there.

The following is a quotation from an illuminated address which was presented to him (with a purse of gold) on his leaving Darlington: "We beg to assure you, Sir, that we part from you with the utmost regret. You have endeared yourself to numbers of us and our families by your kindness of heart, courteous, and gentlemanly bearing, your remarkable frankness and candour as a medical man, and, moreover, the solicitude you have ever evinced for the recovery and welfare of your patients. We have the highest appreciation of your skill, not only as a surgeon, but in the wider field open to the physician in the region of medical science. With a naturally acute and appreciative mind you have ever been ready to seek for and adopt the most advanced knowledge in connexion with the profession of which you are so conspicuous an ornament." Mr. Howison towards the close of his life had lost his sight, being quite blind in one eye and

partially blind in the other. Blindness was the cause of his death by a sad accident. On Saturday afternoon, Dec. 23rd, as a train going to Baker-street was entering West Hampstead Station during a dense fog the engine-driver felt the engine going over something. Mr. Howison was then found lying flat on his back between the rails and the side of the platform, having evidently stepped over the side in the dark. He was much injured and was conveyed to University College Hospital, Gower-street, but he died on the way thither.

DAVID CULLEN, M.D., L.R.C.S. EDIN.,
DEPUTY SURGEON-GENERAL, A.M.D.

ON Jan. 4th Deputy Surgeon-General David Cullen, A.M.D., passed away peacefully at his residence, Halsey House, Cheltenham, in the sixth-seventh year of his age, after seven weeks' illness. Deceased some five years ago was the subject of prostatic disease, but later he developed symptoms of abdominal malignant disease, which a few months ago became complicated by ascites. No doubt through a desire to avoid giving anxiety to his family and relatives he maintained a marked reticence respecting his condition and avoided all reference to his malady. Till seven weeks ago Dr. Cullen maintained his general habits of life, enjoying the society of his family and friends, walking out daily, always cheerful and uncomplaining; but then, finding that he needed help, he sent for his friends Dr. John Bramwell and Mr. Cripps Lawrence, who attended him till he was released. The day before his death, the ascites having increased, threatened to add to his suffering, and relief was obtained by paracentesis. Dr. David Cullen graduated M.D. Edin. and L.R.C.S. Edin. in 1854 and served in the Army Medical Department from 1854 to 1869; during that period he was an assistant surgeon on the staff of the 6th Light Dragoons, the 3rd Battalion Rifle Brigade, and the 17th Lancers. He served in the Crimea from 1854 to 1856 and in the Indian Mutiny from 1857 to 1859. Later he was surgeon-major in the 71st Highland Light Infantry and was registrar to the Royal Victoria Hospital, Netley, from 1875 to 1880, after which he retired on a pension. Dr. Cullen was awarded medals for his services in the Crimea, in Turkey, and in the Indian Mutiny, and clasps for Sebastopol and Lucknow. For the last 18 years Dr. Cullen has resided in Cheltenham.

JOHN GORHAM, M.R.C.S. ENG., L.S.A.

ON Dec. 13th, 1899, there passed away John Gorham, one of the oldest and best known practitioners of Tonbridge. He was educated at Tonbridge School and studied medicine at Guy's Hospital, becoming L.S.A. in 1835 and M.R.C.S. Eng. in 1839. Returning to Tonbridge he entered into partnership with Dr. West, who was a well-known surgeon of the day. Mr. Gorham paid special attention to the physical side of science and wrote much and brilliantly upon light and crystallography. Among his works were "Unfrequented Paths in Optics: Part 1, Light from a Pinhole; Part 2, Light from a Fissure"; "A System for the Construction of Crystal Models on the Type of an Ordinary Plait"; "The Rotation of Coloured Discs," *Quarterly Journal of the Microscopical Society*, 1859; "Mode of Calculating Hexagonal Facets in Cornea of the Eye in Insects"; "The Diascope, a New Optical Instrument"; "Rudiments of Colour by Rotation," *Transactions of the Royal Microscopical Society;* "The Stereograph, for Delineating Solids in Space"; "Venation in Leaves of Umbelliferæ"; "On the Composite Structure of Simple Leaves"; "Tooth Extraction, a Manual on the Proper Mode of Extracting Teeth"; "The Tubular Balance"; "Intussusception in Infants"; "On the Blending of Colours by the Sole Agency of the Sensorium," *Brain*, 1882; "The Pupil Photometer"; and papers upon "Ovarian Dropsy" and "Respiration and Pulse in the Infant" which appeared in our columns. He was in his eighty-fifth year.

FREDERICK WILLIAMS LEWIS, M.R.C.S. ENG.

MR. FREDERICK WILLIAMS LEWIS died, after a few hours' illness, at his residence, Violet Cottage, Llandovery, towards the end of last year. He received his medical education at the Middlesex Hospital. After qualifying M.R.C.S. Eng. in 1873, he became house surgeon to that institution. He afterwards came to Llandovery, where he became partner to Dr. Thomas, to whose practice he succeeded. He was at once in the full swing of practice. He became medical officer for the No. 1 district of Llandovery Union, medical officer of health for the Llandovery Urban and Rural District, and surgeon to the Great Western, Vale of Towy, and London and North-Western railway companies. He was a conspicuously able accoucheur and a courageous and dexterous surgeon, and results of operations performed by Mr. Lewis remain as striking examples of neat and successful surgery. By his unceasing kindness, sympathy, and liberality, Mr. Lewis had endeared himself to rich and poor alike. The poor especially have lost in him a warm-hearted and most generous helper and friend. The funeral procession was one of the largest ever witnessed in Wales.

GEORGE CHEESMAN, L.R.C.P. EDIN., M.R.C.S. ENG.

WE regret to announce that Mr. G. Cheesman, who had been the medical officer for the Southampton Incorporation for many years, and who was formerly a very well-known practitioner in the town, died at his residence, Grendahr, Hillside-avenue, Bitterne-park, on Jan. 2nd, at an advanced age. He represented the old All Saints Ward in the council for a number of years prior to the redistribution of seats.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. Paetsch, professor in the Berlin Dental Institute.—Dr. Tirant, who formerly held an important official post in French Cochin China, where he made important zoological observations.—Dr. Johann Mitvalsky, an ophthalmologist of considerable reputation on the teaching staff of the Bohemian University of Prague. He was 38 years of age.

Medical News.

UNIVERSITY OF LONDON.—At the B.S. examination for honours the following candidates were successful:—

Surgery.—First Class: Thomas Rupert H. Bucknall, M.D., London Hospital; Mabel G. Stevenson (gold medal), Royal Free Hospital; Wilfred B. L. Trotter, M.D. (scholarship and gold medal), University College; and Jane Holland Turnbull, Royal Free Hospital. Second Class: Philip Turner, B.Sc., Guy's Hospital.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held in January the following candidates passed in the subjects indicated:—

PART I.

Biology.—B. F. Board and C. Kellgren, Royal Free Hospital; R. V. Khedkar, Bombay; D. Mann, Royal Free Hospital; A. Rogers, Cardiff; and J. S. Wilkes, Birmingham.
Chemistry.—C. T. Price, St. Bartholomew's Hospital, and G. W. N. Stevens, Charing-cross Hospital.
Materia Medica and Pharmacy.—K. C. Edwards, Cambridge and Glasgow; A. W. Ellis, Edinburgh; F. A. Segreda, Guy's Hospital; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree and D. A. Stepney, Royal Free Hospital; and J. H. Williams, London Hospital.

PART II.

Anatomy.—A. T. Barnard, Royal Free Hospital; T. J. M. Clapperton, King's College Hospital; P. S. Cooke, Charing-cross Hospital; A. W. Ellis, Edinburgh; H. R. Grellet, Guy's Hospital; F. H. Hand, St. Mary's Hospital; E. M. Handley, Royal Free Hospital; J. A. Kilpatrick, King's College Hospital; A. R. McEnnery, Bristol; O. Millauro, Charing-cross Hospital; T. Scatchard, Leeds; R. H. Terry, Guy's Hospital; A. Turner, Charing-cross Hospital; F. J. Turner, Guy's Hospital; and J. A. W. Webster, St. Mary's Hospital.
Physiology.—A. T, Barnard, Royal Free Hospital; F. C. Bourns, Westminster Hospital; E. M. de Wilton, St. Mary's Hospital; C. D. E. Forbes, St. George's Hospital; E. M. Handley, Royal Free Hospital; F. H. Maberly, Birmingham; O. Millauro, Charing-cross Hospital; H. Morrison and T. Scatchard, Leeds; R. H. Terry, Guy's Hospital; A. Turner, Charing-cross Hospital; J. A. W. Webster, St. Mary's Hospital; and C. M. Woods, Charing-cross Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Karl Schweigger has decided to resign the chair of Ophthalmology at the end of the winter session. Dr. Uhthoff of Breslau has been nominated as his successor.—

Dr. Wilhelm Kolle, who has been working in Kimberley in connexion with Koch's investigations on South African cattle plague and has recently resumed his old post as assistant medical officer of the Berlin Institute for Infectious Diseases, has been appointed Professor.—*Budapest:* Dr. A. Szekely has been recognised as *privat-docent* of Infectious Diseases.—*Gratz:* The chair of Ophthalmology, vacant by the death of Dr. Borysiekiewicz, has been offered to, and declined by, Dr. W. Czermak of Prague.—*Halle:* Dr. Kast of Breslau is expected to follow Dr. T. Weber, who is retiring from the chair of Special Pathology and Therapeutics.—*Heidelberg:* Dr. Hofmokl, Extraordinary Professor of Surgery, is retiring on account of his health.—*Leipsic:* Dr. Felix Marchand of Marburg has been offered the chair of Pathological Anatomy, vacant by the death of Dr. Birch-Hirschfeld.—*Prague (Bohemian University):* Dr. Rudolf Kimla, *privat-docent*, has been granted an Extraordinary Professorship.—*Leyden:* Dr. P. Kan has been recognised as *privat-docent* of Otology and Rhinology.—*New York (Polyclinic and Hospital):* Dr. M. Manges has been appointed Professor of Medicine.

FEMALE STUDENTS ADMITTED AT HEIDELBERG.—The medical faculty of the University of Heidelberg has decided to admit female students on the same terms as "regular" male students—that is to say, they must produce a "maturity" certificate from a German gymnasium. "Occasional" female students will not be admitted.

CONVALESCENT HOME FOR WOUNDED SOLDIERS AT TORQUAY.—An influential committee has been appointed to promote a fund for opening a convalescent home at Torquay for wounded soldiers from South Africa. A large villa, which commands some of the finest coast scenery on the shores of Devon, has been placed at the disposal of the committee.

LUNACY IN SOMERSET.—At the meeting of the Somerset County Council held on Jan. 2nd it was reported that there were 847 patients in the Wells Asylum and 462 at Cotford, making a total of 1309 (782 females and 527 males). It was stated that the expenditure at the latter asylum now amounted to £172,170, although originally it was estimated that the cost would be £100,000.

PRESENTATION TO A MEDICAL MAN.—At Newick, Lewes, on Dec. 30th, a small party of friends met at the rectory to present Mr. Richard Gravely, M.R.C.S., with a jubilee testimonial to mark the completion of his 50 years' residence in the village. The rector, on behalf of the subscribers, made the presentation. The testimonial consisted of a solid silver antique inkstand, a pair of silver candlesticks, a case containing a silver pen, pencil, and paper-knife, a cheque, and an illuminated address which contained the names of more than 90 subscribers. On the inkstand is engraved: "Presented to Richard Gravely, Esq., resident in Newick 50 years—1849-1899—by his many friends," and the address itself states: "This testimonial is presented to Richard Gravely, Esq., together with a gift of silver, subscribed for by those whose names appear below, in token of their appreciation of the constant interest shown by him in the welfare of the inhabitants of Newick and the neighbourhood during his 50 years' residence among them."

MEDICAL SLANDER CASE.—At Cardiff on Jan. 5th the under sheriff (Mr. Lawrence Williams) awarded Dr. T. H. Morris £35 damages against Mr. R. W. Willis, an itinerant patent medicine vendor. Evidence showed that on Sept. 20th a young man fractured both his legs in falling from a railway-carriage. Dr. Morris was sent for and, finding amputation was required, after having rendered assistance, took the patient to the Cardiff Infirmary, where he died within two hours. The jury at the inquest found that no fault was attributable to anyone. The defendant wished to accompany Dr. Morris to the infirmary with the patient, but as there was plenty of assistance this was refused. Willis then went to an hotel at Tylorstown and there said, in the presence of Mr. T. Parry and several others, that "Dr. Morris did not know his work and made no attempt to save the young man and if he were the young man's father he would have taken him by the neck and pitched him under the train." Speaking from a van later to about 200 people he made a similar statement, adding that "if Dr. Morris had done what he ought the young man's life would have been saved."

BRIXHAM (DEVON) HOSPITAL.—At the eighth annual meeting of this institution held recently it was stated that for the first time in its history there was a favourable balance. 83 in-patients and 992 out-patients had been treated. The receipts amounted to £535 and the expenditure to £516.

SUPERANNUATION ALLOWANCES.—Dr. John Shoolbraid has been awarded a pension of £50 per annum by the Aldershot District Council on his retirement as medical officer of health of Aldershot.—Mr. Daniel B. Balding, F.R.C.S. Eng., has been granted a superannuation allowance of £34 per annum by the Royston (Herts) Board of Guardians on his retiring from the post of medical officer to the workhouse.

MEDICAL MAGISTRATES.—The following gentlemen have been appointed justices of the peace for New South Wales—namely: Francis Alexander Bennet, M.D. Aberd., of Sydney; Thomas Benedict Clune, L.R.C.S. Irel., of Petersham; Cambridge Cary Cocks, M.D., of Wentworth; James Graham, M.D. Edin., of Sydney; Henry Louis Harris, M.B., of Tamworth; Alfred Wynter Hawthorne, M.D. R.U.I., of Carcoar; Evan Lewis Hickey, M.D. Durh., of Nyngau; John William Kennedy, F.R.C.S. Irel. of Hay; Michael John Lyden, M.D., of Sydney; George Archibald Innes Mackay, L.R.C.P. Edin., of Maclean; John Michael M'Donagh, M.D. Brux., of Sydney; Sydney Sargent Merrifield, M.R.C.S. Eng., of Bombala; George Edward Miles, L.R.C.P. Lond., M.R.C.S. Eng., of Rydalmere; Alfred Edward Perkins, M.B. Syd., of Marrickville; and Charles Daniel Hartley Rygate, M.R.C.S. Eng., of Wellington.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ANDREWS, C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer for the Sixth Sanitary District of the Norwich Union.

BAILES, NORMAN CHRISTIAN, M.B., B.S. Durh., has been appointed Resident Surgeon to the General Dispensary, Birmingham.

BLACK, JOHN, L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

BLANDFORD, L. J., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

CAMPKIN, HUGH T., L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

CORRIE, A. T., L.R.C.P. Edin., M.R.C.S., Fleet Surgeon, has been appointed in medical charge of the Dockyard and Royal Naval Barracks at Sheerness.

CROOK, A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Fourth Sanitary District of the Norwich Union and the Boys' Home.

DARRELL, H. W., M.D. Toronto, L.R.C.P. Lond., has been re-appointed Medical Officer for the Third Sanitary District of the Norwich Union.

DOWLING, A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Union Medical Officer for Haydock.

DYER, S. REGINARD, M.D. Brux., M.R.C.S., L.R.C.P. Lond., D.P.H. Eng., Conjoint Board, Barrister-at-Law, has been appointed Medical Officer H.M. Prison, Stafford.

FIELD, A. T., M.R.C.S., has been appointed Medical Officer for the Wymondham Sanitary District of the Melton Mowbray Union, vice R. Moreton, resigned.

GOFFE, E. G. L., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Medical Officer at the Lewisham Union Infirmary, vice E. R. Badcock.

GOFTON, EDWARD, M.B., B.S. Durh., has been appointed Assistant House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

HARDWICKE, G., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Resident Medical Officer by the Leeds City Council.

JAMES, M. B., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer for the Workhouse and Infirmary of the Parish of St. Mary, Islington, vice M. G. Dyson, resigned.

MCCONNELL, JAS., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

MACGOWAN, J. S., M.D. Lond., M.R.C.S., has been appointed Medical Officer for the Fifth Sanitary District of the Township of Oldham, Oldham Union, vice J. H. Fletcher, resigned.

MCMURRY, J., M.D., R.U.I. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

MAURICE, ALBERT, L.D.S. Edin., has been appointed Dental Surgeon to the Belgrave Hospital for Children, Gloucester-street, London.

MEARNS, JAMES, A., M.B., C.M. Aberd. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

MORRISON, R., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Duffield Sanitary District of the Belper Union, vice F. D. Holmes, deceased.

MUIRHEAD, JAS., M.B., B.S. Durh., has been appointed Junior House Physician to the Royal Infirmary, Newcastle-on-Tyne.

NORTON, J. J., L.R.C.S., L.K.Q.C.P. Irel., has been appointed Medical Officer for the Alrewas Sanitary District of the Lichfield Union, vice J. J. Spears.

PARRY, T. L. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

PEARCE, FRANK J., L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

ROSSITER, C. B., F.R.C.S. Edin., has been appointed Clinical Assistant to the St. John's Hospital for Diseases of the Skin, Leicester-square, London.

ROWLAND, FRANK, L.R.C.P., L.R.C.S. Edin., has been appointed Resident Surgeon to the Birmingham General Dispensary.

SCOTT, NORMAN E. H., M.B., Ch.B. Glasg., has been appointed House Physician to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, N.E.

SIEGER, A. A. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

SIMPSON, WM., M.B., B.S. Durh., has been appointed Senior House Physician to the Royal Infirmary, Newcastle-on-Tyne.

SPOWART, W. R., M.D. Dub., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer for the Eighth Sanitary District of the Norwich Union.

STACY, J. H., L.R.C.P., L.R.C.S. Edin., has been re-appointed a District Medical Officer for the Norwich Union.

YOUNG, A. G., M.B., C.M. Glasg., has been appointed Medical Officer for the Castle Bytham Sanitary District of the Bourne Union, vice J. B. Richardson, resigned.

VALENTINE, WM., L.R.C.P., L.R.C.S. Edin., has been appointed Union Medical Officer for Newton.

WATSON, H., M.D. Aberd., C.M., has been re-appointed Medical Officer for the Fifth Sanitary District of the Norwich Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ABERYSTWITH INFIRMARY.—House Surgeon. Must also act as Secretary. Knowledge of Welsh essential. Salary £150, with the usual residential allowances (stimulants excepted).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for twelve months. Salary £80 per annum, with apartments, board, and attendance.

BRECON INFIRMARY, South Wales.—Resident House Surgeon, unmarried. Salary £80 per annum, with furnished apartments, board (all found except beer), attendance, fire, and gas.

CARDIFF INFIRMARY.—Assistant House Surgeon and Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CHESTER GENERAL INFIRMARY.—Visiting Surgeon for two years. Salary £80 per annum, with residence and maintenance in the house.

CITY OF LIVERPOOL.—Visiting Physician to the City Hospital North, Netherfield-road. Salary £130 per annum. Applications to the Town Clerk, Liverpool.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Resident House Physician for 12 months. Salary £100 per annum, with apartments and board.—Also Resident Assistant House Surgeon for six months. Salary £30 for that period, with apartments, board, &c.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Indoor Dispenser and Assistant to the House Surgeon. Honorarium £20 guineas per annum, with board, lodging, and washing.

DUNDEE COMBINATION POORHOUSES AND HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board and furnished apartments. Apply to the Clerk of Council, Council-chambers, Dundee.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Junior Assistant Medical Officer, unmarried. Salary £150, with board, apartments, washing, and attendance.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

GROVE HALL ASYLUM, Bow, London.—Junior Assistant Medical Officer. Salary £120 a year, with board, apartments, washing, and attendance. Personal application to Medical Superintendent desirable.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Registrar and Pathologist. Honorarium 25 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London.—Assistant Surgeon. Also two Assistant Physicians.

HOSPITAL FOR WOMEN, Soho-square (the London School of Gynæcology).—Clinical Assistantships.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing. Also House Physician for six months. Board, lodging, and washing provided.

LEICESTER INFIRMARY.—House Physician for twelve months. Salary £100 per annum, with board apartments, and washing.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon to the Female Hospital. Salary £80 per annum, with board, lodging, and washing.

METROPOLITAN DISPENSARY, Cripplegate, E.C.—Resident Medical Officer. Salary £100 per annum, furnished residence, and an allowance for coal and gas. Apply to the Secretary, Cripplegate Institute, Golden-lane, London, E.C.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Senior Assistants in the Out-patient Department, fully qualified (females), for two years.

NOTTINGHAM GENERAL HOSPITAL.—House Surgeon for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NORTH LONDON HOSPITAL FOR CONSUMPTION, Hampstead.—Assistant Resident Medical Officer for six months. Honorarium at the rate of £60 per annum. Apply to the Secretary, 41, Fitzroy-square, W.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum. Special arrangement as to board, &c.

PARISH OF ROUSAY AND EDILSHAY, Orkney.—Resident Medical Officer. Salary £51 per annum. Apply to the Inspector of Poor, Rousay, Orkney.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, with furnished apartments in the Asylum, board, and washing free.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Applications to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London, S.W.

ST. GEORGE'S HOSPITAL, London.—Curator of the Museum, and an Assistant Curator. Salary £100 a year for the Curator and £50 a year for the Assistant Curator.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—Honorary Physician. Also House Surgeon for not less than six months. Salary £50 per annum, with board, lodging, and washing.

TORBAY HOSPITAL, Torquay.—House Surgeon. Salary £100 per annum and £5 for nurses' lectures. Board, lodging, washing, and attendance provided (wine, spirits, and beer excepted).

WALSALL AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £100 per annum, board, lodging, and washing.

WEST KENT GENERAL HOSPITAL, Maidstone.—House Surgeon, unmarried. Salary 100 guineas per annum, with board and residence, &c., rising 10 guineas a year to 120 guineas.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Acting Assistant Surgeon.

WEST RIDING ASYLUM, Wakefield.—Assistant Medical Officer to act as Locum Tenens for one month. Salary £3 3*s.* per week, with apartments and board.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY, Whitehaven.—House Surgeon. Salary £120 per year and £30 a year for dispensing, with furnished apartments and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, and board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

ALDRIDGE.—On Jan. 2nd, at Rockstone House, Southampton, the wife of Norman E. Aldridge, M.B., of a daughter.

COSENS.—On Jan. 3rd, at Oxford-terrace, the wife of C. H. Cosens, M.R.C.S. L.R.C.P., of a daughter.

DOW.—On Jan. 4th, at High-street, Lewes, Sussex, the wife of William A. Dow, M.D., of a daughter.

WREFORD.—On Jan. 3rd, at Mount Edgcombe-gardens, Clapham-road, S.W., the wife of S. Wreford, M.R.C.S., of a daughter.

MARRIAGES.

HART—HAWKES.—On Jan. 8th, at the Congress Hall, Clapton, by Commissioner Pollard, Chancellor of the Salvation Army Exchequer, Arthur Herbert Hart, M.S., M.D., M.R.C.S., L.R.C.P., Medical Superintendent to the International Headquarters and of Bannockburn, Lordship-lane, Bruce-grove, to Kate, eldest daughter of Thomas Hawkes of Boscombe, Bournemouth.

PRALL—PINSENT.—On Nov. 1st, 1899, at St. Thomas's Church, Calcutta, by the Rev. C. Anstey, Cedric Barkley Prall, Captain, Indian Medical Service, youngest son of the late Richard Prall of Frindsbury, Kent, to Kathleen Blanche, younger daughter of William Swain Pinsent of Rose-hill, Newton Abbot, South Devon.

SEALY—POWELL.—On Jan. 4th, at St. Barnabas's, South Kennington, Francis Marmaduke Sealy, M.R.C.S., L.S.A., of Sutterton, Boston, to Harriett Catherine, daughter of the late James Turner Powell of Guildford-road, S.W.

WATSON—BARRETT.—On Jan. 3rd, at St. Luke's Chapel in Norwich Cathedral, Charles R. Watson, M.D. Brux., of Tunbridge Wells, to Grace Elspeth, daughter of Rev. Canon Barrett of Lincoln.

DEATHS.

CULLEN.—On Jan. 4th, at his residence, Halsey House, Cheltenham Deputy-Surgeon-General David Cullen, Army Medical Department, retired.

DUDLEY.—On Jan. 2nd, at Hova-villas, Hove, Sussex, John Gardner Dudley, M.A., M.D. Cantab., in his 72nd year.

ELDER.—On Jan. 6th, at 7, Leopold-place, Edinburgh, George Elder, M.D., F.R.C.P. Edin.

GRANT.—On Jan. 3rd, at 3, Connaught-square, Hyde Park, London, Alexander Grant, F.R.C.S., Surgeon-Major, late of the Bengal Service, and Honorary Surgeon to the Queen, aged 82

LONG.—On Jan. 2nd, at Crowborough, Sussex, Henry Plater Long, M.R.C.S., aged 60.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CLERGYMAN AND THE MEDICAL MAN.

WE have frequently pointed out that it is the duty and privilege of the Church to look after people's bodies as well as after their souls. When, however, the clergyman steps out of his proper sphere and usurps the place which properly belongs to a medical man it is time to point out that he is exceeding his duties. We are led to these remarks by a paragraph which appears in the *Eastern Morning News* of Jan. 3rd, 1900, concerning certain villages in the Wolds of Yorkshire, which are some 10 miles from a medical man. As under these circumstances the visit involves a journey of some 20 miles, it is not surprising to find that one practitioner makes a uniform charge of one guinea for a visit. This we are glad to see the *Eastern Morning News* considers by no means excessive. However, our contemporary goes on, "In some villages the difficulty is surmounted by private persons having a knowledge of physic and surgery. At Octon a large farmer is a qualified M.D., and at Langtoft the vicar can attend all ordinary cases, and make a poultice, and lance an abscess, &c." We have nothing to say as to the qualified M.D. except that as his name does not appear in the Medical Directory for 1899 under "Octon" we are unable to ascertain from what university he obtained his degree; but we feel compelled to say that the Vicar of Langtoft is treading upon dangerous ground. He can do good work if he impresses upon his sick parishioners the advisability of seeking trained medical aid or of the necessity for fresh air in the sick room. He may not do much harm with a poultice if its application is not the signal for deferring the seeking of the services of a medical man, but if he is in the habit of opening abscesses he will one day come to grief. The incision of an abscess is a thing in no way to be undertaken by unskilled hands, for it is an operation which for its safe performance demands a considerable amount of anatomical knowledge and we should counsel the reverend gentleman to refrain in future. But the kind of clergyman who does real mischief is one such as the writer of the following letter, addressed to the editor of the *Record* and published in the issue of that paper for Jan. 5th under the heading "Influenza: a Remedy":—

> SIR,—Now that the epidemic of influenza is gaining ground I strongly recommend an invaluable remedy I saw in your columns about three or four years ago, which a clergyman advised. It is to be had from Messrs. F. C. Calvert and Co., Manchester, and is called "No. 1 Medical Phenol," price 1*s.* 6*d.*, or with postage 1*s.* 9*d.* Take three drops with two tablespoonsful of water for a dose—only take three doses in all—with four hours between. Half the quantity for a child. In most cases it makes a perfect cure in a day. Shake the medicine well. I have known 50 cases cured in my parish with it. SPENCER J. COMPTON.
>
> South Creake Vicarage, Fakenham, Jan. 2nd.

This kind of letter does infinite harm. It is not true to say that nine minims of carbolic acid taken in three doses will cure influenza or any other infectious fever in a day. The advice is dangerous not only to the patient himself by leading him to think that he has done everything necessary for his own welfare, but it also leads to his not improbably infecting others. Unfortunately in this land of freedom any person, however ignorant, may prescribe and any other person, however foolish, is quite at liberty to take such prescriptions; and the spread of education seems as yet to have done little in making the masses wiser. The Dowager Countess of Southdown who drugged her tenants with Podger's pills lived in an unenlightened age. The vicar of South Creake would be well advised if he attended to his own business. As a rule in a village, as we have said upon a former occasion, the vicar and the medical man may work well in coöperation, and as long as this sort of coöperation has careful regard for the privileged nature of much that is told to the members of both professions the result is for the public good. But when it comes to the members of one profession usurping the functions of the other nothing but harm can follow. In a town the evils are somewhat less obvious, but in a village where very likely the clergyman and the medical man are the only two liberally educated inhabitants the evils of a dual medical control are grave.

THE DEARTH OF LOCUM-TENENTS.

WE have been informed from various quarters that owing to a multiplicity of causes, such as the action of the General Medical Council in forbidding the further employment of unqualified assistants, the war in South Africa which has absorbed the services of many civilian medical men, and the existence of an epidemic of influenza, there is a great dearth in the supply of medical men willing to act as locum-tenents. This being so, we regret to learn that some men who are available for such posts are with short-sighted policy taking advantage of the present distress to exact large fees. This is not as it should be. We have ever maintained that the labourer is worthy of his hire, but when we hear of locum-tenents demanding excessive remuneration on the plea that their services are greatly in demand and that demand is in excess of supply, we must enter a protest. The locum-tenent of to-day will be, or at any rate hopes to be, the practitioner of to-morrow, and he should be prepared to look at his opportunity rather from a broad professional point of view than from his own sectional point of view. We do not for one moment suggest that all young practitioners who seek for the post of a locum-tenent are acting in this manner, but it must be remembered that in a profession such as ours the defections of individual members are visited upon the profession as a whole, and therefore we earnestly trust that the few who are in error will speedily be brought to see the foolishness of their present course of action.

MATERIA MEDICA LABELS.

WE have received from Mr. H. K. Lewis, of 136, Gower-street, London, a book of materia medica labels adapted for public and private collections. The labels are arranged in two divisions, the first division comprising chemical materia medica (alcohols, alkaloids, sugars, and neutral bodies), and the second division comprising with a few exceptions substances of organised structure obtained from the vegetable and animal kingdoms. The whole series is compiled from the British Pharmacopœia of 1898 and other sources. The characters are clear and where the formula is possible it is given. The labels are of a convenient size and the gum is uniformly distributed and free from those objectionable qualities which frequently characterise adhesive matter. The compilation should be very useful. The price is 10*s.* 6*d.* the book including nearly 500 labels.

"A SAD AND URGENT CASE."

To the Editors of THE LANCET.

SIRS,—The following additional subscriptions have been received for this fund. The list will remain open until Jan. 27th only and subscriptions may be sent to Dr. H. Macnaughton-Jones, 141, Harley-street; or to

Yours faithfully,

WILLIAM H. BOURKE, M.D. Brux.

8, Moreton-gardens, South Kensington, Jan. 10th, 1900.

	£	*s.*	*d.*
Dr. A. Duke	0	10	0
"C."	0	10	0
Dr. S Browne	2	0	0
Dr. T. Elliott	2	2	0
Dr. R. Barnes	1	1	0
Dr. W. H. Bourke	2	2	0
The Baroness Gray ...	10	0	0
Dr. F. G. Smart	1	1	0
Dr. R. E. Burges	0	10	6
Mr. D. B. Hewitt	1	1	0
Dr. W. Radford	1	0	0
Dep.-Surgeon-General Ferguson	1	1	0
Dr. P. L. Benson	1	1	0
Dr. H. Leslie Jones ...	1	1	0
Dr. Wm. McGeagh ...	0	10	6
Mr. E. White	1	1	0
Mr. J. R. White	0	10	6
"Well Wisher"	0	5	0
Dr. G. Patterson	1	1	0
Mrs. John Rigden	1	1	0
Mr. J. Shimeld	0	10	0
Surgeon-General T. S. Burnett	1	1	0
Dr. G. Cowen	0	10	0
Dr. A. Patton	1	1	0
Mr. A. Meldon	1	1	0
Dr. J. Welpley	1	0	0
Dr. C. B. Ball	1	1	0
Rev. D. J. Forbes	1	1	0
Dr. H. B. Pope	0	10	6
Dr. Arnold Ingle	2	2	0
Mr. Chas. Terry	2	2	0
Mr. O. A. Wickham ...	1	1	0
Dr J. W. Martin	1	1	0
"H. S."	2	0	0
Dr. Clifford Allbutt ...	1	1	0
Dr. Hallgood	0	10	6
Per "Doctor's Daughter"	4	1	0
Dr. A. Caldwell	1	1	0
Mr. S. Parsons Smith ...	0	10	0
Dr. J. Hamilton	1	0	0
Per Mrs. Paddon	2	0	6
Dr. J. Redfern	0	10	6
Mrs. Full	1	1	0
Dr. R. McVittie	1	0	0
Dr. Lombe Atthill	1	0	0
Miss Allan	5	0	0
Dr. Wm. Travers	1	1	0
Dr. R. E. Hugo	0	10	0
Dr. A. W. Baker	1	1	0
Dr. Alice McLaren	1	1	0
Dr. Elizabeth Pace ...	1	1	0
Mr. R. G. Nesbitt	0	10	0
Lieutenant-Colonel W. Alexander, A.M.S. ...	1	1	0
Dr. J. Stewart	0	5	0
Mr. John Carver, J.P. ...	5	0	0
Dr. Wm. Fuller	1	1	0
Mr. Alfred Osmond ...	1	1	0
Mrs. Blake	1	1	0
Mr. Wm. Duff Bruce ...	2	2	0
Mrs. Hemans	2	0	0
Dr. J. Shaw Lyttle ...	0	5	0
Miss Low	1	1	0

THE ORGANISATION OF THE PROFESSION: SOME SUGGESTIONS.

To the Editors of THE LANCET.

SIRS,—Re the query of your correspondent "Hon. Secretary" in THE LANCET of Dec. 30th, 1899 (p. 1870), in which he asks for particulars of a Provident Medical Association to be managed solely by practitioners, you refer him to the excellent and invaluable articles in THE LANCET on the "Battle of the Clubs," &c. These are, indeed, invaluable and will amply repay careful study by anyone interested in the question. The articles above referred to deal with a series of more or less local provident associations; the idea that your correspondent apparently has is for a more comprehensive scheme which shall be more generally applicable and embrace more than the particular district in which it happens to be started.

For some two years past I have been (with the help of a solicitor of considerable experience in organisation and an accountant) endeavouring to frame the constitution, rules, and directions for working just such a scheme under the name of "The Public Medical Service," and I hope that it will very shortly be ready for publication. If your correspondent or others interested will communicate with me either through your columns or privately I shall be happy to answer any brief and direct queries upon the subject. Briefly the principles upon which the scheme has been drawn up are that "The Public Medical Service"

shall be managed and controlled solely by registered medical practitioners; that every medical practitioner who agrees to conform to the rules shall be eligible to act on the medical staff; and that there shall be a wage limit and no canvassing. The service is to be managed by a central executive council annually elected from and by the general body of members. The rules are so drawn that they may apply as far as possible to any district. Power is delegated by the executive council to members residing in the various districts to carry on the service in that district within the powers delegated to them by the rules and to elect their district officers. The district officers are chairman, secretary, and treasurer. The district committees engage collectors as required. The collectors are absolutely forbidden to canvass. Members of the medical staff must sign an application form and undertake to obey the rules. Every registered medical practitioner in the district is eligible to join the medical staff and is *ipso facto* a member of the district committee upon being admitted upon the medical staff. The district committees carry on the business of the service in the district within the powers delegated to them by the rules. The questions of practitioners residing upon the borders of one or more districts, and other complications that may arise, have as far as possible been considered and provided for. The question of dispensing by chemists has been considered and rules have been framed should a district desire to adopt that method. Patients are admitted by the medical staff upon written application. Subscriptions of patients are payable according to their weekly income. No reduction is made for women or children as such, but members of a large family with a small joint income may be admitted for a smaller premium each than if they joined as separate entities. The actual premiums to be paid according to the income have been the subject of most careful consideration by a small committee of medical men. The classification has been agreed upon, but it is felt that the actual sums should not yet be fixed. Certain extra fees are payable by the patient to his medical adviser—for example, confinements, consultations, small-pox in the unvaccinated, certain cases under the Workmen's Compensation Act, &c. All extra fees are payable to, and retained by, the medical man. Subscriptions are paid to the collector, by him to the district treasurer, and thence to the head office. The books close quarterly, when the money is returned to members of the medical staff according to the actual amount received from their patients less expenses and contribution to the reserve fund. By an application of the card system the accounts of each member of the medical staff and of each district are kept separate with a minimum of clerical work. The card system has been adopted for keeping the records of patients and a modification of it for keeping the accounts; by this means the clerical work at the district and the head office is reduced to a minimum. Patients may transfer themselves quarterly from one practitioner to another or from one district to another after giving due notice. To enable them to do so they must obtain a certificate of transfer which states that they have paid up all subscriptions and arrears due to the medical man they are leaving. This certificate is taken to the new medical attendant and by him sent to the proper quarter. The wage limit and weekly subscriptions are subject to periodical revision which need not necessarily be retrospective. By the system adopted it will be possible to trace a patient from place to place and thus to a large extent prevent fraud. To be successful when started the scheme must be worked upon broad principles. The object of the executive council should be to induce all practitioners to join either as active or honorary members, their especial aim being to offer a substitute to practitioners to replace the medical aid appointments already held by them. It would be difficult to ask a man to sacrifice perhaps half his income unless one could offer some substitute. Central control is essential to ensure uniformity in the working of the district committee and to keep the service an individual entity and not a series of irregular small associations. The government must be democratic; this will be secured by the annual election of the whole council, sufficient continuity of procedure being secured by the right of the council to nominate—as from the council—and recommend their successors for election, nominations being also received from the general body of members. The details are innumerable, nor would any useful purpose be served by attempting to include more of them here. So far as possible the above principles have been carried out in the proposed rules and directions for working.

I shall be happy to receive communications from practitioners interested and to answer any short and direct queries upon the proposed scheme, and especially to know what support is likely to be forthcoming from the profession should such a scheme be propounded.

I am, Sirs, yours faithfully,

MURTAUGH HOUGHTON,

Hon. Secretary to the East Suburban Medical Protection Society, Limited; Member of Council of the Corporate and Medical Reform Association.

York-road, Ilford, Jan. 7th, 1900.

"THE MACKEY FUND."

To the Editors of THE LANCET.

SIRS,—I have received the following subscriptions on behalf of the widow of the late Mr. Stephen Mackey:—Amount previously reported, £13 8*s.*; Sir Joseph Ewart, M.D. St. And., F.R.C.P. Lond., Brighton, £1 1*s.*; Dr. Mouillot, Harrogate, £1 1*s.*

I am, Sirs, yours faithfully,

LEONARD C. DOBSON, M.D. Lond.

59, Addison-gardens, Kensington, Jan. 10th, 1900.

Enquirer.—Under certain circumstances—i.e., where there is good collateral security—an agent might consider such a proposal, but under those circumstances whoever acted as security might as well act as principal. The proceeding is for obvious reasons quite unusual and the collateral security would have to be very sound. For who is to ensure that the medical man will live to return the advance, or will have health to continue in practice, or will work the practice in such an efficient manner that here will be each year a surplus from which to repay the money lent?

H. A. B.—We cannot decide upon the comparative merits of the degrees and diplomas mentioned. Each is a good qualification and for each nowadays work of a fairly high standard is expected. An M.D. degree has the obvious use in general practice of giving its possessor an academic right to the popular title which he will anyhow receive; but the special department of work which our correspondent contemplates taking up is daily becoming more purely surgical.

J. W.—We do not recommend practitioners, specialist or other. Our correspondent can obtain from his medical man the names of the gentlemen whom it might be advisable to consult, if a consultation is required. The complaint is unfortunately an obstinate one in some of its forms.

H. J. P.—We do not recommend practitioners.

ERRATUM.—The death of Surgeon-Major Alexander Gibb Grant, which appeared under the heading of "The Services," in our last week's issue should read, instead, "Surgeon-Major Alexander Grant."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Leicester Free Press, Westmorland Gazette, Market Harborough Mail, Daily Mail (London), New York Sun, Birmingham Daily Post, Morning Herald, Nottingham Daily Guardian, Scotsman, Times of India, Pioneer Mail, Citizen, Builder, Architect, Liverpool Daily Post, Sanitary Record, Bristol Mercury, Brighton Gazette, Yorkshire Post, Birmingham Daily Gazette, Eastbourne Gazette, Hereford Mercury, Sheffield Daily Telegraph, Malton Gazette, Glasgow Herald, Local Government Chronicle, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Denbighshire Free Press, Carolina Spartan, Local Government Journal, Surrey Advertiser, Yorkshire Herald, Sportsman, Manchester Courier, Southampton News, British Dental Journal, Naval and Military Record, Drogheda Conservative, Batley News, Kentish Express, Fife Herald, Alliance News, Leighton Buzzard Reporter, Woburn Reporter, Wakefield Herald, East Sussex News, Todmorden Advertiser, Halifax Courier, Leeds Mercury, Norfolk Daily Standard, Eastern Daily Press (Norwich), &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 11th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 5	29·84	N.E.	...	55	45	33	40	41	Overcast
" 6	30·03	S.W.	...	56	44	34	34	35	Foggy
" 7	29·71	S.E.	0·32	53	45	35	42	44	Raining
" 8	30·14	S.W.	0·09	59	49	35	38	39	Overcast
" 9	30·06	N.W.	0·15	66	48	39	7	48	Overcast
" 10	30·13	W.	0·03	66	48	39	41	43	Raining
" 11	30·41	N.W.	0·01	48	42	37	38	40	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (20th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (16th).—CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Paper:—Dr. T. V. Dickinson: Gynæcological Therapeutics.

PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—Papers:—Dr. W. Pakes: The Occurrence of the Proteus Vulgaris in a Venous Thrombus.—Mr. Shattock: A Specimen of Columnar-celled Carcinoma of the Uterus.—Dr. Foulerton: Mycotic Tumour from a Horse.—Dr. Auld: Some Results of Experiments with the Toxins of the Pneumococcus. And various Card Specimens.

WEDNESDAY (17th).—SOCIETY OF ARTS.—8 P.M. Mr. A. Rigg: Ventilation without Draughts.

THURSDAY (18th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Annual General Meeting and Conversazione.

FRIDAY (19th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Galloway: Consultation. (Skin).

TUESDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Consultation. (Medical.)

WEDNESDAY (17th).—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). 4.30 P.M. Dr. T. D. Savill: Pustular Diseases. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Sir W. H. Broadbent, Bart: Clinical Lecture.

THURSDAY (18th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.). 5 P.M. Clinical Demonstration:—Dr. H. Campbell: Cases of Locomotor Ataxy and other Disorders of the Gait.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC) 22, Chenies-street, W.C.).—3 P.M. Roentgen Ray Class:—Dr. H. Low: Demonstration I. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. W. H. R. Rivers: The Senses of Primitive Man.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Penrose: Demonstration of Selected Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Surgical Cases. (Post-graduate Course.)

FRIDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Eye, Ear and Throat.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume, were given in THE LANCET of Jan. 6th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1899 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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Communications, Letters, &c., have been received from—

A.—Mr. D. Ainley, Halifax; Association for Supply of Pure Vaccine Lymph, Lond.; A. D. Z., Leeds.

B.—Mr. W. Bernard, Londonderry; Bolton Infirmary, Secretary of; Mr. F. E. Bennett, Lond.; Beeton Co., Lond.; Mr. R. J. Beevor, Lond.: Messrs. J. N. Bishop and Sons, Lond.; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. A. E. Barker, Lond.; *British Columbia Review*, Editor of; Mr. J. Bland-Sutton, Lond.; Mr. J. A. H. Brincker, Lond.; Bovine, Ltd, Lond.; Mr. A. C. Bushell, Folkestone; Mr. A. F. Blagg, Clifton; Mons. O. Berthier, Paris; Sir James Blyth, Lond.; Mr. P. Besant, Lond.; Mr. W. H. Brooks, Leicester; British Orthopædic Society, Lond., Secretary of; Dr. J. Blumfeld, Lond.; Mr. H. A. Bridgman, Lond.; Mr. W. H. Barrett, Chichester; Messrs. C. Barker and Sons, Lond.

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O.—Obstet.

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Y.—Dr. E. S. Yonge, Manchester; *Yorkshire Post*, Leeds, Manager of.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. H. R. Andreae, Lond; Aberystwith Infirmary, Secretary of; Messrs. Allen and Hanburys, Lond.; A. C.; Mons. J. Astier, Asnières, France; American Tobacco Co., Lond.; Messrs. Armour and Co., Lond.; Dr. J. Atlee, Lond.

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Two Clinical Lectures

ON

THE USE OF MASSAGE IN RECENT FRACTURES AND OTHER COMMON INJURIES.

Delivered at St. George's Hospital on Jan. 30th and Feb. 27th, 1900,

BY WILLIAM H. BENNETT, F.R.C.S. ENG.,

SURGEON TO ST. GEORGE'S HOSPITAL; MEMBER OF THE COURT OF EXAMINERS, ROYAL COLLEGE OF SURGEONS OF ENGLAND, ETC.

LECTURE I.

Delivered on Jan. 30th.

GENTLEMEN,—It is now more than two years ago since I called attention to the use of massage in recent fractures,[1] a treatment which had previously received too little attention in this country. After having had some experience of it I then came to the conclusion that, rationally practised, this treatment was probably the best method which could be used in ordinary fractures, both simple and compound, when the circumstances of the practitioner and of the patient permitted its adoption. The result of that communication was, I believe, a considerable increase in the use of the method. It has been employed freely in St. George's Hospital with excellent results. Latterly, however, there has been some falling off in its use—not because there is anything wrong in the principle of the method or with its results, but because it is at times difficult to keep the necessary number of dressers, who of course are constantly changing, sufficiently instructed in the details to enable it to be safely carried out. I have, therefore, thought that it might be useful to devote some attention to a practical description of the way in which the treatment should be applied.

I do not propose to confine my remarks altogether to massage in fracture, as I think it will be useful to deal generally with the subject of the legitimate use of rational massage in common surgical injuries. In other words, I shall try to say something useful about the treatment of recent fractures, of dislocations, and of sprains and bruises by the same means. It is possible that I may be able to say something about the treatment of each of these varieties of injury—at all events, I hope the time spent in considering the matter will not be entirely wasted.

THE TREATMENT OF RECENT FRACTURES BY MASSAGE.

Most of you know that the real difficulties and disappointments in cases of fracture, supposing they are treated in the ordinary way, often commence after the union has taken place and the patient begins to think of getting about. There are, of course, initial difficulties in connexion with the "setting" of the bones and in the subsequent keeping of the fragments properly in place, but these, as a rule, cause no great trouble provided they are intelligently met. The difficulties in the later stages are mainly pain and stiffness, which frequently require a long and trying course of massage and passive movement before the patient is able to get about with comfort or to follow his occupation and which sometimes lead to permanent crippling. In the case, for example, of a fracture of the leg treated in the ordinary way by having been placed in splints or in plaster-of-Paris, or by some other contrivance of that kind, for a long period, say from six to eight weeks, you will find that when the splint, of whatever kind it may be, is taken off and the patient begins to walk about or tries to walk about, complaint is frequently made of intolerable pain about the ankle and sometimes across the sole of the foot. The ankle is quite stiff, the knee may also be stiff, and the muscles are wasted so that the leg may be little more than bone and skin. Supposing, however, that the case has been treated rationally by massage from the beginning, you will find that the patient is afflicted with none of these troubles; the ankle is not stiff, there is no pain such as I have mentioned, and the muscles are not wasted, because in the massage treatment they are developed; in fact, when the patient begins to get about the ankle is free and supple and the muscles are practically in the same condition as those of the sound limb. These are obvious and great advantages. The reasons of the discomfort which patients suffer when the treatment has been conducted upon classical lines are easily explained. The stiffness is due to the fact that in consequence of the limb having been placed in an immovable splint for a long period the joint included in the splints becomes, as a matter of course, stiff. If, for example, a perfectly healthy ankle-joint were put into a plaster-of-Paris splint for six weeks or two months it would be found upon the removal of the splint that the joint had become stiff and that natural mobility could only be obtained at the expense of pain and great discomfort. In fracture the stiffness is of course infinitely increased by the adhesions of the soft parts around the seat of the lesion.

A noteworthy pain in fracture of the leg is that which shoots downwards from the seat of the fracture along the back of the leg to the inner malleolus and thence into the sole of the foot. This pain is sometimes most acute and at times leads to permanent crippling; it is due to neuritis produced by the parts about the fracture on the posterior aspect becoming matted at the level of the injury; this matting sometimes involves the posterior tibial nerve and so gives rise to the neuritis. This condition is no imaginary one since I have proved it by dissection.[2] The result of this condition is that when the patient begins to try to use the limb after the mere stiffness due to the splints has been overcome, any free movement of the foot causes a dragging upon the adherent nerve so that an intense neuralgic pain is caused. So acute is this pain in some cases that it prevents the patient proceeding further with attempts to get better movement. People are therefore sometimes seen walking with stiff ankles after fractures of the leg which have been treated by persistent splinting, not because the stiffness cannot be overcome but because the pain on movement of the ankle is so great that they are unable to bear the necessary manipulation. All this trouble is preventable by the use of intelligent massage in the early stages of fracture In the early stage of fractures the main difficulty is, of course, as I said just now, connected with the setting of the bones, the difficulties arising in this respect being mainly three. One is the ordinary nervousness of the patient, which, of course, can only be overcome by tactful management or by the administration of an anæsthetic; the second is connected with the direction or other peculiarity of the fracture; and the third difficulty arises from muscular spasm, the result, no doubt, either of irritation of the muscles by sharp edges of bone or of direct laceration of the muscles themselves which in consequence become hyper-sensitive and excitable. I know of nothing more difficult to relieve under ordinary circumstances that the muscular spasm which comes on after the injury in some cases of fracture. Not only is it painful to the patient, but the constant muscular contractions frequently render the retention of the fragments in proper position almost impossible.

In the old times—and with some people it is even the custom now—it was sought to overcome this spasm by tenotomy, and since it is more commonly met with in the muscles of the calf than elsewhere, division of the tendo-Achillis was the operation most frequently performed for this purpose, because it was thought that division of the tendon would for the time being paralyse the gastrocnemius and soleus and would permit of the proper adjustment and retention in position of the fragments which could not be otherwise accomplished. It is not unusual after the reduction of a fracture with or without the aid of an anæsthetic—we will, for example, take the case of the leg—to find when the patient recovers consciousness that uncontrollable spasm occurs; the pain is acute, the muscular contraction is inevitable, and if the fracture is at all oblique the displacement recurs. Spasm of this kind is more efficiently controlled by massage than by any other plan, excepting perhaps prolonged anæsthesia by ether or narcotism by opium, alternatives which are obviously undesirable in a general way.

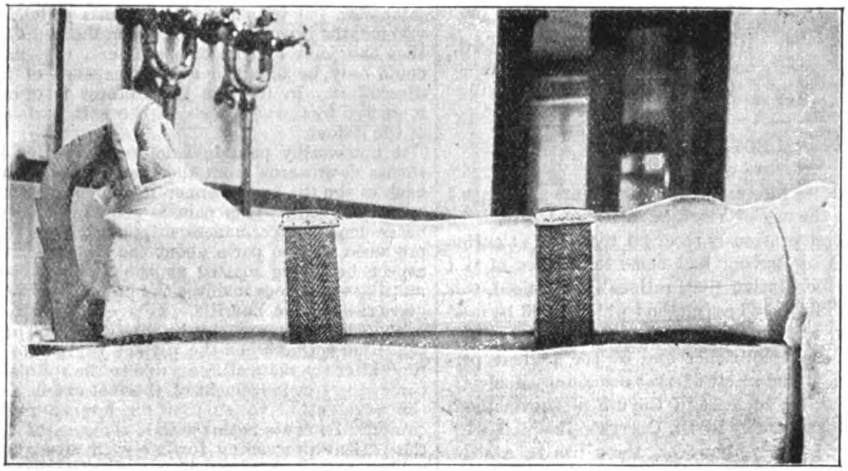
Assuming that massage in these cases of recent fracture is right—as I have no doubt it is—the next point for our consideration is the method of its application. There are, roughly, three stages in the process and each of these stages

[1] THE LANCET, Feb. 5th, 1898, p. 359.

[2] Ibid.

effects certain purposes. Naturally, the first thing in every fracture is to "set" the broken bones, by which I mean placing them in their proper positions. Nothing short of accurate replacement of the fragments in their proper positions should be regarded as a satisfactory "setting." The primary point, therefore, to be borne in mind in every case of fracture is that too much trouble cannot be taken in the first instance in getting the bones into position. With regard to the plan of fixing fractured bones in position by the use of screws, nails, pegs, wire, &c., I propose to say nothing here. The method may be under certain conditions a good one, but it obviously cannot be freely adopted by the ordinary practitioner, although it may produce excellent results in the practice of some of us.

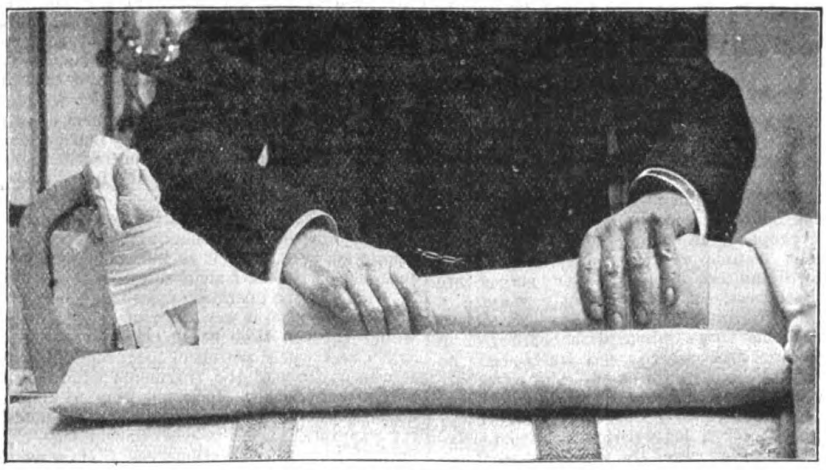
FIG. 1.



Massage in recent fracture of the leg. Stage 1: The fracture set.—The limb is secured on a back-splint, with a slightly oblique foot-piece, by bandages at the ankle and knee. Side-splints fixed by webbings or straps complete the fixation of the fracture.

swelling about the fracture; there is also a certain amount of muscular spasm. He complains so much of the spasm that unless something is done he can hardly lie quiet and certainly cannot sleep or feel comfortable. The ordinary method under such circumstances is to give a hypodermic injection of morphia, or, if the bones are not in precise apposition, to give an anæsthetic if that has not already been done. You will, however, find that unless the bones are grossly out of place—in which case you must at once rectify the defect—gentle massage over the fracture, merely a smooth upward movement of the hand which grasps as much of the circumference of the limb as possible, will in a very few minutes, in the majority of cases, practically relieve all spasm. You will sometimes find people who are suffering

FIG. 2.



Massage in recent fracture of the leg. Stage 2: Immediate smooth rubbing.—Commence at any time, the sooner the better after the fracture has been "set." The straps fixing the side splints are unfastened and the splints are allowed to fall away from the limb. The knee is then steadied by one hand of the manipulator whilst smooth gentle rubbing from the foot upwards is effected by the other hand, which is made to grasp as much of the circumference of the limb as possible. The time required is from five to 10 minutes. The objects are the relief of muscular spasm and rapid absorption of effused blood, &c. At the end of this stage the side-splints are replaced, leaving the parts in the condition shown in Fig. 1.

Returning from this digression to the method of applying massage, let us suppose that this man before you has a broken leg, somewhere below its middle. He has come at once to the hospital and the fracture has been what is commonly called "set"—and as he has come here we will suppose it has been properly set. There is a good deal of from spasm to such an extent that they are crying out with the pain and who are certainly unable to get any peaceful rest, after a few smooth passages of the hand over the damaged part settle down comfortably; in some cases they will actually fall asleep while the rubbing is proceeding. This movement, however, must be done in the right way—

that is to say, with the flat of the palm of the hand grasping the limb very smoothly and uniformly in the way I show you (vide Fig. 2). You need not be in the least afraid of smoothing the limb over the fracture if you do it properly. Patients do not resent the pressure at all—in fact, they rather like it, as some of you know already from what you have seen in my practice. The first object, then, that massage effects in these cases is the relief of the pain due to spasm should it be present. The same smooth movement that I am now applying very gently over the swollen parts day the massage is employed, at first mainly to get rid of the effused blood round about the fracture. At the end of the third day, again, after practising this smooth massage for ten minutes, passive movement of the muscles and tendons at the back of the ankle and in the calf should commence. In order to effect this you begin very gently by moving the toes only. The foot is still bandaged and the splint remains in the way you see here. The hand is insinuated under the toes in the way I am doing (vide Fig. 3) and dorsal flexion of the toes

FIG. 3.

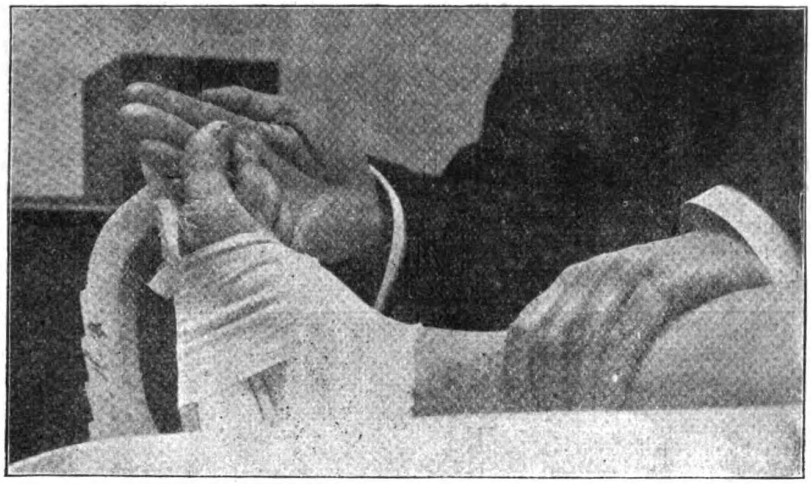
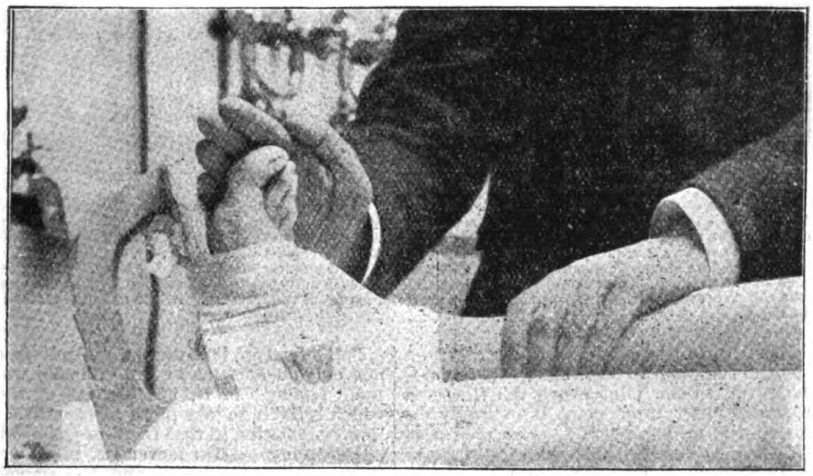


FIG. 4.



Massage in recent fracture of the leg. Stage 3: Commencement of internal massage.—After preliminary smooth massage as described in Stage 2 one hand of the manipulator is insinuated between the toes of the affected side and the foot-piece of the splint (**Fig. 3**). Dorsal flexion is then effected as much as possible by rotating the hand forwards and downwards (*vide* Fig. 4). This movement is repeated from five to ten times, the fracture being steadied by the grasp of the other hand of the manipulator. The date of the commencement of this stage may be any time after the second day. The objects are early slight movement of the flexor tendons at the back of the ankle to prevent adhesions. Movement of the toes separately instead of *en bloc* may be substituted at discretion. At the end of this stage the side-splints are replaced as in Fig. 1.

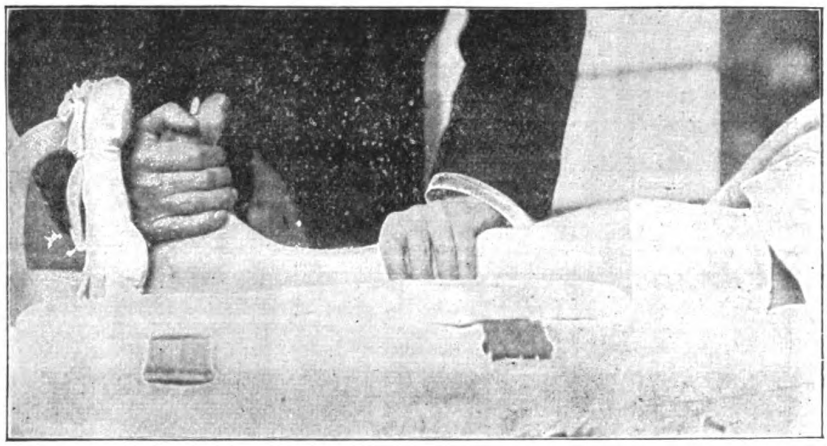
immediately about the fracture will also bring about absorption of the effused blood with extreme rapidity, so long as the rubbing is smoothly and carefully carried out. The splints used for the treatment of the fracture, you will note, consist of a back-splint with an oblique foot-piece and two straight side-splints, the latter secured by straps so that they are easily loosened (vide Fig. 1).

Immediate muscular spasm having been allayed in the manner indicated the side-splints at the end of two or three days are loosened and the limb is left exposed on the back-splint as this man's is (vide Fig. 2), and every *en bloc* is made (vide Fig. 4). Every time the toes are bent in that way the flexor tendons are pulled upon and so a little movement is produced. The little movement thus produced in the calf accomplishes the beginning of what is called "internal massage," by which I mean that there is a little rubbing movement up and down of the deep muscles in the calf of the leg. This movement not only stimulates the circulation but it makes sufficient movement to prevent immediate adhesions from forming about the fracture which would otherwise occur. The first passive movement then affects the toes; this is begun on the third day and

continued for two days—say, until the fifth day. If all goes well passive movement of the ankle may be commenced from the fifth to the seventh day. For this purpose the limb is allowed to lie quite comfortably, as it will do now, on the back-splint, the side-splints having been removed and the bandage around the ankle taken off, the bandage above the knee remaining undisturbed (vide Fig. 5). The foot is now firmly grasped with one hand and freely moved at the ankle-joint, the fracture being at the same time steadied with the opposite hand. After a few days the patient may be allowed to make voluntary movements of the ankle as it lies on the splint, the fracture being steadied by the surgeon's hand. Having arrived at this stage of the affair all fear of any adhesion about the ankle-joint or the parts behind the fracture ceases. It may happen in exceptional cases that the patient is so over-sensitive or the damage to the soft parts so extensive that the plan cannot be carried out with safety, but if employed with intelligence you will rarely find any case in which it cannot be profitably used. For the passive movements from three to five minutes at each sitting is sufficient. This is always preceded by a quarter of an hour's smooth rubbing by which the patient is generally made most comfortable. These processes are repeated day by day, extending at the end of the first fortnight to as much as half an hour for each sitting. At the end of a fortnight—a little more or less, according to the state of union—attention must be given to the joint above the fractured point. The joint below the fractured point is naturally the most important, because it is that which is most interfered with if adhesions form. At the end, then, of a fortnight or less, after having done what is necessary for the leg, the knee is subjected to passive movement. In bending the knee great care must be exercised, because the fracture being only a fortnight old, or a little more, is not in a condition of anything like firm union. The bending of the knee may be carried out in one of two ways. It may be done (1) by simply taking the leg, as you have often seen me do, with one palm under the limb just above the heel and the other grasping it under the thigh in the way shown in Fig. 6, and then lifting the knee from the splint. By degrees, as the case goes on, the knee may be raised more and more until at the end of three weeks it is bent up to a right angle. During the whole of these manipulations it must be constantly borne in mind that a recently broken limb is being dealt with. Although that is the plan I adopt in managing these fractures myself in private or when my masseuse is managing them for me, it is safer for hospital purposes at this stage, after the massage for the foot and leg has been finished, (2) to put on a pair of short side-splints, retained in position with straps or webbings, and then bend the knee and ankle in the way I show you (vide Fig. 6). This brings the treatment up to about the end of the third week after the receipt of the injury, and by this time in the majority of cases treated on this plan the fracture is nearly sound—not sound enough for walking but sound enough for the patient to be left without any splint. The patient can lie in bed if so disposed, or if the patient be a private one and prefers to be getting up and sitting on a couch or chair he may do so after having been provided with a case of poro-plastic or leather to be worn around the calf over the seat of fracture, as a kind of protection. At the end of three weeks you will find that complete ordinary muscle massage may be thoroughly carried out, in order to develop the muscles throughout the whole of the limb.

Such is the way in which any ordinary case of fracture of the leg may be treated by massage. The nearer the fracture is to a joint the more important is it that this massage should be carried out, for the simple reason that the nearer the fracture is to a joint the more likely is it that there will be subsequent pain and stiffness. Please understand that the use of massage and passive movement in these cases in no respect lessens the necessity for the point of primary importance in all fractures—i.e., placing the fragments at the outset in accurate position.

FIG. 5.



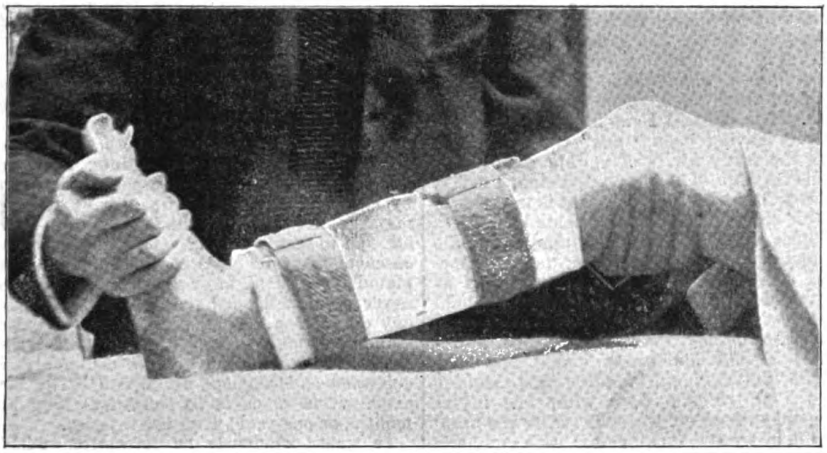
Massage in recent fracture of the leg. Stage 4: Increase of internal massage.—After the usual preliminary smooth massage the bandage fixing the ankle is removed, leaving the limb secured above by the bandage at the knee and at the seat of fracture by the grasp of one hand of the manipulator. The other hand is insinuated between the sole and the foot-piece of the splint and firmly but gently grasps the foot and makes passive flexion at the ankle as freely as possible five or six times without moving the fractured bones. The date of commencement of this stage may be any time after the fourth day but may in difficult cases have to be postponed as late as the eighth or even the tenth day. The object is movement of the ankle-joint and muscles at the back of the leg and the calf to prevent adhesions, especially at the posterior aspect of the fracture. At the end of this stage the splints are replaced as in Fig. 1.

Pott's fracture is always a difficult fracture, as you know, not only on account of the difficulty which often arises in the "setting" of it, but because of the matting of parts which is liable to take place afterwards. Once the bones are in good position in that fracture you need have no hesitation in beginning passive movement in two or three days after the injury at the latest, and the smooth massage may be commenced directly after the accident with great advantage. Because Pott's fracture happens to involve the joint there is no reason why passive movement should not be used immediately. Indeed, this is a strong reason for its adoption, for it is only by so doing that the avoidance of adhesion and stiffness can be with certainty accomplished (vide Fig. 7). I have described the case of a fracture of the leg because it is one of the most easy to manage. When managed on the lines I have described it will be found, if the practitioner will devote the time and the patient has the patience, that a better result will follow in fractures treated in this way than by any other plan, and that in the end the time which is occupied in the recovery of the patient is little more than half of that which follows the treatment by splints in the ordinary manner.

There is one fracture in which the effect of massage from the beginning is most remarkable—viz., intra-capsular fracture of the neck of the thigh-bone. So far as massage

of the part is concerned in a fracture of that kind it cannot be commenced too early. If it is started a few minutes after the injury it is not too soon. In such cases, as you well know, the pain is sometimes very acute, and the spasm is often almost continuous, the patient complaining bitterly of the jumping of the limb and the intense discomfort caused by the spasm. The suffering resulting from this kind than all the drugs and anæsthetics in the pharmacopœia. In a day or two let passive movement be commenced. Have no anxiety about the union, your main objects being to give comfort and prevent muscle-waste; upon the latter the ultimate utility of the limb will for the most part depend. The worst thing that can happen in cases of this kind is wasting of the muscles, which can be obviated by intelligent

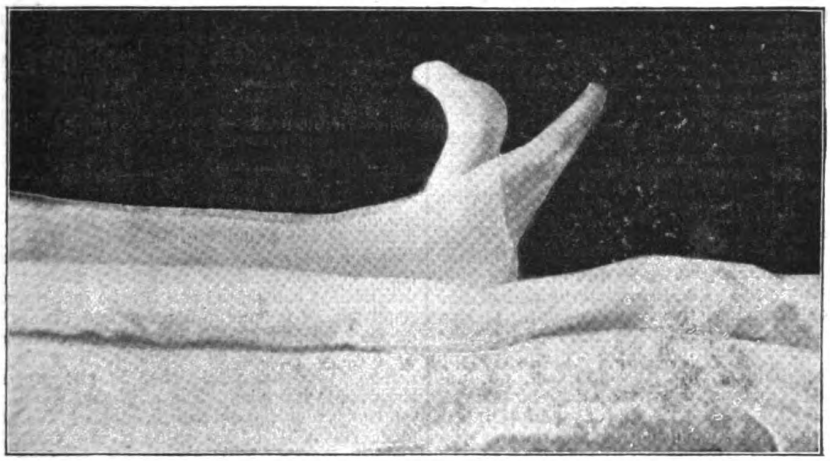
FIG. 6.



Massage in recent fracture of the leg. Stage 5: Increase of passive movement and commencement of complete massage.—The back-splint is now dispensed with, the fracture being fixed by means of side-splints straight or with foot-piece (Cline's). These having been removed the limb is laid on the bed or couch and complete ordinary massage is applied for 15 minutes. Unless the union is very firm the fracture is then fixed by two short splints or, better, by a moulded poroplastic or leather splint. Passive movements of the ankle and knee are then made in the manner shown in the figure. The flexion at the knee not only prevents stiffness of that joint but allows more free internal massage by relaxing the calf muscles. The date of commencement may be any time after the fourteenth day, according to the state of the union.

the spasm can be removed very rapidly by smooth rubbing of the sort I have described. In such a fracture you need not trouble about adjustment of the fragments. Bony union you know will not occur and, failing that, the indication is to obtain as useful a limb as may be. The object in view should be to get a moveable and painless limb with the muscles as strong as possible. No splints should be used. massage. This, then, is the treatment under ordinary circumstances which I strongly commend to your notice in such cases. The use of a splint should be altogether avoided, smooth massage should be commenced at once, passive movement should follow quickly, flexion and extension should be effected by lifting the knee from the bed in the way I show you, and rotation movements should be the

FIG. 7.



Massage in recent fracture of the leg, showing the amount of voluntary movement at the ankle in a severe case of Pott's fracture two weeks and three days after the injury. When the patient was admitted, immediately after the accident, the foot was displaced completely outward, the transverse horizontal plane of the sole being vertical. The use of all splints was discontinued in the third week.

Splints in such cases tend to the production of bed-sores and promote the wasting of muscles. They do no good and they render the patient most uncomfortable. Therefore let these cases be treated by smooth rubbing at once and passive movement in 24 hours. A masseuse, or any person with a moderately soft hand, can give more comfort in a case of last to be practised. For the first three or four days let passive flexion and extension be done as often as the nurse can do it; no pain occurs if the limb has been previously rubbed smoothly and gently. In a week or two rotation may be used. Under no circumstances should any passive movement whatever be employed until the neighbourhood of the

ury has been subjected to a good smooth rubbing. You may use liniments or not, as you please, but it is the rubbing which does the good.

There are few fractures in the whole body which are followed so frequently, I suppose, by a certain amount of defective movement as Colles's fracture, the result almost entirely of the matting of the parts. Sometimes it is said that the defects which follow in Colles's fractures are entirely due to the alteration in the relations of the bones produced by the injury. In certain of the cases the bones are without doubt altered in their relations to one another but the cause of the want of movement does not, as a rule, lie with the altered bone relations. The cause of the want of proper movement is practically always adhesions and nothing more, and if these cases are treated intelligently by massage from the first there need be no fear of defective power of movement. The method I use in such cases is as follows:—The fracture having been "set" the forearm is placed upon one of the many kinds of splints which have been devised for this fracture—Carr's splints being, I think, on the whole the best; but the kind of splint is immaterial so long as the anterior splint is placed well behind the bases of the fingers. Before the back-splint is applied gentle smooth rubbing should be used, the patient being immediately told to flex and extend the fingers as much as possible and as often as possible. The back-splint should from the first be removed daily for smooth rubbing. In two or three days a little gentle backward passive movement at the wrist should be made whilst the part lies exposed on the anterior splint after the smooth rubbing. In from four to six days after the injury the part should be gently lifted off the splint after the usual smooth rubbing and held by the manipulator with one hand firmly grasping the fracture area whilst the other hand flexes and extends the wrist a few times in succession. This is repeated daily, the amount of movement increasing gradually as time goes on. In a fortnight the patient may be allowed to make the movements freely of his own accord after he has been provided with a poroplastic or leather splint for the wrist which is easily removed and replaced. Ordinary complete massage is at the same time commenced daily. At the end of three weeks all splints may be discarded, the arm being carried in a sling for another week only.

Again, let me impress upon you the fact that the most important practical point to be borne in mind in connexion with passive movement in all cases of recent fracture is this: *passive movement should always be preceded by smooth massage which soothes the irritable muscles so completely that movements of the most complete kind are readily carried out without exciting muscular contraction of a harmful kind.* If, on the other hand, passive movement is abruptly attempted without preparing the muscles by previous smooth rubbing violent muscular action generally occurs which is not only painful to the patient but tends to throw the fractured bones out of place. There is, I am sure, no axiom in surgery which is more sound than is this: In all cases in which passive movement is practised smooth muscle massage should precede the movement.

Another set of fractures which can be treated by this method with a result which, speaking generally, surpasses that of any other plan are those occurring in the immediate neighbourhood of the shoulder-joint. The difficulties under ordinary circumstances of dealing with such fractures are too well known to require comment. I am now referring to fractures of the extreme upper end of the humerus and of the scapula close to, or involving, the shoulder-joint. It is a matter, I suppose, of common knowledge that such fractures are followed much more frequently than some people suppose by stiffness of the shoulder-joint. It is, in fact, not uncommon to find upon examining a patient at a long interval after a fracture of this sort that the shoulder-joint is quite fixed, although the patient may be ignorant of the fact. Many patients who have sustained an injury of the kind I am now discussing complain continually of acute pain in attempting to raise the arm to a right angle from the body. In the case of the majority of patients who complain in this way an examination will show that the scapula in the movement mentioned moves with the humerus and that movement in the shoulder-joint is practically *nil*. In fact, a considerable proportion of people who have sustained this kind of injury, especially if the lesion has been treated by means of continuous splinting or fixed apparatus, never regain free movement in the joint. The method that I use, because it has given me the best results in all these fractures about the shoulder in the immediate vicinity of the joint, whether the lesion is of the humerus or of the scapula, is to commence smooth rubbing in the ordinary way *at once*. From the beginning of the case I use passive movement very gently indeed. One hand is placed on the shoulder, gripping the part as a whole. This fixes the shoulder girdle. To-and-fro movements of the arm are then gently made, especial care being taken to avoid rotation. If rotation is made movements between the fragments are liable to follow freely, and so union may be delayed or prevented. You need have no fear of harm coming from antero-posterior movement. At the end of three or four days gentle abduction from the side of the trunk is commenced; at the end of a fortnight circumduction may be gently carried out. Rotation should not be attempted for at least a fortnight, after which rotatory movement should be daily made. For these fractures near the joint I do not use splints, excepting a protective shoulder-cap of leather or poroplastic felt retained in position by straps so that it can readily be removed for the daily massage, nor do I use pads in the axilla. The arm is merely allowed to rest in a sling. By this method the treatment of cases of fracture close to the shoulder-joint may be completed in a fortnight or at the most three weeks, and I have never seen such good results attained in so short a time by any other plan. If in such cases the parts are confined in splints for long periods a stiff shoulder-joint follows, as I have already said, much more commonly than is generally supposed—a statement which can easily be verified by the examination of cases so treated at long periods (say nine months or one year) after the injuries.

It would obviously be impossible within the limits of lectures like these to give the details of the treatment of each kind of fracture, but the examples I have described give a fair idea of the principles of the plan which can readily be applied by any intelligent person. It is a method of treatment which must be conducted with discretion. In compound fracture it is not always practicable in the early stages, but after the wound has healed it can be used as if the case were one of simple fracture, and in the earliest stages of many compound fractures there is no reason why passive movement of the joint most likely to be concerned should not be practised, although the fact that the manipulations cannot in these be preceded by the smooth massage places you at some disadvantage in such cases. In very young children, again, there may be difficulties in using the method in its entirety, but even in these cases it is quite curious how a frightened child with a fractured limb can be soothed by gentle massage of the part.

The great advantages of the treatment are: (1) the ease with which the patient is made comfortable by arresting the muscular spasm and so relieving the pain; (2) the effecting of rapid absorption of effused blood, &c.; (3) the prevention of the stiffness by obviating the formation of adhesions; (4) the prevention of muscle-wasting and the preservation throughout the case of the normal nutrition of the limb; and (5) the shortening of the time by at least half during which the patient is prevented from resuming the ordinary use of the limb.

The only real objections to the plan are, I think: (1) the difficulty which must often arise in carrying it out, as unless a competent masseur or masseuse is available the time required must be frequently more than the ordinary practitioner can spare; and (2) the fact that it is a treatment requiring so much intelligence and discretion in the mode of its application that it may be difficult at all times to find a person to whom it may be entrusted with safety when the practitioner is not prepared to manage the details himself. The objection which has been raised on the ground that movements of the fractured bones must result is of no value if the treatment is properly carried out, as the movement is then practically *nil* and certainly not enough to prevent union in any degree whatever. What the results of the treatment of recent fractures by massage in the hands of others has been I do not know, but so far as my experience is concerned the results are far superior to those obtainable in any other way. I am not acquainted, for example, with any other treatment by which the result depicted in Fig. 7 could be obtained in an extremely severe case of Pott's fracture. With increasing experience of the method my belief in it has steadily become more sure.

Two Clinical Lectures
ON
PRIMARY SYPHILITIC CHANCRES.

Delivered at the London Hospital on Feb. 16th and March 2nd, 1900,

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LECTURE I.

Delivered on Feb. 16th, 1900.

GENTLEMEN,—You will see so many cases of primary chancre in the out-patient room and elsewhere in this hospital that it is unnecessary for me to weary you with the ordinary facts about them. But I may remind you that they occur in very different forms, of which the following are the chief. There is a primary syphilitic chancre or infecting sore which is nothing more than a raised papule with hardly any induration. There is a second and much more common form in which there is a disc of induration without ulceration. This disc of induration may vary in size from that of a lentil up to almost any size, even two or three inches across. It may, for instance, form a complete ring round the penis. The hardness has given rise to the name "sclerosis" which has lately been applied, especially by German and American writers, to all primary syphilitic sores, and I am sure it is a great mistake so to apply it. I cannot impress upon you too strongly that the induration of infecting sores may be only slight and not infrequently absent; and there is no doubt whatever that occasionally a man gets syphilis from what has appeared from first to last to be a "soft sore." The third common form consists in an actual ulcer having generally an indurated base. These ulcerating chancres are especially apt to occur on the under and inner surface of the prepuce, and at what is called the retro-preputial fold or furrow; in other words, concealed positions where septic organisms are apt to get at them. They are frequently accompanied by such complications as foul discharge, sloughing, and even sometimes hæmorrhage. Occasionally, in certain positions, primary chancres take the form of rings, for instance at the meatus of the urethra. Again, at the preputial orifice there is often an annular induration. You know that a primary syphilitic sore may commence with, or be preceded by, a soft sore or chancroid, which generally, at the end of three weeks, takes on induration, that induration being accompanied by enlargement of the inguinal glands. From two to four weeks after contagion—it is always advisable to date events from the date of contagion where you can ascertain it,—from two to four weeks after contagion the characteristic features of infecting sore should be present; in other words, at the end of three weeks from contagion you can usually decide whether a sore is going to be infective or not. The incubation stage, however, is sometimes strangely delayed. It may be up to six or eight weeks, but, as a rule, at the end of three weeks not only have the typical signs of an infecting chancre become manifest but the bubo is also well marked. That bubo, if carefully looked for, is found in something like 99 per cent. of the cases; it is hardly ever absent and is the most characteristic and constant of all the symptoms of syphilitic infection. Let me remind you of its chief features. The glands are indolent and painless, not adherent to the skin or matted to the deep tissues, and they are usually either almond-like in shape or "bulletty." The term "shotty" is often applied to them, but this does not convey so correct an idea as "bulletty"; and even when one grants that many of these glands are elongated like almonds they may be said to resemble the shape of the modern bullets. Remember, also, that the typical glands may be met with in one groin only or in both groins. If present on one side only it may be the opposite side to that on which the chancre is situated. Of this I have seen many instances, due to the crossing of the lymphatics.

Now, the character of the bubo is, as we said, one of the most remarkably constant features of syphilis. In an analysis of over 125 cases of infecting chancres which I shall refer to in only one did the bubo suppurate. In one other case it was inflamed and threatened to suppurate. But in the vast majority of cases the infecting sore is indolent throughout and does not either inflame or suppurate.

Another point which I shall have to refer to in detail is that in about 50 per cent. of cases of primary infecting sore there is, in addition to indolent enlargement of the glands, a cord-like thickening of the lymphatic vessels leading up towards the groin. Under the influence of mercury the induration of the sore, and to a less extent and at a slower pace that of the glands also, melts away. But if untreated the induration of a primary sore may last many months. There is a tendency for a chancre to re-indurate, that is to say, for recurrent induration to take place during the secondary stage at the site of the sore; and even in the tertiary stage, many years afterwards, there may be a recurrence of induration which is doubtless of the nature of gummatous infiltration at the site of the original chancre.

After these preliminaries we come to the question of the site of the primary chancre in men. I have carefully analysed the notes of 125 cases of infecting chancre under my care. In no less than 60 per cent. of these the primary sore—I am speaking of genital chancres—was either at the orifice of the prepuce, on its internal surface, or at what is called the retro-preputial fold or furrow; the relative proportion being about 35 per cent. at the furrow and 25 per cent. on the inner surface of the prepuce. Primary chancres in this part, either at the furrow or on the inner surface of the prepuce, are usually well indurated, sometimes excessively so, and being, in the majority of cases, concealed sores, and liable to septic contamination, a foul ulcer in the position is not infrequent with an offensive discharge and perhaps hæmorrhage. In 50 per cent. of the cases of chancre in this position there are indurated lymphatic cords running up towards the groin from them. But I want to impress upon you the immense frequency with which primary infecting sores occur in this region.

You know it is generally believed that syphilis is comparatively rare in the Jews. We do not know that they are, as a race, more moral than Christians, but the fact is undoubtedly true that Jews do not contract primary chancres in nearly so high a proportion as Christians. And you can understand the reason, for with the prepuce done away with and the skin, glans, and furrow harder than in normal cases, the risk of syphilitic infection is very much diminished. My experience, both at the Lock Hospital and at the London Hospital, where one sees a great number of Jews in the out-patient department, is that while they very often contract gonorrhœa, syphilis is a comparatively rare event with them.

Sometimes one sees a disc of induration running half-way or completely round the furrow. As in the case of chancres at the meatus and at the preputial orifice in phimosis the reason for this is fairly obvious. The fine lymphatics anastomose at these three positions, forming a circular network round which the virus is conveyed and produces annular induration.

Turning to the question of chancres on the outer surface of the penis—that is to say, from the pubes to the edge of the prepuce—we find 27 per cent. of the primary sores in that situation. They are often well indurated, but it is quite exceptional to find them forming foul ulcers with a septic discharge. Sometimes you meet here with the purely papular form. Lymphatic cords leading from chancres in this position appear, from my statistics, to be relatively infrequent; in only one of every four cases were they found. An interesting fact occurs in connexion with chancres on the outer surface of the penis, that is, you may find another chancre on an exactly corresponding position on the scrotum, and one cannot doubt that the inoculation has occurred from the first sore on to the scrotum, that the initial place has been the penis and then before the tissues have become protected against the virus of chancres inoculation has occurred on the scrotum.

We have now done with the frequent positions for primary infecting sores on the genitals and will proceed to the less frequent situations. Chancres of the glans penis are interesting because there you meet with what is called the "parchment chancre." Induration cannot be very extensive on the glans owing to the anatomical structure of the skin there. Chancres in this position were present in only 8 per cent. of

my cases. Primary infecting sores on the frænum, connecting the border of the glans and the rest of the penis, are very uncommon; I only make them out as 1 per cent. That is interesting because soft sores are frequent there. Over and over again, in cases of suppurating buboes in the groin you may have to search for the soft sore which has produced the infection, and very probably you will find it just at the side of the frænum, but in my experience syphilitic sores there are uncommon. Tears of the frænum are not uncommon and are apt to become the subject of unhealthy ulceration apart from syphilitic infection.

Then as regards the urethra. I am quite sceptical as to the occurrence of chancres further back than one inch from the meatus, and although constantly on the look-out for such cases I have never found an undoubted one. I have notes of some five or six cases only in which the chancre involved besides the meatus the immediately adjoining part of the urethra and the fossa navicularis. I will mention one in particular as being the most typical I have known. A man had gonorrhœa and eight months later he was exposed to further contagion and free purulent discharge followed. When he came to the hospital this urethral discharge was accompanied by a double inguinal bubo. The meatus was quite free and, of course, the presence of this double inguinal bubo, which is extremely rare in gonorrhœa alone, made one carefully examine the urethra. One could feel that the distal third of an inch of the urethra was involved, and on separating the lips of the meatus there was a crescentic ulcer, a true primary chancre, in the fossa navicularis. Such cases are uncommon and there is no proof that the syphilitic virus can get far back into the urethra during sexual intercourse. To recapitulate the result of the analysis of 125 cases of genital chancres in men, the majority occur in the inner surface of the prepuce and at the furrow—viz., 60 per cent. In a smaller number—viz., 27 per cent.—the chancre occurs on the outer surface of the penis; only 8 per cent. occur on the glans and 4 per cent. at the meatus and adjoining part of the urethra.

Of course, a primary syphilitic sore may be accompanied by one or more soft chancres, but apart from this comes the question, Are the primary infecting sores often multiple? You know that in books it is stated that one of the chief points in the diagnosis between a soft sore and a syphilitic sore is that the syphilitic sore is single and the soft sore is multiple. Do not attach too much importance to that statement. Now, of the 125 cases which I have analysed the actual infecting indurated sores were multiple in 20 per cent., or possibly rather over that figure. So that in one out of every five cases of primary infecting sores of the genitals you must expect two or three or perhaps even more indurated chancres. Of course, in cases where inoculation of the syphilitic virus has been performed at the same time at several points all those points develop indurated chancres. A syphilitic infant with mucous patches in its mouth may infect the breast of the nurse in many points, and Fournier quotes a case where there were 30 primary chancres on the breast from this cause. With that premise that they are not infrequently multiple, due to inoculation at the same time at different spots, we will note that they may be multiple from inoculation after the first chancre has developed. Let me give you a few instances of this. A woman came up to the hospital with a primary sore of the lower lip. We could not ascertain how it was obtained; in all probability it was through kissing. Six weeks later a second sore developed on the upper lip, exactly opposite the first one, and then it took on the characters of a primary sore. They were both indurated sores, with a smooth, glossy surface and scanty secretion. That is as clear a case of auto-inoculation as you could have. Then I have notes of several cases in which primary chancres have occurred on the penis and on the corresponding position of the scrotum where the two would come into contact. In another case there was a large primary chancre at the end of the penis, which the patient poulticed, and after two months a second chancre developed at the root of the penis, on the dorsum. At the end of seven months, when he first came for treatment, both chancres were typical, and he also presented a double bubo and a papulo-erythematous rash. A man who attended at the Lock Hospital had a very large primary chancre on his penis, the furrow being chiefly involved. He had to dress this sore himself, drawing the foreskin back several times a day. He was engaged in metal work and no doubt chips of copper frequently produced abrasions on his fingers. At the end of two months, during which time he was under constant observation and internal treatment with mercury, he appeared one day with a bandage round the right index finger. On inquiry he said he had injured the finger at his work and that the sore would not heal. It was found to be a typical primary sore. But this sore did not develop until six or seven weeks after the first sore on his penis, and he was under mercury at the time. It ran the usual course, became a large indurated sore, and he had a bubo in his armpit. Such a case is very striking and proves that whilst primary syphilitic sores are not, as a rule, auto-inoculable they undoubtedly may be so even many weeks after the first infection.

This leads one to the subject of extra-genital chancres—primary syphilitic sores on other parts of the body than the genitals. They are probably of much more frequency than is generally supposed. You ought, therefore, to be thoroughly familiar with the points about them, and you should be always on your guard lest you overlook a primary infecting sore on a part remote from the genitals. First as regards their occurrence on the hands. I saw not very long ago a medical man who had a primary chancre on each hand, acquired in reducing a para-phimosis (the patient must have had a syphilitic chancre at the time). There was no doubt infection of both hands at the same time, which is unusual. I have seen at least 20 chancres on the fingers of medical men or nurses who have been attending midwifery cases, the patient having syphilis. With regard to these digital chancres, there are some very good drawings in our museum showing the different forms which they assume. There is an excellent article by Mr. W. H. A. Jacobson lately published in the "Guy's Hospital Reports." These sores may occur on any parts of the fingers, but for an obvious reason they are most common towards the end. They usually have the form of circular granulating patches, with an edge of discoloured or pigmented skin, and they are usually somewhat raised. The induration may be only slight and they are, as a rule, painless, unless they happen to occur just round the nails (the peri-onychial whitlow). Another position is well illustrated in the drawing I now pass round. It happens to be a much larger granulating surface on the part where the skin is thin and delicate, on the dorsum of the first phalanx, going down into the cleft. Of that I have seen several instances. Occasionally one sees the lesions on the knuckles or higher up on the hand. I have seen knuckle chancres on the hands of both medical men and nurses. Let me impress upon you this fact, that although often suspicious in appearance there is nothing absolutely characteristic about these sores to show that they are primary chancres. There is, however, always marked glandular enlargement in the axilla and perhaps at the bend of the elbow as well, and this axillary bubo is as constant as that of the groin with primary sores of the genitals, and often even larger. Then these primary infecting sores may only arouse your suspicion because they will not heal like ordinary traumatic ulcerations. Long duration and failure to heal alone should elicit the suspicion of the medical man who is attending the case. I could relate to you case after case where primary chancres of the hands have been for weeks mistaken, even after the roseola or papular eruption has developed, with danger not only to the patient (the risk of the attack of syphilis being extra severe because treatment was not begun early), but also because of the chance of infection to other people.

Next as regards the lips. I saw some years ago an interesting case in which syphilis was acquired in a curious way. A young married lady was returning from India with her husband and when coming through the Suez Canal she was foolish enough to smoke cigarettes which had been made by Arabs and brought on board, and she developed a chancre on her lip from this cause. I saw her husband and he had no trace of syphilis about him. As you know, infection from pipes and cigarettes, though infrequent, has been proved by many instances. Lately a female, 60 years of age, came up to my clinic with a typical indurated chancre of the lip, acquired from nursing a grandchild, whom I also saw, with secondary syphilitic sores about its mouth. I have mentioned to you the case of a young woman who had an indurated chancre of the under lip and another on the upper lip from auto-inoculation. I have also mentioned the case of a man who denied—and with every appearance of truth—any risk of genital contagion for two years, but who presented a chancre on the mucous membrane of the cheek

accompanied by a large sub-maxillary bubo as well as a papulo-erythematous rash. I will not trouble you with chancres occurring far back in the mouth, as, for instance, on the tonsil, since my experience of these has been very small.

In ophthalmic work one occasionally comes across cases of chancres on the eyelids. I have also seen examples of chancre of the eyelids in students or medical men who, whilst seeing a great number of cases of primary syphilis, are apt to be careless and to rub the eyelids and thus introduce infection. There is in our museum a good coloured photograph from a case of mine showing primary chancre in the middle of the forehead in a boy with secondary eruption. This is certainly a very unusual site and we could obtain no evidence as to the method of contagion. I have, of course, seen a good many cases of primary chancre of the tongue, and whilst most of them were characteristic enough—circular or oval raised sores, with slight ulceration and well-marked induration—the following notes relate to a case which was a revelation to me because the chancre had only the appearance throughout of an insignificant white patch. The facts were these. A gentleman came under the care of another surgeon on account of such a patch on his tongue. He was told that it was syphilitic and was given mercury. He was not satisfied with this opinion and a few days later he came to me. All that he presented was a small white patch, not raised, on the outer side of the tongue, far back. It looked just as though the tongue had been touched with nitrate of silver. As the diagnosis was so doubtful we thought the patient had better wait, especially as he was a heavy smoker, and he was advised to give up mercury. He was seen independently by another surgeon, who gave him the same opinion, and neither of us suspected that the patch was a primary sore. Within about two months the patient developed a copious rash, undoubtedly of syphilitic nature, and then on the same side as that on which the patch appeared there was a large bubo of the submaxillary region which had appeared since his last visit. This case illustrates how deceptive a primary sore may be, and how difficult it is to be sure of infection in certain cases.

A case of primary chancre of the chin was interesting. A woman had two primary sores, one on each side of the middle of the chin. These were acquired in a manner which it is better not to discuss, but I mention the case because of its interest in other ways. The bubo was large and painful and slow to subside. The patient was at first treated by a surgeon with pills of green iodide. There is no doubt that the use of green iodide is largely responsible for the feeling sometimes met with amongst medical men and others against mercury given by the mouth. I never order green iodide because of all the preparations of mercury it is the most unstable and the most apt to cause diarrhœa and stomatitis, and therefore its administration has to be suspended. The production of stomatitis and diarrhœa is apt to prejudice the person against taking mercury by the mouth, and quite naturally. In this case the treatment had to be suspended, the chancres were very conspicuous, and the patient was much concerned about her appearance. She took three grains of mercury a day regularly for a year without the slightest ill effect, and beyond a slight annular syphilide she had no reminders of the disease.

Regarding extra-genital chancres on the lower limbs I have met with two particularly interesting cases. One was a primary sore on the heel in a boy who was an out-patient of the London Hospital. The lesion was right over the tendo Achillis—a most unlikely place, you would think, for infection. There was a well-marked bubo in the groin and he had a copious roseola. The history was as follows. He had had a scratch on the heel and had come up to the hospital to have this slight wound dressed. Whether the infection was conveyed in the receiving-room—which is possible seeing the number of syphilitic patients who come there—or whether it was done at home by using dirty dressings we cannot say. But certainly that scratch had become inoculated in some way with the syphilitic virus. Curiously, about that time I saw a chancre on the top of a patient's head, so that touches the two extremes of distribution in the body. I have notes of an interesting case of chancre of the thigh, a very uncommon position for such a lesion. The patient was a man, aged 22 years, who noticed after venereal contagion in June a sore on the front of his thigh half-way down towards the knee, "like a blind boil." It was painful, it ulcerated, and it then slowly scabbed. He came up to be seen in August—that is to say, three months after the contagion. He still had some soft sores on his penis and half-way down the thigh there was a raised purple disc, indurated and having a dry scab. This sore was two inches across. The glands were enlarged to a slight extent and there was a copious secondary eruption on the thighs, the arms, and the abdomen.

I have now briefly mentioned particulars of a good number of cases of extra-genital chancres under my own observation. Dr. Bulkley, in a most laborious and excellent work called "Syphilis of the Innocent," gives notes of 100 cases of extra-genital chancres which were under his own care. I do not know why he calls the work "Syphilis of the Innocent" because many of the patients described, so far from being innocent, were exceedingly depraved. That one surgeon should have observed over 100 cases of extra-genital chancre will prove to you how important is the subject.

It is interesting to recall the fact that in the early epidemics of syphilis, when the disease was brought over from America to Europe after the voyages of Columbus, this method of infection seems to have been very common. Before people knew the dangers of it it was spread widecast by drinking-vessels—which were not so plentiful as they are now—by spoons, and by other eating implements, and in all sorts of ways, apart from venereal contagion. At the present time probably the best places to see extra-genital chancres are the Paris hospitals.

A few words in conclusion on the subject of the indurated lymphatic cords which are often, as we have seen, present with primary infecting sores. If carefully looked for you will find indurated lymphatic cords in from 40 per cent. to 50 per cent. of the cases of primary syphilis. This will show you the importance of the matter, although it is not mentioned in any published description. They are most frequent in conjunction with chancres of the furrow or the inner aspect of the prepuce. One grants that they are less constant than the bubo, but sometimes they are better marked and of greater value in diagnosis. They seem to be in no way proportional to the number or size of the chancres or to the degree of the surrounding inflammation. As a rule, there is one indurated lymphatic cord running from the chancre, which usually tapers off towards the glans and can be often traced directly into the inguinal glands, but you may frequently find two, and in one case there were four, under the skin of the penis. They may be as thick as the stem of a clay pipe; they are often knotty, and occasionally they give rise to little lymphatic "abscesses," so-called, towards the root; a small collection of leucocytes and lymph forms and breaks, and the skin soon heals again. They may last into the secondary stage, but they usually disappear before the glands have subsided. Still, I have found them two or three months after infection. In one case there was a disc of induration, apparently lymphatic, right round the penis. The primary sore was at the frænum.

The question naturally arises, Are these indurated lymphatic cords ever found without primary syphilis? We have noted that they may be of great help in the diagnosis and that they are present in probably from 40 to 50 per cent. of the cases. I wish one could say that they are never observed without infecting sores, but though the exceptions are few they seem to be undoubted. Here is an example. A man had primary and secondary syphilis, and it was treated in this hospital in 1894 under one of my colleagues for four months. In 1895 the patient came to me at the Lock Hospital with gonorrhœa and phimosis, and he had a hard knotty cord going up to a swollen left inguinal gland. The cord persisted for a week or two.

I have notes of one or two other cases in which with inflammatory œdema of the prepuce and gonorrhœa indurated lymphatic cords were present, but these exceptions are so few that one is justified in attaching much importance with regard to the diagnosis of primary syphilis on the detection of these lymphatic cords.

SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.—The annual meeting of the Bath branch of this society was held on May 19th under the presidency of the Mayor. The report for 1899 stated that 106 cases had been investigated, 11 prosecutions had been undertaken (all of which resulted in convictions), and 84 warnings had been issued, the total number of children looked after being 217. The financial statement showed a favourable balance of £42.

PREVENTIVE INOCULATION AGAINST TYPHOID FEVER.[1]

BY ALEXANDER G. R. FOULERTON, F.R.C.S. ENG., D.P.H. CAMB.,

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THE subject which I have chosen to discuss this evening, Preventive Inoculation against Typhoid Fever, is one which, I venture to hope, will have some sort of special interest for you who are for the most part engaged in the practice of that branch of medicine which deals more particularly with the prevention of disease. An additional reason which has influenced me in selecting this subject is the fact that it has at the present time a further interest for all of us, because of the extensive use which is now being made of the method in the hope of protecting in some degree our troops now serving in South Africa against a disease which is severely prevalent there and which is especially to be dreaded under the insanitary conditions which necessarily attend on the movements of the large army corps of modern warfare.

In the first place I will ask your patience whilst I refer in detail to the experimental work upon which this practice of preventive inoculation against typhoid fever is founded. If a suitable dose of a culture of bacillus typhosus of average virulence, such, for instance, as one obtained fresh from the spleen of a patient dead from typhoid fever, is injected into the peritoneal sac of a rabbit or a guinea-pig death will follow as a rule in from 24 to 96 hours, according to the exact amount of the dose injected and the individual susceptibility of the animal experimented upon. And, as a matter of fact, the individual susceptibility of different animals of these species to the action of this bacillus when cultures fresh from human sources are used varies considerably and is frequently a source of some difficulty in laboratory work. In the case of a guinea-pig weighing about 250 grammes a dose of one cubic centimetre of a 48 hours' old culture will generally cause death in about 48 hours. But by a simple passage of the bacillus through a series of animals the specific virulence of the culture may be considerably increased, and its action rendered more certain of result. This increase of virulence is obtained thus. A fatal dose of broth culture is injected into the peritoneal sac of a guinea-pig, a second guinea-pig is then similarly inoculated with the peritoneal effusion from the first, a third is inoculated from the second, and so on through a series of animals. With each successive inoculation it will be found that the virulence of the bacillus increases, so that gradually decreasing doses of peritoneal effusion are sufficient to cause death, and after the bacillus has passed through about 20 animals it will be found that the virulence is now so increased that 0·2 cubic centimetre of a 24 hours' culture in broth will almost certainly kill a guinea-pig within 24 hours. The animal dies with a general blood infection by bacillus typhosus, and the anatomical changes found after death may include engorgement of the spleen, the liver, and the kidneys, congestion and swelling of Peyer's patches, enlargement of the mesenteric glands, and serous effusion into the pleural and peritoneal sacs. A culture of virulent bacillus which will produce such effects as these is then used for the purpose of testing the degree of protection afforded to animals immunised by the method next to be described.

The immunisation is carried out by injecting into the animal selected several doses of a broth culture of the bacillus which has been sterilised by heat. Such a sterilised culture contains, in addition to the dead bacilli, various more or less toxic substances which the bacteria have formed in the broth during the course of their growth. And the degree of actual toxicity of such a sterilised broth will vary with the method of its preparation. Thus a highly toxic broth may be obtained by some such method as that of Sanarelli, which consists in incubating a highly virulent culture of the bacillus at 37°C. for one month, at the end of which time the broth is sterilised at 80°C. and the flask containing it is allowed to stand for some months at room temperature. The flask, after its neck has been hermetically sealed, is then heated for several days at 60°C., the sediment in the flask is allowed to settle, and the clear fluid is decanted. This clear fluid contains the soluble constituents of the bacilli together with the toxic substances formed during the development of the culture. A subcutaneous injection of about six cubic centimetres of this broth will kill a guinea-pig weighing 400 grammes in less than 20 hours. The symptoms following inoculation are those of rapid collapse accompanied by a fall in temperature, diarrhœa, and various nervous symptoms. After death there may be found a turbid effusion into the peritoneal sac, engorgement and softening of the spleen, petechial hæmorrhages into the mucous membrane of the stomach, and hæmorrhage into the cavity of the intestines. A somewhat less toxic broth than this is used for immunising purposes. A virulent broth culture is incubated for a fortnight at 37°C. and then sterilised at 100°C. For an average-sized guinea-pig four doses of five cubic centimetres each of this sterile broth are injected subcutaneously, an interval of two or three days being allowed to intervene between each dose in order to allow the reaction which follows one injection to pass off before the next is given. This having been done it will be found that the animal has acquired an active immunity against typhoid infection and will survive the injection into its peritoneal sac of at least 10 times that dose of actively virulent living culture which would inevitably prove fatal to an unprotected animal.

This condition of "active" immunity is characterised by certain changes in the animal's blood serum which will be found to have acquired three important new properties, which may be termed respectively agglutinative, protective, and curative. The agglutinative property is shown by the "clumping" or agglutination of the bacteria in a culture of the specific bacillus to which the diluted serum has been added, and with the serum of a well-immunised animal this agglutinative reaction will be actively manifested with a dilution of at least 1 in 1000. By virtue of its protective property the serum of the immunised animal when injected into another susceptible animal will confer on it a temporary or "passive" immunity against typhoid infection. Thus, if a dose of about two cubic centimetres of the serum be injected into another guinea-pig the latter will for a certain length of time afterwards be immune against an ordinarily fatal dose of virulent living culture. In a similar way the curative property of the serum of the immunised animal may be demonstrated by the following experiments. If an ordinarily fatal dose of living culture be mixed with about 0·5 cubic centimetre of the serum and then injected into a guinea-pig no result will follow. Or if the guinea-pig receives a full fatal dose of the living culture and then within about three hours a dose of the serum a similar curative effect will usually be manifested and the animal will usually survive the inoculation.

If we compare the serum of a patient who has passed through an attack of typhoid fever with the serum of the artificially immunised animal it will be found that the same agglutinative, protective, and curative properties are present; but in a lower degree as a rule in the human serum. Thus after an ordinarily severe attack of typhoid fever the agglutinative reaction is not as a general rule obtained with a dilution of more than 1 in 300, and very often fails before this dilution is reached; whereas with the serum of the immunised animal it is usually active with a dilution of 1 in 1000 and often after the dilution has been carried much beyond that point.

As regards the protective and curative properties Chantemesse and Widal have shown that the quantity of serum from a patient convalescent after typhoid fever which is necessary to confer a passive immunity against typhoid infection on a guinea-pig varies from two cubic centimetres to 10 cubic centimetres, as against a maximum of two cubic centimetres from an artificially immunised animal which will effect the same purpose. On these facts we are justified in assuming that a patient who has passed through an attack of typhoid fever has acquired an active immunity against typhoid infection. The direct proof of this is of course impossible, but for the reasons which I have given, and for other reasons which there is no time to discuss now, we cannot but assume that such is the case.

We have seen, then, that the blood serum of a patient who has passed through an attack of typhoid fever, and who has so far as we can judge acquired an active immunity against typhoid infection, possesses certain essential properties in common with the blood serum of a

[1] A paper read before the Home Counties Branch of the Incorporated Society of Medical Officers of Health, April 26th, 1900.

guinea-pig which has received an injection of the dead bacilli, and which we know with absolute certainty has acquired this active immunity. In view of these facts the next question we have to consider is whether it is possible by employing the same method which is so successful in the case of the guinea-pig or rabbit to confer on man also an active immunity against typhoid infection. At the outset one must notice that a preliminary objection which would have been raised two or three years ago is now no longer valid. This objection would have taken the form that since typhoid fever as it occurs in man cannot be artificially produced in animals, therefore experiments on the latter do not apply. And so long as typhoid fever was looked upon as a disease essentially characterised by certain changes in the mucous membrane of the intestine this objection was without doubt a difficult one to answer, in spite of the fact that in one or two isolated instances a typhoid infection with actual ulceration of Peyer's patches had apparently been produced in the guinea-pig. But typhoid fever belongs to the class of infective diseases in which it has been possible with the advance of bacteriological knowledge to substitute for the older classification founded on anatomical changes a more accurate and comprehensive one founded on causation; and we now understand that the intestinal lesions, with all their immense clinical importance, are not an essential feature of typhoid infection in man, but are, so to speak, accidental lesions due probably to the fact that in man the bacillus usually infects by the intestinal tract; and, further, we know that not only is there in perhaps the majority of cases of typhoid fever a blood infection by the bacillus in addition to the enteric lesions, but also that typhoid fever may occur in man without any enteric lesions at all; and I think that the objections against argument from the guinea-pig to man would no longer be raised in this particular case.

The practical application of preventive inoculation against typhoid fever is, as you are all aware, entirely due to the work of Professor Wright of the Royal Army Medical School at Netley. And, whilst the utility of the method is still under trial, one cannot but pay tribute to the impartial and scientific way in which Professor Wright has dealt with the matter and to the care and minute attention to detail which have been observed in the preparation of the prophylactic fluid. In the procedure now recommended by Professor Wright a broth culture is used which after from 14 to 21 days' incubation at 37° C. has been sterilised by heat at 60° C.; lysol in the proportion of 0·5 per cent. is then added in order to prevent any accidental bacterial contamination after the broth has been sterilised. The amount used for human inoculation is two-fifths of the amount which would be fatal to a guinea-pig weighing 250 grammes. If a second inoculation is thought advisable a dose of about twice the amount of the first may be given after an interval of a week or so. The actual toxicity of different cultures varies, and sometimes considerably, but uniformity of dose is ensured as far as possible by the method of standardisation recently described by Wright and Leishman.[2] My own experience of the method is founded entirely on inoculations with sterilised cultures prepared as above with which Professor Wright kindly supplied me. The inoculations are made with an ordinary hypodermic syringe into the loose subcutaneous tissue either of the flank or of the back of the arm over the triceps muscle, the latter position being the more convenient if for any reason the person inoculated is unable to keep quite at rest during the next 48 hours or so. In my own cases I have always inoculated late in the afternoon and the patient has been kept at rest for the whole of the next day. The symptoms following the inoculation have been as follows. Towards the evening more or less severe constitutional symptoms may set in; thus there have been severe frontal headache, slight shivering, and in one case actual rigors and nausea, accompanied sometimes by vomiting. A tendency to syncope is sometimes present; it occurs within between four and six hours after the inoculation and very soon passes off, but is quite sufficient to render it necessary that the recumbent position should in every case be insisted on for some hours. All these constitutional symptoms, except perhaps a little headache, have invariably disappeared by the next morning—that is to say, within about 18 hours of the inoculation. The patient feels fairly well except for the local reaction which now begins to make itself felt at the site of inoculation. The local reaction results in a firm and painful œdema of the subcutaneous tissue with redness of the skin over it extending for about two inches round the puncture made by the syringe; there may also be redness of the skin extending for some little distance along the line of the lymphatics. Shooting pains may be present which radiate from the puncture in the flank principally upwards towards the pectoral region. The inguinal glands are enlarged and tender. By the following morning all the signs of local inflammation will have disappeared in nearly every case, and the completeness of the disappearance of what is sometimes a very intense local reaction in the short space of time is very striking. The only remaining effects of the inoculation felt by the patient are a general feeling of tiredness and a sensation of bruising and stiffness about the site of inoculation, although no trace of redness or œdema is now perceptible nor is there any tenderness on pressure. The temperature reaction is shown in these eight charts which, with the exception, perhaps, of the first, to which I will refer again, may be taken as fairly representative ones. Three different samples of the prophylactic fluid were used in these cases. The patients in Cases 1, 2, 3, and 4 were inoculated with one sample, those in Cases 5, 6, and 7 from another, and the patient in Case 8 from a third. For the purpose of comparison I have added the temperature charts of two rabbits which had received rather large immunising doses of a sterilised broth culture prepared by myself.

In most cases the immediate effect of the operation on the temperature seems to be a slight fall below the normal; the temperature soon begins to rise and attains its maximum within about 12 hours; it then falls rapidly and again sometimes to below the normal. The local reaction, as already said, may be severe, but since the inflammation caused by the prophylactic fluid is a purely aseptic one there need never be the slightest apprehension of suppuration, provided that the syringe has been properly sterilised and that the person inoculated is in ordinarily good health. If the inoculation has been successful it will be found that the blood serum has after a certain interval acquired the specific agglutinative property in a marked degree. A second inoculation may be thought necessary in some cases, a point to which I will refer again.

At present we know but little as to the details of the process which results in an immunity against an infective disease such as typhoid fever, and which may be set in action by this method of inoculation with a dead culture of the specific bacillus. Keeping the anti-typhoid inoculations more particularly in view we have the following data to work upon: (1) that the agglutinative power of the blood serum, the intensity of which we may take as being in some way a measure of the degree of immunity, does not appear until a certain interval of time has elapsed after the inoculation and then gradually increases up to a certain point; and (2) that the same agglutinative power may persist in the serum for a period of at least two years. The consideration of these facts will lead us to the conclusion that the protective substance or substances are not contained in the original dose of dead cultures, but are produced in the tissues of the individual after inoculation. Also in favour of this view is the fact that (as we have seen) a small dose of serum from an immunised animal will confer an immediate "passive" immunity upon another animal, a fact upon which the whole system of serum therapeutics has been based, while, on the contrary, it is found that the active immunity induced by inculation with a dead culture, although much more effectual and lasting, does not become manifest until a definite interval of time has elapsed. These facts are also in accordance with what is observed in the course of a case of typhoid fever in man. In an ordinary case a definite interval of time elapses after infection before the agglutinative power of the blood can be demonstrated and this agglutinative power, as a rule, then increases in intensity up to the time when the disease is brought to an end by a process of natural immunisation. We have, then, definite grounds for assuming that there is something contained in the original dose of sterilised broth culture which on inoculation causes such a reaction that the tissues of the individual produce a substance or substances which exert a protective influence against the living bacilli. The sterilised broth culture contains both dead bacilli and various substances which we may term generally toxins, but as to the exact

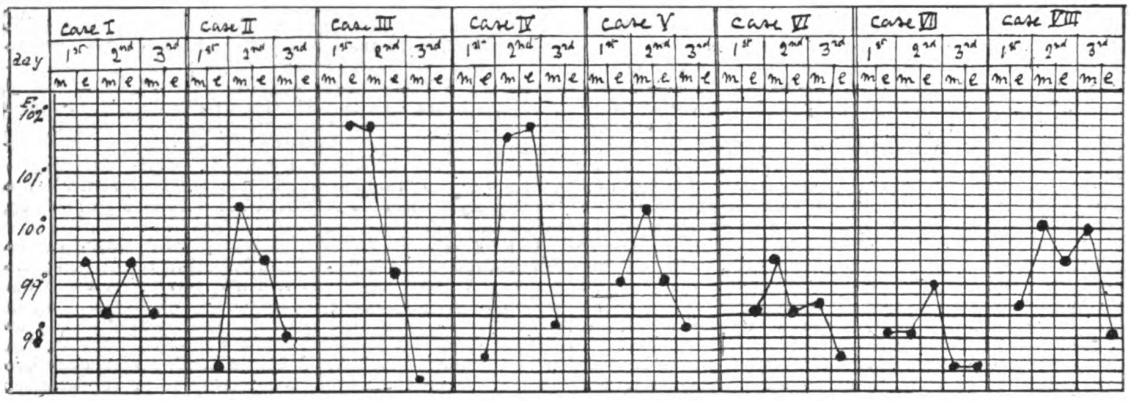
[2] Remarks on the Results which have been Obtained by the Anti-typhoid Inoculations and on the Methods which have been Employed in the Preparation of the Vaccine, Brit. Med. Jour., Jan. 20th, 1900.

nature of which we know very little. And the next question to be considered is whether the substance which is capable of calling forth this reaction on the part of the tissues is contained in the dead bacilli themselves or is one of the soluble toxic bodies formed in the broth by the bacilli whilst still alive. The answer to this question is not easily given, but the fact that an emulsion made by scraping off a surface growth of the bacillus on agar into a normal saline solution will produce the same immunising effect as a sterilised broth culture would suggest that it is some constituent of the bacilli themselves rather than any soluble extra-cellular toxin which is essential. Other facts, also, might be brought forward in support of this view.

I must now pass on to what is, after all, the most important point in connexion with this preventive inoculation against typhoid fever—Does it in practice realise what is hoped for from it? It may at once be said that this question cannot yet be answered, for the time which has elapsed since the inoculations were commenced is yet too short to enable us to judge fairly whether the almost perfect case in favour of this method which has been founded on the evidence of the laboratory is justified by the results obtained in actual practice. The first occasion on which the method was practically tested on anything like a large scale was during the Maidstone epidemic of 1897, when inoculation was offered to the medical staff, nurses, and attendants of the Kent County Asylum at Barming Heath. The main facts relating to the inoculations, with an account of the reaction of the blood of some of those who underwent the operation, have already been published by your President[3] and I need not refer to them now. The actual results were as follows. The first case of typhoid fever occurred at the asylum on Sept. 20th and the last on Nov. 10th. The total number of insane patients in the asylum was 1650; none of these were inoculated. The medical staff, nurses, and attendants numbered 130 in all, and of these 84 were inoculated between Oct. 5th and 9th. Amongst the insane patients who were not inoculated 88 cases of typhoid fever occurred, 74 cases before Oct. 9th and 14 cases after that date. Amongst the medical staff, nurses, and attendants 19 cases occurred, 15 before Oct. 9th and four cases afterwards, and the four cases thus occurring were all amongst those who had not undergone inoculation.

Professor Wright has lately published some statistics[4] bearing on the results of inoculations performed in India during the year 1898 and the early part of 1899. These statistics relate to 11,295 men belonging to various regiments stationed in different parts of India who had the opportunity of inoculation offered to them. Of the whole number 2835 elected to undergo the operation, whilst 8460 remained uninoculated. It was thus possible to observe the incidence of the disease on two classes of men, one presumably protected and the other not, both living under exactly the same conditions and both exposed to the same risk of infection. The results available up to the time of the publication of Professor Wright's paper were as follows. Of the 2835 inoculated, 27, or 0·95 per cent., subsequently contracted typhoid fever; of the 8460 uninoculated, 213, or 2·5 per cent., contracted the disease. The mortality figures applying to the

FIG. 1.



Charts showing the temperature reaction after anti-typhoid inoculations.

FIG. 2.

RABBIT 1. RABBIT 2.

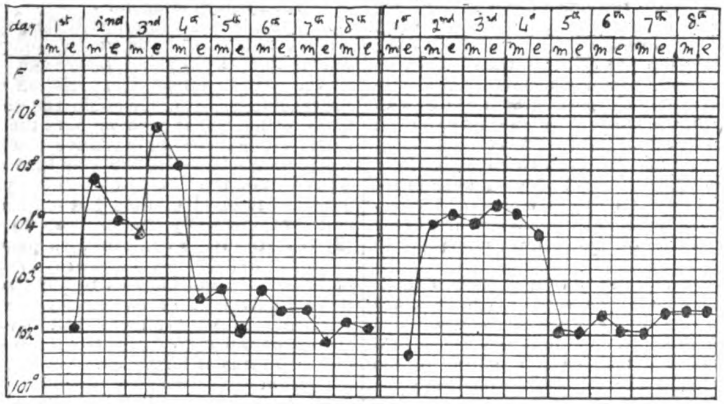


Chart showing reaction in rabbits after inoculation with dead cultures. Each animal received on the first and third days rather large doses of dead culture. The inoculation was performed at 4 P.M. each time; the evening temperatures were taken at 5.30 P.M.

[3] J. S. Tew: The Agglutinative Reaction in Typhoid Fever and Anti-typhoid Vaccination, Public Health, 1898, vol. x., p. 183.

[4] On the Results which have been Obtained by the Anti-typhoid Inoculations, THE LANCET, Jan. 20th, 1900, p. 150.

total of 11,295 men are not at present available, as the returns from the different regiments did not in every case give the result of the illness. From the cases in which the issue of the illness was stated the mortality among the inoculated was calculated at two per 1000 and among the uninoculated at 3·4 per 1000. The case mortality was at the rate of 185·2 per 1000 among the inoculated and 103·3 among the uninoculated. These figures are undoubtedly in favour of the inoculated and might have been more strongly so had it been possible to have classed the men as "successfully inoculated" and "others," instead of as simply "inoculated" and "uninoculated." For with the methods in use at present the inoculation is unsuccessful in a certain proportion of the cases, and those who after inoculation do not give a good agglutinative reaction with their serum cannot for statistical purposes be fairly classed amongst the "inoculated."

Of the results of the inoculations which have been carried out in the case of the troops in South Africa it is too early to form any opinion. Mr. Osborn,[5] in commenting on the large number of cases of typhoid fever which have occurred among the troops, stated that at Modder River the disease occurred at the rate of 6 per 1000 among those who had been inoculated and at the rate of 9 per 1000 among those who had not. No stress can be laid on these last figures one way or another, but extremely valuable data will be available after the war when the complete returns are forthcoming. And in connexion with these statistics it is especially to be hoped that a thorough effort will be made to ascertain by means of the serum test what proportion of the soldiers who underwent the operation on the way out had really reacted to the inoculation. It has been said that the active immunity which follows the injection of a dead culture in animals takes some time to develop and that after the inoculation in man a definite interval elapses before the agglutinative property is manifested in the serum. It is not, therefore, to be expected that any protective effect will follow the operation immediately. I do not think, for instance, that protection would be afforded against an infection within about a week after the inoculation. In speaking of this I would particularly refer to Case 1 on the temperature chart. In this case there had been exposure to the risk of infection under rather exceptional circumstances both before and after the inoculation, the patient being one of four who contracted the disease by direct personal infection from one individual. As far as one could judge the patient must have been inoculated some five or six days after infection had occurred, and definite symptoms of the disease appeared on the eleventh day after the inoculation. The patient passed through an ordinary mild attack of the disease. It will be noticed that the temperature reaction after inoculation in Case 1 on the temperature chart differs very distinctly from the type occurring in Cases 2, 3, and 4, which were inoculated at the same time and from the same sample of serum.

At present we do not know exactly what length of time any protection afforded by the inoculation may be expected to last. In a certain proportion of cases, if we accept the persistence of agglutinative power as an indication of the persistence of immunity, the protective effect lasts for at least two years. By the kindness of Dr. Arthur Jackson, assistant medical officer to the Kent County Asylum, I had the opportunity in October last year of examining the blood of nine of those who had been inoculated just 24 months previously. The results obtained on testing the agglutinative power of the serum in these nine cases are shown in the following table which has already been published elsewhere.[6] Of the nine cases four had previously been tested by Dr. Tew[7] and two of them (Case 4 and Case 5) had given only doubtful reactions shortly after inoculation; the serum from the last five cases had not been tested previously.

From what I have said it will have been gathered that the immediate after-effects of an anti-typhoid inoculation may be distinctly unpleasant, and it is not suggested that these inoculations should be employed generally, but only for those who may be specially liable to the risk of infection. And among those to whom preventive inoculation is likely to afford most benefit are nurses in hospitals into which cases of typhoid fever are admitted, and soldiers who are serving in India and other places where this disease is most prevalent. And it need scarcely be added that if inoculation is advisable for a nurse or a soldier the younger the individual may be the more strongly is inoculation to be advised. And it must not be forgotten that these two classes which I have mentioned include those who are not safeguarded by ordinary sanitary measures. In this country typhoid fever is essentially a water-borne disease and the majority of us can rely for protection against infection upon the work of our medical officers of health. But the nurse is brought into intimate contact with patients who are suffering from the disease, and those who have had long experience of hospital work will well know that there is in some cases such a thing as personal infectivity in typhoid fever, and that quite apart from careless or unskilful nursing there is a real risk in personal contact. Soldiers living in camp in hot dry climates where typhoid fever is an air-borne as well as a water-borne disease also require special protection. In such a climate it would seem under the prevailing conditions all but impossible to prevent the dissemination to some extent of particles of organic matter from latrines by the wind.

Case.	Sex.	Dilution of serum used in testing for agglutination.			
		1 in 10.	1 in 50.	1 in 100.	1 in 200.
1	M.	—	—	—	Instantaneous reaction.
2	F.	—	—	—	Instantaneous reaction.
3	F.	—	—	Instantaneous reaction.	Not tested.
4	F.	—	Reaction within 20 minutes.	No reaction.	—
5	M.	No reaction.	—	—	
6	F.	,,	—	—	—
7	F.	,,	—	—	—
8	F.	,,	—	—	—
9	M.	,,	—	—	—

Finally, it may be pointed out that whilst the immediate effects of inoculation may be, and often are, decidedly unpleasant they are merely temporary, lasting only for a few hours, and up to the present time have never had any more serious result than the short period of discomfort. It need scarcely be added that if the most ordinary care has been observed in the preparation of the prophylactic fluid there is not the very remotest chance, either in these anti-typhoid inoculations or in the similar procedure against cholera and bubonic plague, of conveying the disease itself. In every case in which it is desired that there should be a prospect of protection lasting for more than two years I think that it is desirable to ensure a good tissue reaction by repeating the anti-typhoid inoculation. The second dose may be given a week after the first, and the agglutinative reaction of the blood tested after a further interval of a few days.

Sutton, Surrey.

[5] S. Osborn: Hospital Arrangements in the South African War, THE LANCET, April 21st, 1900, p. 1158.

[6] Foulerton: On the Serum Treatment of Enteric Fever and Bacterial Prophylactic Inoculation, Middlesex Hospital Journal, vol. iii., No. 4, 1899.

[7] Loc. cit.

A CONTRIBUTION TO THE STATISTICS OF RHEUMATIC FEVER AND ITS COMPLICATIONS.

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THE total number of cases of rheumatic fever admitted into Charing-cross Hospital in the course of eight years (1890–97 inclusive) was 450.

Sex and age.—Of the whole number 237 were males and 213 were females, from which it might appear that both sexes are equally liable to the disease. Since, however, there are nearly twice as many male as female beds in the hospital it is probable that these numbers really show a greater liability

of the latter sex to suffer from rheumatism. The following table shows the age-incidence of the cases as admitted to hospital:—

	1 to 10 years.	11 to 20 years.	21 to 30 years.	31 to 40 years.	41 to 50 years.	51 to 60 years.
Males	11	78	79	43	21	5
Females	8	86	82	26	9	2

By far the greater number of cases thus occur between the ages of 10 and 30 years, no less than 157 males and 168 females being included in this period, or over 72 per cent. of the whole number. It is noticeable that within these limits the female cases, in spite of the smaller number of available beds, slightly outnumber those of the other sex. It may be right to point out that the incidence of the disease on children under 11 years may not be fully represented for several reasons. In the first place, the number of children's medical beds in the hospital is only nine and the population from which they are filled is possibly more limited than in the case of adults, owing to the preference of parents for special children's hospitals. Further, it cannot be doubted that the disease often passes unrecognised in children owing to the ill-marked joint-symptoms to which it gives rise at this time of life and the fact that this disease is not popularly associated with childhood. Several instances have come under my own observation in which an illness occurring in a child which was almost undoubtedly rheumatic fever, accompanied by actual swelling of the joints and subsequent valvular disease of the heart, was called "influenza" at the time. In another instance a similar attack was called "malaria"; and it is practically certain that many mild cases of rheumatism which may yet leave serious sequelæ are either entirely overlooked or are treated as mere "feverish attacks," "biliousness," or other creations of household medicine. It might even be suggested that some of the success of salicylate of sodium in the treatment of influenza and some of the cases of cardiac mischief attributed to this protean plague are in reality to be attributed to errors of diagnosis in cases of genuine rheumatism.

Taking first attacks only, including those patients who stated that they had never had a previous attack, and accepting the accounts given by others who were able to fix the date of their first experience of the disease (a total of 304 cases), it appears that no less than 156 (50 per cent.) of these first attacks fell between the ages of 11 and 20 years (females 79, males 77). Under 11 years, 17 cases occurred in male and 21 in female children. From 21 to 30 years there were 42 first attacks in males and 39 in females. The earliest recorded instance among the number was a boy who was reported to have had rheumatism at the age of three weeks. Other early cases were those of a girl aged two years, a boy aged three years (actually observed in hospital), and a girl and boy aged four years respectively. The latest occurrences said to represent first attacks were at 53 and 57 years, both in men. Only one first attack occurred in a woman over 40 years of age.

Heredity.—No very definite reliance can be placed on the family history of these patients, the accounts given of the health of parents and relatives being as a rule untrustworthy, especially with regard to a common and not fatal illness such as rheumatism. As a matter of fact in 99 cases, or approximately 22 per cent., the patients gave a history of rheumatism in one or more members of their families.

Occupation.—With regard to the influence of employment and mode of life only one fact appears at all prominently, namely, the great number of domestic servants who suffer from rheumatism. Out of the present 450 cases no less than 105 (23 per cent.) occurred in this class, 85 being female servants and 20 males. If we add to this number 19 cases of waiters, 10 of barmaids, four of male cooks, and two of office boys, we have a total of 140 cases out of 450, or 31 per cent., belonging to this class of society, while of females alone nearly 40 per cent. were in service.[1] No special liability to rheumatism in those exposed to vicissitudes of weather was evident in this series of cases. The reason for the special incidence on women between 10 and 30 years of age can only be surmised; but the prevalence of anæmia at this period is a very marked coincidence, while both of these diseases seem to fall specially on the servant-class of society. It may be suggested that the existence of anæmia acts as a predisposing cause of acute rheumatism. In this connexion it is interesting to note that in one case, that of a woman, 42 years of age, several attacks had occurred, each in connexion with pregnancy, the period of lactation being always accompanied by rheumatic symptoms. Here, too, perhaps, the anæmia brought about by this drain on the system acted as the predisposing cause. This might well be the case if rheumatic fever is due to the action of some micro-organism, as seems highly probable, although there is little evidence of any transmission of the disease from one individual to another.

Season.—As far as can be gathered from the limited number of cases here recorded rheumatic fever has two periods of maximum incidence in the year corresponding to the months of May and November. That a much larger series is necessary before it is possible to construct a true curve of incidence for the year seems shown by the sudden drop that occurs in the present record between May and June, these months having 47 and 29 cases respectively, or practically the highest and lowest numbers throughout the 12 months (November, the actual maximum, shows 48). It is worthy of remark that while the admissions to this hospital of cases of enteric fever and of acute pneumonia correspond very closely with the accepted periods of maximum frequency of these diseases the cases of rheumatism do not correspond so closely. Probably the seasonal curve of rheumatism is less well defined than that of either of the two other maladies. It is to be remarked that the two months showing the highest averages of cases are months associated, as a rule, with chilly and unsettled weather, when there occur constant changes of temperature.

Onset.—In the vast majority of cases the first thing complained of by the sufferers from rheumatism was pain in one or more joints, which generally began gradually and only caused them to take to bed after one or more days. In a certain number of cases sore-throat was the first thing noticed, apparently in about 5 per cent. Vomiting occurred early in about 3 per cent. of the cases, and shivering or actual rigor in about the same proportion. In approximately 5 per cent. headache was a prominent symptom at the beginning of the illness. Its occurrence later as a result of treatment with salicylates is too well known to need mention and cannot be considered a symptom of the disease.

Another mode of onset, but by no means a common one, was with symptoms of acute pneumonia which masked the pains in the joints, while in one case (that of a girl, aged 14 years) the onset was gradual without joint-pains, but with headache and general malaise, suggesting enteric fever. In another instance enlargement of the spleen was noticed which, if it had occurred along with the former insidious onset, would have caused a misleading resemblance to enteric fever before the occurrence of the typical articular affection.

Duration.—With regard to the duration of the disease it is difficult to say anything definite. When once admitted to hospital the temperature in most cases fell within two or three days, and the pains vanished simultaneously under the influence of salicylate-treatment. On the other hand, patients gave histories of their "rheumatics" having lasted for months before they came for treatment. It is impossible to determine whether these cases are to be considered instances of one long attack or, as seems more probable, as constituting a succession of relapses. Accepting the statements of the patients and calculating from their account of the beginning of their symptoms, the larger number, or nearly two-thirds of the whole, were free from pain and fever within two weeks; but it is impossible to say how long they would have been ill if, on the one hand, they had not come for treatment, or, on the other hand, if they had been treated sooner. Occasionally, even in hospital, cases proved very refractory: in one instance in the present series the patient (a male, 20 years of age) was seven weeks ill in hospital; others were as long as 33 and 39 days, with continued fever and pain in spite of the usual treatment. In two patients, both females, 26 and 36 years old respectively, the disease ultimately settled in one joint and became chronic, the patients leaving the hospital with knees still stiff and painful.

Joints affected.—It is recognised as a feature of the disease that it affects many joints in succession, "flying from one to

[1] The ratio of service to other occupations among 415 female patients admitted during 1898 whose occupations were stated was 26 per cent., which may be taken as the ordinary proportion among patients in this hospital.

another," but on surveying a number of cases it shows a manifest predilection for certain seats. Thus, of about 430 cases in which the affected joints were recorded the knee-joint was affected in 297 instances (69 per cent.), the ankle in 202 (47 per cent.), and the shoulder in 115 (26 per cent.). The elbow, the wrist, and the small joints of the hand and the foot were affected with nearly equal frequency (from 80 to 100 cases); the hip came next with 54 cases and the spine with 37 cases. The neck was affected 11 times, the sterno-clavicular joint eight times, and the temporo-maxillary articulation twice. In 24 cases all the joints were said to be painful, but this vague statement probably only signified the general discomfort and misery of the sufferers. It thus appears that the knee and ankle are nearly twice as often affected as any other joints. The hip-joint, a very frequent seat of rheumatoid arthritis, is not often attacked in rheumatic fever. In a few instances traumatism of a joint (strain, &c.) seems to have determined the seat of onset of the malady.

Complications.—The most frequent complication of acute rheumatism—if it is to be called a complication and not, as seems more probable, a distinct feature of the disease—is undoubtedly endocarditis, and in the present series of cases it was found in 67 males (28 per cent.) and 70 females (33 per cent.) either as recent endocarditis or old valvular disease. In the former sex the mitral valve was affected alone 51 times, the aortic alone in four cases, and both together in 12 instances. In the females the aortic valve suffered alone on two occasions and combined mischief was only met with once, the rest being pure mitral cases. Ulcerative endocarditis occurred in three patients.

Pericarditis was met with in 17 males and 11 females. Of these three died, but in only one of the fatal cases, that of a girl, aged five years, was pericarditis the sole complication, the other two patients having pneumonia, associated in one case with hyperpyrexia. If we add to the above 28 cases of pericarditis 32 others occurring in the hospital in the same period we find that out of a total of 60 cases of this affection 46 (nearly 77 per cent.) occurred in the course of acute rheumatism or were considered "rheumatic." The total mortality of the 60 cases was 19 or nearly 32 per cent., but in four of these the disease was associated with pneumonia, in two with phthisis, and in two with granular kidneys and cirrhosis of the liver respectively. The deaths, therefore, in rheumatic cases, apart from other complications, were nine out of 46 patients, or nearly 20 per cent. On the other hand of 10 cases associated with pneumonia six patients died, or 60 per cent. Two suppurative cases occurred in rheumatic subjects, included in the above numbers, and were both fatal; but they were not associated with symptoms of rheumatic fever at the time of their occurrence. If they were subtracted from the above numbers the mortality of sero-fibrinous pericarditis complicating rheumatic fever would appear to be only about 15 per cent.

The frequency of the occurrence of relapse in cases of rheumatism is difficult to estimate, owing to the fact noticed above that many of the instances of long duration of the illness before admission to hospital are probably due to a series of relapses. Actual instances could be made sure of in 42 cases, or roughly 10 per cent., but the figures are not of much value.

Pneumonia occurred in 14 cases of the present series, equally divided between the two sexes. Of these two, accompanied by pericarditis, were fatal. The total number of cases of pneumonia occurring in the hospital in the period recorded was 300 and in 24 of these—8 per cent—there was more or less reason to associate the disease with rheumatism. It is an interesting speculation to what extent the two diseases are connected, and it is permissible perhaps to surmise that in cases of pneumonia, especially those which run a rather atypical course and end by lysis, closer search would reveal a rheumatic predisposition more often than is at present suspected. In only two of the above 24 cases did the disease end by crisis. The value of salicylate of sodium in acute pneumonia is also of interest in this connexion.

Hyperpyrexia occurred in two cases only, in one of which it was associated with pneumonia. The number seems small, and it is possible that early treatment with salicylates prevents a more frequent occurrence of this fatal complication. Pleurisy was found 14 times and bronchitis in 22 cases; in one patient the latter malady seems to have been responsible for a fatal issue.

Chorea occurred in two males and 11 females, giving an average of nearly 3 per cent. The oldest patients were two girls, 19 years of age. Delirium was noticed in nine cases, chiefly males, several times associated with alcoholic habits, but not always so. In two women there was troublesome neuralgia of the face. Severe abdominal pain was complained of in 13 cases without obvious cause, and diarrhœa occurred in two instances. Four cases presented symptoms of nephritis, two being of the chronic interstitial variety, one a subacute tubal nephritis and one an acute attack; this last occurred in the hospital without any cause that could be discovered other than the rheumatic fever. A purpuric eruption occurred in two cases and hæmaturia in three others, probably due in one case to embolism and in another very possibly to papilloma of the bladder. Epistaxis was twice observed. In one case blood was passed per rectum without obvious cause other than the general disease. Phlebitis occurred once and arterial thrombosis (endarteritis?) affecting the temporal and occipital arteries also in one instance. Of skin-affections, erythema nodosum[2] was observed in nine instances (2 per cent.), all females, and other forms of erythema multiforme in four others (three being women); in two cases it was possibly due to the effect of salicylic treatment. Subcutaneous nodules occurred in five cases, the oldest patient being a woman 26 years of age. In one instance they were the seat of considerable pain. Accidentally associated diseases were gout in six cases (showing that the two diseases are not incompatible), phthisis, Graves's disease, epilepsy, tabes dorsalis, cirrhosis of the liver, and ague.

Death.—In no case of the present series did death occur from an uncomplicated attack of rheumatic fever. Seven cases proved fatal altogether (about 1·5 per cent.), six patients being males and one a female. Two of these cases were due to pneumonia accompanied by pericarditis, one to pericarditis alone: hyperpyrexia accounted for one more. Two cases proved fatal owing to ulcerative endocarditis and one to bronchitis.

Treatment.—With regard to this little need be said. Rest in bed, fluid diet, and salicylate of sodium constituted the routine treatment in all cases. It was often possible to trace a close connexion between the occurrence of a relapse and an unduly early return to fuller diet or a premature omission of the specific drug. In obstinate cases alkalies were tried but did not seem to have much effect. Iodide of potassium, however, occasionally seemed serviceable, aided by blistering of the affected joints in very chronic cases. A recent patient, not included in the above series, appeared to derive benefit from treatment with hot air, a method which is certainly worthy of trial in many cases of chronic joint-disease.

Harley-street, W.

ON OPERATIONS FOR CANCER IN THE AGED.

BY E. HARDING FREELAND, F.R.C.S. ENG.,
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IN THE LANCET of May 5th, 1900 (p. 1276), there appeared a paper by Mr. T. Frederick Gardner entitled "Three Cases of Surgical Interest." The first of the series—a scirrhous cancer of the breast—raises the question of the advisability of operating for cancer in extreme old age. This case has for me a peculiar interest, as a similar case occurred in my practice about two years ago which, taken in conjunction with Mr. Gardner's case, may be worth recording and prove interesting to others.

A spinster, aged 82 years, thin, wiry, and intelligent, somewhat feeble, but for her years in fairly good health, consulted me on March 18th, 1898, for a painful tumour in the left breast, which, she said, she had noticed about a fortnight previously. She told me that she had been "out of sorts" for several months and she thought that she had been losing flesh. On examination I immediately found a nodular swelling of stony hardness of about the size and shape of a plover's egg in the left breast, situated about an inch below, and external to, the nipple. The skin over the tumour was freely moveable except at one point

[2] The total number of cases of erythema nodosum admitted in the eight years was 20, of which only three were males, aged respectivel 12, 14, and 17 years. The oldest female patient was aged 31 years, th youngest seven years. In the latter the condition was accompanied by glandular enlargement.

where it was dimpled and evidently becoming adherent to the parts beneath while there was a tendency to retraction of the nipple. The tumour was moveable, but not freely so, in the surrounding breast tissue. In the axilla a hard gland as large as an almond was felt under cover of the border of the great pectoral muscle and several smaller shotty glands were apparent higher up. The pain, which was acute and tended to recur in paroxysms, was of a "sharp stabbing" character and was felt not only in the tumour but "down the inner side of the left arm" as far as the elbow. This symptom, which first led the patient to take an anxious view of the situation, was increasing rapidly in severity and was telling considerably on her general health, interfering with sleep and giving rise to much mental distress. Such, then, in brief, is the history of the case to which I wish to call attention.

For reasons which I shall presently state, notwithstanding the patient's feeble state of health and advanced age, I determined to operate and the patient readily consented. Accordingly, on March 23rd, chloroform was administered by my friend Mr. G. Everitt Norton, and I removed in one mass the whole of the left breast, the underlying pectoral fascia, and the axillary glands, together with the whole of the axillary cellular tissue, which was studded with numerous small shot-like nodules. The operation lasted some 40 minutes and was accompanied by considerable shock, from which, however, the patient soon rallied. The wound was dressed for the first time after the operation on the eighth day and union was found to be perfect. The patient was completely relieved of her pain, her appetite returned, she gained flesh, slept well, and became more cheerful. She got up on the fourteenth day and in another week left the nursing home for her own abode. The stiffness in her arm soon disappeared and she was able easily to approximate the palm of the hand to the occiput. Her general health continued good and the patient enjoyed life in her own way without pain or any sign of recurrence to the day of her death, which took place suddenly from heart failure on Oct. 20th, 1899, 19 months after the operation, she having been out for a walk the evening previously. The result, I think, quite justified the procedure resorted to.

"All's well that ends well," says the proverb, and it is easy to shake hands with and congratulate oneself on the success of a perilous venture. In cases such as these the point of prime importance is the accurate gauging of the *pros* and *cons* for operation. In the present instance the patient placed herself unreservedly in my hands, steadfastly refusing to have another opinion, so that on my shoulders fell the responsibility of deciding the momentous question as to whether an operation should be undertaken for her relief or whether she should be left to her fate. On thinking over the case at the time the following questions occurred to my mind: 1. Is it possible to remove the whole of the disease with good prospect of subsequent immunity? 2. Supposing this question to be answered in the affirmative, is the patient in a fit condition to withstand the shock necessarily attendant on a somewhat prolonged surgical operation under anæsthesia? 3. Supposing the two foregoing questions to be answered in the negative, what will be the probable subsequent history of the case if left to run its course? In other words, one had to weigh the risk of shock and risk of recurrence after removal with their attendant consequences against the inevitable increase of the tumour, which would probably sooner or later ulcerate, and the increase of pain which opiates sooner or later would cease to relieve. In the present case the facts seemed to me to be as follows:—1. The complete removal of the disease would entail an extensive operation which would occupy some time and give rise to considerable shock. 2. The patient, though somewhat feeble and advanced in years, was in fairly good health, thin, wiry, and of a cheery, hopeful disposition, and she should be, for her age, possessed of fair rallying powers. 3. The growth was evidently increasing rapidly and the pain was already as much as the patient could bear. On reviewing these facts carefully I came to the conclusion that notwithstanding her advanced years it would be better, on the whole, for the patient to run the risk of operation rather than to face the inevitable and in all probability be condemned to a life of suffering and a miserable death. How far this opinion was justified by the result the brief notes of the case above related bear witness.

No doubt, as Mr. Gardner remarks, cases of scirrhus in people of advanced age are rare. This, I take it, is due partly to the fact that the number of people who reach advanced age, say of 80 years, is comparatively small, and partly that those who do survive to such an age have outlived the time of life at which the incidence of cancer is common. But the chief lesson to be learned from cases such as Mr. Gardner's and my own is, I think, that while we should by no means under-estimate the increased risk which must necessarily occur in operating on the aged we should not without the most mature consideration withhold from a patient, however old, the benefits which surgery alone can bestow.

Beaumont-street, W.

A CASE OF TWO ANEURYSMS OF THE TRANSVERSE ARCH OF THE AORTA.

BY GILBERT J. ARNOLD, F.R.C.S. ENG.

THE following is an account of a case which presents some points of interest.

A patient, a man, aged 40 years, consulted me on March 23rd, 1900, stating that the previous night he had been somewhat alarmed by an attack of difficult breathing. He further stated that he had suffered for some years from bronchitis and emphysema of the lungs and latterly occasional attacks of spasmodic asthma for which he had been under treatment abroad. His voice was hoarse and there was sometimes a dry cough. He had marked inspiratory stridor. The hoarseness had, he said, come on suddenly a few days previously. A laryngoscopic examination revealed the cause of the hoarseness. There was abductor paralysis of the left vocal cord. The larynx was normal in other respects. I should have mentioned that the patient had had, and been under treatment for, syphilis some 16 years ago. A thoracic aneurysm involving the left recurrent laryngeal nerve appeared by far the most probable diagnosis, but an examination of the chest did not reveal any abnormal pulsation, any murmur, any dull area on percussion, or cardiac hypertrophy, neither was there any inequality of pupils or difference in the radial pulses. I did not find tracheal tugging well marked. A guarded prognosis was given and potassium iodide was administered, gentle walking exercise being allowed. A few days later the condition of the vocal cords was practically the same—the right cord moving well and the left relaxed in the cadaveric position; there was therefore some paralysis of adduction too. The hoarseness and inspiratory stridor continued unchanged and he complained of very slight difficulty in swallowing. The dosage of iodide was increased. I by no means anticipated that a fatal termination was so near at hand. On April 16th the patient sent for me on account of slight hæmoptysis. He was put to bed, the services of a nurse were obtained, and the recumbent position was insisted on. Ergot was administered and ice was given to suck. The hæmoptysis, which amounted to half a wine glassful of bright red frothy sputum, ceased within two hours. The patient informed me that he had spat blood on one occasion about three weeks before. He died the next day in bed from a sudden profuse hæmorrhage from the mouth.

Necropsy.—The heart and lungs were practically normal except that the bronchi were partially filled with blood. Arising from the convex upper border of the transverse arch of the aorta was a firm sacculated aneurysm situated between the origins of the innominate and left subclavian arteries and behind the left common carotid, the lumen of which was somewhat flattened out by pressure of the aneurysm. Passing in front and in contact with the sac, which was of the size of a hen's egg, was the left vagus nerve. The sac was nearly filled by firm buff-coloured clot disposed in concentric laminæ. There was a second sacculated aneurysm of the size of a billiard ball also originating from the transverse arch and communicating with it by an aperture of the size of a crown-piece. This sac was in direct contact posteriorly with the trachea and also slightly with the œsophagus, but did not obstruct these structures post mortem, although it probably did so to a slight degree during life when distended by the blood-pressure. It contained recent blood-clot only. On slitting up the trachea posteriorly there was seen opening into it in front the aperture of a small ragged channel of communication, passing between two of its cartilage rings exactly one and a

half inches above its bifurcation, leading into the second sac. Through this channel, which was about five millimetres in length and one in diameter, the hæmorrhage had occurred. On the left side of this sac and intimately incorporated with its adventitious walls the left recurrent laryngeal nerve could be traced, its component strands being spread out and of the same dark colour as the rest of the walls of the sac. From its origin from the vagus under the arch of the aorta until it reached the sac and again above the sac the nerve was of normal appearance macroscopically. It is obvious that its conductivity must have been quite abolished. The arch of the aorta showed gross changes of a chronic inflammatory nature (aortitis). There was great thickening involving all the coats. The thickening was not uniform, but was especially marked in the form of hyperæmic patches, over which the intima was slightly raised. The thickening of the aorta was particularly noticeable around the orifices of the two aneurysms which were distant at their nearest points by about half an inch. Sections here showed marked thickening and hyaline degeneration of the coats; the adventitia and adjacent cellular tissue also exhibited groups of small round inflammatory cells which had penetrated the walls of the aorta. Ordinary atheroma with fatty and calcareous changes was not present in the region of the aneurysms.

The following points about the case may be briefly alluded to. 1. The speedy fatal termination after the onset of the laryngeal paralysis. This symptom had been manifest less than one month. Had the laryngeal paralysis appeared earlier in the case the patient would have heard little of "spasmodic asthma," the dyspnœic attacks being doubtless due to recurrent laryngeal irritation coming on earlier than the paralysis. 2. The narrow channel through which the blood escaped. The aneurysm did not burst. The case closely resembles in this respect the one figured on page 382, vol. vi., of Allbutt's System of Medicine, by Sir W. T. Gairdner. 3. The occurrence of two aneurysms arising so close together in the same vessel—the one having undergone spontaneous cure, the other, probably of much more recent origin, showing no signs of doing so. 4. These aneurysms could not be attributed to strain or laborious occupation. Also, the patient, who was a gentleman, had, as far as I could learn, never indulged in much exercise and for some years had regarded himself as rather an invalid. He was of temperate habits, but he certainly had had syphilis years ago and most probably the lesions in the aorta (arteritis) have an etiological connexion with that fact.

Torquay.

INTESTINAL OBSTRUCTION DUE TO PERSISTENT MECKEL'S DIVERTICULUM; SUCCESSFUL LAPAROTOMY.

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AND
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A HEALTHY girl, aged 11 years, went to bed in her usual health on the evening of March 13th, 1899. Although her bowels had been twice relieved during the day she was given a dose of compound liquorice powder. At midnight she awoke with violent pain in the abdomen and was sick several times. On the following day, March 14th, she was seen by Dr. Fawssett, who prescribed an effervescing mixture containing diluted hydrocyanic acid, iced milk, and soda-water, and also hot fomentations to her abdomen. The pain was a good deal relieved but recurred at intervals. Vomiting occurred, but only after taking nourishment, and two or three times the milk-and-soda was retained. No action of the bowels took place. On March 15th no food was given by the mouth and vomiting only occurred once, when the child was moved in bed. As the pain continued and as nothing passed per rectum Dr. Fawssett held a consultation with Dr. R. Sanderson late in the evening of this day. An enema of warm water was given which returned clear with the exception that the last portion was slightly blood-stained. While the water was retained it was thought that an indistinct lump could be felt in the right iliac region. Much gurgling and peristalsis were present. The diagnosis arrived at was acute intestinal obstruction, probably due to intussusception. A small dose of morphia was given hypodermically. As it was then late and as the patient was at Lewes it was decided that Mr. Jowers should be asked to operate in the morning.

On March 16th, at 11 A.M., Mr. Jowers saw the patient with Dr. Fawssett. The child complained of pain at the umbilicus, the abdomen was hard and rigid and slightly distended, distended coils of intestine could be seen, and there were marked peristalsis and gurgling on pressure. No lump could be felt. The tenderness seemed more marked in the left iliac region than elsewhere, the rectum was empty, and no motion or flatus had passed. The child was slightly under the influence of morphia at this time. Dr. W. A. Dow gave chloroform. The abdomen was opened below the umbilicus. On dividing the peritoneum a quantity of serous fluid escaped, greatly distended small intestine bulged into the wound, and after a considerable quantity had been drawn out of the abdomen and covered up in warm boiled towels, a bunch, consisting of several coils of collapsed small intestine, was found tightly nipped by a thin cord which came from the extremity of a Meckel's diverticulum, which was again attached to bowel, forming a ring through which the strangulated coils had slipped. The bowel down to, and including, the diverticulum was greatly distended. The patent portion of the diverticulum was about one and a half inches long and its base or opening into the bowel was fully two inches. To have excised it would have prolonged the operation, but as it was found to be impossible to return the bowels in their distended condition it was determined to utilise the diverticulum to relieve the distension. After covering the wound and the bowels, with the exception of the diverticulum, with boiled towels, the extreme tip was cut off with scissors, making a small opening through which a quantity of gas and a small quantity of liquid fæcal matter escaped. The mucous membrane, which slightly prolapsed, was ligatured and returned, and the peritoneum was then sutured by a double row of Lembert's sutures so as to invert and considerably shorten the length of the diverticulum. The abdominal wound was closed with silkworm-gut sutures, a glass tube being inserted for 24 hours. On the following day the tube was removed and the opening left was closed by a suture introduced for the purpose at the time of operation. Recovery was uninterrupted, there being no sickness and the temperature not rising above normal. The sutures were removed on the tenth day.

The striking thing about this case was that, considering the tightness of the constricting band, the symptoms were not more severe. The vomiting was never stercoraceous or continuous, the child did not look seriously ill, and the temperature was below 100° F. On the day preceding operation she vomited only once. Nor was this absence of vomiting due to masking of symptoms by morphia, as none was given till the night preceding operation.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON THE PASSAGE OF A CALCULUS OF EXCEPTIONAL SIZE THROUGH THE RIGHT URETER AND THE URETHRA OF A MAN ABOUT 50 YEARS OF AGE.

BY J. A. CUNNINGHAM, M.D., M.CH., R.U.I.,
MAJOR, I.M.S.

THE appended illustrations are faithful representations of a calculus composed chiefly of oxalate of lime with a coating in spots of urates and phosphates, which was passed recently by an officer in the Punjab Public Works Department. In its longest diameter the calculus measures fully half an inch.

It is of an irregular oval shape with nodular projections, and when quite dry it weighed seven grains.

The attack of renal colic began when the patient was out in camp towards the end of January, 1900, and when he was at a distance from medical aid. When the attack had lasted



Three different views of the calculus. Actual size.

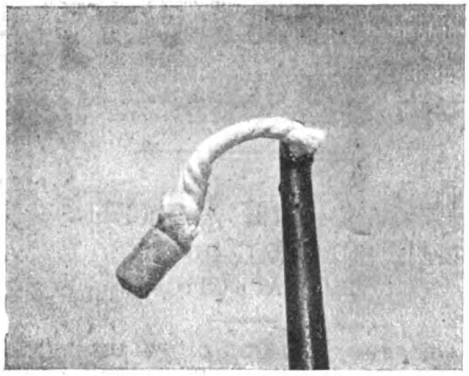
10 days without relief and the patient was nearly exhausted he was visited by a medical officer from a neighbouring district who advised him to proceed to Delhi, where it was expected that an operation would be required to relieve him. He undertook the journey (about four hours by rail and with accommodation for lying down) with some apprehension, but except that he felt weak and exhausted it did him no harm. On arrival it was found that the paroxysms of pain had ceased, and he was conscious that the calculus had reached his bladder, having taken 11 days to pass through the ureter. The pain was not constant during this period, but it occurred in intermittent paroxysms lasting from five to 20 hours each time. After remaining for seven days in the bladder the calculus was voided with the urine without much inconvenience.

Delhi.

REMOVAL OF A FOREIGN BODY FROM THE EAR.

BY JAMES G. MACASKIE, L.R.C.P., L.R.C.S., D.P.H. EDIN.

I WAS called in to see a schoolboy who had pushed into the right meatus a piece of indiarubber which had previously been attached to a lead pencil. I found that he had driven the rubber well in, and as it was almost an exact mould and presented to view an entirely flat surface it was impossible to catch it with forceps and syringing did not seem likely to improve matters. I therefore, on the following day, teased out the end of a small piece of twine and giving this a good coating of seccotine I pushed it tightly against the india-rubber, packing it closely all round with cotton-wool. This was allowed to remain in position for 24 hours when there



Reproduction of photograph of indiarubber and string attached. Actual size.

was firm cohesion and I found not the slightest difficulty in withdrawing everything *en masse*. I may mention that before forming the connexion I thoroughly cleaned away all the wax, of which there was a good deal, with ether. It is very possible that this expedient is by no means new, but as it was so successful I beg to suggest it to any who may be confronted with the same difficulty.

Belford, Northumberland.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

NEW HOSPITAL FOR WOMEN.

THREE CASES OF INTESTINAL SUTURE.

(Under the care of Mrs. STANLEY BOYD, M.D. Brux.)

THE three cases recorded below illustrate well two of the more important conditions for which intestinal suture may be required. Cases 1 and 3 are examples of short-circuiting for irremoveable malignant disease, and Case 2 is a good instance of resection for gangrene and adhesions. Post-operative intestinal obstruction is yearly becoming more frequent, for abdominal operations are now much more readily undertaken than was even lately the case. It is probable that complete covering of the pedicles of ovarian tumours by peritoneal flaps would diminish greatly the tendency to the formation of post-operative bands.

CASE 1. *Ileo-colostomy for intestinal obstruction due to malignant growth involving the iliac glands and cæcum.*—A married woman, aged 27 years, was admitted to the New Hospital for Women on June 30th, 1897. Vaginal hysterectomy had been performed in August, 1896, for malignant disease of the cervix uteri. It was an early and favourable case and she recovered well, leaving the hospital between two and three weeks after operation. In January, 1897, she attended as an out-patient, complaining of flatulence which was relieved by ordinary medical treatment. Nothing further was heard of her till the next June when she wrote complaining of flatulence. On June 30th she attended at the hospital and was admitted. She gave the following history. The bowels had acted regularly up to June 7th. On that day she was seized with violent pain in the abdomen and vomiting which lasted a few hours and recurred four days later after taking some castor oil. The bowels did not act until the 15th (one week's constipation), when the action gave great relief. From that date, in spite of salts, liquorice powder, and enemata, she had had no real relief, although an enema had occasionally brought away small scybala. Flatus was passed only once or twice without an enema. She had suffered much from colicky pain and nausea. She had taken only liquid food. Her face was anxious; the pulse was 120, falling when she was in bed to 88. The vaginal scar was quite soft and normal. The abdomen was hard and tense and distended coils of intestine and peristaltic movements were visible. It was thought that probably a coil of intestine was kinked by adhesion to the vaginal scar and that by carefully given enemata it might be possible to unload the bowel and relieve her for the present. She was ordered regular enemata and gentle massage of the abdomen. She remained in much the same state till July 4th. The enemata had practically no result, nor had some small doses of castor oil repeated at six hours' intervals. On the 4th she felt sick towards evening and during the night. It was therefore decided to open the abdomen.

An operation was performed on July 5th. On opening the abdomen by a median incision above the pubes distended small bowel presented. The source of obstruction was found to lie in a mass of malignant glands lying along and adherent to the right external iliac vessels, infiltrating and binding down the cæcum; to this was adherent also by infiltration of its wall with growth the lower end of the ileum. The ascending and transverse colon beyond the obstruction were contracted and pale. In separating a coil of distended ileum which hung down into the pelvis and was firmly adherent there its peritoneal coat was slightly torn. As complete removal of the malignant mass was impossible it was decided to short-circuit the bowel. The transverse colon was drawn down after ligature and division of omental

adhesions which held its left end. A convenient coil of ileum was selected to attach to it, but in the preparatory packing round of sponges the coil which had been adherent in the pelvis was torn where it had been injured by separation of adhesions. It now seemed best to utilise this tear, as the injured coil could be brought up to the transverse colon without much difficulty. Liquid fæces had escaped as the bowel tore, but the escape was promptly arrested. The bowel was then brought outside the abdomen, allowed to empty itself, and cleansed with 1 in 2000 solution of perchloride of mercury. It was then clamped above and below the tear by an assistant's fingers. At first peristalsis was strong and forced out gas and even a little fæces. The tear was larger than was desirable and was transverse and therefore a little more difficult to bring into line with a longitudinal incision in the colon. Longitudinal traction rendered it diamond-shaped and its lower edge was attached along the length of the transverse colon by two rows of horsehair sutures; the first row, a glover's suture, took up the peritoneum and the muscular coat, while the second row consisted of three interrupted sutures in the centre and at either end, a continuous suture which was carried (after longitudinal incisions of the transverse colon) round the angles to form the deep row in front of the opening. A second anterior row of Lembert's sutures completed the union. The deep row of sutures surrounding the openings into the bowel was thus completely buried. The parts affected were then carefully cleansed with a lotion of perchloride of mercury (1 in 2000), the bowel was returned, the peritoneum was sponged out, and the abdomen was closed by tier suture without drainage. The pulse at the end of the operation was 132 and very compressible. A hypodermic injection of a quarter of a grain of morphia was given to check peristalsis. The patient was fed by nutrient enemata.

On the day after the operation flatus was passed per rectum and on the 8th (three days after the operation) the patient passed a normal motion without pain or blood. From this time she was fed by the mouth and the bowels acted well; sometimes mucus was passed with the stool and sometimes the bowels were loose, but on the whole there was no trouble. On the 10th the abdominal wound was found to be suppurating and required to be opened up freely. She was discharged from the hospital on August 12th with the abdominal wound nearly healed. It was noted that the mass in the iliac region had not increased. On August 18th a thickening was felt per vaginam in the left fornix. On Sept. 12th information was received that a vaginal fæcal fistula had developed and that the patient was suffering much from flatulence. The abdominal wound had healed. On Sept. 20th pus had made its way through the abdominal wound. On Dec. 1st she was seen. She was keeping her bed; the vaginal fæcal fistula had closed. There were two sinuses in the lower part of the abdominal wound; to the right of the scar a hard mass extended out into the right iliac region. It was not clear whether this abscess was in direct continuity with the earlier suppuration in the abdominal wound, burrowing towards the vagina as the abdominal sinus closed and later reopening this track, or whether it formed independently round about the diseased bowel and glands, making its way to the surface by the easy route of the abdominal and vaginal scars. The patient died in March, 1898, from gradually increasing weakness without any recurrence of obstruction.

CASE 2. *Resection of the small intestine for gangrene from obstruction by band.*—A young woman, aged 23 years, unmarried, underwent abdominal section in the new Hospital for Women on Dec. 31st, 1897, for the removal of a large multilocular cyst of the right ovary which filled the abdomen up to the liver; there were no adhesions. The contents of the cysts were so thick that the trocar was useless; the opening had to be enlarged and the cysts broken down by hand; some of the contents, in spite of careful packing, escaped into the peritoneal cavity. Otherwise the operation was easy and convalescence was uninterrupted, the wound healed by first intention, though the evening temperature was usually above 99° F. After three weeks she was sent to the convalescent home, and before she left it was noted that the uterus was freely moveable and in normal position and that the rectum was slightly ballooned. The bowels were opened on Jan. 20th, 1898, the day before she left the hospital. On the evening of the 23rd, after an indigestible supper of mince-pies and nuts, which the patient managed to procure, she had severe abdominal pain and vomiting, the vomiting continuing for two days. She took an aperient, the bowels not having been opened since the 20th, but it acted hardly at all. On the 25th an enema was given without effect and some milk with brandy was given by the mouth; this the patient retained. She was brought back to the hospital on the same afternoon. On admission the temperature was 100·8°, but after this it did not rise above 99·6° or the pulse over 100. There was little to note; the abdomen was not distended, the patient seemed to be fairly comfortable, and when fed frequently with small quantities retained her nourishment. Enemata were given and acted. On the night of the 26th she vomited jelly-like mucus and some brown stuff which was said to have had a fæcal odour. There was no further vomiting for 36 hours, but on the morning of the 28th her aspect had changed for the worse. She was complaining more of pain, chiefly over the stomach, and it was paroxysmal in character. The enema given had acted only very slightly. The abdomen was somewhat distended and moved with respiration, but a transverse coil of intestine was visible. There were signs of a small amount of fluid in the abdomen. The pulse remained about the same, 96, and fairly good. The tongue was red and fissured, but not dry. At noon the patient vomited a large quantity of "fæcal" fluid and operation was undertaken without further delay.

The abdomen was opened through the former scar without any parietal adhesions being encountered. Dilated and congested small intestine presented. The hand, passed behind the uterus, found it and Douglas's pouch to be free from adhesions. The pedicle of the former cyst was adherent to the right pelvic wall and from the back of it passed upwards two or three tense bands which bound down certain coils of intestine. A small amount of blood-stained fluid was found in the abdominal cavity. Two coils of intestine were adherent to each other and these were brought up, dissected free, and bleeding points tied. The intestine so freed was followed up and was found to be held by one of the above-mentioned bands which was ligatured and divided. The bowel above the band was considerably dilated and that below was completely collapsed and it had sloughed just where the band constricted it. About eight inches along the collapsed bowel was a sharp kink caused by dense adhesion to each other of the walls of a short loop of intestine—adhesion so dense that it would obviously have been almost impossible to dissect them apart without lacerating the bowel. It was therefore decided to resect the whole piece up to and including the gangrenous line of stricture. About eight inches were thus cut away, the vessels of the mesentery being secured as they were divided. The cut ends of intestine were brought together by a Murphy's button, but the distal end was so collapsed that it was not easy to introduce the button here, and the bowel was quite markedly stretched over it. On pushing the button home the mucous membrane of the dilated upper end bulged out and had to be trimmed off. A continuous Lembert horsehair suture was applied all round and the V-shaped wound in the mesentery was closed by interrupted horse-hair sutures. The coil of intestine was then sponged with saline solution and dropped back into the abdomen. Two omental bands and the sigmoid flexure were freed from the back of the pedicle. The peritoneal cavity was sponged out and the abdomen was closed by tier suture. A saline injection was given while the patient was still on the table.

The pulse at the end of the operation was 120 and by the evening 130 and the temperature rose to 104°. Flatus passed freely once and on Jan. 30th the bowels acted twice after an enema, the stools being very offensive. There was no blood in the stools. Abdominal pain was a marked symptom for the first few days. Feeding by the mouth was begun on the 30th. By Feb. 1st the temperature had become normal and on the 4th the wound was found to be healed. After this there was a check; vomiting returned with increase of pulse and temperature, and by Feb. 15th an induration had formed to the right of the scar and necessitated re-opening the abdominal wound. A localised collection of pus was found deep to the muscle and pressure on the right iliac fossa caused fresh pus and a very small quantity of fæcal matter to well up. A probe passed in did not strike the button. The cavity was drained by iodoform gauze, the temperature fell, the discharge lost all fæcal admixture, and the sinus closed on April 13th. The button was passed on Feb. 17th, the twentieth day after the operation. Throughout the convalescence aperients were needed and there was always a certain

amount of distension of the abdomen. The patient returned to her work and went on fairly well until September, when she had an attack of abdominal pain and sickness with three days' constipation relieved by castor-oil. During the next five weeks she was sick on four occasions and brought up blood and had attacks of constipation lasting from three to seven days. As self-administered enemata failed to overcome the constipation and the retching and pain continued, she was re-admitted to the hospital on Nov. 1st. The abdomen was a good deal distended on admission and the temperature was slightly raised, being 99° or 100°. For a fortnight she was dieted and treated with enemata and purgatives with varying result. Occasionally there was a good action, but the distension was little relieved and it seemed clear that she was suffering from some chronic obstruction.

On Nov. 19th the abdomen was re-opened through the upper end of the old scar. There were no adhesions of omentum or bowel. A large portion of small intestine was found collapsed. A fibrous band three inches long uniting two coils of bowel was tied at both ends and cut. A second fibrous band was found and from beneath this a large mass of collapsed small intestine was withdrawn. This fibrous band was found to take origin from a coil of small intestine close to the site of the former resection, which was marked by a slight but distinct constriction. Here, in the bowel and in the mesentery, horsehair stitches were embedded, while from the free margin of the bowel projected about two and a half inches of horsehair surrounded by a fibrous envelope, evidently part of the continuous suture inserted to reinforce the button. The strictured coil lay in the pelvis. The horsehair knots and stitches were cut out and the peritoneal coat reunited with fine interrupted sutures of catgut. No other bands were found and the abdomen was closed by tier suture without drainage.

The patient made an excellent recovery with much less pain than on the previous occasion and the bowels acted after an enema on the fourth day. She was discharged from the hospital on Dec. 12th with the wound soundly healed and the bowels acting regularly with the help of mild aperients. She has remained well up to the present time, although she always has to take aperients and gets at times attacks of vomiting, when she is said to bring up blood. This, however, was not substantiated when she was again admitted to the hospital for observation after such a reported attack. During each convalescence there was evidence of the patient's hysterical tendencies.

CASE 3. *Gastro-enterostomy for malignant disease of the stomach and pancreas.*—A married woman, aged 37 years, was admitted to the New Hospital for Women in November, 1898, under the care of Miss Cock, M.D. Brux. There was a history of nine months' definite illness and of an attack of vomiting 15 months previously which passed off. For nine months the patient had noticed a small lump in the epigastric region to the right of the mid-line and had suffered from abdominal pain, discomfort, and distension. These attacks of pain were terminated and relieved by vomiting of large quantities of offensive liquid. At first the attacks occurred with weekly intervals, but later the intervals were only from 24 to 48 hours, and the pain had become more or less continuous. She had never vomited blood. In August, 1898, her weight was 6 st. 4 lb. On admission it was 5 st. 4 lb. There was no history of previous gastric trouble or of syphilis. On admission it was noted during an attack of distension that there was considerable separation of the recti. The upper part, sometimes the whole abdomen, was distended by the stomach. The outline of the smaller and greater curvatures could at times be distinctly seen as well as felt. They extended respectively to the level of the umbilicus or just above it (smaller curvature) and to the pubes (greater curvature). On palpation succussion splash and waves of peristalsis could easily be obtained over the dilated stomach, and to the right of the mid-line just below the liver and beneath the edge of the right rectus muscle a tumour of the size of a small egg could be plainly felt, hard, not tender, moveable both vertically and laterally, separable from the liver edge. The vomit which was offensive and chiefly fluid, contained neither blood nor sarcinæ. As much as three or four pints were brought up at once. The patient remained in the hospital over three weeks and at first derived slight benefit from medical treatment and dieting; the improvement was not maintained, however, and after leaving the hospital the symptoms were as bad as ever. Her weight on her discharge was 4 st. 8 lb. On March 17th, 1899, she was re-admitted to a surgical ward with a view to operative measures. Her weight on admission was 6 st. 2 lb., a distinct gain in spite of the persistence of the symptoms. The local condition was unchanged except that the distension was more intermittent. The patient was most anxious for surgical relief.

After preliminary washing out of the stomach for four days, and immediately before operation, an exploratory laparotomy was performed on March 23rd. The incision, which was three inches long, extended to within an inch of the umbilicus and part of the anterior wall of the stomach presented in the wound. Examination showed the tumour noted above to be an infiltration of the coats of the stomach near the pyloric end, involving and constricting the whole circumference and welding it into one mass with the similarly infiltrated pancreas below. The pyloric orifice as apart from the mass could not be made out nor could the foramen of Winslow be traced. There were hard glands in both omenta. The liver was unaffected. As the infiltration of the pancreas rendered an excision of what was regarded as a malignant growth impossible gastro-enterostomy was resolved upon. The most dependent part of the stomach was drawn upwards out of the wound and the posterior wall of the stomach was exposed by a crucial incision through the transverse mesocolon. The commencement of the jejunum was felt for and a high coil that would lie in easy proximity to the stomach was selected and clamped, gauze veils being carefully packed round and beneath the stomach and intestinal coil. The viscera being held in contact two rows of continuous Lembert's sutures of fine silk were passed over a length of two inches and tied. An anterior row of interrupted stitches was passed, leaving sufficient space for opening the viscera between this row and the two previous ones; these were not tied, their ends being left long, clamped, drawn aside, and protected, while the viscera were opened for some one and a half inches. Small bleeding points were secured. The surfaces having been well sponged with saline solution the mucous coats were brought together with a few interrupted silk sutures to keep them out of the way, and the anterior row of sutures was tied and reinforced by a second row of continuous silk sutures anterior to them. The parts were again well sponged with saline solution and returned to the peritoneal cavity, where they lay without strain, the transverse colon falling naturally into position in front of them. The abdominal wound was sutured in layers.

The patient made an excellent recovery. She was fed by nutrient enemata for two days but from the first was given sips of hot water by the mouth. On the third day milk was given by the mouth in teaspoonfuls, and by the sixth day all rectal feeding was stopped and she was given minced meat by the mouth. There was no sickness from the time of the operation and there was no pain. She was discharged from the hospital on April 8th feeling better than she had felt for months. Her weight on discharge was 6 st. 2 lb. Owing to the tension of the recti from the line of suture it was no longer possible to make out the swelling in the neighbourhood of the pylorus, but the shape of the abdomen had become much more uniform and the rather marked distension which at first existed in the neighbourhood of the wound had quite disappeared. The patient was seen on Nov. 1st, 1899, her weight then being 7 st. 8 lb. She expressed herself as being extremely well. She was able to do all her own work and had gained flesh and colour in a remarkable way. The tension of the recti was still so marked as to preclude the possibility of feeling the tumour, the abdomen was uniform and symmetrical, but perhaps slightly fuller above than below the umbilicus. To percussion the greater curvature lay at the lower limit of the abdominal scar (about one inch above the umbilicus). In March, 1900, her weight was 7 st. 12 lb. and her health continued excellent. The epigastrium was less tense and palpation was possible. Nothing could be felt of the tumour which seemed to have diminished or disappeared.

Remarks by Mrs. BOYD.—In Case 2 the second operation gave an opportunity of observing the nature of the junction effected by Murphy's button. It cannot be considered a typical case on account of the reinforcing line of suture, and further the intra-peritoneal abscess that formed after the first operation was undoubtedly due to leaking at the site of the button. The difficulty in adjusting the button to ends of such different calibre was answerable for this, causing at the

proximal end considerable frilling of the mucous membrane, and at the distal end dangerous pressure from distension by the button. The line of suture was not efficacious in ultimately preventing leaking, although it was doubtless useful in strengthening the junction until adhesions had formed round about. The late development of the abscess points to this conclusion, although the early abdominal pain suggests irritation about the line of junction. That the continuous stitch had cut out at some time was clear from the length of straight horsehair found hanging from the free margin of the bowel, while the mesenteric portion remained embedded with no sign of irritation. This would seem to point to certain disadvantages in the use of a somewhat rigid, non-absorbable suture for a continuous stitch where it happens to cut out, for the long end thus found surrounded by organised lymph might certainly have proved an additional trap for the bowel. The external stricture at the line of junction was extremely slight and there was no marked thickening to suggest that the calibre of the bowel might be diminished disproportionately. It is interesting to note the very slight evidence that remained at the second operation (after an interval of six months) of the fairly extensive intra-peritoneal abscess—viz., the two distinct fibrous bands passing from one part of the intestine to the other. Indeed, it is not clear that these bands may not have had their origin after the ovariotomy with the band that formed the first source of obstruction, but were overlooked as causing no trouble at that time.

Case 3 calls for little remark except to emphasise the extremely easy convalescence with entire absence of pain and intestinal worry. This seems partly due to the area of stomach chosen for anastomosis, allowing the viscus to lie after suture in a perfectly natural position. The ease of access and the convenience for suture were equally marked. The disappearance of the tumour and the prolonged improvement in the patient's health make it probable that the obstruction was cicatricial rather than malignant, as was diagnosed at the time of operation.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Exhibition of Cases and Specimens.—Annual Meeting.

A MEETING of this society was held on May 29th, Mr. A. PEARCE GOULD being in the chair.

Dr. MORLEY FLETCHER exhibited a specimen of Hypertrophied Brain which had been removed from the body of a boy, aged 10 years. During life the head was noticed to be of unusual size. The child was somewhat backward but not imbecile. The father had rather a big head. The skull-cap and membranes were normal, the weight of the brain being 73 ounces. There was a uniform increase in size and the different parts were also all relatively increased. Microscopically the chief change consisted of an increase in the neuroglia. In various parts were found non-nucleated round bodies, more abundant in the white matter. They were dissolved by xylol and probably consisted of some fatty substance. This was the heaviest brain on record as far as he (Dr. Morley Fletcher) was aware and corresponded to the pathological variety known as cerebral hypertrophy. The recorded cases had been found in children and adults, most of whom exhibited a deficiency of intellect. Megalencephalic would be a more suitable name. He was indebted to Sir Dyce Duckworth for permission to publish the case.

Dr. FLETCHER also exhibited a Tumour of the Posterior Mediastinum probably originating in the sympathetic system. The patient was a woman, aged 32 years, who was admitted under the care of Dr. P. J. Hensley into St. Bartholomew's Hospital. She had had pain in both groins and later pains in the chest and all the symptoms of mediastinal tumour. There was excess of white corpuscles in the blood. A small nodule of secondary growth was present in one lung. The tumour measured six inches vertically and consisted of two lobes. The tumour had also invaded the spinal canal though not the intra-dural cavity. Microscopically the tumour consisted of myxomatous tissue with fibres resembling non-medullated nerve fibres and cells resembling sympathetic nerve cells. Other parts of the tumour were sarcomatous with spindle cells. In the spinal canal the structure was different. It was suggested that the tumour originated in a sympathetic ganglion and that it was a neuroma.—Dr. H D. ROLLESTON, remarking on the rarity and interest of the growth, suggested that it should be referred to the Morbid Growths Committee and this suggestion was adopted.

Dr. MORLEY FLETCHER and Mr. H. J. WARING exhibited two cases of Congenital Sacro-coccygeal Tumour. The first was removed from a child, aged two years, who was under the care of Mr. J. Langton at St. Bartholomew's Hospital. The tumour which was present at birth had been gradually increasing in size. It was removed, but two months later the child returned with recurrence in the iliac and lumbar glands. The primary tumour and the pelvis were both exhibited. The tumour was cystic, the cysts being lined by columnar epithelium. The more solid portions had the structure of an adeno-carcinoma. As far as Dr. Fletcher and Mr. Waring knew no other case had been recorded of a congenital sacro-coccygeal tumour becoming carcinomatous. The second specimen shown was a sacro-coccygeal tumour from an infant, seven days old. This was a cystic tumour containing spindle and round cells, myxomatous tissue, and cartilage. The embryological origin of these forms of congenital tumour was discussed.

Dr. E. CAUTLEY showed the brain from a case of Congenital Hydrocephalus with Complete Atrophy or Non-development of the Prosencephalon. The patient was a male infant, aged four months, who died after an illness of three weeks' duration, characterised by vomiting, drowsiness, occasional screaming, spastic rigidity of the limbs, retraction of the head and rigidity of the neck muscles, exaggeration of the knee-jerks, and extensive craniotabes. The head was of normal size for the age and weight of the child, but the sutures and fontanelles were open, the anterior fontanelle being large and bulging. The brain was represented by the medulla oblongata, pons varolii, cerebellum, crura cerebri, and optic thalami, all of which were small and ill-developed. The rest of the brain consisted of a membranous bag composed of two dilated lateral ventricles, which had held about a pint of clear watery fluid. The membrane was about the same thickness as the dura mater in a normal adult and did not appear to contain any nervous tissue elements. Dr. Cautley ascribed the condition to an excessive formation of fluid in that part of the anterior cerebral vesicle known as the prosencephalon or procerebrum, and interference with its escape. This probably occurred very early in fœtal life and the prosencephalon became a membranous bag containing fluid instead of developing into the usual cerebral hemispheres, lateral ventricles, corpora striata, and olfactory lobes.

Mr. WALTER EDMUNDS exhibited the Thyroid of the Puppy of a Bitch from whom the Thyroid had been Removed. Halsted had shown that the thyroid of a puppy from a bitch partially deprived of its thyroid was hypertrophied; it was about 20 times larger, and microscopically the colloid was absent and the vesicles were very rare. This experiment Mr. Edmunds had repeated. Nearly the whole of the thyroid was removed from a bitch, leaving only one parathyroid and a morsel of thyroid proper. A few months later the bitch gave birth to a puppy and it was found that the thyroid of the puppy was large. Microscopically the colloid was absent and the secreting cells lining the vesicles were hypertrophied. These were the appearances of compensatory hypertrophy. It had been observed that the health of women suffering from either myxœdema or Graves's disease was much improved by pregnancy.

Dr. ARTHUR SAUNDERS exhibited the Legs of a Duck which had Webless Feet. He had only been able to find records of two instances of webless feet in ducks, one by F. O. Morris in *The Zoologist*, vol. iv. (1846), p. 1214, and one by Möbius in the Transactions of the Zoological Society of Frankfort-on-Maine, vol. xviii. (1877), p. 223. It was a congenital deformity. There was no abnormality in the duck excepting the absence of the web, which was represented by a slight membrane. The duck was able to swim, but not so well as other ducks.

Mr. S. G. SHATTOCK exhibited some Anatomical Rarities: 1. The hand and forearm of a chimpanzee in which the tendons of the flexor profundus digitorum were ruptured near their insertions into the terminal phalanges. The tendon of the index was tied in a knot around the unruptured tendon of the flexor sublimis after having been

completely withdrawn through the perforation in the latter. The rupture doubtless arose from a violent contraction of the muscle made to save a fall, whilst the terminal phalanges of one hand alone supported the weight of the body. 2. Unilateral synostosis of the temporo-maxillary articulation, preceded by an unusual amount of destruction of the jaw. No history was forthcoming. The degree of destruction suggested a tabetic arthropathy. The whole of the condyle and neck, with a portion of the ramus, had completely disappeared. 3. The tusk of an African elephant presenting a sharp angular curvature. Its surface showed the results of superficial destruction, associated with abnormal productions of cement, indicative of an alveolar periostitis. These changes explained the occurrence of the curvature. In consequence of a condition like that of pyorrhœa alveolaris in the human subject the tusk became loosened and by its sheer weight then underwent downward displacement. As the production of ivory proceeded from the persistent pulp in the base the deeper or growing end of the tusk formed—i.e., after the occurrence of the displacement had been developed in the normal axis. Mr. Snattock questioned whether the mobility of the tusk of the elephant, usually regarded as normal, was not really a result of alveolar inflammation, for such observations related to animals living in the unnatural conditions of captivity. In man pyorrhœa alveolaris was known not only to induce premature absorption of the alveoli and exposure of the fangs of the teeth, but in extreme cases a tooth isolated by this disease might assume a horizontal position; were it furnished with a persistent pulp the after-growth would be followed by a curvature, as in the case of the tusk described. 4. Two Umbilical Calculi which consisted of squamous cells and hairs with needles of fatty acids. They had been removed from the umbilicus, in which situation they had produced a suppurative sinus.

Dr. JOHN FAWCETT exhibited a Fibroid Lung following Broncho-pneumonia. The patient, a child, had been admitted several times into Guy's Hospital under the care of Dr. Hale White with recurrent bronchitis and broncho-pneumonia. At the necropsy both lungs were found to be affected with old and recent pleurisy, thickening of the pleura, and a general increase of the fibrous tissue. As to the etiology of the condition broncho-pneumonia was the cause in this case, as it generally was in children. In looking up the Guy's Hospital post-mortem records from 1875–98 inclusive Dr. Fawcett had found that there had been 97 necropsies on cases of fibroid lung apart from tuberculous disease. In 43 of these the exciting cause was apparently some pleural lesion and in only five of these could there be said to have been any acute pulmonary lesion which might have been a "pneumonia." 18 of the cases were thought to be syphilitic and 10 were due to broncho-pneumonia. The majority—viz., 57—of the Guy's Hospital cases were between 30 and 60 years of age. These data were quoted to show that when a larger number of cases were taken it was clear that fibroid lung affected a longer period of life than was stated by some observers and also to show that pleurisy might be in later years probably quite as potent a factor in the causation of fibroid lung as broncho-pneumonia in the earlier ones.

Dr. A. J. CLEVELAND and Dr. J. FAWCETT exhibited a specimen of Diplococcus from a case of cerebro-spinal meningitis. The patient was a youth, aged 19 years, who died after an illness of five days. At the necropsy there was turbid serum in the ventricles and round the spinal cord. In the lymph at the base of the brain and round the cord diplococci were found, but no cultures could be obtained from this or from the serum or from the blood.

Dr. H. D. ROLLESTON showed a Pedunculated Spindle-celled Sarcoma arising from the submucous coat of the posterior surface of the œsophagus in its middle third. The tumour was white, friable, and in places superficially ulcerated. The base of attachment measured three inches on the long axis of the gullet. The growth was moulded to fit the lumen of the œsophagus and therefore was more pedunculated in the long than in the transverse axis of the gullet. It extended from a point one inch above the cardia to within one and a half inches of the cricoid. Reference was made to seven other recorded specimens, of which three—Targett's, C. Ogle's, and Livongood's—were pedunculated. Most of the cases were spindle-celled and arose from the submucous coat. Clinically, sarcoma resembled carcinoma of the œsophagus. The specimen was from a man, aged 49 years, who died with œsophageal obstruction.

Dr. FRANCES H. HAWKINS exhibited as a card specimen a Lympho-sarcoma of the Thorax occurring in a child, aged six years.

The annual meeting of the society was held subsequently. The report of the council showed that the society was in a satisfactory condition, the members amounting to an aggregate of 681. Reference was made to the new departure in the shape of laboratory meetings which had been held during the past session with conspicuous success. Various alterations had been made in the rules to meet the modern development of pathological science and an editor had been appointed. Votes of thanks were passed to Mr. A. Pearce Gould who had acted as president during the latter part of the session, to the retiring vice-presidents, members of the council, and the retiring officers. The following officers were appointed for the session 1900–1: President: Mr. W. Watson Cheyne. Vice-Presidents: Dr. E. Crookshank, Dr. S. Martin, Dr. F. W. Mott, Dr. G. Newton Pitt, Mr. Victor Horsley, Mr. G. H. Makins, Mr. Charters J. Symonds, and Mr. J. H. Targett. Treasurer: Dr. Sidney Coupland. Honorary secretaries: Mr. Charles A. Ballance and Dr. J. Rose Bradford. Council: Dr. F. W. Andrewes, Dr. T. Grigor Brodie, Dr. Sheridan Delépine, Dr. James Galloway, Dr. Archibald E. Garrod, Dr. Herbert P. Hawkins, Dr. R. G. Hebb, Dr. Patrick Manson, Dr. Cyril Ogle, Dr. H. D. Rolleston, Mr. William H. Battle, Mr. Cecil F. Beadles, Mr. H. P. Dean, Mr. A. G. R. Foulerton, Dr. C. D. Green, Dr. F. G. Hopkins, Dr. John McFadyean, Dr. Allan Macfadyen, Mr. D'Arcy Power, and Mr. Frederick C. Wallis.

CLINICAL SOCIETY OF LONDON.

Case of Gastro-enterostomy followed by Pylorectomy.—Septicæmia treated by Anti-Streptococcic Serum and Nuclein.—Conclusion of a case of Graves's Disease.—Annual Meeting.

A MEETING of this society was held on May 25th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Mr. ARTHUR E. BARKER read a paper on a case of Gastro-enterostomy followed by Pylorectomy and Recovery. The case was that of a woman, aged 55 years, who presented herself in March, 1899, at University College Hospital with very obscure symptoms of partial intestinal obstruction. There was a defined tumour to the left of the left rectus muscle under the border of the ribs. This was variously diagnosed, but Mr. Barker held it to be a growth of the splenic flexure of the colon. The abdomen was opened on this hypothesis by an incision at the left border of the left rectus. The tumour was found to be a carcinoma of the pylorus. Retro-colic gastro-enterostomy was at once performed, from which the patient made a rapid recovery. Five weeks later Mr. Barker removed the whole of the pyloric end of the stomach and closed the resulting openings in it and in the duodenum. Recovery was rapid, and the patient put on flesh steadily and went about as before, eating, as a rule, ordinary food. She died from recurrence exactly one year after the operation. The first operation was done under local (eucaine) analgesia and the second under chloroform anæsthesia. Murphy's button was employed and came away on the twelfth day. The operation was much facilitated by taking it in two stages. The following points were raised: (1) the peculiar position of the tumour, being in the splenic region; (2) the general propriety of pylorectomy; (3) the performance of a preliminary gastro-enterostomy, which was of undoubted advantage, and Mr. Barker thought that it might be made more of a routine procedure; (4) the selection of the anterior or posterior operation, the latter being in most cases as easy as the anterior and, in Mr. Barker's opinion, preferable; (5) the use of Murphy's button, as compared with simple suture, Mr. Barker showing a preference for the latter; and (6) the advantage of local anæsthesia as obviating the vomiting during the operation.—Mr. LEONARD BIDWELL quite concurred with Mr. Barker in preferring the double operation and he quoted some cases on which he had operated in that manner, all of which could be regarded as successful though the growth had recurred later. In one case in which he had performed the operation in one stage the patient died within ten days of the operation from the adhesions in the jejunum, which resulted in a kink. To prevent this accident the loop of the jejunum attached to the stomach should not be too close up to the duodenum. If it were, regurgitation of the bile into the stomach occurred.

He (Mr. Bidwell) advocated Halsted's method of suturing and in only one case had he had the slightest trouble afterwards. As to the interval of time which elapsed between the two operations, he had allowed 18 days and thought that that was a suitable time. In regard to the diagnosis of the early stages of stricture of the pylorus there was at first increased power in the stomach muscle and therefore there might be no dilatation. The absence of dilatation of the stomach rendered the diagnosis more difficult. The duration of life was not very great, but it was longer after the double operation than after gastro-enterostomy alone.—Mr. BARKER, in replying, said he would have liked to have heard more particulars of Mr. Bidwell's cases. As to the duration of life, he was not very sanguine. The operation prolonged life, and the average duration of life was not seven years but perhaps two or three years. Everything depended on an early diagnosis and the courage of the patient to undergo the operation. One thing was quite certain, pylorectomy should never be done for anything excepting malignant disease.

Dr. W. F. VICTOR BONNEY (introduced by Dr. JOHN ABERCROMBIE) read a paper on a case of Obscure Septicæmia treated by Anti-streptococcic Serum and Nuclein. The case was that of a young man who was seized, without any history of previous disease whatsoever, with fever of a persistent type, associated with joint swellings, femoral thrombosis, and abdominal distension. On the forty-second day of the disease rigors began, with a remittent temperature reaching nearly 107° F. on several occasions. He was treated by injections of anti-streptococcic serum, receiving within a period of 17 days 420 cubic centimetres in 42 injections. During this period the temperature fell and the patient greatly improved. A relapse on the sixty-fourth day was treated by injections of nuclein, 1 per cent. solution, in two cubic centimetre doses. He received nearly 30 cubic centimetres in eight days, during which period the temperature fell and the patient rapidly convalesced. He recovered and was now in complete health. The diagnosis, which was obscure at first, was divided between malignant endocarditis, enteric fever, and some obscure form of pyæmia. The first was negatived by the absence of cardiac signs and the second by Widal's test twice applied. Several bacteriological examinations left the matter still unsettled, though Mr. A. G. Foulerton was suspicious of having detected the gonococcus in the blood, but could not, by a mishap, confirm it. Reviewing the whole case, the likelihood that it was a gonococcal septicæmia was not improbable. The serum used was that made by Mr. Bokenham, while Messrs. Burroughs and Wellcome kindly gave the nuclein free. No ill-effects followed the injection of either.—The PRESIDENT remarked on the interest of cases of this kind which ought always to be carefully recorded in order that they might be more readily compared. The patient whose case he had recorded, to which Dr. Bonney had referred, was still alive, but the diagnosis was still uncertain. The cardiac signs disappeared and the patient had had recurrent attacks of fever and of albuminuria.—Dr. ABERCROMBIE remarked that he could not help believing that the treatment by serum and nuclein had the chief share in the recovery of this case, though he had used these remedies in other cases of septicæmia without success, excepting in one instance. As to Dr. Bonney's case, the patient had since presented himself for treatment for urethritis.—Mr. ARTHUR E. BARKER remarked that many cases of gonorrhœal pyæmia came under the notice of the surgeons and he would hesitate to accept the view that this case was checked by the anti-streptococcic serum. Cases of this disease went on to an extreme degree and then got well in a very remarkable way without any remedy. The bacteria probably grew until the soil was exhausted.—Dr. BONNEY, in reply to the suggestion that the recovery was a coincidence, remarked that the patient was getting progressively worse on two occasions and each time that the remedies were given he got well.

Dr. WILLIAM PASTEUR communicated the conclusion and post-mortem notes of a case of Graves's Disease with Bradycardia shown at a clinical meeting in April, 1898. The patient, a widow, aged 67 years, had sufferred from Graves's disease for 20 years and exhibited the disease in a typical form, with tachycardia, when first seen at the Middlesex Hospital in 1836. Under observation the enlarged thyroid dwindled and the tachycardia gradually gave place to marked bradycardia. The demeanour and facial expression were placid and almost apathetic. She said that her voice had altered in quality. She had become very sensitive to cold and rather clumsy with her fingers. It was a question whether the bradycardia was associated with degenerative lesions of the heart, of which there was physical evidence; or whether, with other symptoms just mentioned, it indicated the supervention of myxœdema. The latter was the opinion generally expressed. The patient was re-admitted to hospital in July, 1899, with acute symptoms of heart failure from which she rallied for a time. In January, 1900, she returned to hospital in a critical condition with signs of extreme tricuspid regurgitation and died within 24 hours of admission. The thyroid gland was rather small but not atrophic to the naked eye. Microscopically, parts of the gland appeared fairly healthy, but others showed an extensive round-celled infiltration of the alveolar structure. There were hypertrophy and dilatation of the left ventricle of the heart, but little change was present at the valves and in the coronary arteries. The thymus was not persistent. There were no obvious changes in the brain or meninges. Dr. Pasteur considered that the case afforded valuable pathological evidence of the occurrence of thyroid atrophy in the wake of Graves's disease. The case was of interest in presenting the symptoms of the two diseases in combination. He was of opinion that the bradycardia was more probably related to the condition of the heart than to the thyroid cirrhosis.—Dr. ALEXANDER MORISON said that after hearing Dr. Pasteur he had come to the conclusion that the bradycardia was related in some way to the thyroid disease. He would like to ask if any notable effect resulted from treatment and if it had modified the pulse in any way. The degenerative changes found in the heart were those constantly met with in the opposite condition of pulse and could therefore hardly account for the bradycardia. A systematic examination of the nervous system ought more constantly to be conducted in these cases. His own belief was that they would never be able to speak positively until the nerves' association with the heart could be investigated.—Dr. PASTEUR, in reply, said that the nervous system had not been investigated in this case. As to the results of treatment by thyroid they were negative, and this was not surprising when so much colloid material and cell infiltration were found in the thyroid.

Subsequently the annual meeting was held. The report of the council showed that the financial position of the society was satisfactory and that the work of the society during the past year had been well maintained. Hearty votes of thanks were given to the retiring Vice-Presidents and members of council. The following gentlemen were elected to hold office during the session 1900–1:—President: Sir Richard Douglas Powell, Bart. Vice-Presidents: Dr. Sidney Coupland, Dr. Stephen Mackenzie, Dr. W. Joseph Tyson, Mr. A. Pearce Gould, Mr. John Hammond Morgan, and Mr. Herbert W. Page. Treasurer: Mr. Howard Marsh. Council: Dr. J. Rose Bradford, Dr. C. W. Chapman, Dr. J. K. Fowler, Dr. Archibald E. Garrod, Dr. H. P. Hawkins, Dr. J. A. Ormerod, Dr. H. D. Rolleston, Dr. Harrington Sainsbury, Dr. R. Percy Smith, Dr. J. C. Uhthoff, Dr. A. F. Voelcker, Mr. W. H. Battle, Mr. James Berry, Mr. Stanley Boyd, Mr. L. A. Dunn, Mr. F. S. Eve, Mr. Raymond Johnson, Mr. G. H. Makins, Mr. John D. Malcolm, and Mr. Stephen Paget. Honorary secretaries: Mr. Charters J. Symonds and Dr. Percy Kidd.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The general meeting of this society was held on May 11th, Dr. Barclay Baron, the President, being in the chair.—Dr. John Macintyre (Glasgow) gave a demonstration upon the Use of the Roentgen Rays in the Diagnosis of Diseases of the Throat, Nose, and Neighbouring Organs, illustrated by numerous lantern slides, photographs, and apparatus. In the first part he dealt with certain matters of technique, alluding especially to the advances made since his last demonstration to the association in 1896. After speaking of the most convenient source of electricity and discussing the relative advantages of Wimshurst machines and coils for Roentgen ray work he mentioned various forms of interrupter, including the Wehnelt and a form devised by himself. He also described various modes of controlling the vacuum in Crookes's tubes, and an ingenious automatic mercurial pump used by him when making his own tubes. Barium platino-cyanide was the salt that Dr. Macintyre found to be the best for screens. The potassium plantino-cyanide,

though more brilliant, was less durable. The use of the screen was gradually coming into greater prominence; but, when photography was necessary, plates requiring only a very short exposure were now being used—a matter of no little importance when the patient was very ill. The second part was devoted to the application of the Roentgen rays to medical work. Speaking first of the application of stereoscopic vision to screen work and photography Dr. Macintyre passed on to the narration of individual cases. He showed how, besides the use of x rays in locating foreign bodies in the œsophagus, the larynx, the antrum, and the bronchi, fractures of the jaws could be seen, enlargement of the cardiac area recognised, and thoracic aneurysm rendered visible when other means of diagnosis had failed. He had also observed enlarged mediastinal glands and the presence of fluid in the pericardium and pleuræ. One interesting point mentioned was the distinct shadow cast by phthisical deposits at the apex of the lung. Examination of the accessory cavities of the nose had also revealed important information; for instance, the presence of a probe passed through the infundibulum into the frontal sinus could be clearly verified. Finally, Dr. Macintyre recommended the systematic examination of patients by the x rays. In many cases this method would only be supplementary to other means of diagnosis, but in a certain few instances he had been able thus to obtain valuable information which could not otherwise have been gained.—A short discussion followed.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The first annual dinner of this society was held at the White Hart Hotel, Windsor, on May 23rd, Mr. W. B. Holderness, the President, being in the chair.—Amongst other guests the mayor of Windsor, Mr. A. T. Barber, and the ex-mayor, Sir John Soundy, who had granted the use of the Guildhall for the society's meetings, were present.—The Vice-Presidents were represented by Mr. Arnold Thomson and Mr. Startin and the committee by Dr. H. T. Newman and Dr. E. S. Norris. The metropolitan members present included Mr. G. P. Field, Mr. Noble Smith, Dr. Fletcher Beach, and Mr. H. W. Allingham; and in addition to Windsor and Eton the following towns in the neighbourhood were represented: Slough, Maidenhead, Chertsey, Egham, Staines, Ascot, Weybridge, Ashford, Iver, and Bracknell. In all there was a muster of over 40. After the usual loyal toasts had been duly honoured, Mr. Noble Smith, in proposing the "Windsor and District Medical Society," drew attention to its strength and remarkable rate of growth. He also made suggestions as to the possibilities of its further development.—The President after alluding to the immense amount of labour expended by Dr. E. B. Hulbert in organising the society and expressing the universal regret of the members at his resignation, handed him a silver cigarette-box and match-box to correspond as a mark of their appreciation of his work. Both were engraved with a suitable inscription.—Dr. Hulbert responded, expressing his warmest thanks.—Various other toasts having been proposed and acknowledged the proceedings terminated with the National Anthem.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on May 9th, Dr. W. G. Dickinson, the President, being in the chair.—Mr. C. A. Ballance gave a demonstration on the Operative Treatment of Chronic Otorrhœa. Mr. Ballance commenced by dividing chronic otorrhœa into two classes: (1) tractable otorrhœa; and (2) intractable otorrhœa. With regard to the first group, antiseptic irrigation, alcohol instillation, the removal of adenoids in children, and various minor operative measures in the adult were discussed. In intractable otorrhœa Mr. Ballance advocated operation in two stages: (1) the complete mastoid operation for the removal of the disease; and (2) the healing of the operation cavity some seven or ten days later by the application of large epithelial grafts. The advantages claimed were: (1) the immediate healing of the wound; and (2) that now for the first time in the history of the operation the surgeon could honestly promise his patient (*a*) a certain and rapid cure and (*b*) a considerable probability of improvement in hearing. Mr. Ballance also hinted at the boundless possibilities which the success of the grafting of the bony walls of the tympano-antral cavities seemed to offer in the surgery of the bones in all parts of the body and the likelihood that the method might be successful in the treatment of post-suppurative and chronic dry deafness by the application of epithelial grafts to the labyrinth. The address was illustrated by lantern slides.

Reviews and Notices of Books.

Acromegaly. By Dr. MAXIMILIAN STERNBERG, Privat-docent in the University of Vienna. Translated by F. R. B. ATKINSON, M.D., C.M. Edin. London: The New Sydenham Society. 1899. Pp. 138.

THIS volume, one of the latest published by that excellent body, the New Sydenham Society, contains a good account of the somewhat rare disease "acromegaly."

The author gives an interesting and complete account of the "history" of the disease, starting from the original description given by Marie in 1886, although, as it is pointed out, cases of this affection had been previously described under other names.

A brief review is then given of the principal clinical appearances of the disease, but the symptoms are considered in detail further on in the book. Dr. Sternberg has evidently made a careful study of the literature of the subject and has collected the reports of 47 necropsies of undoubted cases of acromegaly, so that the chapter on Pathological Anatomy is made a most instructive one. A comprehensive description is given of the changes found in the bones and some good illustrations, which materially aid in following the descriptions, are supplied in the letterpress. The account of the conditions found in the skull is minutely carried out. With regard to the structure of the bones the author is of opinion that a systematic histological examination of the whole osseous system—certainly a very laborious task—has yet to be undertaken, for in referring to the literature of the subject he found that each author seemed inclined to declare as typical the conditions found in his own case, and the value of these observations was lessened inasmuch as frequently the inquiry was limited to an examination of a few bones or even of only one. Due attention is, of course, devoted to the changes which have been described in the pituitary gland, or, as Dr. Sternberg prefers to term it, "the hypophysis." He considers, however, that the histological conditions met with must be received with a certain amount of reserve owing to the circumstance that the organ possesses a fairly complicated structure and our knowledge of its morphology is not thoroughly exhausted. Further, the interpretation of the reports is also rendered more difficult owing to the fact that the terminology of the pathological anatomy varies in different schools, so that we cannot attach without further consideration a similar meaning to designations which sound identical.

Chapters IV. and V. are devoted to the symptomatology of the disease, its development, course, terminations, the types that are encountered, and the prognosis. Dr. Sternberg's description of the symptoms are clear and concise and Dr. Atkinson has performed the task of translation admirably.

The chapter on the Relationship of Acromegaly to Other Diseases and Conditions will also be found interesting, especially the remarks on "myxœdema and cretinism" and on "gigantism." The author states that it will be found by anyone who collects the cases described in literature as "giants" and considers them strictly according to their pathological conditions that about 40 per cent. of all giants are also the subjects of acromegaly. This proportion suggests the inference of a closer connexion, and after a review of the arguments and cases which have been raised and quoted in favour of the supposition that there is a relationship between the two Dr. Sternberg comes to the conclusion that acromegaly is a well-defined disease, with perfectly sharply-marked characteristics, whilst gigantism is an anomaly of development which in itself has nothing to do with disease, but may occur in connexion with various illnesses and

certainly with universal dystrophies. Acromegaly is one of these illnesses.

The subjects of the etiology and pathology of the disease are fully discussed, stress being laid on the "hypophysis theory." Dr. Sternberg is of opinion that notwithstanding the reserve that must be maintained regarding the histological results met with in the hypophysis, the connexion between the course of the disease and the post-mortem appearances is so striking that it adds, no doubt, an important support to that view which sees in the cessation of the normal function of the hypophysis the cause of acromegaly. "Whatever may be imagined as to a closer connexion it is at present entirely left to conjectures which are as numerously present in the literature as they are unproved." An especial difficulty, which is at present insurmountable, arises from the fact that there is no doubt that tumours of the hypophysis may exist without acromegaly.

One of the best chapters in the book is that dealing with diagnosis, and we need only refer to the list of diseases which the author states may be mistaken for acromegaly to appreciate the great care with which he has written his book. To readers interested in this subject we can confidently recommend a perusal of this work.

On Neuroma and Neuro-fibromatosis. By ALEXIS THOMSON, F.R.C.S. Edin., Assistant Surgeon to the Royal Infirmary, Surgeon to the Deaconess Hospital, and Lecturer on Surgery, Edinburgh. With 20 plates. Edinburgh: Printed by Turnbull and Spears. 1900. 4to, pp. 168. Price 21*s*.

NEW growths in connexion with nerves are rare, yet these tumours are so striking that medical literature contains records of a large number of cases. The attention of Mr. Alexis Thomson seems to have been directed to this interesting and important subject by a very remarkable series of 15 cases which were in the wards of the Royal Infirmary, Edinburgh, within six years.

In 1803 Odier of Geneva introduced the name "neuroma" for tumours forming in connexion with nerves. In 1829 a valuable paper was read before the Medico-Chirurgical Society of Edinburgh by William Wood who gave a careful account of the clinical and pathological characters of the disease and records 24 cases which he had collected. Various other papers on the subject have from time to time appeared, but in 1849 was published an important work on Neuroma by R. W. Smith of Dublin. His descriptions have been copied into all text-books since, and though Virchow in 1863 distinguished between the true neuroma which consists of true nerve tissue and the false neuroma which is derived from the connective tissue of a nerve, yet the term "neuroma" has very conveniently been applied to all tumours arising in connexion with nerves. The true neuroma, composed chiefly of nervous elements, is of extreme rarity, and only five certain cases have been put on record; they have probably all been connected with the sympathetic system, and abstracts of the notes of all the cases are given in Mr. Thomson's work, and Dr. Knaus's remarkable case is figured. The "false neuromata" are the really important growths and the author classifies them thus: (1) circumscribed tumours; (2) diffuse overgrowths of the connective tissue of nerves—that is, "neuro-fibromatosis"; (3) traumatic neuromata; and (4) enlargements of nerves in leprosy and syphilis.

The circumscribed variety of the false neuroma may be either innocent or malignant. The innocent growths are far from uncommon and one form is well represented by the "painful subcutaneous tubercle." The malignant variety is a sarcoma and it usually occurs in the prime of life—from 20 to 40 years of age; it is much rarer than the innocent form, and Mr. Thomson has collected 12 cases of well-authenticated primary sarcoma of nerve. Of these in five cases recurrence occurred and death ensued, and in only two has removal of the tumour been followed by two years' freedom from recurrence. It is a remarkable fact that in half the cases the great sciatic nerve was affected.

Of even greater interest than neuromata is the condition which has been called "generalised neuro-fibromatosis." As the author remarks, "the clinical and pathological records of this remarkable disease are so numerous that there is no want of material upon which to base" a description. The nerves are the seat of a great number of tumours and are also diffusely and unequally thickened. In a transverse section of such a nerve-trunk there is seen to be a formation of new connective tissue within the primary bundles of nerve fibres. These changes may occur in the cerebral nerves as well as in those arising from the spinal cord. Curiously, however, the meninges of the brain and cord are never affected, although they correspond to the fibrous tissue of nerves. The tissue in the nerve which appears to suffer most is the endoneurium. Different observers disagree as to the effect of the fibromatosis on the nerve fibres, but Mr. Thomson is satisfied from the special investigation of two cases that degenerative changes are present. As to what nerves are affected the author tabulates 45 cases in which the cranial nerves were implicated and of these the vagus was involved in 29 instances and the fifth nerve in 12, but no nerve was exempt, though it has been stated that the olfactory, optic, and auditory nerves are never affected.

Another form of neuro-fibromatosis is that called "the plexiform neuro-fibroma." It may be looked upon as a fibromatosis confined to the distribution of two or more contiguous nerves or of a plexus of nerves. Histologically, the condition is identical with generalised neuro-fibromatosis, and the two conditions may co-exist in the same individual. Though the disease is rare 62 cases have been collected. By far the most frequent situation of these growths is the subcutaneous tissue of the head and neck in the area of distribution of the fifth cranial and the superficial cervical nerves.

The third variety of neuro-fibromatosis is that form of tumour which is usually called "molluscum fibrosum," and the connexion of this new growth with disease of the nerves was first pointed out by von Recklinghausen in 1882. In this disease the new fibrous tissue is for the most part situated between the bundle of nerve-fibres and the investing perineurium. These skin tumours may occur combined with other forms of neuro-fibromatosis. A still more remarkable condition associated with an increase in the fibrous tissue in nerves is that known as "elephantiasis neuromatosa." This was specially described by Mott of New York in 1854 under the name "Pachydermatocele." It includes those forms of neuro-fibromatosis in which in addition to the fibromatosis of the cutaneous nerves there is also a well-marked and diffuse overgrowth of the skin and subcutaneous tissue in a particular region of the body. The disease is of congenital origin and it increases slowly at first but often more rapidly after puberty. The special seat of the overgrowth is in the pons reticularis of the corium. In other cases neuro-fibromatosis is associated with pigmentation of the skin.

It happens not rarely that patients who are the subjects of neuro-fibromatosis develop sarcoma in the diseased nerve-tracts. This has been well called "secondary malignant neuroma." It chiefly manifests itself by great local malignancy, though exceptionally visceral metastases may occur. In a few cases multiple tumours of the brain have developed in patients with one or other variety of neuro-fibromatosis, but the author considers that this combination of tumours of the central nervous system with

fibromatosis of the nerves is only a coincidence. Mr. Thomson has tabulated the particulars of 77 cases of neuro-fibromatosis, so that reference may be made to them very easily.

The author in summing up his conclusions with regard to this disease tells us that he is inclined to think that it arises before birth or in early childhood, that it is sometimes inherited (as shown by 10 cases which he has collected), that mental deficiency is often also present, and that sex seems to have no influence. He is able to suggest no satisfactory explanation of its actual cause but regards it as a developmental disease. Clinically there is wonderfully little to be said about neuro-fibromatosis. As a rule the tumours are quite insensitive—a striking contrast to the solitary tumours of nerves. Occasionally one tumour, especially where exposed to pressure, may cause pain but this may vary from day to day. It happens, but only very rarely, that the enlarged nerve may press on the brain or spinal cord close to its origin, and so symptoms may arise of pain or paralysis.

A chapter is devoted to detailed accounts of the cases which have come under the author's personal observation, and in the last chapter the traumatic neuromata are discussed. An extensive and valuable bibliography is given. Unfortunately there is no index; this is a most regrettable omission, for every scientific work loses some of its value if the contents cannot be readily referred to.

The 20 plates are carefully executed; they represent well the gross and minute anatomy of the disease. The book is clearly printed on good paper, but the quarto form is certainly not so convenient for general use as is the octavo.

There can be no doubt that Mr. Thomson has made a very valuable contribution to our knowledge of an important class of tumours which have hitherto hardly received their due share of recognition.

Rhinoplastic Operations, with a Description of Recent Improvements in the Indian Method. By D. F. KEEGAN, M.D. T.C.D., F R.C.S. Eng., Indian Medical Service (retired). With 21 Phototype Portraits and 11 Engravings in the Text. London: Baillière, Tindall, and Cox. 1900. Roy. 8vo. Pp. 72. Price 5s.

DR. KEEGAN'S thoroughly practical manual is to some extent an after-growth and expansion of his article on Rhinoplasty which appeared in THE LANCET of Feb. 21st, 1891 (p. 419). At that time he had performed a large number of rhinoplastic operations in the Charitable Hospital at Indore and had devised the modification of the ordinary procedure which it is the object of the present volume to describe more in detail. In some respects the conditions under which he worked were more favourable than those with which British surgeons have to deal, his patients being mutilated not by disease but by cutting instruments. This form of cruelty, although rare in modern Europe, is nevertheless of great antiquity. Many of our readers will recollect the passage where Virgil describes the visit of Æneas to the under-world and his meeting with his friends who had been killed at the capture of Troy.

> Deiphobum vidit lacerum crudeliter ora,
> Ora, manusque ambas, populataque tempora raptis
> Auribus, et truncas inhonesto vulnere nares.

Dr. Keegan mentions that in modern India nose-cutting is a not infrequent form of vengeance for matrimonial offences, and the Trojan legend affords a curious parallel, for Deiphobus after the death of Paris became the consort of Helen, the runaway wife of King Menelaus, and was eventually killed by the aggrieved husband. The distinctive feature of Dr. Keegan's operation, for which he modestly makes no claim of priority, consists in this, that whereas formerly the nasal defect was covered only with a single layer of skin he found means of making firm, open-standing nostrils, lined internally with skin taken from over the nasal bones and covered externally in the usual way with skin raised from the forehead. The difficulty has always been to ensure the prominence and shapeliness of the nose, and to prove that this problem has now been solved 21 phototype portraits of seven patients are introduced, four of them being shown both full-face and in profile. We have no hesitation in strongly recommending the book as the work of a skilful operator. The history of rhinoplasty by means of a forehead flap is not without interest to British surgeons, as it was first practised in Europe by Mr. Carpue of London, of whose cases Dr. Keegan gives a summary. The volume is well printed and its handsome appearance reflects credit on the publishers.

JOURNALS AND REVIEWS.

Revue de Gynécologie et de Chirurgie Abdominale. Tome IV. Nos. 1 and 2. January—February, March—April, 1900. Paris: Masson et Cie.—The first number of this review for the current year contains a most interesting paper by Professor Cornil upon the Anatomy and Histology of Tubal Pregnancy, founded upon a careful examination of seven cases. MM. Jayle and Delherm contribute a study of Extra-uterine Tubal and Intra-ligamentous Gestation after the fifth month, with details of 29 cases collected from the literature and including two of their own observation. M. Vidal writes upon the Technique and Results of Some Conservative Operations upon the Uterine Appendages. A paper upon the Dangers and Accidents of Incomplete Hæmostasis is contributed by M. Rebreyend. A Critical and Historical Study of the Treatment of Fibromata of the Uterus by Electricity by M. A. Zimmern affords a good account of the latest views upon the subject. M. François Neugebauer adds another series of 29 observations of Error of Sex to the 50 cases already recorded by him in the April number of the review for the year 1899. In the second number is a short paper by Professor Pozzi upon Four Cases of Torsion of the Dilated Fallopian Tube. The condition associated with the torsion was in three of the cases a pyosalpinx and in one a tubal gestation. The question of making traction upon a Fibromatous Uterus during Abdominal Hysterectomy is discussed by Professor Reverdin. He describes in detail the method employed by him of suspending by means of a special apparatus large and heavy fibroid tumours during the progress of an operation undertaken for their removal. An interesting case of Fistulous Communication between the Sigmoid Flexure and the Vagina is recorded by M. Xavier Delore. The fistula was closed by the following very ingenious method. The recto-vaginal septum was split up to the site of the opening and after the adherent piece of gut had been separated from the vagina its anterior wall was drawn down and attached to the anus. The anterior wall of the rectum was then cut through up to the level at which it had been separated from the posterior vaginal wall. In this way the piece of bowel above the site of the fistula was made to open into the rectum, while the intervening portion of sigmoid flexure was, as it were, short-circuited. The result was good. M. Fontan continues his series of articles upon the Surgical Treatment of Abscesses of the Liver invading the Thoracic Cavity. The remaining part of the numbers is taken up with analyses of current literature.

VICTORIA HOSPITAL, FOLKESTONE.—The Duke of Cambridge on Saturday last laid the foundation-stone of a new wing to this hospital. It is to commemorate the Queen's Diamond Jubilee, will cost £6500, and will consist of two new wards of 14 beds each, affording additional accommodation which is greatly needed.

THE LANCET.

LONDON: SATURDAY, JUNE 2, 1900.

THE papers read at the last meeting of the Royal Medical and Chirurgical Society were of unusual interest. The topics discussed, like the enveloping British forces now invading the Transvaal, covered a wide field, which had to be traversed with great celerity in order to bring the discussion within the limits of the time at the disposal of the speakers. Any attempt on our part to pass the subjects in review would only prove futile, but we select a few points for comment.

The first to address the meeting was Mr. CLINTON DENT whose remarks had the merit of being both practical and suggestive. Sir WILLIAM MACCORMAC followed Mr. CLINTON DENT with an address which was published in our issue of May 26th. Sir WILLIAM MACCORMAC'S observations dealt mainly, of course, with the surgical aspects of the present war. He detailed the conclusions which he had formed thereon, with which those who have read the series of surgical notes which he forwarded to THE LANCET from the actual scene of warfare, while the facts and the impressions he derived from them were still fresh in his mind, are already acquainted. But Sir WILLIAM MACCORMAC having had leisure to arrange his thoughts was enabled in his address to summarise and supplement his original observations by a running commentary. The impression that must be derived from reading his address is that it contains the results of thoughtful experience set forth in admirably simple and clear language. Terrible as war always must be, Sir WILLIAM MACCORMAC is reassuring because he presents a vivid and realistic picture of the far less serious and fatal injuries inflicted by modern rifled arms; while he inculcates the hopeful lessons to be learnt from our recent experience as to how much may be expected by abstention from operative interference. In what Sir WILLIAM MACCORMAC has to say about abdominal surgery in the field most persons will thoroughly concur. After a big battle by no reasonable provision beforehand can an adequate amount of surgical aid to the wounded be supplied at once, although the modern methods of field medical organisation are probably the best that have yet been devised for stripping the battle-field of its wounded. The pressure after an action is so great and the energies and resource of the surgeons are so overtaxed as not to admit of early or prolonged operations. We fully concur, too, in what Sir WILLIAM MACCORMAC has to say about operations for the removal of bullets. The reasons which have been recently put forward for their removal where they are not giving rise to pain, trouble, or inconvenience are, it seems to us, altogether insufficient. Again, in his expressed views about the position of female nurses at the seat of war Sir WILLIAM MACCORMAC is eminently sound; a moving army in the field with an enemy confronting it is emphatically not the place for women, and no general or commanding officer would ever willingly consent to their being there. But we especially desire to express our hearty concurrence in what Sir WILLIAM MACCORMAC has urged about the duty of Governments to send properly accredited military medical officers as military medical *attachés* to the seats of war. It should be an established rule to do this, for every military power, especially those where conscription is in force, is concerned in providing the best possible system of medical administration. The military *attaché* accompanying the headquarters staff may know very little of the military operations, but he would always find a welcome from his brother medical men who would have nothing to conceal from him with respect to medical organisation.

Mr. CLINTON DENT'S address also calls for attention—an opinion in which all will concur who heard it or who have perused the summarised report of it in our issue of May 26th, p. 1515. It deserves careful study because it deals with a number of details which do not readily lend themselves to a hasty purview or brief comment. Military medical and sanitary authorities alike will probably agree with Mr. DENT in what he has to say about accommodation for the wounded. Churches, schools, and public buildings are, as a rule, quite unfitted for such a purpose and are certainly inferior to temporary canvas structures. For one thing, most permanent buildings of this nature are usually quite insufficiently ventilated; and whether a cathedral or a schoolroom has to be occupied the free admission and movement of fresh air are essential. In the views of Mr. DENT concerning additional air space in marquees, bedsteads of less width than that of the regulation pattern, the provision of flooring, and the desirability of having a more permanent and special kind of operating theatre than a tent, we concur, and we trust that some of his very sensible and practical suggestions will bear fruit in the future. We have possessions in all parts of the globe and in every sort of climate and never know where our next war will be. Military success often depends upon the mobility of our forces; and whatever we provide in the way of hospital stores and equipment has to be packed and transported to the scene of action and adapted, as far as practicable, to the varying circumstances of the country and campaign. Those responsible for medical administration must therefore often have before them very difficult problems—which fact should ensure a ready hearing for wise criticism.

WE have several times alluded in our columns to the Consultative Medical and Surgical Institution of Birmingham, the projection of which has called for great and misspent energy from Mr. ARTHUR CHAMBERLAIN, who shares with the Birmingham Hospital Saturday Fund the responsibility for a curious departure in medical practice. We dealt with the matter fully in a leading article which appeared on May 20th, 1899, under the heading, "The Degradation of Consultation." The scheme has now become a fact, for we read in the advertisement columns of a lay contemporary

that the institution was opened on Monday, May 21st. The advertisement, which we print in another column (see p. 1633), states that the institution has for its object "to lessen the strain upon hospital charity by providing, on terms within and under conditions suitable to their pecuniary means and position, medical and surgical aid to those who would otherwise seek it gratuitously or be unduly taxed by paying the usual consultation fees." To carry out this object this institution offers to those in need of it the services of a consulting medical practitioner at the reduced rate of half a guinea per consultation. In the original scheme there were to be two such medical officers, but we believe that as yet only one officer is provided, though if the supply of cheap consultants were unlimited the objections to the scheme would be as forcible.

Birmingham is a shrewd city which has made its mark in the world by its quick solution of economical difficulties and by its orderly management of municipal affairs, and we believe that a community which has shown itself so distinctly level-headed will see at once that the Consultative Medical and Surgical Institution offers no advantages to the public whatever. The general advice that the public will obtain for half a guinea, however sound, will not be the kind of advice for which those who can afford it are wont to pay proper fees; while to those who cannot afford to pay two guineas or one guinea what they will get for a smaller sum might prove of but small value in highly special or obscure conditions. The scientific opinion upon all sorts of pathological conditions of one or two gentlemen cannot in these later days of medicine be as valuable, as informative, and as little open to error as the aggregate advice given by the staffs of general hospitals and special hospitals. This is obvious, however well equipped in many scientific directions the cheap consultant officers may be; whilst if it should chance that their endowments are not on the face extraordinary acceptance of the post will lead to the suspicion that desire for employment has overcome modesty. All this will be obvious to Birmingham, and we believe confidently that the people will decide for themselves that they must see a genuine consulting surgeon or physician if they want to have genuine benefits from a consultation. To ask the advice of an institution which will be unable to guarantee the services of men having beneath their hands the proper fields from which to glean their experiences will be felt to be an idle and dangerous course; and if this does not appear at once it will on the first occasion when a man finds himself consulting for presbyopia the same gentleman who has already given ten-shillings-and-sixpence-worth of specialised opinion upon a neighbour's fractured patella. The public recognises that the general practitioner is able to treat such conditions and only looks for the services of a consultant when the circumstances are exceptional. And, equally, the public will find it curious that exceptional knowledge of such a wide range should be centred in one or two gentlemen without hospital appointments.

The general practitioner in Birmingham can help the sick in Birmingham as he is helping the sick throughout the kingdom. Under all ordinary and most extraordinary circumstances, he can do for them what their condition requires and he can tell whether they need further advice than his own. For, unlike the officers of the Consultative Medical and Surgical Institution, he has no need to wear the appearance of knowing everything. If the case is one where consultation with some man of wide or special experience, some man with all the peculiar advantages of being in touch with a hospital, is necessary, the general practitioner can decide how such consultation should be obtained. Few families require the services of a consulting surgeon or consulting physician very frequently, and the expense of paying the usual fee is one which, when regarded as an extraordinary item, is not crippling to persons unless they are really poor. Where, on the other hand, the payment of two guineas or one guinea is entirely out of the question the general practitioner will direct them into their right course. Such patients can go to a hospital, or they can ask their medical man to represent to the consulting physician that there are considerations in the case which would make it a kind thing to waive a portion of the fee. Most consulting physicians and surgeons in Birmingham will see patients at a reduced rate if the propriety and humanity of doing so are proved to them. And the medium through whom the consultant medical men should be approached is the general practitioner, who alone can say whether a case is one demanding particular attention, and who can generally estimate with some accuracy the pecuniary position of the patient. The intervention of the general practitioner will secure that only those borderland cases reach the consultant which clearly belong neither to the class from which hospital patients should be drawn nor to the class which can easily pay full fees.

IN THE LANCET of May 19th (p. 1420) we published an address which was recently delivered before the annual meeting of the Gloucestershire Branch of the British Medical Association at Cheltenham by Dr. ROBERT SAUNDBY who selected as his subject "The Modern Treatment of Diabetes Mellitus." Dr. SAUNDBY'S previous writings on this disease are well known, and his remarks on this occasion are particularly worthy of perusal and careful consideration. In discussing briefly the "theory of diabetes" he laid stress on certain points which have not received from most observers the attention which should be paid to them. It is well known that the withholding of carbohydrate food fails to stop the excretion of sugar in severe cases of diabetes. An explanation of this phenomenon has been adduced by Dr. PAVY and others by demonstrating that the albuminous molecule whilst undergoing decomposition into urea, water, and carbonic acid splits off a carbohydrate molecule from which sugar is formed. The resulting sugar and urea bear a definite relation to one another, so that if we know the quantity of urea excreted in 24 hours we can calculate the amount of sugar formed in the body from the decomposition of albumin. Yet if the tissues continued to consume a normal proportion of sugar all of this should be used up in the body. This important consideration has not been sufficiently recognised in framing a theory as to the morbid factors which bring about the condition of diabetes mellitus, and

therefore the usual conception that the essential cause of the disease is a derangement of the glycogen-storing function of the liver caused by bodily or mental shock or other *noxa* has to be modified by postulating a further failure of the sugar-destroying function of the tissues. It is difficult to explain, as Dr. SAUNDBY points out, how the tissues come to lose, partially at all events, their power of assimilating sugar, but there seems to be reason to believe that it is directly caused in some way by the excess of sugar which reaches them. When this quantity is restricted by careful diet many diabetic patients show after some time an increase of sugar-destroying power. Dr. SAUNDBY very concisely sums up his inferences as to the theory of diabetes thus: "We have therefore arrived at the conclusions that under the influence of certain agencies ..... the liver loses its power of storing glycogen; in consequence the tissues gorged with sugar suffer a diminution of their power to consume that substance; and finally glycosuria ensues which becomes persistent and increasing unless arrested by treatment." Equally interesting and precise are Dr. SAUNDBY'S remarks on the pathogenesis of diabetes mellitus, but we have not space to comment on them here, suffice it to say that he believes that there are three principal organs to which, upon more or less important grounds, we look for the seat of the original mischief to which the functional disturbance of the liver must be attributed. These are the nervous system (more especially the brain, the medulla oblongata, and vagi), the pancreas, and the liver.

It is, however, to that part of Dr. SAUNDBY'S address which deals with the treatment of diabetes mellitus that we would particularly direct the attention of our readers. There is, unfortunately, an absolute consensus of opinion among those who have most experience of this disease that no drug hitherto suggested has any influence upon its course, and therefore the treatment must be entirely dietetic. It is by no means an easy matter to draw up a diet table which will satisfactorily fulfil all the indications for the well-being of the patient, but Dr. SAUNDBY succeeded in placing the subject before his hearers in a manner succinct and most practicable. In the first place he pointed out that attention must be paid to quantity as well as to quality, for it is more than probable that such untoward results as are alleged to have followed sometimes the use of strict diabetic diet were due to excessive quantities of albuminous food. The quantity of food that a patient should consume is calculated in heat units. The usually accepted heat values of the ordinary elements of food are, roughly, for one gramme of albumin, four heat units; for one gramme of carbohydrates, four heat units; for one gramme of fat, nine heat units; and for one gramme of alcohol, seven heat units. A person weighing 10 st. requires daily on slight work an alimentary value of 2450 heat units. In addition a diabetic subject must receive a quantity of food equal in heat units to the amount of unconsumed sugar which he secretes.

On this basis tables are given by Dr. SAUNDBY indicating the quantity and nature of food substances which may be given to diabetic patients so as to fulfil the above requirements. The amount of sugar passed by the patient has to be estimated frequently and the diet altered in accordance with the results obtained. This necessary analysis may perhaps seem a stumbling-block, but by means of the apparatus now manufactured the necessary operation may be successfully accomplished in a very few minutes. Especially noteworthy are the "extras" which may be gradually added to the diet of a diabetic patient, the apportioning of them being strictly governed by the results of the urinary analysis. The monotony of the *régime* may thus be considerably modified, much to the patient's satisfaction, but, as the lecturer maintained, for safety to be assured in making these additions to the diet each extra must be allowed separately, and no further change should be permitted until the result of consuming the new articles of food has been tested by careful analysis of the urine. When a sufficiently varied diet has been reached a sternly uncompromising attitude should be maintained upon the question of further concessions. Having thoroughly followed Dr. SAUNDBY'S arguments and studied the illustrative cases quoted by him we believe that practitioners will find that they have acquired much valuable information as to the dietetic treatment of diabetes mellitus; the success of any such therapeutic measure being governed by the care and completeness with which it is applied. Dr. SAUNDBY has done good service in laying his views with such clearness before the profession.

THE fluctuations of the money market are, at least in their minor details, a little outside the comprehension of the majority of our profession who might even find some difficulty in defining accurately a "bull" or a "bear." And, as a rule these fluctuations do not concern us as a profession, but when our contemporary the *Times* reports, apparently in all seriousness, that the progress of plague is beginning to exert a prejudicial influence upon the buoyancy of certain stocks we feel compelled to ask how far such a condition is justified by facts. Naturally our chief concern is with our own country and we are anxious to consider whether there is a likelihood of the scenes associated with the Plague of London being ever re-enacted in our midst; for this is the vision which the Stock Exchange seems to have conjured up. Is there anything in the behaviour of plague as it is manifesting itself among Europeans at the present time which would lead us to view the immediate future as regards the British Isles with misgivings? It is a serious fact that to answer this question with a direct affirmative or negative would be to go beyond what the facts justify.

Since the recent appearance of bubonic plague in the East the disease has been studied in almost all its aspects by representatives of one or another country, and although our own Royal Commission has not yet said its last word we are in possession of knowledge which enables us to understand at least some of the means by which the disease may be spread and its presence determined. The discovery of the specific bacillus has helped us materially, and although we are perhaps as far as ever removed from an understanding of that mysterious combination of causes which, after a lapse of so many years, has bestowed upon plague a certain power of epidemic diffusion, we seem to have a more correct conception of the multitudinous forms in which probably, in the first instance at least, the disease may stalk abroad. Not a few recent

facts—as indeed does the whole history of plague—point to the enormous influence which what is known as "pestis ambulans" may exert upon the diffusion of this disease, and if the true detailed history of plague were known it would be found in the majority of cases to have spread through the medium of unrecognised cases; in other words, the danger is from the unknown rather than from the known, and under the head of the unknown we must, of course, have regard to the influence of infected rodents. As an instance of the possible operation of the unsuspected agency, we may refer to the story of the voyage of the s.s. *Golconda*, which is told by Dr. BULSTRODE in the current report of the Medical Officer of the Local Government Board. The *Golconda* arrived at Plymouth with a case of pestis ambulans on board, and the history of the patient pointed to the fact that he had suffered from plague since the vessel left Colombo, and that he had been ashore at the ports of call on the way home. If that patient had given rise to plague at any of these points it is not unlikely that the source of the disease would never have been ascertained. He had started from a port which was not at that time recognised officially as infected with plague and hence quarantine would have been useless to prevent the occurrence, and of course he was not known to be suffering from plague when he went on shore. How can importations of this character be guarded against? Certainly not by quarantine, unless the quarantine be directed to the whole world, and together with the prohibition of plague we prohibit the food which maintains our lives. In so far as this country is concerned we must place our reliance upon medical inspection, coupled with a notification forwarded to our inland sanitary authorities of all those who may be considered to have been exposed to infection. The destruction, as far as may be possible, of rats upon ships from infected or suspected localities or infesting the docks and wharves of our ports, must also be undertaken. Our port medical officers of health must in these days throw a wide net. They have ample powers and they must interpret those powers liberally. True this port sanitary net may not keep back every case of pestis ambulans; it probably will not. But everything that passes through this net will be observed and any after-developments will be promptly checked, assuming that our inland sanitary authorities are alive to their responsibilities.

At the present moment, so far as the condition of Europe is concerned, there is little to excite alarm in England, and the presence of plague within a few days' steam of our ports is not yet an immediate source of danger, though, of course, the likelihood of recrudescence in the human species, or of its persistence in rodents, must be borne in mind. In this connexion the recent experience of Alexandria is not without its lessons. Here we find a heterogeneous population of about 320,000 persons living under conditions which are far from sanitary, but although plague obtained a decided footing at this port, when attacked by European methods it failed to spread; and Alexandria is to be regarded as one of the most important gates of Europe through which a large proportion of possible infection must make entry. So, too, with regard to the behaviour of plague amongst Europeans at the present time, there are no reliable indications that the disease is either of a highly infective or explosive type, and we may with some reason assume that before this country is seriously affected with plague we are likely to have marked manifestation of the disease upon the mainland of Europe. Plague can only to a very limited extent be classed with cholera, and we know of no explosions of plague such as are matters of history in the case of cholera. Moreover, there is no well-authenticated instance of water-borne plague on record. Perhaps the disease with which plague may be most reasonably compared is typhus fever, and it may be inferred that the progress of our sanitation has at least had some effect in controlling this latter disease, even though, as we are from time to time reminded, it is still with us. It is, of course, conceivable that both plague and typhus fever may one day resume their old epidemicity, but even if this be so we find difficulty in believing that diminished overcrowding, the notification and isolation of disease, and our ability through our sanitary organisation to seek out unrecognised cases will count for nought. As regards the oscillation of the pecuniary pendulum, we can well understand that local outbreaks of plague may have some influence upon the stocks connected in one or another fashion with the commerce of the invaded areas, but apart from this we see at present no sufficient reason for disturbing our securities. It has to be accepted that plague has assumed pandemic proportions, and its presence in Australasia and in North and South America offers much food for reflection, but the hour of actual apprehension has not arrived for the British Isles.

Annotations.

"Ne quid nimis."

THE USE OF HORSEFLESH AS A FOOD.

THE gradually extending use of horseflesh as an article of daily consumption in Germany and the circumstance that many of our brave troops have been compelled to use it as a diet more or less completely replacing beef and mutton for many weeks together in Kimberley and Mafeking make opportune an article upon its effects by the well-known physiologist Ed. Pflüger which is published in the May number of his *Archiv für Physiologie*. Professor Pflüger's experiments were instituted on dogs to determine the metabolism of the body and the capability of obtaining a full amount of work out of the animal on a diet of pure, or nearly pure, albumin. With this object the well-boiled muscles of fish were given, which the animal ate with relish, but which, from the difficulty of freeing it from bones, had to be discontinued, vomiting and staining of the fæces with blood resulting from its use. Horseflesh next suggested itself as representing albumin with an extraordinarily small proportion of fat, yielding, in fact, only about 1 per cent. of ether-extract. This, carefully cleansed from tendon and any apparent adipose tissue, was given to a dog after being passed through a mincer either in the fresh state or after sterilisation and division into equal blocks which kept well. The immediate effects were that diarrhœa set in, which continued as long as this kind of meat was supplied and, in addition, under nearly similar conditions of work, the daily loss of nitrogen by the bowels was found to be doubled, or more than doubled. Professor Pflüger then made inquiries

of the keepers of the Zoological Gardens at Cologne, and found that it was generally known that the use of horseflesh caused diarrhœa in all predatory animals, on which account it had been very generally given up and the flesh of cows, which caused no disturbance of the bowels, had been substituted for it. He found, too, that the same effects followed its use whether it was eaten raw or had been first boiled. Cats were less disturbed than dogs, though still to a noticeable extent. Investigations were now undertaken to determine whether the effects observed were due to the want of fat or to the presence of the large quantity of glycogen which horseflesh is known to contain. Therefore mutton fat from the region of the kidneys in the proportion of 750 grains to each 4 lb. 4 oz. of the meat was added with immediate good effects, for the dog at once began to pass well-formed fæces. The same result followed the admixture of ox fat in like proportion, but pig's fat was much less effective in arresting the diarrhœa. The question arose whether the diarrhœa resulted from the mere poverty of fat in horseflesh or from the presence of some poisonous constituent in it to which fat proved an antidote. Further experiments in which horse-fat was mingled with ox-flesh and administered to the animal as a diet caused no diarrhœa, hence it was concluded that there was no poisonous constituent in horseflesh. Experiments made with starch in the form of rice pap reduced but did not prevent the diarrhœa caused by the exclusive use of horseflesh. When the diet of horseflesh was continued for many months the addition of even considerable proportions of rice-pap and fat had but little effect in controlling the diarrhœa. Next an endeavour was made to determine whether the toxic agent was contained in the water in which the finely divided meat had been boiled. This was separated by passing through a sieve, but the addition of this fluid had no injurious effect whilst the meat-pap left on the sieve produced diarrhœa. In other words what the French would call the bouilli was poisonous whilst the bouillon was not. The boiled meat was now subjected to the action of alcohol and experiments were made with both the material that was precipitated by alcohol and with that which was obtained by evaporating the alcohol to dryness. The results showed that the poison was not contained in the precipitate caused by alcohol but in the material left on the evaporation of the alcohol. This material was again treated with ether. The ether dissolved part of the alcoholic extract and left a remainder. Experiment again showed that the toxic agent was contained in the material dissolved by the ether but its action had become considerably enfeebled, probably owing to its decomposition. A quantitative analysis of the ether-extract seemed to show that it was composed of about three-fourths of lecithin and one-fourth of neutral fat and cholesterin. This certainly does not afford any information in regard to the exact nature of the toxin but it indicates the path for further research and leads Professor Pflüger to suspect that it may consist of neurin or some modification of that poisonous agent. He concludes with some suggestions for cooks in beleaguered garrisons who are reduced to horseflesh as food, which coming from the pen of one of the most distinguished living physiologists, deserve consideration. In one mode of dressing the horseflesh is converted into a pulp and for every two pounds about three-quarters of an ounce of ox fat or mutton fat taken from the region of the kidneys is served up with a sauce of meal as a hash. Another is to cut it into collops, boil it in water, throw away the broth, and serve the meat with a fat sauce. Beer, wine, tea, or coffee may be taken with it. A third is to convert it into a pulp, add a tenth of its weight of rice and a fortieth of its weight of fat, and cook by steaming; or, lastly, it may be beaten up with plenty of fat and eaten with an oily sauce.

THE TENURE OF OFFICE OF MEDICAL OFFICERS OF HEALTH.

IN THE LANCET of May 19th we drew attention in a leading article to the disabilities under which provincial medical officers of health often labour by virtue of the fact that the insecurity of their offices renders its difficult for them to perform their duties in a manner satisfactory at the same time both to their own self-respect and to the public health, and we referred to the Bill now before Parliament which has for one of its objects the creation of permanent appointments. We expressed our sympathy both with the spirit of the Bill and with the efforts which were being made by certain medical practitioners for furthering its objects, but we also suggested that there might be difficulty in securing the passage of the Bill through Parliament in its present shape on account of its somewhat far-reaching nature. Moreover, we expressed doubts whether it was altogether desirable in the true interests of the profession or of the public health that an effort should be made to render permanent part-time appointments carrying with them such insignificant salaries as £10 to £50. We regret to find, as will be seen under the heading of "Correspondence," that Dr. J. Groves, the well-known medical officer of health of the Isle of Wight Rural District, regards our remarks as "ungenerous." This is the last form we intended them to take. We are quite aware of the difficulty to which our correspondent draws attention of persuading "local authorities to pay salaries commensurate with the dignity of the office"; indeed, we see no prospect of the smaller and poorer authorities ever being able to do so, and we are afraid, too, that the attempt to compel them to saddle themselves with permanent appointments will also fail. It is partly for this reason and because we think that £10 appointments are inconsistent with the position which the medical officer of health should occupy that we rather advocate the creation of combined appointments carrying with them adequate remuneration; at any rate, we incline to the view that it is appointments such as these which should, in the first instance at least, be rendered permanent. We question the practicability of carrying the present Bill through Parliament and we still advise the modification which we have suggested. Moreover, the loss of office by an officer who devotes his whole time to public health work and who derives his livelihood from it is a much more serious affair than the loss by a general practitioner to whom the paltry pay he receives as medical officer of health is a relatively insignificant matter. It is surely desirable in the interests of the profession that there should be at least some pecuniary and other limitations to the creation of permanent appointments and that some check should be placed upon sanitary authorities anxious to rid themselves permanently of their responsibility in the very cheapest manner possible.

SHELL-FISH AND POLLUTED ESTUARIES.

A PUBLIC inquiry of a somewhat far-reaching nature was held quite recently at Exeter before two Local Government Board inspectors. Owing, it appears, to an outbreak of enteric fever which occurred in Exeter and which was locally attributed to the consumption of cockles collected from near a sewer outfall, a representation was made to the Local Government Board by the Devonshire County Council, the Exeter corporation, and other local authorities, asking that the estuary of the Exe should be declared a "stream" within the meaning of the Rivers Pollution Acts, tidal estuaries being in the absence of such declaration outside the operation of those statutes. Much evidence was adduced in support of the application and we shall be interested to hear what view the Local Government Board takes of the matter. As far as we can gather from the

reports in the local papers the application was based almost solely upon danger to health through the consumption of polluted cockles and mussels, although certain other considerations such, for instance, as nuisance during bathing and boating, were brought forward in support of the scheme. There can, we think, be no doubt that danger must attend the consumption of raw shell-fish collected from near a sewer outfall, and this whether the outfall be into a tidal estuary or into the open sea, and there would appear to be reasonable ground for supposing that this danger must at least in some degree obtain even if the sewage be treated before discharge; in other words, it seems impossible to dispose of the risk altogether unless the collection of shell-fish from near sewer outfalls can be prohibited. Those who are familiar with our coasts know how luxuriant a growth of mussels may often be found around sewer outfalls, and how difficult, if not impossible, it is to prevent the public and the vendors of such molluscs from collecting them for consumption. The fact, however, that the danger cannot be entirely obviated is no justifiable reason for neglecting to minimise it, and the abstraction of sewage from our estuaries is certainly desirable upon æsthetic grounds if on no other. We can, however, conceive a position where the existence of a handful of cockles or periwinkles might lead to the expenditure of enormous sums of money in connexion with sewage disposal, and in a case such as that it might be questioned whether the public health could not be more profitably protected by the provision say, of a purer water-supply or of adequate isolation accommodation. Moreover, there arises here, as in the case of nearly all our food-supplies, the question as to how far we may be able to protect ourselves against polluted importations from abroad. It is perhaps not generally known that a very considerable amount of the supply of mussels to this country is derived from the Netherlands. Some control or at least inspection of these foreign sources of supply would seem to be indicated if we wish to place our shell-fish industry beyond reproach and to consume our molluscs with equanimity.

CANCER OF THE STOMACH IN THE YOUNG.

Dr. William Osler and Dr. Thomas McCrae have contributed to the *New York Medical Journal* of April 21st a valuable and exhaustive paper on this subject. A generation ago it was thought that cancer of the stomach could be left out of consideration in the diagnosis of obscure cases if the patient was under the age of 30 years. Unfortunately this is not true. In 3257 recorded cases the percentage of patients under 30 years of age is 2·5. In a series of 150 cases observed at the medical department of the Johns Hopkins University six of the patients were under the age of 30 years—i.e., 4 per cent.—an unusually high proportion. In childhood the disease is a pathological curiosity; there are only six cases on record in patients under 10 years of age. Between the ages of 10 and 20 years cancer of the stomach is also very rare; only 13 cases have been recorded. Between the ages of 20 and 30 years cases are more numerous. In the six cases above mentioned two features stand out prominently—an abrupt onset and an acute course. There was no loss of appetite in three cases, anorexia was present in two, and in one the state of the appetite was not noted. Pain was absent in only one case; in the others it was fairly severe. Vomiting was present in five cases; it was absent in the case where pain was absent. In four cases the duration was known; it was six months in two and four months in two. The following is one of the cases cited by the writers of the article. A man, aged 25 years, who had previously been well and strong, was admitted to hospital complaining of weakness and debility. Eight weeks before admission his friends noticed that he looked yellow. Two weeks later he had a slight feverish attack which kept him in bed for some days. The temperature did not rise above 102° F. He then lost his appetite and became wasted. There were occasional belching of gas and a bad taste in the mouth, but no nausea or vomiting. In the two weeks before admission he lost nearly 15 pounds. His physician discovered a mass in the abdomen and the patient therefore came to hospital. There were moderate pallor, sallowness, and emaciation. Below the ensiform cartilage was an elevation which descended with inspiration. The test-meal yielded 80 cubic centimetres of liquid which contained no hydrochloric acid and gave a reaction for lactic acid. Dr. Osler made this note: "The great mobility of the tumour with varying conditions of fulness and emptiness of the stomach seems very important. The anæmia, nausea, failure of stomach digestion, absence of free hydrochloric acid, and presence of lactic acid, in spite of the patient's age, point to cancer of the stomach." Exploratory laparotomy showed a firm mass near the pylorus of the size of an orange. Small nodules were felt on the posterior portion of the stomach. The patient recovered rapidly from the operation which seemed for a time to have a beneficial effect on the symptoms. He grew feebler and more emaciated, however, and died four months after the onset of symptoms.

SEPTIC SKIRTS.

THE streets and pavements of London are not kept as clean as they should be, and from time to time we have found occasion to direct the attention of some of the metropolitan vestries to their statutory duties in this respect. On the whole, the changes which have taken place in municipal cleanliness have been steadily for the better, but the improvements have been very slowly brought about, and they have not yet arrived at such a pitch of perfection that garments can be dragged on the pavement without becoming soiled. Nor does such an ideal state appear to be within the bounds of possibility. Automobile machines have not entirely replaced horses, and dogs are permitted not only to live, but to move about, in most parts of the metropolitan area, nor is it desirable or likely that either horses or dogs will be banished from London. It does not require any very prolonged observation on the habits of these animals to convince even a person of slow understanding that whilst animals are at large they are addicted to discharge excrement of fluid and of more or less solid character at not infrequent intervals. No means, as far as we are aware, have been suggested for the prevention of these nuisances, which we fear must be looked upon as the normal outcome of life as it at present exists. Another source of the pollution of the pavements results from the habit of expectoration which is practised among men, though less perhaps by Englishmen than by Americans and other foreign races. The habit is sufficiently prevalent to make the products of expectoration an easily recognised and general nuisance. It is one, also, for which the only apparent remedy is a change in the habits of the people and is distinctly not one for legislative interference. The habit of profuse expectoration is one also, it may be said, which had not merely the sanction but the distinct approval of one of the greatest of English physicians. Sir Thomas Watson was accustomed to stop and to expectorate freely in the streets of London whenever he detected a bad smell, and he explained that he considered the practice a valuable one for the prevention of ill effects from the source which produced the malodour. Many British workmen doubtless expectorate as a matter of habit rather than from any prophylactic theory, and perhaps habits have greater fixity of tenure than theories. Enough has been said to indicate the source and nature of some of the most prevalent of the nuisances of the streets and pavements, and it will be generally admitted that under the present conditions of life a certain amount of

such pollution must exist. It does not necessarily follow that this should be brought indoors. Unfortunately, at the present time a large number of women sweep the streets with the skirts of their gowns and other garments and bear with them wherever they go the abominable filth to which we have briefly alluded. Attempts are, indeed, often made by women to keep their dresses from dragging. Such attempts are usually unsuccessful. The management of a long gown is too difficult a matter for the majority of Englishwomen. The habit has arisen of seizing the upper part of the skirt and holding it in a bunch at a place called by women "the broad part of the back below the waist" and amongst anatomists by the less cumbrous term "gluteal region." This practice can be commended neither from a physiological nor from an artistic point of view. It is not to our purpose to descant on the absurdity or on the ugliness of the habit of walking in long skirts—these things are too palpable to be laboured; but we strongly protest from a sanitary point of view against the importation into private houses of skirts reeking with ordure, urine, and pathogenic microbes. For walking in the street a short skirt should be worn, and we commend the sensible walking gown now adopted by the best-dressed women to those whose business it is to write on the fashions in dress for women of the middle and lower classes.

AUTO-INTOXICATION.

DR. C. A. EWALD, in a recent number of the *Berliner Klinische Wochenschrift* (Feb. 12th, 1900), deals in a comprehensive manner with the subject of auto-intoxication as it occurs in various diseases and brings much of our scattered and fragmentary knowledge together. As examples of intestinal auto-intoxication he cites the nervous disturbances which occur in acute and chronic digestive disorders—for example, attacks of flushing and giddiness, headaches and curious sensations in the head, and throbbings and noises in the ears. Some cutaneous eruptions such as urticaria, acne, pruritis, and purpura are also due to intestinal auto-intoxication, and Müller and Manicatide have recently published instances of affections of the spinal cord in children resulting from the same cause. Periodic vomiting, asthma dyspepticum, tetany, and some of the anæmias are assignable to the same source. Among the auto-intoxications arising from diseased metabolism within the tissues and organs of the body may be included uræmia from renal disease, pancreatic diabetes, the cachexia resulting from cancer, Graves's disease, Addison's disease of the suprarenal bodies, myxœdema, cachexia strumipriva, cretinism, leukæmia, and pseudo-leukæmia. The eclampsia of pregnant women, gout, and migraine are attributable also to similar diseases of metabolism, giving rise to auto-intoxication with various chemical products. It is not, however, correct, says Dr. Ewald, to classify icterus gravis among the auto-intoxications, and the same may be said of acetonuria and oxaluria, which are symptoms of special diseases and which require treatment accordingly.

THE BIRTHDAY HONOURS.

WE regret that by an oversight the name of Lieutenant-Colonel Aylmer Martin Crofts, I.M.S., was not included in our reference to the honours bestowed upon members of the medical profession in the last issue of THE LANCET. Lieutenant-Colonel Aylmer Martin Crofts, who has received a Companionship of the Most Eminent Order of the Indian Empire, is residency surgeon at Gwalior and medical officer to the Maharajah. He served in the Afghan War of 1878-80 at Kandahar and with the Khyber Brigade, receiving the medal. In the Egyptian War of 1882 he was present at the battle of Tel-el-Kebir and for his services in this campaign received the medal and clasp and Khedive's Star. He was also with the Zhob Valley Expedition of 1884. A telegram to the *Times* through Reuter's Agency, dated Simla, May 22nd, states that "the Queen's birthday honours include 81 silver medals of the new Kaisar-i-Hind Order. 44 natives receive medals, which are given chiefly for services in connexion with the plague and famine." Among the European recipients are Captain John Grant (Medical Service) and Miss Charlotte Adams, Mrs. Henry Smith, and Miss Susan Campbell, lady doctors.

THE ROYAL ARMY MEDICAL CORPS STALL AT THE NATIONAL BAZAAR.

OWING to the untiring exertions of the ladies, married and single, who worked at the Royal Army Medical Corps stall its success was placed beyond doubt. During the days of sale the intake reached a sum close on £200. On the opening day H.R.H. the Princess of Wales visited the stall and purchased from amongst its exhibits. Her Royal Highness had also before the opening of the bazaar contributed some very valuable and pretty articles to the stall which found eager purchasers. The officers of the Corps express their indebtedness to the ladies who so largely contributed to the gratifying results we now announce.

NERVE STRUCTURE ELUCIDATED BY NERVE-STAINING.

IN giving an account of Mr. William H. Wynn's article on the Minute Structure of the Medullary Sheath of Nerve-fibres in THE LANCET of May 5th (p. 1297), we inadvertently omitted to mention that the modification of the Weigert-Pal process of staining the nerve tissue which was so effectively employed by Mr. Wynn in his reseaches was originally suggested by Dr. Joseph Shaw Bolton, now of the Pathological Laboratory, London County Lunatic Asylum, Claybury. An account of Dr. Bolton's method and of the steps by which he was led to it will be found in the *Journal of Anatomy and Physiology* for January, 1899, and for January, 1898. In the former article he called attention to the circumstance that the medullary sheath is deeply stained in parts of its circumference only, this occurring either as six sections separated by gaps or as six dots surrounding the axis cylinder, the outer part of the sheath being practically unstained. Mr. Wynn's article contained a more elaborate and amplified account of the structures seen and partially described by Dr. Bolton.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS: PARIS; 1900.

THE committee of organisation of this Congress has issued a circular reminding the members that the titles of communications must be received at the offices of the Congress, 21, rue de l'École de Médecine, before June 10th at the very latest, if they are to be entered on the official programme. The final prospectus is about to be issued and will contain the titles of all communications with the names of the authors which have been sent to the sectional secretaries in Paris in time. It is necessary, therefore, that all notices should be sent to Paris at once. The list of members of the Congress will be closed on July 15th, and communications can be made until that date, but such belated notices will not appear in the final prospectus. The British Government has officially appointed the following gentlemen to represent Great Britain and Ireland at the forthcoming Congress:—(1) Lieutenant-Colonel E. F. Drake-Brockman, I.M.S., delegate from the Indian Medical Service (Great Britain); (2) Brigade-Surgeon Lieutenant-Colonel Alexander Crombie, I.M.S., delegate from the Indian Medical Service (Great Britain); (3) Fleet-Surgeon Gilbert Kirker, R.N., representing the Naval Medical Service; and (4) Mr. Thomas

Joseph Stafford, F.R.C.S. Irel., Medical Commissioner of the Local Government Board (Ireland). These appear to be the only delegates of which the General Committee at Paris have official cognisance. Intending members of the Congress must send a visiting card, an intimation of the section they wish to join, and a post-office order for 25 francs to Dr. Duflocq, 21, rue de l'École de Médecine, Paris. Members of the Congress will receive without charge two sets of publications, the first at the opening of the Congress and the second at a later date. The first set will consist of—(1) summaries of the "reports" relating to the section which the member has joined; (2) an illustrated volume of 400 pages on French mineral waters and health resorts; (3) Medical Paris (a volume of about 400 pages); and (4) Guide Conty (a guide to Paris and the Exhibition). The second set will consist of three volumes relating to the subjects treated of at the Congress. Full accounts of the subjects that have come before the Congress will be published in 17 volumes of Transactions, the subscription price of which will be 50 francs, but which will be reduced to 45 francs for members. Members of the Congress are entitled to take part in the work of all the sections and in all the entertainments. They will also have free entry to the Exhibition during the sitting of the Congress (August 2nd to 9th), they will be presented with a badge, and will have a reduction of 50 per cent. on French railway fares. Rooms can be obtained through the following agencies, with which terms have been arranged by the committee, provided that the members make immediate personal application to the agencies. The Agence Desroches, 21, rue de Faubourg Montmartre, receives members at the railway station, conveys them to their place of residence, and on their departure conveys them to the railway station. Their charge for the first day is 20 francs, and for the last day 15 francs; for each intervening day 10 francs are charged for bedroom, lights, attendance, and early breakfast. The Agence des Voyages Pratiques, 9, rue de Rome, renders similar services at a charge of 6½ francs and upwards per day. This agency also provides sleeping accommodation at various prices, from 3 francs per day in dormitories to 5½ francs per day, and sets of furnished rooms, three or more, for 270 francs per month and upwards. The Agence des Voyages Modernes, 1, rue de l'Echelle, provides bedrooms from 6 francs per day, and board and lodging for 15 francs per day. The Agence Lubin, 36, Boulevard Haussmann, provides bedrooms for 12 francs per day for one person and 20 francs for two persons; the money must be paid in advance to the Crédit Lyonnais. The Société Française des Voyages Duchemin, 20, rue de Grammont, provides sleeping accommodation at charges of from 70 to 120 francs per week, and board and lodging at from 140 to 180 francs per week. By permission of the Minister of Public Instruction members of the Congress travelling alone can have sleeping accommodation in school dormitories for 5½ francs per day. Application should be made to the offices of the Congress, 21, rue de l'École de Médecine.

CAMBRIDGE SUMMER SCHOOL OF MEDICINE FOR QUALIFIED PRACTITIONERS.

A VALUABLE series of lectures and demonstrations to qualified medical practitioners will be delivered at Cambridge from June 25th to 30th. The proceedings will commence with dinner in hall at 7 P.M. on Monday, June 25th, followed at 8.30 P.M. by a reception in the hall of Trinity College by Professor Sir Michael Foster, M.P. On the succeeding days there will be cliniques at Addenbrooke's Hospital and demonstrations will be given in the Pathological Laboratory, the subjects of demonstration as at present arranged being Malaria on June 26th, by Dr. Nuttall; Tuberculosis on June 28th, by Professor Sims Woodhead; Antitoxin on June 29th, by Dr. Louis Cobbett; and Blood on June 30th, by Mr. Strangeways Pigg. Demonstrations will also be given in the Pharmacological Laboratory by Dr. Dixon and in the Physiological Laboratory by Dr. Shore and Dr. Hopkins. Lectures will be delivered on the Fracture of Bones, by Dr. J. Griffiths; on Angina Pectoris, by Professor Allbutt; on the Vermiform Appendix, by Dr. Rogers; on the Factors which Determine Climate, by Mr. Yule Oldham; on Specimens Preserved in Formalin, by Mr. Strangeways Pigg; and on Public Health, by Dr. B. Anningson. Breakfast, lunch, and dinner will be taken in hall each day. On June 27th Professor Allbutt will give a garden party, and on June 29th there will be a smoking concert in King's College Hall. It is hoped that the visitors in order of application will be accommodated in the colleges; the inclusive fee is four guineas. Applications should be addressed to the honorary secretary, Dr. Joseph Griffiths, Medical Schools, Cambridge. The opportunities offered by this invitation, which is a repetition of that given in 1895, are well worthy of attention, glimpses of life in a famous university town being combined with post-graduate instruction by eminent teachers.

PERNICIOUS ANÆMIA AND ITS PATHOLOGY.

DR. RICHARD S. CABOT of Boston, well known for his excellent work on the "Clinical Examination of Blood," read an important paper on the above subject at the recent annual meeting of American physicians, held at Washington (May 1st, 2nd, and 3rd). The conclusions arrived at by him were based on a study of 110 cases of pernicious anæmia. Of the 110 cases reported 57 were males and 53 were females. Of the cases occurring in females four followed parturition and in one of these in which a necropsy was held there were leucocytosis and diphtheritic endometritis. Dr. Cabot finds that the disease is generally one of middle life. He had seen all the cases within seven years. Many of the patients were at first thought to be suffering from tuberculosis and 14 cases occurred at about the time of the menopause. Hæmorrhage is probably a symptom and not a cause of the disease, and it has been observed from the bowels, the stomach, the nose, the gums, and the ears. The symptoms are constant, though in certain cases they are very mild. It is not the lack of red blood corpuscles only that causes the symptoms. Muscular weakness, dyspnœa, and gastro-intestinal symptoms, such as vomiting and diarrhœa, are seen, and the latter train of symptoms may be often paroxysmal. The theory that atrophy of the gastric glands is a cause of the disease cannot be maintained. Hæmic cardiac murmurs are always heard and occasionally a true regurgitant (mitral) murmur is detected. The liver was found enlarged in 30 cases, the spleen in 13 cases. There were hæmorrhages into the retina in 36 cases, and in 15 cases the fundi were normal. In exactly two-thirds of the cases fever was present, the temperature varying from 99° to 100° F. The urine was normal in 53 cases. In other cases albumin and hyalin or granular casts were present. The urine was usually pale. There were nervous symptoms in one-third of the cases, and it is probable that obscure nervous lesions were really present in a larger proportion. In 106 cases the red blood corpuscles were below 2,000,000 per cubic millimetre, and in four cases they were above that figure. The leucocytes in 72 cases were below 5000 per cubic millimetre, and in 38 cases they were above that figure. The hæmoglobin in 79 cases was high and in 81 cases it was normal or low. The red corpuscles were usually enlarged and such enlarged cells were found at one time or another in 107 cases. The lymphocytes were normal in number, the polymorphonuclear leucocytes were decreased, and myelocytes were frequently present. The symptomatology and course of the disease were quite unlike

those of secondary anæmia. No case recovered, though in 69 cases one or more remissions were seen. 20 cases were progressive. In 78 cases the duration of the disease was from one to three years. Treatment was negative, arsenic and bone-marrow had no effect, but in some cases laxative treatment seemed to have done some good. This seems to bear out Dr. W. Hunter's idea that the disease is a toxæmia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

IN addition to those whose names we have already given, we understand that Mr. Pearce Gould, Dr. J. Ward Cousins of Portsmouth, and Mr. Jordan Lloyd of Birmingham will be candidates for the vacancies upon the Council of the Royal College of Surgeons of England.

HOUSES LET IN LODGINGS.

A CASE of much importance in connexion with the sanitary administration of London was heard last week by Mr. Slade at the Southwark Police-court. Experience of this administration has increasingly shown that the most effectual method of maintaining the houses occupied by the poor in proper sanitary condition and of the prevention of overcrowding is the regulation of houses let in lodgings. This regulation, indeed, is often an absolute necessity, and especially in the central districts where landlords are able more largely than in other districts to trade upon the necessities of the poor. The regulation of such houses not only controls the landlord but also the tenant who is expected to coöperate in the maintenance of cleanliness and proper ventilation of the rooms. The enforcement of the by-laws has served a useful purpose in those districts where the work has been undertaken, and the London County Council have persistently urged upon the authorities of other districts the adoption of a like course. The question has from time to time arisen as to what is a house let in lodgings. There has been no doubt that the ordinary tenement house which was originally constructed for one family but which has come to be occupied by several families, often a family in every one or two rooms, is within this definition. Where there has been doubt is in the case of blocks of artisans' dwellings where each suite of two or three rooms may claim to be a separate house. The case to which we refer is likely to have a considerable influence in determining how far blocks of artisans' dwellings are for the purposes of the Public Health Act to be deemed to be houses let in lodgings. The Gun-street dwellings in the parish of St. George the Martyr, the subject of the proceedings before the Southwark magistrate, have previously been a cause of anxiety to the sanitary authority and on the recommendation of Dr. F. J. Waldo, the medical officer of health, numerous rooms have been closed as unfit for human habitation. Repairs have been effected, alterations made, and the rooms re-let, but while improvements have been made in the buildings the inhabitants remaining have been, to use the words of the vestry clerk, persons who were often uncleanly in their habits and whom it was essential that the sanitary authority should supervise. The vestry, therefore, acting on the advice of their medical officer of health, have wisely determined to bring these premises under regulation, and there seemed reasonable prospect that this could be successfully done because the tenements are not such as are known as "self-contained," but the sanitary appliances on each floor were outside the dwellings and were used in common by the tenants. The contention of the vestry that each block was a separate house and that the rooms were lodgings was strongly contested by the owner who quoted a number of cases ranging from the time of Charles I. and urged that the registration law embodied in those cases must be regarded as safeguarding the interests of the inmates who would be disenfranchised if they were to be deemed to be lodgers. Mr. Slade decided against the vestry on the ground that the landlord did not reside on the premises and did not exercise any control over them either by himself or his servants, and therefore that the tenements could not be regarded as lodgings. It will be seen that Mr. Slade's decision is capable of much wider application than to blocks of artisans' dwellings and that if sustained it may affect the regulation of much tenemented property of a higher class. The vestry have appealed and it is to be sincerely hoped that this appeal will be successful and that it will be found that the definition of a lodger for the purposes of the public health law is entirely different from that for the purposes of the registration law. It is, indeed, difficult to believe that this will not be the result, for it would otherwise always be possible for an Act of Parliament dealing with one subject in effect to repeal another Act dealing with an entirely different subject which was not under consideration at the time the subsequent Act was passed. We shall await the final decision with much interest.

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE annual meeting of the council of the Society for the Prevention of Cruelty to Children was held on May 15th under the presidency of Mr. W. H. Collingridge. The chairman was able to give the satisfactory information that notwithstanding a generally prevalent demand for war funds the income of the society during the past year showed an increase of £1000. This gain, moreover, had resulted from an influx of ordinary subscriptions. On the other hand, a deficit of £7700 on account of expenses had to be met. This amount was covered by reserve funds. Among other business transacted at the meeting was the passing of a resolution in support of Lord James's Juvenile Offender's Bill. It was also decided to petition Parliament for the addition to the Bill of a clause requiring the presence of a medical practitioner during the infliction of corporal punishment. Such an arrangement ought to strengthen the measure, and if sensibly carried out should not impair its punitive effect. Another resolution strongly supported the Bill forbidding the sale of intoxicating liquors to children. It is instructive to note that this resolution was approved by representatives from widely separated parts of England and from Ireland, and evidence was given proving that the proposed legislation is much desired by the working classes in the north.

PILOCARPINE AND WILLOW-BARK.

SOME excellent work is evidently being done in the Wellcome Chemical Research Laboratories judging from the important contributions published from time to time in the Transactions of the Chemical Society. This kind of work should receive every encouragement, since it is devoted to the throwing of further light upon the pharmacology of the materia medica. We are glad to see that these communications as they appear from time to time are being published in separate pamphlet form. Not very long ago we received an interesting paper of this kind on some gold salts of hyoscine, hyoscyamine, and atropine by H. A. D. Jowett, D.Sc., and more recently we have received two further papers on the substances quoted in the title of this annotation. For some time considerable obscurity has surrounded the nature of pilocarpine and the number and kind of specific alkaloids contained in jaborandi leaves. Although the experiments are still in progress some interesting results have been obtained. A base, for instance, isomeric with pilocarpine, is produced from it by the action of heat or alkali and it is

proposed to call it isopilocarpine. This substance has been found in jaborandi leaves. Pilocarpidine appears, however, not to be present in ordinary jaborandi leaves, but in the jaborine of Harnack pilocarpidine as well as isopilocarpine are found. As to the physiological experiments on isopilocarpine, pilocarpine, and pilocarpidine, Professor Marshall of University College, Dundee, reports that the substances produce similar effects on the secretory activity of the sweat and salivary glands, pilocarpine being much the most powerful. Isopilocarpine is comparatively less depressant to the hearts of rabbits but not to those of cats and men. The jaborine prepared by Merck possesses a mild pilocarpine effect. Dr. Jowett has also turned his attention to the chemistry of willow-bark with the result that he has succeeded in recognising and separating a new glucoside for which he proposes provisionally the name of "salinigrin." The yield of this crystalline glucoside is about 1 per cent. of the bark. It yields on hydrolysis a dextro-rotatory sugar which gives qualitative reactions analogous with glucose. At the same time hydrolysis produces metahydroxybenzaldehyde which may be easily distinguished from salicin by the fact that sulphuric acid produces no change of colour whilst with this reagent salicin yields a blood-red colour. This is the sort of work which is calculated to throw a much desired light on the action of various drugs and their principles and it is an encouraging sign of the times that such important work is undertaken by manufacturing chemists.

MILITARY DRILL IN SCHOOLS.

WE are pleased to see that Lord Balfour's useful suggestions with regard to physical training in schools [1] have not been forgotten. Very similar in its purport is a scheme recently introduced at Macclesfield. A Patriotic Association has been formed in that city for the encouragement of physical exercise and military drill among boys from 10 to 17 years of age. The course will begin in the elementary day schools and will be carried out in them, or in a Volunteer drill hall where the school playground is too small, under the supervision of a qualified drill inspector. The boys will also be enrolled in cadet corps and taught to handle a rifle, with a view to their enrolment later in rifle volunteer regiments. This plan ought to work well. It is practical, it is adequate without being too ambitious, it ought not to prove expensive or to interfere with the ordinary school work, it is free from sensationalism (one great pitfall of the times), and finally it has a definite end in view. It thus promises to fulfil very successfully the purposes of Lord Balfour's proposal to which it evidently owes its inspiration. As an example of public spirit judiciously applied we commend this scheme to the attention of all who are concerned with school education.

THE QUESTION OF HORSE AMBULANCES.

IN THE LANCET of Dec. 9th, 1899, p. 1599, appeared a leading article calling attention to the inadequate provision for dealing promptly with the accidents which daily occur in our large metropolis and suggesting some remedial measures. Our first suggestion and the one that we considered to be the most important was the maintenance of horse ambulance wagons at hospitals, and although it still remains a blot upon our great city that in this respect we are far behind some of the large towns in America, and at least one town in Ireland, it is gratifying to learn that Manchester has taken steps towards the establishment of a similar ambulance service to that which we advocated for London. On Thursday, May 24th, a deputation from the Medical Charities Committee of that city attended a meeting of the Watch Committee of the Manchester Corporation and laid before the committee reasons for the provision of horse ambulances, Mr. Alfred Simpson, chairman of the House Committee of the Royal Infirmary, remarking that the provision of proper ambulance facilities had long engaged the attention of the medical authorities. In the beginning of the year, on the advice of Professor D. J. Leech, the matter was brought before the members of the Red Cross Society and a resolution was passed inviting the municipal authorities to provide horse ambulances. This resolution has received the endorsement of the Sanitary Association of Manchester and Salford. Mr. Alderman Rawson, the chairman of the Watch Committee, assured the members of the deputation that his committee were in sympathy with their object. A special sub-committee had already under consideration the whole question of the provision of horse ambulances in Manchester. Surely what is necessary for Manchester is necessary for London with a population ten times larger. How long shall we be put to shame in the cause of humanity by our sister city?

[1] THE LANCET, Feb. 10th, 1900, p. 398.

THE AUSTRO-HUNGARIAN WAR OF 1848-1849 AND THE BOER WAR: A CONTRAST.

A COMPARISON has been frequently instituted between the situation of the Boers in the present war and that of the Hungarian revolutionary army prior to the capitulation of Vilagos in August, 1849. As the circumstances are not parallel, however, any conclusions drawn from such a comparison are not only altogether misleading as to the causes which were operative in the two cases but unjust as to the motives and conduct of the Hungarians who were disinterested patriots fighting in defence of freedom, justice, and independence. Kossuth and Görgey did not enrich themselves, they had not sought to oppress anyone, nor had they been opposed to any system granting an equality of political rights to all—quite the contrary. Some of the facts and incidents connected with the campaign of the Hungarian army in 1848-49 are historically of a highly interesting and romantic character. It may not be generally known that Surgeon-Major Theodore Duka, a retired officer of the Indian Medical Service who has been long resident in London, and Count Julius Andrassy were attached to the staff of the Commander-in-Chief, General Görgey, and took a prominent part in the war. Surgeon-Major Duka—then a first lieutenant and adjutant in the Hungarian army—at the battle of Komorn with the Austrian army on April 26th, 1849, having rendered conspicuous services in rallying some of the Hungarian troops, was decorated with others with the Order of Valour, Class III., in the presence of the Hungarian forces paraded for the purpose by General Görgey in obedience to his general order. That Görgey displayed remarkable ability as a general and was a man of great enterprise and courage goes without saying, seeing that the Hungarian army whilst under his command achieved some brilliant victories and for a long time kept the whole Austrian army at bay; but he was really more than this, for, when Russia threw an overwhelming force into the field and success was no longer possible for the Hungarians, Görgey with patriotic wisdom and courage capitulated in order to avoid an inevitable and purposeless sacrifice of life. The breach which had already taken place between Kossuth and Görgey widened still further and Görgey by his action on this occasion covered himself with unmerited obloquy. But time ultimately brought its recompense and reward, for it was recognised on all sides that Görgey was right and had acted with great wisdom and self-abnegation in what he had done. After the capitulation of Vilagos in August, 1849, Andrassy and Duka

had to flee; they came to this country and had to bear their exile, misfortunes, and straitened circumstances with what fortitude they could. Captain Duka, as he was then, was still a young man; with indomitable energy he learnt the English language and elected to enter the medical profession, and for that purpose became a student at St. George's Hospital, and, having qualified, he passed into the Indian Medical Service from which, after having been present through the Mutiny, he retired many years ago. He took up his residence in his adopted country where he has since had the gratification of entertaining his old general as his guest. Count Andrassy in the meantime had become Prime Minister of Hungary in 1867 on the restoration of the constitution of 1848 and the reorganisation of the Austro-Hungarian Empire. After having been sentenced to death and hanged in effigy with the defeated Hungarian generals, who were actually executed and not in effigy merely, Andrassy had subsequently the privilege of being the official medium for placing the crown of St. Stephen on the head of Francis Joseph as King of Hungary. Time brings great changes on his wings and no ruler is more deservedly popular and beloved than is the Emperor Francis Joseph by his Hungarian subjects at the present time. Surgeon-Major Duka is now one of the governors of the hospital (St. George's) where he was once a student.

THE STUDY OF CHILDREN'S DISEASES.

A MOVEMENT is in progress for the formation of a society devoted exclusively to the study of children's diseases, and a meeting of the supporters of the proposal will be held at 5.30 P.M. on Monday, June 11th, at 20, Hanover-square, W. A circular to this effect has been forwarded to the members of the staffs of the different hospitals for children throughout the country, as well as to the members of the Medical Officers of Schools Association. We understand that the project, so far, has received a liberal measure of approval from those likely to be interested.

"MR. VICTOR HORSLEY AND THE MEDICAL ACTS."

WE have received the following letter from Mr. Victor Horsley:—

To the Editors of THE LANCET.

25, Cavendish-square, London, W., May 30th, 1900.

DEAR SIRS,—My attention has been drawn to the fact that in the last issue but one and the present issue of THE LANCET you make certain statements with regard to my speech at the Manchester Conference calculated to convey the idea that my interpretation of the Medical Acts is erroneous; and, furthermore, you place these statements prominently in your columns of annotations. I note that although you head your second annotation with my name you simply publish a letter from some person not in the profession and say you are not called upon to make any remark upon it. As that letter contains a complete misrepresentation of the administration of the Medical Acts by the General Medical Council I think it was your duty as the editors of the leading medical journal to point out the bearing of the Medical Acts on the subject. The obviousness of this will be seen from the fact that at present you have only published one side of the matter and that a misleading one. The Medical Act provides, Sections 28 and 29, two different methods of procedure whereby the General Medical Council is empowered to erase from the Register the name of a practitioner who has been guilty of an offence against the ethics of the profession, such as is defined in Section 29 as being "conduct infamous in a professional respect." These two methods of procedure are as follows, and the first is conditioned by the fact that various medical corporations possess under their charters disciplinary powers. Under Section 28 the Medical Act provides, if a medical corporation examines into the ethical conduct of a practitioner and convicts him, that on such conviction being reported to the General Medical Council, the Council need not put the profession to the expense and trouble of holding a second inquiry, but may, if they see fit, accept the judgment of the corporate body and may forthwith erase the name of the person convicted from the Register. This was the method by which Mr. Alabone's name was erased from the Medical Register. The second procedure is that whereby the Council holds the inquiry itself and if they find the person guilty they erase his name under Section 29 of the Medical Act. My statement at Manchester, therefore, is perfectly true and I protest against your publishing statements respecting the Medical Acts which, if unaccompanied by explanatory correction, are extremely misleading. Further, as you have thought it right to particularise myself in this matter I must ask that you give this letter the same publicity that you have to other statements in your annotations.

Yours faithfully,

VICTOR HORSLEY.

We made no comment upon the letter in question from Mr. Alabone Cheverton because we conceived that everyone knew the position. Clause 28 of the Medical Act, 21 & 22 Victoria, cap. 90, says nothing about the examination into ethical conduct but merely says: "If any of the said Colleges or the said Bodies at any time exercise any power they possess by Law of striking off from the List of such College or Body the Name of any one of their Members, such College or Body shall signify to the General Council the Name of the Member so struck off; and the General Council may, if they see fit, direct the Registrar to erase forthwith from the Register the Qualification derived from such College or Body in respect of which such Member was registered." There is nothing in this clause about "infamous conduct in any professional respect"; that expression is contained in the next clause under which Mr. Alabone was *not* struck off from the Register. We do not understand that Mr. Horsley accuses us of incorrectly reporting and it appears that he has been inaccurate.

INAUGURAL ADDRESS BEFORE THE AMERICAN NEUROLOGICAL ASSOCIATION, 1900.

IN the inaugural address[1] delivered by Dr. Edward D. Fisher, the President, for the present year it is pointed out that the position of neurology among the divisions of medicine and surgery has changed very much in the last 20 or 25 years. "Perhaps no special branch of medicine," continues Dr. Fisher, "comes into quite so close touch with general medicine and medical surgery as neurology." While a high level of work had been achieved in this field it had also been sedulously exploited by the charlatan. The clinics held in the Old World in Paris, Vienna, Berlin, and London had made these places centres of worldwide neurological fame, and eventually it had come to dawn on the professional mind that a full and thorough course in psychiatry and neurology was a paramount necessity. The speciality of neurology should never remain narrow and be separated from general medicine. The heart, lungs, and viscera had to be carefully explored in nervous as in other diseases. A special illustration of this was seen in syphilis which had such well-defined effects upon the viscera and on the nervous system. Therapeutics should receive more attention in the future than in the past; diagnosis and localisation of the disease did not complete the neurologist's work. Scientific training and investigation would lead the way to means of treatment, and the fact that Dr. Weir-Mitchell's methods had been thus discovered made it certain that more might be expected in this direction from American neurology. Dr. Fisher concluded by saying that "the note of warning I would sound to those about to enter this field of medicine is to keep up as broad a knowledge of all medicine as possible. No one should enter neurology as a speciality without having first had an experience in general

[1] Journal of Nervous and Mental Diseases, May, 1900.

practice. I believe, if I read the signs of the times aright, that is the tendency of the neurology of the future."

THE CROONIAN LECTURES FOR 1900.

THE Croonian Lectures for 1900 will be delivered by Dr. F. W. Mott, F.R.S., before the Royal College of Physicians of London at the College, Pall Mall East, on the following dates: June 19th, 21st, 26th, and 28th. The subject is "The Degeneration of the Neurone," and the lectures will commence at 5 P.M.

A COMMITTEE, of which the Prince of Wales is chairman, has been formed for the purpose of providing a memorial to the late Duke of Westminster. The late duke, as our readers know, always took the deepest interest in all that concerned the poor, and hospitals and nursing necessarily formed part of that interest. The suggestion that the memorial shall be in the form of stained-glass windows for the Abbey which takes its name from the city of which the late duke was Lord High Steward is a good one, and the fund will no doubt be freely supported. The Duke of York is treasurer to the fund, but subscriptions should be sent to the honorary secretaries, 1, Great George-street, Westminster, or to the Bank of England.

IT is announced that the lepers on Robben Island have collected a second sum of money for the African wounded soldiers' fund with the object of showing their appreciation of the benefits conferred upon them by the British Government. The pathos of this act cannot fail to appeal to the medical profession.

Mr. H. T. Butlin, D.C.L., will deliver the Cavendish Lecture of the West London Medico-Chirurgical Society at 8.30 P.M. on Friday, June 22nd, in the Town Hall, Hammersmith. He will take as his subject the Application of Pathology to Surgery.

THE honorary freedom of the Salters' Company will be conferred on Sir William Mac Cormac at Salters' Hall on Monday, June 18th.

THE WAR IN SOUTH AFRICA.

EVENTS have proceeded with dramatic rapidity at the theatre of war in South Africa. Lord Roberts's converging forces—a large crescent-shaped wave overlapping and enveloping opposition by its horns and overcoming all resistance by the driving power of its centre—have moved on a concerted plan with extraordinary rapidity, and the British flag will soon fly over Pretoria and Johannesberg. We, in common with other journals having direct information from the seat of operations, conjectured some time ago that the resistance offered by Boer forces might collapse at any moment, but we did not realise that the fortunate occurrence was so near or that the news from the seat of war would from day to day tell one story—that of the hasty retreat of the enemy from one defensible position after another. Such, however, has happened, and now, for practical purposes, the war is over.

While the Boers have shown themselves, whether upon their own initiative or upon that of foreign allies, to be good tacticians, and while they have exhibited an alacrity which almost amounted to genius in seizing upon positions best adapted to their methods of warfare, their weakness has been apparent in their want of any bold and original strategy. As soon as our generals had mastered the situation and had a sufficient number of men at their disposal to carry out their designs the whole aspect and character of the war changed and a series of "entanglements," any one of which contained its promise of tragedy, resolved itself into a resistless march to victory.

The *Times* correspondent in describing the military situation in a communication which appeared in that journal on May 28th alluded to the death-rate in the hospitals at Bloemfontein as being very high. This is not surprising. The Free State capital is about 4600 feet above the sea level, and the diurnal variation of temperature at this altitude must tell heavily on sick men, and we agree with the writer in thinking that efforts should be made to remove invalids from Bloemfontein to a more equable climate. The Portland Hospital is, however, working well at Bloemfontein.

We have more than once called attention to the admirable services rendered by the Indian coolies and dhoolie-bearers during the present war and have expressed a hope that their work would be requited by something more tangible than mere praise. We were, therefore, glad to notice that Sir George White, on the occasion of his being presented with an address and service of plate from his fellow Ulstermen in commemoration of his defence of Ladysmith, earnestly commended the case of the Indian coolies to consideration in the following words: "These men, who discharged most valuable duty during the siege of Ladysmith, are now drawing pay at Indian rates, which placed them on inferior terms to the soldiers with whom they were serving and inferior to those which they would be enjoying in their own country." This is a matter which should be set right generously and promptly. The war will entail, we know, an enormous amount of departmental work, but we trust that the modest claims of the dhoolie-bearers will not be overlooked in the apportionment of rewards in more obvious directions.

We direct the attention of our readers to the sketches of the Boer trenches at page 1609, which we owe to the courtesy of Mr. Clinton Dent and Messrs. George Bell and Sons. They enable us to realise far better than any description would do the serious nature of the difficulties which our troops had to encounter in the direct attacks on Boer positions which they were in some cases, if not in all, compelled to make.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

A patient came into the Imperial Yeomanry Hospital with a perforating bullet wound which entered just outside the right angle of the mouth and emerged beside the second dorsal spine two inches to the right from the middle line. The body of the mandible had been splintered just below. The splintering included the sockets of the three molars, and an immediate operation was called for to remove the loose splinters of tooth and bone which had already caused an abscess in the cheek. But the interesting part of his case lay in injuries that had been inflicted on the brachial plexus. Firstly, the eyeball was retracted and the palpebral fissure diminished, and the pupil was very small and dilated neither to shade nor to painful impression on the right side of the neck. Possibly this total paralysis is due to the injury to the cervical sympathetic chain, but since no other structure of the carotid sheath appears to have been damaged it seems more probable that it is due to damage to the ramus communicans of the first and perhaps also the second dorsal root. True, the track of the bullet does not seem to have been close enough to the middle line to hit these rami communicantes, but it is not outside the range of probability that they could have been caused by concussion or hæmorrhage. He has been under observation here for about a month without showing any sign of diminution of the sympathetic paralysis, and nerve lesions, if they are going to clear up, as they frequently do to an altogether astonishing degree when they are due to concussion or hæmorrhage, generally do so long before that period. Secondly, on admission he was found to have complete paralysis of all muscles of the right arm, including the deltoid, the pectorals, and the serratus magnus and the muscles below them. The skin sensations were unimpaired down to the insertion of the deltoid. Below that there was universal hyperæsthesia. This hyperæsthesia has steadily diminished and has given place to normal sensation, until now, five weeks after the receipt of the wound, it is limited to an area about one and a half inches wide extending along the outer border of the forearm and arm from two inches above the elbow-joint to the wrist-joint. Accurately at the wrist-joint the hyperæsthetic area just described is almost isolated from the second hyperæsthetic area which embraces the entire thumb and just the radial side of the index finger down to the first inter-phalangeal joint. Thus apparently the whole of the roots of the brachial plexus were involved, though the lesion was probably not an irrecoverable one, for the two areas still remaining hyperæsthetic are those supplied by the fifth and sixth roots, and it must have been the first dorsal

root which was damaged if, as seems likely, the sympathetic paralysis was not due to a division of the cervical sympathetic cord.

It is by no means uncommon in our experience for a bullet to be found with its wrong end foremost, so to speak, and this even at the very end of a long track which appears to have been inflicted by a direct, not ricochet, shot. Sometimes, but not always, a possible explanation of the turning of the bullet has been given by the fact that it has touched a bone in its course.

Complete transverse penetration of the head or face is by no means rare, and, as in penetrating wounds in other parts of the body, it is often astonishing what slight damage has been done. In one case the bullet entered just upon the external auditory meatus on the right side and emerged through the external angular process of the frontal bone on the left side. The patient was absolutely blind in the left eye and the retina was one mass of hæmorrhage. Despite the violently septic character of the entrance wound on admission the man is now making excellent progress in every respect and presents about the best instance we have had of the extraordinary way in which nerves will recover which apparently were completely shattered. The second and the third divisions of the fifth nerve on the right-hand side were completely paralysed both as to motion and sensation. The ocular muscles of the right-hand side were paralytic, but they, too, have recovered, and even the optic nerve, which was so much damaged as to cause very well-marked optic neuritis, is also recovering.

We have had quite a large number of bad cases of hæmorrhoids. Whether they are caused by riding—for almost all the patients have been mounted troops—or by the unnatural stress upon the rectal eliminating apparatus we are not sure, but it is a fact that most people's alimentary canal in these parts varies in a most unaccountable manner between the states of diarrhœa and intestinal obstruction.

A young officer came into this hospital the other day with eight wounds. One bullet had perforated his lumbar region and another had perforated his thigh. In neither case did any harm result. A piece of shell had blown a piece out of the inner aspect of both thighs and three pieces off the bottom of his scrotum, while a third bullet had lodged in the cruro-scrotal fold, whence it dropped out as he was standing up to be examined. He has left the hospital in no way the worse, apparently, for his narrow escapes. Another most extraordinary case was that of a man in whom a bullet entered the right thigh on the inner aspect about two inches below the cruro-scrotal fold. The leg was skiagraphed, but nothing could be seen of the bullet. An abscess developed in the other thigh at about a symmetrical position to the entrance wound. It was incised and the bullet was found, and the finger could then retrace the track of the bullet across the front of the bodies of the two pubic bones to the wound of entrance.

A man was shot while his right hand was hanging in front of his abdomen, the bullet tunnelling the radius without doing any harm, and then piercing the abdominal wall two inches above the middle of Poupart's ligament it emerged through the middle of the dorsum ilii. When admitted into the hospital he presented no abdominal symptoms whatever, but we kept him in bed and on restricted diet so as to be on the safe side, for I had seen at Wynberg a similar case in which a couple of weeks after the receipt of the wound a hard tender swelling developed in the right iliac fossa, which, as there was considerable pyrexia, was taken to be an abscess. It was incised and proved to be a large hæmatoma. Our patient also was not long before he developed a swelling in the cæcal region. This swelling was neither tender nor painful, nor was his alimentary canal in any way upset. He developed a high temperature every night, but we had great difficulty in persuading him that he was ill and in getting him to let us do anything. On incision the swelling proved to be a huge fæcal abscess, and for two days all his fæces poured out through the incision. This distressing symptom suddenly ceased and the wound proceeded straight away to heal up in a most rapid and satisfactory manner. We have had three or four other instances of perforations through the iliac and cæcal region that have presented no symptoms at all. In another case the man was shot through the pelvic bones lower down; the entrance wound was behind, just two inches below the posterior superior spine and two inches to the left of the middle line, and the exit wound was just to the right of the middle line in front under or through the edge of the descending ramus of the pubes. There was no sign whatever of damage to the bones, the alimentary canal, the blood-vessels, the peritoneum, or the bladder, but only sufficient damage to the cords of the sacral plexus to cause paresis of the gastrocnemii, and an area of anæsthesia over the heel indicates, I take it, damage to the first sacral nerve. The anæsthetic area shortly became hyperæsthetic and is now rapidly returning to normal.

Even before we left England such a large number of perforating wounds of the trunk and head, to say nothing of the limbs, without any permanent damage had been recorded in the medical journals that I take it that you have no desire to hear repeated again all these miracles. Every train-load brings us fresh instances of them. In the last, for instance, was a man in whom the bullet entered behind the middle of one clavicle and emerged through the opposite groin. One thing which I have not seen noted in the medical journals, but which is being borne in upon us more and more, is the rapidity with which the effects of general anæsthetics pass off in this climate. Perhaps it is due to the skill of our anæsthetists, but the fact remains that it is much rarer to see any vomiting or nausea after operations out here than it is at home, and the rule is to find the patient so well that within an hour of his being put back to bed he is asking to be allowed to smoke or even to get up.

Deelfontein, May 7th.

THE CHARING-CROSS HOSPITAL EXHIBITS AT EARL'S COURT.

THE Appeal Committee of Charing-cross Hospital have organised an interesting exhibit at the entrance of the Old English Village which is one of the most attractive features of the Woman's Exhibition held this year at Earl's Court. Outside there are tents fitted up for field ambulance work and dummy figures representing wounded soldiers so as to illustrate the ingenious devices by which dressings and splints are extemporised out of anything that may be found on the battle-field, from a broken rifle to the bark of a tree. Within the building there are several compartments, the largest being a surgical ward with eight beds differing in structure and suited for various special purposes. Thus one bed is provided with electric light so as to facilitate examinations with the ophthalmoscope, while a system of rubber tubes enables water to circulate round the head of the patient and thus replaces the more clumsy ice-bag. The Gorham bed attracts much attention. With no great muscular effort, but by merely turning a small wheel, the patient may be raised in almost any position or lifted several inches above the mattress while the sheets are being changed, the body being suspended on canvas bands stretched across a moveable iron framework. Other beds are provided with special apparatus for fractured thighs and legs, and for abdominal injuries, &c. The combined bed-table and locker used is also very ingenious. These beds stand on Messrs. Geary, Walker, and Co's. patent anhydrous flooring. An asphalt foundation is laid first, then a thin layer of wood, and on this are placed oak blocks. Between the blocks a thin partition of an asphalt composition is sufficiently elastic to allow for expansion and thus the risk of cracks or of bulging is met. In the centre a Pridgin Teale fireplace ensures a more perfect consumption of coal, consequently producing more heat, less smoke, and not requiring so much attention as is usually the case. The fan windows devised by Mr. Robert Adams should be carefully examined. Instead of the ugly side projections to which architects so strongly object, when the top of the window is made to open inwards the side draws out a light metallic fan which when unfolded prevents the air escaping otherwise than from the top. Thus directed it must strike the ceiling, whence it is diffused over the ward without causing any sharp draughts. Apart from this the large window-panes can be raised by merely removing a small bolt and then twisted right round by means of a central pivot. Thus the external surface of the glass can be brought inside and cleaned This contrivance would be just as useful in private houses as in hospitals and would put an end to the difficulty and danger of window-cleaning. Messrs. Burroughs and Wellcome exhibit a ward medicine case, not unlike a brief bag, which contains a variety of useful things in a small compass.

Next to the ward there is a model operating-room. In the centre to give a good light the wall and ceiling on the northern side are of ground glass. Between this ground glass and a second outer and plain glass covering built for protection there is an electric heating apparatus. This is important, as otherwise the wide glass expanse would chill the air of the operating-room. Inside there are hot-air coils and ventilators. Needless to say, that all surfaces are absolutely smooth and air-tight and that there are no corners or ledges. The water for sterilising the instruments is heated by electricity at a cost of less than a penny per hour. Mr. George B. Davis, sanitary engineer, provides the closets, the baths, and a running-stream lavatory for the operating surgeons, with a shampoo for sluicing the arms. The ledges of this and other lavatories and sinks all slant towards the basins, so that no water or soapsuds can stagnate on the borders. Glass, gun metal, and enamelled hardware alone are employed, and the connexions with the piping are not soldered but established by means of "union" screws, so that the lavatory can be readily removed to any other place. Underneath the waste water discharges into an open channel and the connexion of this channel with the drain-pipe can be plugged up and completely cut off. For the bath, which is in another room, the water enters all round the sides from the rim, so that the bath can be washed out before it is used. The delivery is so abundant that the bath can be filled in three-quarters of a minute and it can also be emptied with equal promptitude. All the fittings are of good gun-metal, and the towel-horse being of hot-water tubing the linen is duly heated and kept warm. At the sink the grid is so made that the bed-pans are placed on end, so that the water-jet is discharged in the centre and thoroughly flushes them out.

To return to the operating-room, it is provided with Dr. Isaac's electric search-light, which is affixed to the forehead in the same manner as a pair of spectacles and is useful for examining the throat or for speculum work. Messrs. S. Maw, Son, and Thompson provide all the surgical instruments and also an air-tight and dust-proof brass and glass instrument-cabinet. In a case of similar construction the aseptic bandages are kept. The flooring is made of the terrazo mosaic supplied by the Artistic Tile Company. This consists of fragments of marble set in cement. Being liquid when applied it can with great facility be rounded off at the corners so as to prevent the forming of angles where the wall joins the floor. When dry it is hard and impermeable. The same firm exhibits a table such as is used at the Pasteur Institute. It is made of volcanic lava, and is so hard that it can only be cut with a diamond saw. The strongest acids produce no effect upon it and therefore it is considered best adapted as being absolutely non-absorbent. In the operating-room there are aseptic irrigators by which water can be brought to the operating table. It comes direct from the main to a nickle-plated cylinder on a wrought metal stand, containing a sufficient number of Pasteur-Chamberland filtering bougies to ensure a constant current of water. To this cylinder a long india-rubber tube is fixed and the water can thus be brought wherever needed. Throughout the building the Pasteur-Chamberland filter is employed.

Another room is devoted entirely to Roentgen ray apparatus. Dr. Mackenzie Davidson, the medical officer in charge of the x-ray room at Charing-cross Hospital, shows a new zoditory mercury break which can be made to work satisfactorily with any voltage. Here there are many photographs taken from different points of view and combined with the aid of a stereoscope so as to prevent distortion. Then there are various methods of generating the currents required for x-ray work and there is also a portable apparatus for field ambulances.

Finally, Messrs. Thomas Bradford and Co. have fitted up a small, compact laundry which is not worked by steam power. A spraying grid used in conjunction with the soaking tank is new. It is worked with the aid of a hose and reduces the necessity of handling the dirty linen to a minimum. Two small fires suffice to do all the washing, drying, and ironing.

Altogether this exhibition is very compact and contains many things of considerable technical interest in a very small space; moreover, the general public cannot fail to be impressed and interested when they see the scientific care that is bestowed on hospital patients. It is to be hoped that this exhibition will awaken sympathy and increase the subscriptions needed for the continuation of the good work done at Charing-cross and other hospitals.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Changes in Plague Policy.—The Progress of the Epidemic.—The Request for a Plague Expert.—The Serum Treatment of Plague.

AN extraordinary change of policy has been gradually adopted by the plague authorities. Whereas formerly detention of travellers with quarantine and thorough disinfection, isolation of the sick in hospital and segregation in camp of those who had been in contact with them, eviction from dwellings with formation of health camps, and disinfection here, there, and everywhere were actively practised one finds that one by one these measures have been gradually relinquished. During the past week it has been notified that disinfection of native passengers to Naini Tal will be restricted to the soiled linen and dirty blankets of third-class passengers who have travelled from a plague-infected district.

The epidemic wave is gradually falling. The deaths from plague throughout India last week fell to 2498 compared with the 3365 deaths for the week previous. It is improving in Bombay city and also in Karachi, and it is markedly less in Calcutta and the Bengal Presidency. An improvement is also reported from Aden. Bombay city has still a mortality at the rate of over 130 per 1000 per annum, and while having 1400 deaths above the average returns but 448 deaths from plague. While plague is thus improving the numbers on famine relief unfortunately continue to increase. The grand total is now over 5 500,000. The Central Provinces and the Bombay Native States show the largest increases this week.

I understand that considerably more than a month ago the New South Wales Government asked the Government of India for the services of a plague expert, but so much time having elapsed since the request they now intimate that they do not require the services of a plague expert from India.

An advocate for the serum treatment of plague after the method of Professor Lustig has appeared in the person of Dr. A. Meyr of the Bombay Municipal Laboratory. In a paper read before the Medical and Physical Society he reviewed the results obtained when the patients were selected for treatment and since then when they have been taken alternately as they were admitted. His figures must be doubted on two grounds—viz., that patients of the later days of disease and moribund and mild cases were excluded. Since May, 1899, some 361 patients were treated, with a recovery rate of 33·8 per cent. The report says that an equal number without the serum treatment only gave a recovery rate of 21·2 per cent. There must here be an obvious fallacy, because without the exclusion of any cases this has been hitherto the average recovery rate of all admissions. 33 per cent., or thereabouts, die within 24 hours. It is clear, therefore, that the exclusion of moribund cases and cases in the later days of disease must considerably improve the recovery rate of the remainder. In fact, exclusion of such cases at once raises the recovery rate 12 or 15 per cent., if not more. If Dr. Meyr could show a real improvement of 12 per cent. it would certainly indicate some promise of future success, but to hold up an improvement of only 12 per cent. after deduction of serious cases over the rate which ruled at the hospitals for all admissions is not very satisfactory. The original Chinese serum was obtained by injecting the horse with living and virulent cultures. This method was thought to be dangerous and was abandoned. Latterly a modified practice has been adopted in Paris. This consists of injecting first of all dead cultures and afterwards living and virulent ones. Serum after this method was used in Oporto and was said to have proved very successful, but here again the same errors were repeated in that similar cases were not taken for comparison. Under these circumstances it is impossible to place faith in the returns notwithstanding that the mortality under the serum treatment is reported to have been five times less than that of cases treated without it. It is very evident that the method of Lustig which has been tried in Bombay falls far behind that which has apparently proved so successful at Oporto. If Lustig's serum possesses any value great alteration must be made in its preparation in order to render it more potent.

May 3rd.

THE BOER TRENCHES.

IN the report in THE LANCET of May 26th of the meeting of the Royal Medical and Chirurgical Society on May 22nd we referred to the lantern slides of the Boer trenches exhibited by Mr. Clinton T. Dent, F.R C S. Eng., in illustration of his address. By the courtesy of Mr. Dent, by whom the photographs were taken, and of Messrs. George Bell and Sons, we are enabled to reproduce two of these slides, which, with several others, will appear in a book Messrs. Bell are about to publish, entitled, "My Diocese during the War," by the Right Rev. the Lord Bishop of Natal. Fig. 1 shows a typical Boer trench at Magersfontein, the foremost figure in which, that of the Bishop himself, gives an excellent idea of the almost complete cover afforded by these deep trenches to those engaged in them. The shelter provided was even more complete than appears in the photograph. Skins were spread over the iron supports laid across the trench, and in these skins earth was piled up. In many places sheets of corrugated iron were laid on the iron supports. The trenches were thus to a great extent bullet-proof, if not altogether bomb-proof. The Highland Brigade advanced along the plain on the left. The front wall is covered with mealie sacks filled with earth. In places loop-holes are made between the sacks. Fig. 2 represents another trench, with a roofed-in shelter behind. On the top of the central kopje was an emplacement for a big gun.

FIG. 1.

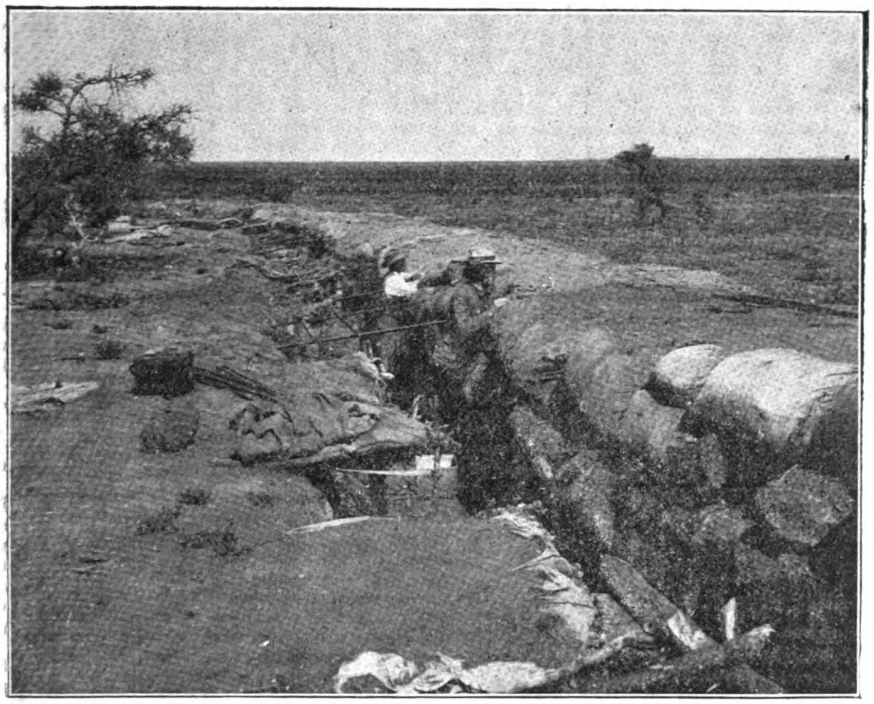
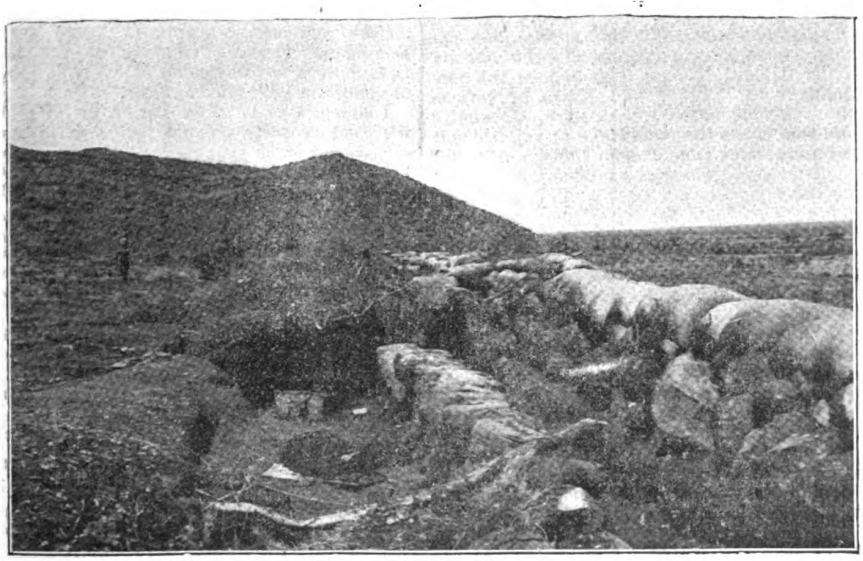


FIG. 2.



ROYAL MEDICAL BENEVOLENT COLLEGE.

THE annual general meeting was held on May 25th Dr. HOLMAN presided and was supported by the following members of council: Mr. John Croft, Mr. C. L Smiles, Rev. E. W. Northey, Mr. H. E. Vardon, Mr. G. C. Croft, Sir Arthur T. Watson, Bart., Q.C., Mr. Stamford Felce, Sir Joseph Fayrer, Bart., Mr. A. E. Cumberbatch, Dr. A. E. Sansom, Dr. J. H. Galton, Mr. Oldaker, Sir R. Douglas Powell, Bart., Dr. M. Baines, and Mr. G. P. Field.

The following pensioners were elected: Annie Blick, John Charles Bonnett, Elizabeth M. Solly, William Dewsnap, Margaret Keith, Ellen Wilson, and Anne Winearl Osborne.

The following foundation scholars were elected: Edward R. L. Warren, Gerald Percy Adams, Charles R. Hamilton, and Cuthbert W. Ellison.

Dr. HOLMAN, in moving the adoption of the annual report, which was in every way a satisfactory one, said: The policy of the council has been to prepare students for entering the profession of medicine and to give to all pupils whatever the course intended for them, a sound, all-round public school education, so that they may be fitted to act not only as medical practitioners or otherwise, but also to hold their own socially in the neighbourhood in which they live. This is in exact accordance with the wishes and aims of the Founder of the College. Epsom College is not a class school, but offers especial advantages to the sons of medical men.

The days of class schools are practically at an end, and it is desired to make our College a public school to all intents and purposes with a medical foundation. Years since it was a common complaint by medical men that they were not given any social status either in private practice or in the public services. It was evident to anyone looking into the question that one cause was the frequent absence of general culture and tone in those who were complaining.

Our object at Epsom is to turn out well-educated gentlemen and students of good tone and high aims, and our experience is that by giving our students the widest education possible we are enabled not only to pass a large proportion through the stiffer medical examinations, but also to ensure their continuing to do well by the avoidance of any sort of cramming. We can often carry them further still and secure university distinctions. I am referring mainly, of course, to those boys intended for the medical profession. Of the general success of other boys I need not touch upon. Our average number of passes in the London Preliminary Scientific and Matriculation Examinations, on which many, though not all, of our valuable hospital scholarships depend, will compare favourably with those of any other school. Of late years we have also gained constantly university open scholarships won straight from Epsom. Between Founder's day, 1896, and Founder's day, 1899, ten open scholarships or exhibitions at the universities have been gained. The two in 1899 were for mathematics. In the *British Medical Journal* of this morning are published the results of inquiries by the General Medical Council into the preliminary examinations in England and Wales by various examining bodies. Matriculation examination, University of London, of all candidates the percentage of rejections is given as 52·2, of candidates from Epsom College it is 35; at the Oxford and Cambridge school examinations for the higher certificate the rejections are given as 43·7, at Epsom it is 20; for the lower certificate the rejections are given as 44·3, at Epsom it is 25. The time has been so limited since I saw these figures that I have not been able to work out our returns in decimals, but the general result is sufficient to show that our teaching is well up to the mark.

Some little time since my attention was drawn to the fact that we could not fill up annually the nine free scholarships most generously given us by the metropolitan hospitals. In all cases it was formerly a *sine quâ non* that the student should have passed both parts of the Preliminary Scientific Examination of the University of London and in three hospitals the first division was required. From our school of under 250 boys, not all of whom enter the medical profession, we could not find nine students out of some 50 leaving each year able to gain these valuable and much-coveted honours on such conditions and it is clearly too much to expect. The senior form has sometimes had less than nine boys in it. This preliminary examination is composed of three subjects, two of which must be taken together and one standing by itself. Candidates from all parts and from many schools and hospitals will vary in age from 17 to 25 years and upwards. On inquiry I found that by far the larger portion of these candidates had to take this examination in two parts and the proportion passing in all three subjects at once was very small indeed and is growing smaller each year. It is no part of my duty to ask why this should be the case, whether it be the result of stiffer examinations or the poorer mental calibre of the candidates. This is another question. Such a discovery gave an ample answer to our position with the hospitals; and when the whole question was laid before the deans of the various schools they at once allowed their scholarships to be awarded to students who had passed a portion of this examination on the obvious condition that the remaining subject or subjects should be passed so soon as possible. That the deans thought our application a reasonable one was clearly shown by their ready acquiescence with our request.

That every year the candidates going up for certain examinations vary much in quality is the experience of all teachers, and that all candidates with the very best intentions on their own parts and every assistance from their masters can be made to pass such examinations is again an assertion opposed to the experience of all schools. The estimation in which a wrangler's degree is held by university men varies greatly, depending upon the class of men who are competing in any particular year. That our boys, as a rule, do succeed in these higher examinations is incontrovertible. In 1899 nine lads went up for the Preliminary Scientific Examination, six of whom passed in *all* subjects and one of these in Division 1, whilst two others passed in one part of the examination and one only failed. Two forms, 25 in number, were sent in bodily for the Matriculation and 16 passed. After much thought and acting on the advice of our head master and other educational experts well qualified to advise, the whole form is usually sent in. A large percentage are expected to pass. The remainder get over the stage fright of their first interview with the examination papers, and also learn what subjects they are weak in and to which they must give more attention. It is helpful both to teacher and taught and a sure test of general efficiency.

I wish it to be thoroughly understood that every boy intended for medicine is given the best possible attention and every chance of success by careful preparation and even (when necessary) by extra tuition; and I may also assert that boys leaving us are so prepared as to be able to take up practically the position of second-year students to whatever medical school they go. I am also able to say that in only one instance of the scholars going to the London hospitals has any complaint on the score of industry or conduct been made during the past ten years, and then a little judicious advice and remonstrance restrained the student who hardly knew how to govern himself when first exposed to the freedom of London after the discipline of school life. Many of our boys obtain minor hospital appointments and some eventually get posts on the staff of the hospitals. There are now eight old Epsomians who are teachers at the London hospitals. Epsom boys are welcomed at every hospital and rarely fail to qualify in their allotted time.

I should like it to be known as widely as possible that with our recently erected junior school buildings we can admit boys much younger than in past years. Boys entering College early are placed in a much better position to command success than those coming later when too often the preliminary education has been of too cramped a character.

The report having been unanimously adopted, a resolution of regret at the Duke of Abercorn's resignation of the office of President was moved by Mr. S. FELCE and seconded by Dr. GALTON. This having been passed, a resolution concerning the appointment of the Earl of Rosebery as President was moved by Sir JOSEPH FAYRER and seconded by the Rev. E. W. NORTHEY. This resolution was also passed and the proceedings terminated with a vote of thanks to the Chairman, moved by Sir JOSEPH FAYRER and seconded by Mr. SMILES.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6230 births and 4098 deaths were registered during the week ending May 26th. The annual rate of mortality in these towns, which had

been 17·8 and 18·2 per 1000 in the two preceding weeks, further rose to 18·4 last week. In London the death-rate was 16·4 per 1000, while it averaged 19·7 in the 32 provincial towns. The lowest death-rates in these towns were 12·3 in Croydon, 12·6 in Cardiff, 13·4 in West Ham and in Birkenhead, and 15·8 in Swansea; the highest rates were 23·5 in Oldham, 23·3 in Salford, 25·5 in Manchester, and 27·4 in Liverpool. The 4098 deaths in these towns included 443 which were referred to the principal zymotic diseases, against 441 and 431 in the two preceding weeks; of these 127 resulted from measles, 126 from whooping-cough, 81 from diphtheria, 39 from diarrhœa, 34 from scarlet fever, 34 from "fever" (principally enteric), and two from small-pox. The lowest death-rates from these diseases last week occurred in Croydon, Birkenhead, Nottingham, and Newcastle; and the highest rates in Derby, Salford, Oldham, Blackburn, and Sheffield. The greatest proportional mortality from measles occurred in Plymouth, Cardiff, Derby, Huddersfield, and Leeds; from scarlet fever in Blackburn; and from whooping-cough in Liverpool, Manchester, Salford, and Oldham. The mortality from "fever" showed no marked excess in any of the large towns. The 81 deaths from diphtheria included 29 in London, nine in Leicester, nine in Sheffield, five in Brighton, and four in Leeds. Two fatal cases of small-pox were registered last week in Liverpool, but not one in any other of the 33 large towns. There were five small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday last, May 26th, against five and three in the two preceding weeks; three new cases were admitted during the week, against none in either of the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1784, against numbers increasing from 1647 to 1733 on the four preceding Saturdays; 216 new cases were admitted during the week, against 176, 203, and 221 in the three preceding weeks. Influenza was certified as the primary cause of 19 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 417, 300, and 270 in the three preceding weeks, further declined last week to 269, and were 27 below the corrected average. The causes of 53, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Bradford, Leeds, Newcastle, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Preston, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·7 and 19·5 per 1000 in the two preceding weeks, further rose to 19·6 during the week ending May 26th, and exceeded by 1·2 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 10·6 in Leith and 14·9 in Dundee to 20·5 in Edinburgh and 21·4 in Glasgow. The 606 deaths in these towns included 36 which were referred to whooping-cough, 19 to diarrhœa, 10 to measles, five to diphtheria, three to scarlet fever, two to "fever," and one to small-pox. In all 76 deaths resulted from these principal zymotic diseases, against 63 and 85 in the two preceding weeks. These 76 deaths were equal to an annual rate of 2·5 per 1000, which was 0·5 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 22 and 30 in the two preceding weeks, further rose last week to 36, of which 28 occurred in Glasgow and six in Aberdeen. The deaths from diarrhœa, which had been nine and 15 in the two preceding weeks, further rose to 19 last week, and included nine in Glasgow, three in Edinburgh, three in Dundee, and three in Aberdeen. The fatal cases of measles, which had been 15, 16, and 19 in the three preceding weeks, declined again last week to 10, of which six were registered in Glasgow, two in Edinburgh, and two in Leith. The deaths from diphtheria, which had risen from three to seven in the five preceding weeks, declined again to five last week and included two in Glasgow. The fatal cases of scarlet fever, which had been seven in each of the two preceding weeks, declined last week to three, of which two occurred in Glasgow, where the death from small-pox was also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 145 to 84 in the five preceding weeks, rose again last week to 94, and exceeded by 14 the number in the corresponding period of last year. The causes of 28, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7, 26·3, and 23·0 per 1000 in the three preceding weeks, rose again to 25·2 during the week ending May 26th. During the past four weeks the death-rate in the city has averaged 26·1 per 1000, the rates during the same period being 17 0 in London and 19·5 in Edinburgh. The 169 deaths registered in Dublin during the week under notice exceeded by 15 the number in the preceding week, and included five which were referred to the principal zymotic diseases, against five and nine in the two preceding weeks; of these, three resulted from whooping-cough, two from "fever," and not one either from small-pox, measles, scarlet fever, diphtheria, or diarrhœa. These five deaths were equal to an annual rate of 0·7 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·2 in Edinburgh. The fatal cases of whooping-cough, which had been four, one, and one in the three preceding weeks, rose again last week to three. The deaths from "fever," which had been six, one, and three in the three preceding weeks, declined again to two last week. The 169 deaths in Dublin last week included 31 of infants under one year of age and 39 of persons aged upwards of 60 years; the deaths of infants exceeded the number recorded in the preceding week, while those of elderly persons showed a decline. Four inquest cases and one death from violence were registered; and 61, or more than a third, of the deaths occurred in public institutions. The causes of 6, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeon W. H. Norman to the *Cormorant* for Gibraltar Hospital. Surgeon N. L. Richards to the *Cormorant* for Gibraltar Hospital, Dockyard, and Naval Extension Works.

ROYAL ARMY MEDICAL CORPS.

Surgeon-Lieutenant-Colonel Henry Wright, 1st Volunteer Battalion the Lincolnshire Regiment, is granted the temporary rank of Major whilst serving in South Africa. Lieutenant-Colonel McAdam, r.p., is ordered to Dublin for duty and Captain C. K. Morgan is to proceed from Satara to Poona for duty at the Station Hospital. Lieutenant-Colonel W. F. Ruttledge, r.p., is appointed Sanitary Officer at Aldershot. Surgeon-Major A. G. Grant, I.M.S., r.p., assumes temporary medical charge of troops, Station Hospital, &c., Aberdeen.

VOLUNTEER CORPS.

Rifle: The under-mentioned officers are borne as supernumerary whilst serving with the Royal Army Medical Corps in South Africa:—4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Captain E. J. G. Berkley. 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry: Surgeon-Captain R. Pollok.

Artillery: 2nd Hampshire (Southern Division, Royal Garrison Artillery): Surgeon-Lieutenant Paul McKenna Terry resigns his commission and is appointed Second Lieutenant. 1st Suffolk and Harwich: Surgeon-Lieutenant F. A. Brooks to be Surgeon-Captain. *Electrical Engineers:* John Alfred Masters to be Surgeon-Lieutenant. *Rifle:* 2nd Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry): James Gordon Bain to be Surgeon-Lieutenant. 4th Volunteer Battalion (the Cheshire Regiment): Surgeon-Lieutenant E. C McCarthy to be Surgeon-Captain. 4th Volunteer Battalion the Cameronians (Scottish Rifles): John Souttar McKendrick to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Arthur Thomas Lakin to be Surgeon-Lieutenant.

VOLUNTEER INFANTRY BRIGADE.

Cheshire: Surgeon-Captain H. W. King, 2nd Volunteer Battalion the Cheshire Regiment, to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade, vice Brigade-Surgeon-Lieutenant-Colonel A. Hamilton, who resigns the appointment.

Memorandum.—In consequence of the division of the 1st Worcestershire and Warwickshire Volunteer Artillery into two corps the following appointments are made:—1st Worcestershire Volunteer Artillery: Surgeon-Lieutenant A. C. Oldham. 1st Warwickshire Volunteer Artillery: Surgeon-Lieutenant S. P. Johnson.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant A. E. Madge resigns his commission.

VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers:—*North-Eastern District: Rifle:* 2nd Volunteer Battalion, the Prince of Wales's Own (West Yorkshire Regiment) Surgeon-Lieutenant-Colonel Samuel Johnston. 1st Volunteer Battalion, the Leicestershire Regiment: Surgeon-Lieutenant-Colonel Robert Bradshaw Smith. *Scottish District: Rifle:* 4th (Donside Highland) Volunteer Battalion, the Gordon Highlanders: Surgeon-Captain John Osbert Wilson. 7th (Clackmannan and Kinross) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Major Duncan William Currie.

TRANSVAAL WAR NOTES.

Captain Lawson, R.A.M.C., left South Africa invalided in the *Canada* on May 17th.

Dr. William Davies, son of Mr. Ebenezer Davies, medical officer of health of Swansea, who was imprisoned owing to his supposed connexion with the Jameson raid and who was one of the survivors of the siege of Ladysmith, was also one of those to enter Mafeking on May 18th. He was attached to the Imperial Light Horse and took charge of the medical stores accompanying the relief column.

The War Office has decided to build a number of wooden huts near the site of the proposed new infantry barracks at Pembroke Dock for the accommodation of 140 convalescent soldiers returning from South Africa.

Lieutenant-General Sir W. Butler, K.C.B., commanding the Western District, visited the military hospital at Stoke last week to see the convalescent patients who had recently landed from the *Braemar Castle*. At the conclusion of the visit General Butler expressed himself as highly gratified at the general appearance of the hospital and the care and attention bestowed by the staff upon the patients.

By the request of the principal medical officer at Bloemfontein the Langman Hospital of 100 beds has been converted into one of 150, the necessary equipment for which has been provided by Mr. Langman and despatched to South Africa. The medical staff has been increased by the appointment of Mr. W. W. Woolliscroft, late house surgeon to Charing-cross Hospital.

Major S. R. Wills, R.A.M.C., Captain W. D. Erskine, R.A.M.C., and Lieutenant Morris, R.A.M.C., are returning home invalided from South Africa in the *Simla* which left Cape Town on May 21st.

TRANSVAAL WAR CASUALTIES.

The following deaths are reported:—Royal Army Medical Corps: Lieutenant E. L. Munn, enteric fever, Boshof, May 23rd; Major Perry Marsh, enteric fever, Deelfontein, May 22nd.

Mr. F. R. Eames, a dresser attached to the Welsh Hospital, has died from dysentery at Bloemfontein on May 27th.

DEATHS IN THE SERVICES.

Lieutenant-Colonel Aylmer Ellis Hayes, D.S.O., A.M.S., late of the Royal Army Medical Corps. He was appointed surgeon in 1877 and retired with the rank of lieutenant-colonel in 1897. He served with distinction in the operations near Suakin in 1888, including the engagement at Gemarzah, and mentioned in despatches (medal with clasp, third class of the Medjidie, and Khedive's star). He also took part in the operations on the Soudan frontier, 1889 (mentioned in despatches, D.S.O. and clasp).

Brigade-Surgeon-Lieutenant-Colonel William Center, I.M.S., retired, at Ealing, on May 16th. He joined the Indian Medical Department in 1865, and from 1871 served in the Punjab as chemical examiner and professor in the Lahore Medical School. He also at one time was statistical officer in the sanitary department of the Government of India, and subsequently was appointed civil surgeon at Lahore and superintendent of the lunatic asylum.

Correspondence.

"Audi alteram partem."

"THE TENURE OF OFFICE OF MEDICAL OFFICERS OF HEALTH."

To the Editors of THE LANCET.

SIRS,—After the annotation under the above heading in THE LANCET of May 12th, p. 1375, some of your readers were scarcely prepared for the leading article on the same subject in THE LANCET of May 19th, p. 1454. Whoever the writer of this ungenerous article may be he is evidently not in sympathy with a very large number of his provincial brethren in the disabilities under which they labour by virtue of the precarious nature of their appointments as medical officers of health. He sees "in the proposal a serious obstacle to the development of whole-time appointments carrying salaries commensurate with the dignity of the office of a specially qualified medical officer of health." Now, the Local Government Board have had a quarter of a century in which to develop whole-time appointments. Are they at all likely during the next 25 years to persuade local authorities to pay salaries commensurate with the dignity of the office? Are not the salaries attaching to whole-time appointments rather rapidly falling, too? In the meantime who are to do the sanitary work in the provinces? Who are doing the work now, and who have done the work in the past? It has been done, it is being done in the present, and it will be done in the future, to the great benefit of the community, by half-time men. These half-time men are not a class of mere officials any more than are Poor-law medical officers, but, for the most part, they are earnest, hardworking, conscientious practitioners of medicine, men of ability, often of social standing—some are magistrates—who are able to exert their influence as citizens and among their patients in favour of sanitary reform. Why should not these men receive the same protection as Poor-law medical officers have? Why should not they be appointed during good behaviour as are the clerks of their authorities who are also engaged in private practice? Is the profession of medicine less honourable than that of law? In what possible manner can such protection prove a serious obstacle to the development of whole-time appointments? Will these men do their work less efficiently because they know they will not be dismissed at the end of the term of their appointment because they have done their duty? Does experience teach that medical officers of health who receive "the paltry salary of some £10 to £50 yearly" are insecure in their office? On the contrary, they already possess security of tenure if they are sufficiently subservient, and if they are not efficient are they likely to become less efficient because they cannot be dismissed without the consent of the Local Government Board, who possibly have not sanctioned their appointments because they have not been asked to contribute to their salaries? But is it a disadvantage to the community that a medical officer of health receiving a salary, say, of £50 yearly is encouraged to do his duty by the knowledge that he cannot be arbitrarily dismissed from his post?

The medical officer of health who requires security of tenure of office is the man who is appointed with the consent of the Local Government Board, who pay a moiety of his salary, and who can be dismissed without their consent—a man whose tenure of office becomes insecure only when he carries out his duties earnestly in the manner which the law prescribes and who advises his authority that it is their duty to spend money in providing water-supplies and sewerage in obedience to the law which they are appointed to administer. And until the Local Government Board take upon themselves the task of coercing sanitary authorities to do their duty they must consent to the enabling the present-day medical officer of health to do his duty without fear or favour if the sanitary interests of the provincial community are to be adequately safeguarded. And the present-day

medical officer of health is a half-time man to the extent of 90 per cent. of the whole number.

In conclusion, permit me to say that many old subscribers to THE LANCET must have read with pain and regret a *doctrinaire* article in which the interests of a large body of honourable members of the medical profession who are doing a great and beneficent public work and who are daily suffering disability and loss of dignity such as no other body of men in the profession suffer, are ignored. The conditions under which they carry on this work is a public scandal which has existed far too long, and, with all courtesy and deference to you, Sirs, I am very much mistaken if the indications are not that the great bulk of the medical profession have definitely made up their minds that it shall cease. I am, Sirs, your obedient servant,

Carisbrooke, Isle of Wight, May 22nd, 1900. J. GROVES, M.D.

THE INFLUENCE OF DUST AND FLIES IN THE CONTAMINATION OF FOOD AND THE DISSEMINATION OF DISEASE.

To the Editors of THE LANCET.

SIRS,—I have read with much interest the Milroy lectures on Summer Diarrhœa by Dr. Waldo and consider that his evidence is as complete as the statistician or medical officer of health can make it, but there is one point concerning the means by which food becomes contaminated to which he barely refers, and to which I, as a practitioner, am inclined to give a very high degree of importance. The point to which I refer is the agency of flies in the direct conveyance of bacteria from filth to food.

In making this remark I wish it to be understood that I do not desire to question in the least degree the immense importance of bacteria-laden dust, especially that derived from horse-dung and other forms of excreta with which the atmosphere of towns is at all times polluted, but I would like to point out that such dust is present at all times of the year when the streets and roads are dry enough to allow it to exist in the form of dust. Contamination of food by means of dust is, therefore, possible at all seasons. Of course, during hot weather the bacteria grow much more rapidly in food, milk, &c., than in colder weather, and are, therefore, more likely to be present in large numbers at the time when the food is ingested. The relative resistance of the gastro-intestinal canal to the action of such organisms or their products, and the question as to whether and to what extent climatic conditions affect such resistance we must leave out of account, as we are arguing now on matters outside the human body. The excellent Table IX.[1] would be still more instructive if it contained the following details, which, however, could only be learned by notification followed by domiciliary visits, or special report on each case drawn up by the practitioner in attendance upon it, on a form supplied for the purpose: (1) number of cases in which food was habitually kept in the living room; (2) number of cases in which the said room was also used for sleeping; (3) number of cases occurring in rooms the windows of which were habitually kept closed; (4) number of cases in which flies were noted to be numerous in the room or rooms at the time of the occurrence of the case; (5) number of cases occurring (*a*) in basement, (*b*) on ground floor, (*c*) first floor, (*d*) second floor, &c., respectively, and whether front or back rooms and how used.

As a general practitioner of over 11 years' standing I have seen a good many cases of summer diarrhœa and have no doubt of its being due to bacterial contamination from alvine evacuations, whether equine, human, or other. I am inclined to think that human excreta have more to do with it than is recognised, the only question is the method of transference. My own experience, which has, of course, formed my own opinion, although it is not very extensive and has not been systematically recorded, is as follows: that the cases occur for the most part amongst the poor and in the following circumstances—(1) in small, ill-ventilated rooms, especially at the back of the house and in the basement; (2) in rooms the windows of which are habitually kept closed and to which the air and dust of the streets have less access than to most others; (3) in rooms used as kitchen, living-room, and often as sleeping-room, the atmosphere of such a room being usually close and often fœtid, the temperature very high, and frequently almost uniform day and night, forming, in fact, an incubator at very nearly the optimum temperature for the cultivation of pathogenic bacteria. Such rooms are, in my experience, always swarming with flies in summer, and I have even occasionally seen them containing fairly large numbers of active flies in winter, owing to the high and uniform temperature at which they are kept. According to Dr. Waldo's showing the incidence of diarrhœa is not greatest in the large streets and thoroughfares which are most dung-laden, but in by-streets and courts.

Now if the disease were due mainly to direct contamination by dust one would expect to find it most in the larger streets where such dust as there is consists chiefly of horse-dung and is kept constantly stirred up. The windows of the houses in such streets are, moreover frequently wide open during hot weather. The dust has, therefore, free access to basements, kitchens, larders, &c. The bactericidal action of air, light, sunshine, &c., on town dust must, as Dr. Waldo says, be considerable, but cannot be completely antiseptic. I think that bacteria are more likely to be conveyed in an active and virulent state by flies which settle at one moment on fresh dung and at the next on milk, meat, butter, sugar, jam, or fruit than by dust which must, if emanating from dung, have been some hours exposed to wind, &c., to have become desiccated and pulverised and to have reached its destination on the food, to say nothing of the strong sunshine to which it is likely to have been subjected at the time of year we are considering in the process of desiccation.

These remarks are based solely on observation and that of no vast number of cases, as I have not practised extensively among the poor upon whom the greatest incidence of infantile diarrhœa falls. Nevertheless, wherever I have seen the summer diarrhœa of infants and of all the varying conditions among which it makes its appearance the one condition which has impressed me as being the most constant and invariable has been the presence and persistent meddlesomeness of the common fly. Granting that the dung of our streets supplies the materies morbi, may not the fly play as important a part as the wind-current in depositing it in an active state on our food? This is, of course, capable of investigation by exposing for a given length of time in a room in which a case of summer diarrhœa has occurred cultivation plates—(*a*) protected from flies but not from dust; (*b*) exposed to flies, incubating both and examining the resulting colonies.

I am, Sirs, yours faithfully,

WM. SALISBURY-SHARPE, M.R.C.S. Eng., L.R.C.P. Lond.

Cleveland-terrace, Hyde Park, W., May 26th, 1900.

[1] THE LANCET, May 19th, 1900, p. 1427.

"THE CONFERENCE ON MEDICAL ORGANISATION AT MANCHESTER."

To the Editors of THE LANCET.

SIRS,—The honorary secretary of the above Conference, Dr. Samuel Crawshaw, accuses me of "destructive criticism" in regard to this meeting. This is, indeed, a surprise and a revelation. For more than five years I have travelled on your behalf and in all directions to investigate the economic grievances of the medical profession and the result has been to point out the absolute necessity of organising medical unions or guilds. Surely all sincere workers in this cause must feel that friendly criticism is far more useful than mere complimentary notices. It is further insinuated that while I pursued the easy course of finding fault I failed in the more difficult task of indicating a remedy. Yet I suggested the fixing of a definite system of representation based on the signing of a pledge and the payment of a subscription, the discussions of the course of action to be followed rather than of grievances, and, above all, the methods and means for bringing men into union. Had this been done more fully then, indeed, the conference would have been something "very different" from "anything previously attempted." I fancied, and still believe, that this is what Dr. Crawshaw and all genuine reformers desire; and I beg him and them to rest assured that far from entertaining any hostile motive my criticisms are solely inspired by the desire of helping forward the cause.

There was, however, one objection which I raised against the Conference; but this I mentioned some considerable time before it was held and not afterwards. Seeing that as yet there are not many genuine medical unions in Great Britain, that their funds are limited, and that not many of the

members can afford to leave their practices for any length of time, I thought that the holding of two congresses within a few months of each other might tend to weaken both these assemblies. Nevertheless, and though this still seems to me a serious consideration, I did not press the matter further, but accepted the explanation given. I was told that it would be very much better for the International Congress of Medical Ethics or Deontology that a Conference should first be held at Manchester, that the delegates whom the Manchester Conference would not fail to elect would be able to attend the Paris Congress in a more representative capacity; for, instead of speaking in the name of their individual societies they would speak on behalf of all those who had met at Manchester. This seemed to me a good and weighty reason and I can assure the delegates of the Manchester Conference that they will be very heartily welcomed by the delegates of medical unions of France and other nationalities who will meet in Paris on July 23rd next. Unfortunately, I am not yet acquainted with the names of these delegates, and I would urge that they should communicate at once with the secretary of the British Section of the International Congress on Medical Ethics.

I am, Sirs, yours faithfully,

May 29th, 1900. YOUR SPECIAL COMMISSIONER.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—The medical profession will thank Captain Clayton Lane, I.M.S., for his outspoken letter. I have now before me the twenty-eighth newspaper report of inquests in England upon persons killed by anæsthetics since Jan. 1st, 1900. The following is the last (*Bristol Times and Mirror*, May 24th):—

HIGHBRIDGE.

DEATH UNDER CHLOROFORM.—A young married woman named Mulford, the wife of a local tradesman, went under chloroform yesterday in order to have some teeth extracted and succumbed to the effects of the drug. The sad occurrence has created a painful sensation in the town.

Not infrequently such reports as this are all that emerges when someone has been killed by an anæsthetic. This is not for the public good. It is not helpful to science. It does not prevent future deaths. Yet some 80 per cent. of these persons are killed before the operation commences—one of this month's cases in one and a half minutes.

If a captain lose his ship, or an officer lose a piece of artillery, he is court-martialled as a matter of course. The burden of justification is cast entirely upon the officer in charge of national property, even in cases where such officer may have nobly done his duty and be obviously entitled to general sympathy. I submit, Sirs, as an ethical principle, that the like burden of justification lies still more cogently upon one who has killed his patient by an anæsthetic. I submit also that no one is justified in giving an anæsthetic in so slovenly a fashion that he cannot afterwards write out an intelligent report of the case. The public and the profession are entitled to a clear and explicit statement of the following facts:—1. The anæsthetic adopted; the amount used; the inhaler employed; the method of administration; and the time-history of the administration, showing the time from the commencement of the administration to the supervention of danger or death. 2. A report on the patient, the results of any examination that may have been made, and whether albuminuria or glycosuria existed. The disease or injury for which the anæsthetic was administered and the operation intended. How far the operation had proceeded at the moment when danger or death supervened. 3. The measures used for resuscitation, how soon instituted, their results. 4. The facts disclosed by a necropsy, if made. 5. The cause to which death was assigned. I am, Sirs, yours faithfully,

Manchester square, W., May 26th, 1900. JAMES EDMUNDS.

THE RÔLE OF EDUCATION IN THE PREVENTION OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—Education is the motto of the associations formed in this country to prevent the spread of tuberculosis. The Devon and Cornwall Association's committee forwarded in May, 1899, and in May, 1900, letters to county councils and boards of education advocating instruction in "health laws or maxims" to scholars in elementary schools. It believes good may ensue by an appeal to the open mind of youth rather than the prejudices of age. In "Moral Instruction to Children" Mr. Adler recommends lessons on duty to one's self, to womankind, and to society, which include personal and public hygiene. It is more than probable that a higher standard of morality would result from improved health. Instruction seems necessary to counterbalance the effects of modern artificial conditions of life seen in tuberculosis.

The National Association for the Prevention of Consumption is shortly considering with branch delegates and others how pressure may be brought to bear on the education authorities to include such instruction in the New Education Code. Locally it is believed it may be taught under "composition," "writing" (copybook headings), or "domestic science." Further, it is possible that education authorities may be actually shown, perhaps, some practical illustrations of defective hygienic arrangements with results.

I am, Sirs, yours faithfully,

F. BUSHNELL,
Honorary Secretary of the Devon and Cornwall Branch.

Plymouth.

TREATMENT OF CHRONIC ECZEMA.

To the Editors of THE LANCET.

SIRS,—I beg to forward you particulars of a case of chronic eczema which was cured by an abscess. The patient was a man, aged 31 years, who for eight years had a patch of chronic eczema as big as a crown-piece situated in the popliteal region over the biceps femoris tendon. He had tried various treatments from time to time, including arsenic, dieting, and total abstinence from alcoholic stimulant. He had also tried "complete" rest and change of air, but treatment seemed to be of no avail. The patch slowly increased in size and the skin became cracked and fissured.

One day he scratched it and it became infected with pyogenic organisms. An acute abscess formed accompanied with a good deal of cellulitis and lymphangitis. The abscess was opened and the patient was well in a week. This happened a month ago and the patch of eczema has entirely disappeared. I attribute the cure to the increased vascularity of the surrounding area produced by the inflammation. (This, of course, will not apply to the cicatrix.) I venture to suggest that counter-irritation of the skin by increasing the vascular supply might prove a beneficial method of treatment. I should be glad if some of your readers having experience of similar conditions would kindly give me the benefit of their opinion.

I am, Sirs, yours faithfully,

PERCY AUGUSTUS LONGHURST, M.R.C.S. Eng., L.R.C.P. Lond.

Old Burlington-street, May 14th, 1900.

*** A probable explanation of the above interesting clinical observation is that the chronic eczema was microbic in origin and that the microbe was destroyed by the toxins of the pyogenic cocci. It is being gradually recognised that many conditions grouped under the wide term eczema are due to the presence of micro-organisms.—ED. L.

SAVE ME FROM MY FRIENDS.

To the Editors of THE LANCET.

SIRS,—My attention has been called to various paragraphs which have appeared in the lay press with reference to the case of a private patient of mine. Will you allow me to say that they have been inserted without my knowledge or consent and that they have caused me much annoyance.

I am, Sirs, yours faithfully,

G. ANDERSON CRITCHETT.

Harley-street, Cavendish-square, W., May 30th, 1900.

MYLES *v.* FITZGIBBON.

To the Editors of THE LANCET.

SIRS,—In consequence of Mr. Myles's refusal to allow me to embody in my letter of apology, dated the 24th inst. and published in the Dublin press of this date, my explanation as to how I fell into the serious mistake as to a matter of

fact appearing in the circulars addressed by me to the Fellows of the Royal College of Surgeons in Ireland, it becomes necessary for me now to publish my explanation through the medium of the press. The mistake referred to arose from the publication of Mr. Myles's acceptance of the offer of the freedom of the city of Limerick having appeared in the *Evening Telegraph* immediately in succession to the report of the meeting of the United Irish League and being assumed by me to have been part of the proceedings at that meeting. I was not aware of my mistake until I read in the Dublin evening papers of May 23rd the report of the motion for an injunction in which paragraphs from an affidavit made by Mr. Myles were quoted. As soon as I became aware of the error into which I had fallen I tendered through my solicitors to the legal adviser of Mr. Myles a complete apology.

I am, Sirs, yours faithfully,

HENRY FITZGIBBON, M.D.

49, Merrion-square, Dublin, May 25th, 1900.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Small-pox at Stalybridge.

THE unfortunate importation of small-pox into Stalybridge was under discussion at the Cheshire County Council meeting held on May 15th. The patient was a man who had been putting up machinery in Russia and who left Moscow on April 17th "suffering from a bad form of confluent small-pox." On this side of the water he travelled by Queenborough, London, and Manchester, reaching Stalybridge on April 20th. He was seen by a medical man and removed to the Hyde Small-pox Hospital, where he died next morning. Everything possible was done locally to prevent the disease from spreading, but up to May 15th there had been two more cases at Stalybridge, and several cases have occurred since. Seven cases have been removed for hospital treatment. Four cases were sent away on May 24th, three of them from one house. Two were removed during the week from Ashton-under-Lyne to the Oldham Hospital. Mr. F. J. Roberts-Dudley of Stalybridge has issued an infectious disease proclamation, and no doubt all efforts will be made to limit the epidemic. It appears also that three men who travelled with the deceased from London contracted small-pox, and as they lived respectively at Bolton, Oldham, and Carlisle, the area of possible infection is tolerably wide. In a letter to the medical officer of the county from the medical officer of health at Stalybridge the latter gentleman says that he could not make out why the man was not stopped at Queenborough or in London. No doubt many other people will feel the same difficulty and probably a good deal of indignation at the evident carelessness that sometimes obtains at our ports with respect to the entry of infectious diseases. It was moved and carried in the county council—

That a communication from the Council be sent to the Local Government Board with a strong expression of opinion that proper precautions were not taken for the protection of the population.

In Stalybridge just now "revaccination is common."

Sale of Drink to Children.

A meeting was held in the Manchester Town-hall on May 22nd in support of Mr. Souttar's Bill for preventing the sale of drink to children. The Rev. Canon Kelly submitted for adoption a draft form of memorial in behalf of the Bill to the local Members of Parliament and a petition to Parliament to the effect that the Bill might become law during the present session without amendment, which was carried. It seemed to him that "it was more dangerous for one who was between the ages of 13 and 16 to enter a public-house than it was for a child of tender years." The licensed victuallers of course oppose this Bill for various reasons, but one point they wish to make against it is that it is more dangerous to the morals for a young person 18 years of age to hear the conversation of the public-house than for one of 16 years, so that, presumably, they would, out of regard for the morals of the community, allow visits to the public-house to buy drink by the youngest children who could carry a jug or a bottle, but forbid it at a later age. It has not, however, been stated at what age after early childhood the licensed victuallers consider that the morals of the young will be improved by visits to the village public-house or the ginshop. The Manchester Corporation has passed a strong resolution in favour of the Bill.

Chorlton Board of Guardians.

Mr. Jenner-Fust, Local Government Board Inspector, distributed praise and blame at the meeting of the Chorlton Board of Guardians on May 25th. He began with the former and congratulated the board on the excellent arrangements at the cottage homes at Styal, and paid the superintendent a high compliment on the way in which the children were cared for. He then referred to the workhouse infirmary at Withington and made various criticisms. It appears that there is some want of classification, for he said it was desirable that some alteration should take place in the system which at present grouped in the same rooms children suffering from whooping-cough, ringworm, and women suffering from a variety of complaints. He drew attention to the fact that there were only straw beds in the infirmary. "Although straw was an excellent thing he thought that an improvement would be effected by the introduction of horse-hair beds." He did not like the corduroy suits for the inmates and said that they were not generally worn in workhouses nowadays. So fashions change. As to the imbeciles they did not know yet what was to be done, but having regard to the overcrowding that at present existed in the infirmary and the continuous increase of the population, "they ought not to hesitate in proceeding with schemes for increasing the accommodation." There is already a scheme for enlarging the cottage homes recently built which it was thought at the time were on a sufficiently large scale, but Mr. Jenner-Fust considered that they would be quite justified in building a new nurses' home, a new laundry for the infirmary, and in entirely separating the infirmary from the rest of the workhouse. Mr. Mainwaring, the chairman, said that they would all rejoice in being able to remove the imbeciles from the workhouse and that they were in hopes, although at present the difficulties seemed insurmountable, that the two unions of Manchester and Chorlton would be combined. It is considered by the board that the former does not bear its fair share of taxation for the relief of the poor and that this very great work would be facilitated by the two unions becoming one.

May 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health of Dublin.

THE report of the committee appointed at the instance of the Lord Lieutenant to inquire into the public health of Dublin was issued on May 17th and contained little that was novel or unexpected. The tenements house evil occupies the foremost place as the prime cause of the abnormal death-rate of Dublin, and the noxious features of these dwellings are described in vigorous language. It is satisfactory to note that the committee do not see their way to blame the soil on which the city is built for the prevalence of enteric fever. There is every reason to think it a preventable disease, but the committee are of opinion that the causes of its prevalence in Dublin are not yet thoroughly understood. The important statement appears that "the hospital accommodation for infectious cases in Dublin is larger in proportion to the population than is the case in any English city." In reference to the notification of infectious diseases it was the general opinion of all the witnesses who were examined that this measure should be made compulsory in the districts surrounding Dublin. The committee concur in this opinion and they point out that "such notification is already compulsory throughout Great Britain as it ought to be throughout Ireland." Among the recommendations made by the committee the most novel and debateable was to the effect "that the duties of medical officers of health should no longer be discharged by the 16 dispensary medical officers, and that in future these duties should be discharged by an assistant medical officer of health who should receive an adequate salary and who should give his whole time to the duties of his office." The Dublin *Daily Express*, in commenting on the report, states that it proves that the sanitary authorities have failed to discharge some of the most pressing and important of the duties which devolve on those who are supposed to safeguard health in a

community. In connexion with the same subject a recent article from THE LANCET was quoted with an account of a wake held in the neighbourhood of Fitzwilliam-place, a wealthy and fashionable street of Dublin. The editor of the *Daily Express* goes on to say that this, if true, shows a clear case of neglect on the part of the sanitary authorities, for, as THE LANCET points out, there are laws which sanction the application of the necessary sanitary measures.

Royal College of Surgeons in Ireland: Election of President.

The unpleasant contention with reference to the coming election at the Royal College of Surgeons in Ireland raised by a circular letter from Mr. Henry Fitzgibbon to the Fellows of the College on May 21st, in which he offered himself as a candidate for the Presidency in opposition to Mr. Myles, has been brought to a satisfactory conclusion. An injunction to restrain Mr. Fitzgibbon from publishing his circular was at once obtained by Mr. Myles. On May 24th, however, a full and ample apology was written by Mr. Henry Fitzgibbon and forwarded to all the electors. He at the same time formally withdrew his candidature for the Presidency of the College. By a circular letter dated May 25th he concluded the correspondence, and in referring to his retirement from the contest informed the Fellows that he had fallen into a serious error as to a matter of fact, the mistake having arisen from misconstruction of a report which appeared in an evening paper with regard to Mr. Myles. The latter is now unopposed and will be duly elected President of the College on June 4th.

Notification of Infectious Diseases in Dublin.

A printed circular dealing with the notification of infectious diseases in Dublin was issued by the corporation on May 25th and sent to all the medical men in practice in the city. It specifies the diseases which must be notified, including cerebro-spinal meningitis, which has been added to the list—but only for the next four months. As to phthisis, attention is called to the fact that although it is not included in the list it is desirable to disinfect the rooms in which persons affected by this disease have resided; moreover, the circular points out that notification (which will be regarded as confidential) with a view to disinfection will be gladly received and acted upon. The attention of the Public Health Committee having been called to the fact that some medical men refrain systematically from notifying cases of infectious disease, the committee have resolved to prosecute any medical man who neglects to discharge this duty in compliance with the law of the land. The Registrar-General for Ireland has recently added a new tabular feature to his reports relating to the number of cases of infectious disease notified to the Public Health Committee and the corporation and has stated that it is his intention to furnish this information for each week in future.

Death of Dr. Edward Johnston Quinan of Dublin.

Dr. E. J. Quinan, a physician well known and highly esteemed in Dublin for many years, died on May 26th at his residence in Harcourt-street, aged 86 years. He was an M.D. of King's College, Aberdeen, a Fellow of the Royal College of Surgeons in Ireland, and formerly one of the Court of Examiners there. Dr. Quinan filled the office of honorary secretary to the Irish Medical Association for 40 years and received an address and a presentation piece of plate in recognition of his long and distinguished services to the Poor-law medical officers of Ireland.

The Poor-law Medical Officers of Ireland Vacation Leave.

The disappointment caused among the Poor-law medical officers of Ireland by the recent decision of the Queen's Bench Division, which declared that the Local Government Board had no power to insist on the maximum four weeks' vacation, has been turned into joy by the statement of Mr. Gerald Balfour, contained in his speech in the House of Commons on May 24th. The Chief Secretary for Ireland said: "It appeared that one of the general rules which was passed for dispensary districts was that the medical officers should be allowed four weeks' vacation. The County-court Judges ruled that the Board's action was correct and legal, but the Supreme Court, to which the case was carried, declared that the Board under its rule had no power to insist upon this four weeks' maximum in every case. This, however, would be met by the issue of a new rule, and it would be altered in due course."

The Outbreak of Typhoid Fever in Belfast.

From the report of the medical superintendent officer of health I learn that the total death-rate for the week ended May 19th has been 22·2 per 1000 and for the principal zymotic diseases 2·7. There were 58 cases of typhoid fever notified during the past week, which is a further increase in the weekly number of cases notified. It is stated by a correspondent in a Belfast paper that although the Water Commissioners got a Bill passed 12 months ago enabling them to purchase or deal with the farms lying within the catchment areas of their reservoirs at Carrickfergus and Stoneyford, on the ground that the proximity of these inhabited farmsteads to the reservoirs was a source of danger by polluting the water, no steps have been taken to acquire these farms. If the farms are a source of danger they should be dealt with at once; if not, the owners should be put out of suspense as to whether they are to be dispossessed or not.

Queen's College (Belfast) Athletic Sports.

The annual sports in connexion with the Queen's College Athletic Club took place in the grounds of the North of Ireland Cricket Club on May 26th and were largely attended and in every respect were a great success.

The Samaritan Hospital, Belfast.

A fête and fancy fair on behalf of this hospital will be held in the grounds of Norwood Tower, Belfast, in June.

May 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Temperance Manifesto by the Academy of Medicine.

IN my letter which appeared in THE LANCET of May 19th (p. 1472) I mentioned the circular of General Gallifet, the Minister of War, which forbade the sale of alcoholic liquors in canteens and other places of military resort. Immediately upon the issue of this circular the Academy of Medicine sent its congratulations to the Minister. In an address voted upon the motion of M. Bergeron and M. Laborde the Academy recalls the fact that in its capacity of guardian of those principles of hygiene which dominate the public health it cannot remain indifferent to any prohibitive measures which commence to put into practice those indispensable rules which it has never ceased to advise as warring against the progress of alcoholism. Further, the Academy considers that this beginning should be at once followed by a complementary measure—namely, the forbidding of alcohol in other State departments. Finally, the Academy hopes that the Government will be induced to pass laws calculated to prevent the ever-increasing ravages of alcohol in civil life. The Academy has in view the seafaring population, the mercantile marine no less than the navy, and especially the fishing classes amongst whom alcohol has brought about terrible results. So bad are its effects among the peoples of Brittany and Normandy, who were formerly so wonderfully healthy, that it is considered that unless prompt action is taken the race will shortly disappear. Among the Icelandic and Newfoundland fishing fleets alcohol in the form of a particularly vile brandy is the most essential part of the fisherman's food-stuff. Even in the navy there is a daily distribution of *tafia*, the dose of which is doubled in bad weather or in times of extra work. The Academy is to be warmly congratulated upon its action, for the work to be done is still very great.

The Surgical Treatment of Facial Neuralgia.

M. Chipault, who has made a specialty of the surgery of the nervous system, read some most interesting observations before the Academy of Medicine at the meeting held on May 15th. The surgical treatment of rebellious forms of neuralgia has hitherto given very unsatisfactory results. Peripheral resections of the trigeminal nerve are not dangerous, but give relief lasting only a few months. Resection of the Gasserian ganglion gives better results, but is a dangerous operation, for the mortality rate is not less than 25 per cent. On the other hand the pathology of facial neuralgia which so often arises as an accompaniment of a condition of arterial sclerosis would lead one to imagine that it is a condition of vaso-motor origin. Anyway, many of

the symptoms which accompany it are of vaso-motor origin and go to prove that there exists some common cause, not of the neuralgia itself, but of something which sets the neuralgia in action. Given these conditions it is a logical mode of treatment to employ resection of the superior cervical ganglion of the sympathetic, a ganglion which furnishes vaso-motor filaments, not only to the branches of the trigeminal, but also to the Gasserian ganglion and its central roots. M. Jaboulay had a successful case under this treatment. After consultation with M. Abadie, M. Chipault decided to perform the operation upon a man, aged 60 years, who for 38 years had suffered from a very persistent and acute form of neuralgia which increased in severity as time went on. The pain was especially marked in the region supplied by the superior maxillary nerve. After everything had been tried without success, more particularly opium and sulphate of quinine, the patient underwent the above-mentioned operation. Within 48 hours afterwards his pain had gone and he experienced nothing but a slight feeling of heat in the gum. This case bears out the correctness of the theory that facial neuralgia is due to some vaso-motor cause. M. Chipault remarked that this operation is neither dangerous nor disagreeable, a fact which he had demonstrated by having performed it in some 50 cases. Moreover, the scar is in the neck and not in the face and, therefore, hardly visible, and the patient is spared the subsequent annoying anæsthesia, which is so trying a feature of operations upon the trigeminal nerve.

Sanitary Measures against Plague.

Following on the excitement produced in France by the announcement that plague had appeared at Port Said the precautionary measures set on foot by the authorities have been doubled. Dr. Proust, Inspector-General of Public Health, and M. Catelan, director of the Health Department of Marseilles, have inspected the lazaretto at Frioul and have satisfied themselves that the establishment is in good working order. Stringent precautions have been set on foot to prevent the spread of plague from this port. All ships coming from infected ports are rigorously disinfected and the passengers are kept under strict observation. The French Consul at Alexandria has sent to the Government a telegram addressed to the Chamber of Commerce at Marseilles stating that a passenger who was shipped from Arabia as plague-stricken had been found to be simply suffering from intermittent fever and that quarantine restrictions were relaxed in the case. He was sent to Suez and he arrived there in perfect health. Dr. Flaissières, the Mayor of Marseilles, with a view to encouraging the destruction of rats by which plague is spread, has published a notice that a reward of five centimes per rat and two and a half centimes per mouse will be paid for every one of these animals handed over either living or dead.

Professional Secrecy and the Law.

The Criminal Division of the Court of Cassation has just given a decision declaring that a statement made in court which violates professional secrecy is not evidence. The matter arose out of evidence given by a midwife at the hearing of a criminal charge. She had been consulted by a girl whom on examination she had found to be pregnant and who was afterwards prosecuted for concealment of birth. The Public Prosecutor appealed against the judgment of the Correctional Court of Lure, which had acquitted the prisoner, and the Court of Besançon having considered the arguments of the defending counsel decided that the midwife's evidence was inadmissible and confirmed the judgment of the Correctional Court. The Public Prosecutor having appealed against this decision, the Criminal Division of the Court of Cassation on the case coming before it dismissed the appeal of the Public Prosecutor of Besançon and delivered a judgment which lays down that the duty of professional secrecy necessarily implies that those bound by it shall not, even when called upon to give evidence, reveal matters entrusted to them in the practice of their professions. The Court further went on to state that the law cannot insist upon statements made in violation of professional secrecy being included in the evidence against an accused person, and it pointed out that the judgment of the Correctional Court acquitting the accused of the charge of concealment of birth was based on the fact that the testimony of the midwife at the hearing of the case (to the effect that she was consulted by the accused and had come to the conclusion that the accused had been six months pregnant) was evidence of a secret of which the midwife only became aware through the accused person consulting her in her professional capacity.

May 29th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Plague at Port Said.

IT was on the last day of April that two suspicious deaths occurred among some Greeks living in the European quarter of the town and it was soon proved by bacteriological examination that both of these deaths were from plague. Medical officers, trained disinfectors, and all the necessary equipment of a hospital were at once despatched from Cairo and Alexandria to Port Said, the Government issued the necessary regulations for times of epidemics, and war was formally declared against the bacillus. Steps were taken to try to find out whether there had not been earlier undiagnosed cases of the disease, and an analysis of the death certificates signed by European medical men practising in Port Said revealed the fact that during April three deaths had been certified as due to "influenza with phlegmons," and "cerebral influenza." Death had ensued in these three cases after a few days' illness, and from notes furnished by the courtesy of the practitioners it is now certain that all three were typical cases of plague of a virulent kind. The earliest case was that of a Greek who was taken ill on March 28th and died on April 7th with pneumonic symptoms and cervical buboes. Careful examination of all death returns shows that there is not, and has not been, any excessive mortality in the town, and therefore the disease has been discovered before it has had time to assume any dangerous proportions. Mr. Pinching, the Director-General of the Sanitary Department, reports that all his preparations are now completed. A hospital is ready for 50 patients, organised gangs have been formed for disinfecting, for whitewashing, and for the removal of rubbish, and the Government has voted a credit of £10,000 for the necessary expenses. But it will be necessary for all the consuls and the European residents to do their best to aid the sanitary officials in carrying out all necessary orders. The difficulty does not arise so much with the disposal of the sick or of the dead, but with the friends who have been in contact with the sick, and yet these, whatever their nationality, must for the public good be kept under medical supervision for a few days. Another trouble is that the foreign local press amuses itself, as it did last year in Alexandria, by denying the existence of plague and by deriding the efforts of the English sanitarians. It is unfortunate that the representatives of the foreign Powers here are not disposed to silence these writers who do a decided amount of harm among the lower and more ignorant classes where plague most easily finds its victims. One person has also been found dead at Alexandria—an Egyptian rag-picking woman. There is, as yet, no evidence of how the plague reached Port Said, but it is known that a large commerce in second-hand clothing is carried on between the crews of vessels passing through Port Said and the provision boats of the town. Close to the house in which three cases of plague have been found is a large store of this kind of cast-off clothing.

Hotels at Assouan.

Winter visitors at Assouan are now provided with a choice of three hotels, one of which is the old one in the town itself and has 110 bedrooms and is found chiefly useful for tourists who only want to stay for a few days and see the sights. The two new hotels belong to rival companies and therefore compete with each other to the great advantage of tourists wishing to spend a month or two on the spot. They have both been opened this year, they are both carefully chosen as regards site and sanitation, and they are both designed by English architects. The Berkefeld filter is used in all the hotels and the filtering candles are ordered to be boiled every three days. Bath-rooms, electric lighting, and a library are to be found in the two new hotels. One of them, built on the site of the former English military hospital, has Tobin tube ventilators in every bedroom, fire-taps and plugs on every floor, and splendid views from a liberal allowance of balconies, and is far removed from all the bazaars and native parts of Assouan. This building discharges its drainage into cesspools in the

gardens, while the other hotel, overlooking lovely islands of rocks, employs earth-closets and a cemented cesspool for slop-water. An English church for 300 people has just been built and the town is rendered a little more gay by the presence of the 10th Soudanese regiment with its English officers.

Cairo, May 13th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Antitoxin and the Diphtheria Death-rate in New York.

A STRIKING demonstration of the value of the antitoxin treatment of diphtheria has been officially given by the Health Department of this city. During 1899 there were in the entire city of Greater New York 11,550 cases of diphtheria with 1925 deaths, giving a mortality of 16·6 per cent. In the borough of Brooklyn the antitoxin treatment is not as popular as in the other boroughs and results show that in that borough in 2894 cases 744 deaths occurred, giving a death-rate of 25·7 per cent. In the borough of Manhattan, where antitoxin is being much more extensively used, out of 7612 cases only 960 proved fatal, giving a death-rate of 12 6 per cent., just 50 per cent. less than that of Brooklyn.

The Comparative Efficiency in Steam Disinfection of Flowing Steam and of Steam with a Vacuum.

Surgeon Carter, of the Marine Hospital Service, states that observations having shown that steam introduced into cylinders under pressure but without continuous outlet left "dead spaces" of less than 212° F. and penetrated pillows, mattresses, rolls of cotton quilts, &c., very slowly, the attempt was made at Gulf Quarantine to remedy this (slow penetration) by turning on a considerable head of steam and allowing it to escape freely, but little pressure in the chamber being aimed at. At first several (four) outlets were provided which were closed or opened at will so as to direct the steam to or from any part of the (rectangular) chamber. This was found to be unnecessary, as good results (as far as "dead spaces" were concerned) were obtained by letting the four run at such a degree of opening as to register 214° to 216° F. in the chamber—about one and a half to four pounds' pressure. Surgeon Carter further reports that he found that articles which had been penetrated slowly by still steam were penetrated rapidly by flowing steam. Of these test articles wads of cotton quilts were the most difficult to penetrate and feather pillows came next. Mattresses, such as were in use, were penetrated readily, and blankets under any condition of roll or wad very readily. Indeed, in the latter the electrical thermometer would ring (100° C.) almost as quickly as in the open. These observations were made with two electric thermometers, giving the time at which 100° C. was reached. The method by flowing steam is by far the more efficient—that is, it secures penetration more readily as compared with the vacuum method, provided articles be hung up or loosely packed, taking more time, however, for pillows, quilts, &c. Where, however, it is desirable to lay things flat, which is necessary with the clothes of first-class passengers to prevent wrinkles, creases, &c., or where one must put a large amount of clothing in a chamber, the vacuum offers advantages which are very considerable. With a chamber of the same size the same amount of efficient work will be less injurious, as the goods will come out with the same folds as they had in the trunk.

The Number of Ruptured and Crippled Patients in New York.

Dr. Taylor states that the hospital for the ruptured and crippled has treated since its organisation in 1863 more than 100,000 patients in its orthopædic department, and treats between 4000 and 5000 cases annually. The orthopædic hospital and dispensary treats over 1000 new cases annually. These two institutions have treated about 50,000 orthopædic cases in the last 10 years, and have now under treatment about 10,000 cases. There are besides large orthopædic clinics at the polyclinic, post-graduate, St. Luke's, and Roosevelt hospitals and the Vanderbilt and Bellevue clinics, and many cases are treated in the general hospitals and dispensaries. It is safe to say that not far from 15,000 cripples are being treated in the charitable institutions of the borough of Manhattan. One-third or more of them, say 5000, are of school age, and of these about three quarters come from the borough of Manhattan, or 3500. Some of these are not severely crippled and may attend the public schools; on the other hand, many who would be eligible for the cripple schools are not being treated in the clinics.

Deaths, Disabilities, and Liabilities Incidental to Occupation.

The Commissioner of the New York Bureau of Labour reports that there are probably not fewer than 40,000 injuries sustained annually by the people engaged in the manufacturing industries of this State. Many of these injuries are trivial, entailing little loss of time, but there could not have been fewer than 6000 injuries that entailed disablement for a period in excess of three months. The number of employés covered in this investigation was 452,425, scarcely half the number engaged in manufacturing industries in the State. The number of injuries reported exceeds the number regularly reported to the factory inspector, which has never reached 1800 per annum among 700,000 employés of inspected factories. The number of injuries is even now understated as many firms fail to report accidents. The ratio of injured to each 1000 employed was 16·11. The total number of working days lost by 1330 injured persons was 19,587, which is a per capita average of 15 days or slightly more than two weeks. The action of the State for the prevention of accidents is as follows: first, to require employers to erect and maintain safeguards about machinery at the direction of the factory inspector; secondly, to place upon the employer a financial responsibility to his employés, to be enforced through an action for damages by the injured person. The former policy has undoubtedly prevented many accidents and its results appear in the most favourable light in the reduction of the number of accidental injuries sustained by railway employés since the passage of the Federal law requiring the adoption of automatic couplers. The annual reports of the factory inspector of this State furnish ample testimony of the need as well as the benefits of such legislation, as does also the report of the inspector of boilers in the Department of Public Works.

Ingredients of Oleomargarine.

The effort to prevent the sale of oleomargarine for butter by legislation has thus far proved a failure. It is alleged that in the State of Pennsylvania alone 15,000,000 pounds of oleomargarine are annually sold for creamery butter. A Bill is now before Congress designed to supply new safeguards against this fraud upon the public and in order to obtain an authentic statement as to the ingredients of oleomargarine the Secretary of the Treasury was called upon to furnish the information. He reports that for the fiscal year ending June 30th, 1899, the following were the percentages which each ingredient bears to the whole material:—neutral lard, 34·27; oleo oil, 26·82; cottonseed oil, 4·77; sesame, 0·53; colouring matter, 0·16; sugar, 0·12; glycerine, 0·01; stearine, 0·007; glucose, 0·003; milk, 15·55; salt, 7·42; butter oil, 4·76; butter, 1·72; cream, 3·86. It has been believed that cottonseed oil constituted at least one half of the quantity of all the ingredients employed in the making of oleomargarine, but the report shows that only about 4 per cent. is actually used, while upwards of 34 per cent. of neutral lard enters into the composition.

Liability for the Infection of an Assistant.

A surgeon who was treating an infectious sore on a man was assisted by the patient's wife whom he assured that no risk of infection would be incurred. The wife is alleged to have become infected and she brought a suit against the surgeon. The Supreme Court of the State held that when the surgeon advised the wife he assumed the obligation to use due care in so doing; that the case was one of positive action not merely one of failure to act; that the fact that his duty as to her was merely to advise and not to administer treatment was immaterial; that the situation was such that she needed the advice of a physician and that the surgeon knew it; that he knew of her danger and negligently advised her as to it and that she was injured by following his advice; that if the contract to attend the plaintiff's husband were eliminated from the case the liability would be the same; and that the gratuitous character of the services rendered to the plaintiff would not excuse the defendant's failure to exercise such care as the circumstances demanded. It was urged that there would have been no danger but for pricks in the plaintiff's fingers of which the defendant was ignorant, but the court held that there was danger unless the plaintiff's hands were free from the slightest wounds, and it cannot

be said as a matter of law that a perfect physical condition is so common that the defendant could reasonably rely upon it in giving advice.

Boards of Health in Porto Rico.

The Porto Rico Department Commander has issued an order requiring the establishment of a Board of Health in every municipality of the island. Each board is to be constituted as follows: the alcalde, a municipal physician, the President of the School Board, and the President of the Board of Charities, all of whom must be residents of the municipality in which they serve. Each municipality must have at least one municipal physician, but if the population exceeds 10,000 there shall be not less than two physicians, and for every 6000 above this number there shall be an additional physician. These physicians must attend all calls made by the sick poor. On the creation of these Boards of Health the island will be supplied with a very complete sanitary government.

A Dinner to Dr. A. Jacobi.

A notable event in medical circles during the last week in New York was a dinner given to Dr. A. Jacobi on his seventieth birthday. Congratulations were received from the principal capitals of Europe as well as telegrams from prominent physicians in this country. For 40 years Dr. Jacobi has been a very active member of the medical profession of this city and country, and at the same time he has been a public-spirited citizen. While he was President of the Academy of Medicine he secured a large endowment for its library which has made it prospectively the most complete medical library in the world.

May 19th.

Obituary.

GEORGE BIRD, M.R.C.S. ENG., M.D. ST. ANDREWS.

DR. GEORGE BIRD, who died at his residence in Hampstead on May 4th, as we have already announced in our columns, was a very well-known man. He was born in 1817, being the son of James Bird, a man who took a high place among the poets of his own county of Suffolk and who could put forward claims to other than local fame. George Bird was the eldest of 16. When quite a lad he desired to study medicine and never repented his youthful bent, but always declared the medical life to be the best life a man could lead. After a period of apprenticeship to a country practitioner—a Dr. Wilson, who had the honour of being summoned to attend King George IV. as a gout expert—George Bird went to London and studied at University College. In 1841 he took the diploma of M.R.C.S. Eng. and at once set up in private practice. In 1859 he took the degree of M.D. at St. Andrews. In 1861 he removed to Welbeck-street, where he practised for 33 years. As a student he had a struggle with poverty and to make ends meet engaged in journalistic work. His eager literary sympathies, his sensitiveness to style and expression, were inherited endowments. He was consistently Liberal in politics. As a lad he wore yellow at a Suffolk election when there was scarcely another badge of the colour to keep him company. His pen was always employed in advocating advanced reforms. Throughout life he was a strenuous upholder of every cause that seemed to him to make for the good of the people, and even when he found himself in a minority—a position which, like most uncompromising pioneers, he often occupied—his advanced opinions were always treated respectfully by his opponents because he held them in such a genuine and spontaneous way. He never seemed to come into collision with the very opposite views of other people, for he respected all honest convictions; hence, in spite of his pronounced views, he made friends of all shades of opinion, and it was a noticeable fact that a great many of his patients were transmuted into friends. There was a mutual attraction between him and literary and artistic people. He keenly sympathised with the subtleties of the poetic and artistic temperament. He had read and travelled largely, having been to Egypt no less than seven times, so that he had much to say on many subjects. One of the earliest of his distinguished patients was Leigh Hunt. He also attended Charles Dickens, Sir Edward Bulwer Lytton, Frank Stone (the father of the present Royal Academician), Sir Richard Burton and Lady Burton, R. H. Horne, Thomas Woolner, R.A., the sculptor and poet, Mrs. Lynn Linton, the novelist, and a host of poets, writers, actors, and actresses of the present day. He had a faculty of inspiring hope; and patients, especially patients who thought themselves worse than they were, found reprieve in his voice and bright aspect. In 1895 he retired to Hampstead. He never ceased to be young-hearted and continued in sympathetic touch with all the great subjects of human interest until his death at the ripe age of 82 years. He had "the youth of old age" and not its decay. All his faculties were clear until the end.

THOMAS ALFRED PERRY MARSH, L.R.C.P. LOND., M.R.C.S. ENG.,

MAJOR, ROYAL ARMY MEDICAL CORPS.

MUCH sorrow is felt in Bristol and Newport (Mon.) at the death of Major Marsh who died from enteric fever at Deelfontein, South Africa, on May 22nd, in his forty-fifth year. The deceased, who was the youngest son of the late Captain H. G. Marsh, J.P., of Winterbourne, Gloucester, received his medical education at Bristol and University College Hospital, taking at the former school several prizes and scholarships in medicine and surgery. He obtained the qualifications of L.R.C.P. Lond. and M.R.C.S. Eng. in 1881 and 1880 respectively and in 1892 that of D.P.H. of the Royal Colleges of Physicians of London and Surgeons of England. Major Marsh had seen nearly 18 years' service in the army and previously to his illness was principal medical officer at De Aar. He saw active service in the Burmese Expedition of 1885 to 1887 when he was in medical charge of a battery of mountain artillery and was present in several engagements near Ningyan and Yemethen, and in the latter place during its investment in 1886. For this campaign Major Marsh received the medal with clasp. The deceased leaves two brothers, one of whom, Mr. O. E. Bulwer Marsh, M.R.C.S. Eng., L.R.C.P. Lond., J.P., is in practice in Newport, and the other, Mr. Earle Marsh, was recently high sheriff for Monmouthshire.

FRANCIS JOSEPH MATHEWS, L.R.C.P., L.R.C.S. IREL.

MUCH popular sympathy was manifested by all classes on the occasion of the death of Mr. Mathews of Cavan, which occurred on May 21st, after a very short illness. The deceased gentleman received his professional training in the schools of the Royal College of Surgeons in Ireland and acquitted himself so creditably as a student that he gained a medal in the class of Materia Medica and Therapeutics. In 1894 he was admitted a Licentiate of the Royal Colleges of Physicians and Surgeons in Ireland and eventually settled in Cavan, where he was appointed medical officer of the Stradone Dispensary District and medical attendant to the Royal Irish Constabulary. Of a fine presence and affable manners he endeared himself to a large circle of friends and acquaintances and won the confidence of all those with whom he had professional relations. The cause of his death was tetanus originating in a wound of the right leg sustained in a bicycle accident about May 10th. The funeral took place in Laragh graveyard on May 23rd, a requiem mass having been previously celebrated in Cavan Cathedral.

THE School Board for London have appointed Robert J. Collie, M.D. Aberd., medical superintendent of the Board's ambulance and home nursing classes. The number of pupils who received instruction in ambulance and home nursing last winter was close on 10,000. The Board have decided that all ambulance classes shall be taught by medical men assisted by the Board's teachers. The course consists of 12 lectures, and these will be given alternately by the medical man and the Board's teacher. The fee has been raised to a guinea per lecture. We understand that until recently the pupils were presented for examination by the St. John Ambulance Association, but that the Board have now determined in future to grant their own certificates.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THE Council continued to sit throughout Wednesday and Thursday, and the proceedings will be reported as usual in full in our columns next week.

On Wednesday a motion by Mr. Brown that the Registrar should send to every registered medical practitioner in the United Kingdom a copy of the Council's resolution of June 6th, 1899, with regard to medical aid associations was withdrawn, the intent being foreshadowed by Sir John Batty Tuke to introduce at a future session a stronger resolution. Mr. Brown's was a useful motion, but his object will have been served if the Council is led in the near future to make a clear pronouncement to the registered practitioners upon the subject.

On the same day, on the motion of Sir Dyce Duckworth, the General Medical Council received the recommendation of the Examination Committee expressing the opinion that another cycle of inspections of final examinations of the several universities and examining boards should be begun during the present year.

On the motion of Sir John Batty Tuke, seconded by Dr. MacAlister, a further report by the Education Committee on the question of raising the standard of the preliminary examination in general education was received and entered on the minutes. The report showed that a substantial advance on the present regulations could be made by insisting on improvements in the character and stringency of the junior examinations which could be directly influenced by the Council; and the same advance could be secured in the case of other examinations by requiring that candidates offering corresponding certificates should have obtained a higher standard than that of a simple pass.

The recommendation of the Education Committee fixing a limit of age below which an applicant shall not be allowed to register as medical or dental student was adopted by the General Medical Council who placed the age at 16 years; consequently, from and after Jan. 1st, 1902, no person will be registered as a medical or dental student who has not attained the age of 16 years.

The report of the Pharmacopœia Committee was received and adopted, the Council recording their cordial thanks to Dr. Leech, Mr. Bryant, Mr. Ekin, and Dr. Walter Hills for important contributions which they had secured to the Pharmacopœia library.

THURSDAY, MAY 24TH.

IN THE LANCET of May 26th we reported the proceedings of the first two days of the session of the Council and resume now with the third day. Sir WILLIAM TURNER, as usual, occupied the presidential chair.

Restoration to the Medical Register.

The PRESIDENT announced, after the Council had been sitting *in camerâ* for a time, that it had been resolved to restore to the Medical Register the name of George Ingersoll Curragh, who possesses the Licence of the Society of Apothecaries of London.

The Case of William Matthews Joyce.

The first business on the programme of the day was the consideration, adjourned from Dec. 1st, 1899, of the charges proved against William Matthews Joyce, registered as of 25, Cattell-road, Small Heath, Birmingham, with the triple qualification of Scotland, 1889, who had been summoned to appear before the Council on the following charges: (*a*) that he was, on July 10th, 1899, at the Warwick Borough Sessions, convicted of being drunk and disorderly; and (*b*) that he was, on Nov. 13th, 1899, at the Warwick Court-house, convicted of misdemeanour—namely, of assaulting and beating Ellen Simpson. At the conclusion of the deliberations of the Council on this case, on motion made from the chair, it was resolved: "That the further consideration of the case of William Matthews Joyce be adjourned till the May session of the Council."

Mr. Joyce appeared in answer to his name.

The PRESIDENT, addressing him, said: You know, Mr. Joyce, the charge made against you at the previous session of the Council. Have you sent in any certificates?

Mr. JOYCE: No; I have none.

The PRESIDENT: Have you anything to say?

Mr. JOYCE: Nothing; I stand here exactly as I stood before.

The PRESIDENT: Has your conduct since you were here last been what it should have been? Has your conduct been altogether correct?

Mr. JOYCE: With great respect I think that matter is for the Council.

The PRESIDENT: I ask you the question.

Mr. JOYCE: I have done nothing to bring me into court at all.

The PRESIDENT: Has your conduct since you were here last been the conduct which you as a member of the profession ought to exhibit?

Mr. JOYCE: Yes; it has been just as my father would recommend, and he was a medical man.

The Council then deliberated *in camerâ* on the case, and when Mr. Joyce was readmitted to the hall the PRESIDENT announced to him that the Council had directed the Registrar to erase his name from the Medical Register.

The Case of James Alexander Graydon.

The Council proceeded to the consideration of the case of James Alexander Graydon, of 21, South-grove, Bow-road, E., registered in Ireland Dec. 7th, 1872, as Lic. Fac. Phys. Surg., Glasgow, 1870, who had been summoned to appear before the Council in consequence of his conviction on March 5th, 1900, at the Thames police-court, for assaulting his wife and his sentence to pay a fine of 21*s.* or go to prison for seven days with hard labour.

Mr. FARRER, jun., read to the Council a certificate of the conviction and sentence. He also read a letter from Mr. Graydon, in which he said he was intoxicated when he struck his wife and was extremely sorry for his action, and he had been a total abstainer for 10 weeks and intended to continue one. Mr. Farrer also read a letter from the wife pleading for lenient treatment for her husband.

Mr. GRAYDON, in answer to the President, said he was extremely sorry for what he had done. He had taken the pledge and he meant to keep it.

After the Council had deliberated in private for a time

The PRESIDENT, addressing Mr. Graydon, said: The Council have given a careful consideration to your case. They are willing to give you an opportunity of redeeming yourself and they will require that you should appear here at the November session and the Council will expect you to produce evidence when you reappear that your conduct and character have been satisfactory in the interval between now and the November session. And in order to do that they will call upon you to produce written certificates from responsible persons. They would like that at least one of your certificates should be from a medical practitioner who knows you and the certificates must bear that your conduct and character have been entirely satisfactory during the interval between now and the month of November.

The Inspection of Documents.

The Council granted liberty to Mr. Horsley to inspect the accounts of the solicitor to the Council for 1899.

The Case of Dr. Robert Herbert Foot.

The Council next proceeded with the case of Robert Herbert Foot, of 6, Elliot-road, North Brixton, S.W., registered in Ireland Dec. 23rd, 1872, as Lic., Lic. Midwif., 1872, R. Coll. Surg. Irel.; M.B. 1872, M.D. 1874, Univ. Dubl.; who had been summoned to appear on conviction for misdemeanour committed in Clapham-road, Lambeth, on April 6th last, and for which he was sentenced to three months' imprisonment with hard labour.

Dr. Foot attended in answer to his summons, together

with his counsel, Mr. Eldon Bankes, and his solicitor, Mr. H. Walter Nelson, of the firm of Lowless and Co.

Mr. FARRER, jun., read the summons and the certificate of conviction and other documents in support of the charge.

Mr. ELDON BANKES then read the statutory declarations for the defence. He also handed in the depositions which had been taken at the police-court and then addressed the Council on behalf of Dr. Foot. He explained that Dr. Foot was convicted on a misapprehension due largely to his own fault in refusing, when accused and on trial, to communicate with his friends and to have professional legal assistance and medical evidence that would have shown, as counsel said he would do later, that his unfortunate client while suffering from illness of some years' existence had been the victim of a mistake. Counsel had not heard till now that Dr. Foot's friends in Ireland had petitioned the Home Secretary for a commutation of sentence on the ground that the alleged offence had been committed while he was temporarily insane.

Mr. R. PATRICK WALL, a neighbouring practitioner, said that what he had stated in regard to Dr. Foot's illness was true. He had known Dr. Foot for eight or nine years.

Dr. FOOT, who was called on his own behalf, was questioned by several members of the Council as to his illness, and he said that he would like to remove all idea of his being insane. He was no more insane than the usual persons who were outside of an asylum.

Mr. WALTER NELSON, a partner of Messrs. Lowless and Co., was called to prove the receipt from Mr. Cameron, solicitor, Dublin, who had acted for Dr. Foot's friends, of a copy of the memorial forwarded to the Home Secretary.

After the Council had deliberated *in camerâ*

The PRESIDENT said: Dr. Foot, the Council have very carefully considered all the circumstances connected with your case and they do not direct the Registrar to erase your name from the Register.

During the consideration of this case ladies were asked to withdraw.

The Case of Armitage Forbes.

The next business was consideration of the case of Armitage Forbes of 28, Charlotte-street, Ashfield, Sydney, New South Wales, registered in Ireland, Feb. 12th, 1879, as Lic. R. Coll. Surg. Irel. 1878; Lic. R. Coll. Phys. Edin. 1879; who had been summoned on the complaint of the Queensland Medical Board on the following charges formulated by the Council's solicitor:—

1. That he was associated and connected with an institution calling itself the Anglo-Australian Medical Institute as one of its directing staff, which institute publicly advertises systems of medical treatment and remedies for particular diseases and seeks to attract patients by the advertisement of such treatment and remedies, and that he was a party to the publication of the advertisements of the said institute and its treatment and remedies, and of his name, address, and qualifications as a British registered medical practitioner in connexion therewith.
2. That the advertisements and the system of advertising to which he was a party were in themselves of such a character that it was discreditable in a British registered medical practitioner to be connected with them.
3. The advertisements above referred to were contained in pamphlets, cards, and leaflets purporting to be issued by the said Anglo-Australian Medical Institute, Queen and Edward Streets, Brisbane, and in issues of newspapers circulating in the colony of Queensland named *The Queenslander*, *The Brisbane Courier*, and in the issues of other newspapers and in other publications in the said colony.

Mr. FARRER, jun., read the summons and the documents in support of the charges.

Mr. Forbes did not appear, but two letters from him were read to the Council. In the first of these he wrote that advertising was necessary in Sydney in order to assure the public that the institute with which he was connected was not carried on by quacks. Medical men practising in New South Wales advertised both in town and country and he wished to be informed as to what constituted a breach of professional etiquette. In the second letter he wrote that he was not aware till he had received information from the Registrar that what he had been doing would be regarded by the General Medical Council as infamous conduct in a professional respect. He could state positively that no kind of unorthodox or illegitimate practice took place in the institute, but he admitted that his name, which had never appeared publicly in any newspaper advertisement, was attached to various pamphlets issued by the institute. He regretted very much that he had incurred the displeasure of the Council and since getting notice from them the institute had been closed, directions had been given to discontinue all advertisements, and he had apologised to the Queensland Medical Board. He had done what he could to atone for his fault and he would not offend in future. He trusted the Council would not have recourse to such a serious measure as striking his name off the Register.

In answer to the PRESIDENT it was stated that no communication from the Queensland Medical Board confirming the statements in the second letter from Mr. Forbes had been received at the Council's offices.

The PRESIDENT said that perhaps the Queensland Medical Board had not had time to communicate with London and he questioned whether it would not be advisable to send a copy of Mr. Forbes's letter to Queensland and adjourn the case till the November session to get a reply corroborative or otherwise.

After some discussion

Mr. HORSLEY asked if it would not be fitting that the President should put the question to the Council. They were all agreed with him.

Dr. MCVAIL was not so sure about that. He contended that the Council should take action that day so as not to allow Mr. Forbes another six months in which he might further misconduct himself supposing he were guilty of the charges now brought against him.

The PRESIDENT: He has admitted them.

Dr. MCVAIL: Though a man admits a crime it does not necessarily follow that he should not be punished for what he has done.

The Council deliberated on the case in private. On the re-admission of the public

The PRESIDENT said: I have to report that the Council has directed the Registrar to erase from the Medical Register the name of Mr. Armitage Forbes.

The Case of Arthur Oglesby.

The Council proceeded to the consideration of the case of Mr. Arthur Oglesby in regard to which the following report was received from the Dental Committee:—

The complaint against Arthur Oglesby having been referred to the Dental Committee to ascertain the facts the Dental Committee beg to report as follows:—

On Feb. 27th, 1900, the following parties attended before the committee and were duly heard, namely: Hugh Woods, M.D., B.A., the honorary general secretary of the London and Counties Medical Protection Society, Limited, the complainants, and the said Arthur Oglesby. The committee find that the following acts were established by the evidence: (1) that Arthur Oglesby was registered in the Dentists Register on July 10th, 1891, as having been in practice before July 22nd, 1878, and his address in the Dentists Register is 21, Cheapside, Barnsley; (2) that Arthur Oglesby has systematically sought to attract professional practice by the issue of public advertisements of his name, address, appliances, and professional qualifications; (3) that in particular he advertises himself as D.D.S. University Ill., which alleged diploma he admits that he obtained without visiting America or being subjected to any examination; (4) that the public advertisements issued by Arthur Oglesby are highly objectionable; and (5) that Arthur Oglesby states that since the month of September, 1899, he has discontinued the issue of the advertisements which were brought before the committee. But he continues to advertise himself by the issue of an objectionable card in the local newspapers.

The evidence before the committee consisted of the following: 1. The statutory declaration of Dr. Hugh Woods and the advertisements therein referred to. 2. The oral statement of Arthur Oglesby and the advertisements referred to by him and transmitted by Arthur Oglesby to the Council. 3. The following documents: Letter of complaint by Dr. Woods dated August 10th, 1899. Letter from the Registrar of the General Medical Council to Arthur Oglesby dated Sept. 12th, 1899. His reply of Sept. 13th, 1899. Further letters from him to the Registrar of Dec. 2nd, 1899. The like of Jan. 19th, 1900. Paragraph from THE LANCET and specimens of advertisements referred to by Arthur Oglesby. Letter to the General Registrar dated Jan. 29th, 1900, and the newspaper extract enclosed therewith.

WM. TURNER, chairman.

The PRESIDENT pointed out that this report must be taken as conclusive with regard to the facts, and what the Council had now to determine was whether it would deal at once with the report or hear parties to the inquiry upon the report or any question arising upon it.

On a vote being taken it was decided by 13 to 2 to hear parties.

Mr. OGLESBY availed himself of the opportunity that this vote afforded him. He said that before September last he had no idea that he was doing wrong. Although he had advertised for years he did not advertise in a way that he at least thought was objectionable—that was to say, in the way of exhibiting appliances or show-cases, stating prices, or as having a secret process. And he wished to say that in England a man was generally cautioned before he was brought up before a tribunal like the General Medical Council, but he had never had the slightest caution or remonstrance before being called upon in November last to answer the charge. That did not seem a generous action

on the part of such a body as this. He did not think he had much to say about the report. With reference to that paragraph in it which stated that he had systematically sought to attract practice by the issue of public advertisements of his name, address, appliances, and professional qualifications he wished to emphasise his statement that he had not exhibited any appliances or show-cases or anything of that sort. He wished also to say that when he got the notice from the General Medical Council he ceased to use the advertisements complained of and simply used a business card. If the committee must regard the card as objectionable every advertisement in the land was such, and if a person was not permitted to use such a card as his no man who was a dentist should be allowed to advertise in the future, so that dentists might know where they were. With regard to the next paragraph he had to say that he obtained the degree referred to there upon the production of proofs of his knowledge and skill. He had no wish to go against the General Medical Council in any way and he was prepared to submit to anything that they considered just.

The PRESIDENT: Did you not receive the Council's notice to dentists in regard to this matter?

Mr. OGLESBY: Not the slightest caution.

The PRESIDENT: Did you receive the notice from the Council relating to the issue of advertisements by dentists as objectionable?

Mr. OGLESBY: I did receive that notice and so soon as I received it my advertisements ceased.

Mr. TEALE: Did you discontinue all advertisements?

Mr. OGLESBY: Except the card.

Mr. TEALE: What about the large advertisement on the house, the whole end of which was painted up?

Mr. OGLESBY: I never thought of that. It continues. There is nothing objectionable on it—only my name and address.

Dr. GLOVER: Simply your name and address?

Mr. OGLESBY: I think that is all. It is three or four years since it was done, and if there is any more it can be only two or three words.

Dr. HERON WATSON: You say you are D.D.S. Did you pay for it?

Mr. OGLESBY: Yes, sir; every degree is paid for.

The PRESIDENT: Oh, no.

Dr. GLOVER: Were you examined for it?

Mr. OGLESBY: No, sir; I sent proofs of my skill and knowledge.

Sir DYCE DUCKWORTH: You have never been in the United States?

Mr. OGLESBY: No, sir.

Dr. LITTLE (looking at Mr. Oglesby): It seems an extraordinary thing to believe that he has been in practice since 1878—that is 22 years. May I ask what his age is?

Mr. OGLESBY: My age is 38 years.

The PRESIDENT: Then do we understand that you were in practice at 16?

Mr. OGLESBY: I was in practice when I was 12 years old.

Dr. MACALISTER: Independent practice?

Mr. OGLESBY: Oh, no.

Dr. WOODS, who was then asked if he had anything to say upon the Dental Committee's report, said that the only point on which he would like to speak was on the matter of dental advertising. He agreed with Mr. Oglesby that it was time dentists should be clearly informed whether or not advertising by them was infamous conduct in a professional respect. That Mr. Oglesby had been selected to answer to the General Medical Council was no fault of his. Advertising by dentists had reached almost the lowest depths of advertising by any trade whatever and it was absolutely necessary that it should be put a stop to. The only way in which this might be done was by presenting a concrete case and he hoped the Council would not allow any consideration to interfere with their pronouncement that advertising of an objectionable character was infamous conduct in a professional respect.

Dr. MCVAIL: Does Dr. Woods consider this man as only representative of a class or does he regard him——

The PRESIDENT: Order, order. That is not a matter that we can go into with Dr. Woods.

The Council then sat *in camerâ*. On parties being recalled

The PRESIDENT said: The Council, Mr. Oglesby, have given very great consideration to your case and they have come to the resolution that your name is to be removed from the Dentists Register.

The decision in this case, as Mr. Tomes stated, the first of its kind, is recorded officially in the following terms:—

(*a*) That the Council do proceed at once to pronounce its judgment on the case.

(*b*) That on the facts found in the report of the Dental Committee it has been proved that Arthur Oglesby has been guilty of conduct which is infamous or disgraceful conduct in a professional respect.

(*c*) That Arthur Oglesby having been proved to have been guilty of infamous or disgraceful conduct in a professional respect the Council do direct the Registrar to erase from the Dentists Register the name of Arthur Oglesby.

The Council adjourned.

FRIDAY, MAY 25TH.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

The Case of Owen McBreen.

The Council proceeded to the consideration of the case of Owen McBreen of 59, Mesnes-street, Wigan, a dentist registered on Nov. 28th, 1878, as "in practice before July 22nd, 1878." The complaint against Owen McBreen having been referred to the Dental Committee to ascertain the facts, the Dental Committee reported as follows:—

On April 26th, 1900, the committee met to ascertain the facts, when Mr. Owen McBreen appeared in person and not accompanied by a solicitor or witnesses. The committee find that the following facts were established by the evidence and admission of Mr. McBreen. That Owen McBreen being a dentist registered in the Dentists' Register as in practice before July 22nd, 1878, and possessing no other registrable qualification, and not being a Licentiate or Member of the Royal College of Surgeons of England, Ireland, or Edinburgh, or any of such Colleges, habitually published advertisements in which he described himself as R.D.S.E. (registered by Royal College of Surgeons), thereby causing it to be inferred that he is connected with one of the Royal Colleges. Mr. McBreen apologised for the offence which he had committed, and promised not to repeat it.

The evidence before the committee consisted of the following:—(i.) A letter from the Assistant Secretary of the Royal College of Surgeons of England to the Registrar of the General Medical Council, dated Jan. 17th, 1900. (ii.) A print of the advertisement referred to in such letter. (iii.) A letter from the Registrar of the Royal College of Surgeons in Ireland to the Registrar of the General Medical Council, dated Jan. 23rd, 1900. (iv.) A letter from Mr. James Robertson, Clerk of the Royal College of Surgeons, Edinburgh, to the Registrar of the General Medical Council, dated Jan. 25th, 1900. (v.) The admission of Mr. McBreen that he published the advertisements complained of.

Mr. MCBREEN, addressing the Council, said he laid the blame for what had occurred upon the printer of the church magazine in which the advertisement appeared; but while he did so he accepted responsibility for himself, said he was sorry for the mistake, and undertook that it would not happen again.

Dr. GLOVER: What did you mean to imply by the letters R.D.S E.?

Mr. MCBREEN: Registered dental surgeon.

Dr. GLOVER: Of what?

Mr. MCBREEN: Of England.

Dr. ATTHILL: Are we to assume that the words "registered by Royal College of Surgeons" were inserted in the advertisement by the printer?

Mr. MCBREEN: I believe they were.

Dr. GLOVER: How did these words come to be in the advertisement?

Mr. MCBREEN: They cannot be found in any advertisement since. The printer may have seen them somewhere and put them in by mistake.

After the Council had deliberated *in camerâ*

The PRESIDENT, addressing Mr. McBreen, said: I have to tell you that after very careful consideration the Council have found that the facts stated in the report of the Dental Committee have been proved against you, and that you are guilty of conduct which is infamous or disgraceful in a professional respect, and I have further to say to you that in consequence of this the Council have directed the Registrar to erase your name from the Dentists Register.

The Case of Charles Louis Lumley.

The Council then considered the case of Charles Louis Lumley of 1, Jermyn-street, St. James's, S.W., registered in England June 7th, 1882, as Lic., Lic. Midwif., 1881, R. Coll. Phys. Irel., who had been summoned to appear before the Council on the following charge as formulated by the Council's solicitor:—

That he was guilty of practising a fraud upon a Mr. Balmer by sending in to him and demanding payment of an account of charges for medical attendance and services rendered to Mr. Balmer's wife when as a fact he had not attended or seen or known Mr. Balmer's wife during the period or any part of the period included in the account; which account was sent in by him with the intention of deceiving Mr. Balmer into the belief that he had professionally attended upon his

(Balmer's) wife and in order to induce him to pay the amount of his pretended charges.

Mr. Lumley attended in answer to his summons, together with Mr. Roskill, his counsel, instructed by Messrs. Cooper and Bake, his solicitors.

Mr. FARRER, jun., explained that the case was the outcome of certain proceedings in the Divorce Court in which Mr. Lumley was a co-respondent. He then read to the Council a transcript of evidence given by Mr. Lumley, in the course of which the latter said he had met Mrs. Balmer at a cycle school, but had never treated her professionally. The proceedings in the Divorce Court were on July 23rd, 1897. He gave Mrs. Balmer a bill for medical attendance between November, 1895, and May, 1896, a bill for £19 10*s*. He understood from Mrs. Balmer that her husband would pay nothing towards her maintenance but for sickness, and Mrs. Balmer said that there was money owing for this period and asked him if he would be good enough to put his name to the bill. He denied that he had written two letters to the husband demanding payment; at any rate, he did not remember having done such a thing. If he had done it then it must have been out of sympathy with Mrs. Balmer.

Mr. ROSKILL, addressing the Council for Mr. Lumley, said that this inquiry was confined to matters arising out of the charge formulated against his client. He admitted at once that Mr. Lumley's conduct had been indiscreet. As to the allegation that his client demanded in two letters payment of the bill he insisted that it had no foundation, and further, he pointed out that the two letters had not been produced—indeed, he was satisfied that the letters had never existed. The relation of doctor and patient never subsisted between Mr. Lumley and Mrs. Balmer. What the latter told the former was that she was in distress and could only get assistance from her husband by telling him that she was ill. She had been ill, but had been so before Mr. Lumley knew her. After repeatedly refusing Mrs. Balmer's request that he should make out a bill for her he at last was prevailed upon, but no sooner had he made out the bill than he realised the mistake into which he had fallen. Next day he went to Mrs. Balmer and demanded the bill back or that it should be destroyed. Mrs. Balmer told him that she had not posted it, and after professing to look for it she said it could not be found. Later on she informed him that it had been found and duly destroyed, and it was a great surprise to Mr. Lumley to find the bill produced in court. It was untrue that Mr. Lumley ever wrote to the husband asking payment of the bill. Counsel went on to argue that in this case the man as a member of society must be distinguished from the man as a medical practitioner, and that Mr. Lumley could not be held as coming under Section 29 of the Medical Act of 1858. He quoted from a decision of the late Master of the Rolls who, in giving judgment in a case he tried, laid it down that if it was shown that a medical man in the pursuit of his profession had done something with regard to it which would be reasonably regarded as disgraceful or dishonourable by his brethren of good repute and competency then it was open to the Medical Council to say that he had been guilty of infamous conduct in a professional respect. That gave a definition of infamous conduct in a professional respect. It laid it down that infamous conduct must be between a medical man and his patient or between a medical man and his professional brethren. He was not seeking to palliate the conduct of a man who told a lie or did a dishonourable action. Mr. Lumley admitted that when he gave the bill to Mrs. Balmer he did do a dishonourable action, but it was not done towards a patient, and if the Council believed what Mr. Lumley had said was the truth they must find that what he had done was not infamous conduct in a professional respect. If a man did a dishonourable action or something else for which he could not be convicted in a public court consequences under the Medical Act could not follow. If Mr. Lumley was not speaking the truth when he denied asking payment of the bill from Mr. Balmer he was none the less outside the scope or Section 29 of the Act, for if he had committed a criminal offence the General Medical Council could intervene only on conviction for it.

Mr. LUMLEY was tendered as a witness on his own behalf and bore out his counsel's statement of the facts. He was asked if Mrs. Balmer ever was a patient of his, and he replied that she was not; he had never attended her professionally. He had tried to find her since the divorce proceedings, but he had never been able to discover any trace of her whatever. He never had written to Mr. Balmer. He knew there was a Mr. Balmer, but he never knew his address, he had no idea of his whereabouts or what he was. He never was alone with Mrs. Balmer and never had committed adultery with her. When he was confronted with the bill during the divorce proceedings he was astonished. His counsel in the case knew nothing about it, and until he (witness) was in the witness-box he had no other idea about it than that it had been destroyed.

Questioned by Mr. HORSLEY in order to have an explanation as to the interval of time that had elapsed between the divorce case and the action taken by the General Medical Council, Mr. Lumley stated that his name had lapsed; it had been off the Register for two or three years because he was travelling about a good deal and could not send the Registrar a fixed address. The name had been put on the Register again in January of the present year.

By Dr. GLOVER: The bill given to Mrs. Balmer was made out by himself and was on the usual printed form.

By the PRESIDENT: So far as he could recollect the bill was made out to Mr. Balmer.

By Dr. LITTLE: The bill was filled in in the evening at Mrs. Balmer's house.

How did it happen that you had one of your account forms at her house?—She had previously asked me for the account. She never was in my house.

By Sir JOHN BATTY TUKE: Mr. Balmer was the first witness at the divorce trial.

In connexion with the letters you were said to have written him was there any corroborative evidence?—He never made any reference to the letters. They were put in by his solicitor.

Sir J. BATTY TUKE: Why was Mr. Balmer not recalled?

Mr. ROSKILL: It was a shame that he was not recalled. It is a strong point in Mr. Lumley's favour that he was not.

By Mr. TOMES: He gave the bill to Mrs. Balmer after he had been acquainted with her for about 11 days. He was not to receive anything out of the money, and he had no idea what the woman would do with it if she got it. He got no money from her.

By Dr. GLOVER: She had previously asked for the bill on the evening she got it. He had gone and fetched the bill-head. It was done on the spur of the moment.

The PRESIDENT: Are we to understand that supposing Mr. Balmer had paid the £19 10*s*. it would have been paid to you?

Mr. LUMLEY: Oh dear, no.

The PRESIDENT: But the account was made out as money due to you; if Mr. Balmer had acknowledged the account would he not have paid you?

Mr. LUMLEY: I understand that he would have sent the money to her. He always, she said, sent the money to her.

The parties were then asked to withdraw. On their being recalled,

The PRESIDENT announced the decision of the Council. Addressing Mr. Lumley, he said: The Council has given a very careful consideration and inquiry, as you know, to your case, and the resolution they have come to is that they direct the registrar to erase your name from the Register. That is the judgment.

Mr. LUMLEY: I regret it exceedingly. Would there be any chance of its being introduced again? It is taking away from a man his chances of earning his livelihood when he is getting up in years.

The PRESIDENT: That is a matter on which we cannot give an opinion now. If you apply to the registrar he will let you see the standing orders.

Mr. Lumley withdrew.

The Council dealt partly with the next case on the programme—that of Mr. Andrew Alexander—before rising for the day.

SATURDAY, MAY 26TH.

The Council resumed to-day, Sir WILLIAM TURNER, the President, being in the chair.

The Case of Andrew Alexander.

Consideration was given to the case of Mr. Andrew Alexander of Blaydon-on-Tyne, registered in Scotland, Sept 5th, 1885, as Lic. R. Coll. Phys. Edin., 1885; Lic. R. Coll. Surg. Edin., 1885; Lic. Fac. Surg. Glasg. 1885, who had been summoned to appear before the Council on the complaint of the Gateshead Medical Association on the following charge as formulated by the Council's solicitor:—

That, being a registered medical practitioner, he covered an unqualified person named Tait whom he employed or purported to employ as an unqualified assistant, and whom he permitted and enabled to attend

on and administer medical relief to patients and carry on medical practice as if he were a duly qualified practitioner.

Dr. BATEMAN, as representing the Medical Defence Union and the Gateshead Medical Association, appeared in support of the complaint.

Mr. Alexander attended in answer to his summons, together with his counsel, Mr. Horridge, instructed by Messrs. Rowcliffes, Rawle and Co. (represented by Mr. Lean).

Mr. FARRER read the summons.

Dr. BATEMAN opened the case for the complainants. He stated that as soon as Mr. Alexander employed Tait steps were taken to warn him that he was not acting in conformity with the Council's prohibition of the employment of unqualified assistants. Tait wrote in reply that Mr. Alexander had decided to run the risk and that if he did so it was no concern of the giver of the warning. Mr. Alexander stated in a letter he wrote that when he entered into an agreement with Tait he made no inquiry into the latter's medical training because he saw that pupils were allowed, and it was as a pupil that he had Tait with him. Mr. Tait, Dr. Bateman observed, had not even entered upon studies in a hospital. Mr. Alexander had been brought into the district by the miners themselves in opposition to the resident medical men, and it was impossible to get any of the miners to appear against him.

Mr. ALFRED COX (Gateshead) was then called as a witness. He proved the truth of a statutory declaration made by him in March last. In this he stated that he was told that Mr. Alexander had employed an unqualified assistant and as secretary of the Gateshead Medical Association he had made inquiries. He saw Tait at Mr. Alexander's business place. Tait was referred to by the door attendant as "doctor," and he admitted that he was not qualified, but said he hoped soon to go to college.

Questioned by Mr. HORRIDGE, Mr. COX said that Mr. Galloway and Mr. Davis made the complaint. They attended the miners before Mr. Alexander came to the district. He never saw Mr. Alexander.

No questions were put by members of the Council.

Mr. WILLIAM HENRY DAVIS (Gateshead) was next examined by Dr. BATEMAN. His evidence was to the effect that Tait was said to have attended families and prescribed for them, but there was great difficulty in getting evidence. Many of them did not know that Tait was unqualified.

Mr. HORRIDGE objected to the admission of the last statement unless it was to be confirmed by the oral testimony of witnesses.

Mr. DAVIS, in answer to further questions by Dr. BATEMAN, stated that the practice he held had been in the family for about 100 years. Before Mr. Alexander came there was considerable feeling in the district about the payments by the miners to the medical men. The latter desired that their fees should be raised, and so soon as they were raised advertisements had been issued for a medical man to attend the men employed at certain of the collieries. Asked if there was any difficulty in getting qualified assistants he replied that he had two qualified assistants.

Asked by Mr. HORRIDGE if there was in attendance anyone who could be cross-examined in corroboration of the statement that many did not know that Mr. Tait was unqualified, he replied that he did not know that a defence of such a kind was to be set up.

Mr. HORRIDGE said that it was not a defence but a charge against Mr. Alexander.

Mr. DAVIS admitted that when Mr. Alexander came into the district he interfered very much with Mr. Davis's practice. Asked if he had gone about the place saying that Mr. Alexander was a "blackleg" he replied that he did not say he was a "blackleg" in the ordinary meaning of the common term as used in the north of England. By "blackleg" he meant a man who undersold others for the benefit of himself. He did not know that pressure had been brought to bear on Mr. Thomson, the qualified assistant Mr. Alexander got soon after he entered the district, so as to make him leave Mr. Alexander.

Mr. JOSEPH CHARLES DOVER, commercial traveller, Gateshead, was also examined. He said that acting on instructions he had gone to Mr. Alexander's business place and asked for the "doctor." He was shown into a room and saw a young man of 22 or 23 years of age. Witness asked him if he was Dr. Alexander and he replied, "No; I am his assistant." Witness consulted him as to pains in the back and liver, and the young man gave him medicine and charged him 2*s.* 6*d.* He got a certificate from him out of a book. This was signed "A. Alexander." He noticed that there was a similarly signed certificate underneath. The young man told witness to look in again and to ask for the assistant. At that time he had no pains in the back or liver. He had gone to Mr. Alexander's place with the intention of finding out whether this man Tait was in practice.

Mr. HORRIDGE did not cross-examine.

In answer to Dr. MACALISTER, the witness said that Tait did not tell him what he was suffering from.

Dr. BATEMAN put in the certificate given to Dover, which was signed "A. Alexander," and read: "This is to certify that J. C. Dover is under my care suffering —— and is unable to follow his employment." He also put in correspondence between Mr. Alexander and himself. Mr. Alexander's letter stated that Tait was his pupil and he allowed him to watch the development of disease and its treatment and try his own hand in the management of trifling ailments. He (Mr. Alexander) attended at the surgery where Tait was engaged every day except Sunday. He himself saw all fresh cases and all cases of a serious nature. Dr. Bateman also put in a declaration made by Mr. Walter Galloway, L.R.C.P. & S. Edin., who was, he said, unable to attend.

This closed the case in support of the complaint.

Mr. HORRIDGE addressed the Council on behalf of Mr. Alexander. He said that directly the Council's resolution on the subject of unqualified assistants was shown to Mr. Alexander he had told the latter that he believed he had committed a breach of the regulations, but he wished to put before the Council the exact circumstances in which that had taken place. The engagement with Tait had not been made in any way in bad faith, and Mr. Alexander would undertake to at once send away the pupil whom he had kept on pending the present inquiry. The dispute between the miners and the medical men of the district had occurred last year. The fees were raised from sixpence a fortnight to ninepence, and as the miners thought they had been treated in an offhand manner they had come to Mr. Alexander and in many cases that gentleman was getting the 9*d.* Nobody except Mr. Galloway and Mr. Davis had complained. When Mr. Alexander entered upon the practice he got Mr. Thomson to assist him. This man was qualified and came for a month's trial at £200 per annum, but within the month he left for no reason at all. Mr. Alexander advertised for another assistant, but so strong was the opposition that he could not get a qualified man. The difficulty of getting qualified men became very great after the issue of the Council's resolution on the subject, but from September last the difficulty had been accentuated by the number of qualified men going to the war. Mr. Alexander had done his best to get a qualified man, and when he got hold of a cutting from a medical journal which he read as meaning that he could employ a pupil who was not at the same time a *bonâ fide* medical student he took Tait, and thought he was doing right so long as he, being himself a registered medical practitioner, supervised him. There had not been one bit of concealment from first to last as to what Tait's position was. In conclusion, counsel submitted that the case was one that should not be severely dealt with.

Mr. ALEXANDER was tendered as a witness on his own behalf. He stated that when he went to Gateshead in the beginning of 1899, a good deal of friction arose between him and the other medical men in the district. Mr. Thomson had left him in September and there was not the slightest reason for his going away. If he had stopped, the terms offered him would have made his position worth £250 a year. Witness had taken Tait in the circumstances and on the conditions which counsel had explained, and there was not a word of truth in the suggestion that Tait was held out to be qualified. He had frankly admitted publicly everywhere that Tait was unqualified, and he had never even suggested that he was a student. With regard to the certificate put in he found it necessary to keep a book of certificates signed.

Questioned by Dr. BATEMAN he admitted that he had been carrying on the practice with Tait as a pupil.

What did Tait pay for taking him as a pupil?—He paid nothing. I gave him board and lodgings and paid him for confinements 5*s.* each case.

The PRESIDENT: You have a written agreement with Mr. Tait. Is it here?

Mr. HORRIDGE: It is not.

By Sir DYCE DUCKWORTH: I think Tait is about 22 years of age.

By Dr. LITTLE: He was employed to do easy midwifery. He went to the Maternity Hospital in Glasgow and saw 20 cases there and I took him to a good many cases.

By Dr. BRUCE: Has he ever used forceps?—Never.

By Sir HECTOR CAMERON: Did he represent himself to the authorities of the Glasgow Maternity Hospital as a registered medical student?—I believe he represented himself as a pupil of mine. It was after the engagement with me that he went to the Maternity.

Sir H. CAMERON: I think they must have misunderstood that he was a registered medical student or they would not have taken him. That is the rule.

Mr. ALEXANDER: I told Mr. Tait to say that he was a pupil. I told him that unless he could get a good deal of practice in midwifery I could not keep him.

By the PRESIDENT: He took no written credentials with him.

By Mr. HORSLEY: He had obtained Mr. Tait through a gentleman who sometimes acted as his locum-tenent, and who hearing of his difficulty had suggested that he should employ Mr. Tait, his (the locum-tenent's) brother-in-law.

Replying to further questions witness said that he did not say that Tait had seen 22 cases of labour in the Glasgow Hospital. Tait had been at the hospital for a fortnight.

By Dr. GLOVER: He had acquiesced in Tait's going to the Glasgow Hospital in order that he might attend to his (witness's) practice.

Some conversation took place with reference to the print that had misled Mr. Alexander, in the course of which the PRESIDENT expressed the view that it looked more like a cutting from the report of a debate than an advertisement, and Mr. HORSLEY remarked that it was not a copy of the Council's advertisement from either THE LANCET or the *British Medical Journal*.

The Council having deliberated on the case in private

The PRESIDENT, addressing Mr. Alexander, said: The Council have given very careful consideration to the charge that has been made against you and they have come to the conclusion that the charge has been proved to their satisfaction, and they have come to the further resolution that the further consideration of the charge against you be adjourned until the next session in November. The signification of that is this, that you will have to appear here next November and give satisfactory evidence to the Council that you have ceased to employ an unqualified assistant and that your conduct and character between this day and the day when you re-appear have been to the entire satisfaction of the Council.

Proceedings in Camerâ.

The remainder of the sitting was spent *in camerâ* dealing with reports from the Penal Cases Committee and the Special Finance Committee.

MONDAY, MAY 28TH.

The Council resumed work to-day, Sir WILLIAM TURNER being again in the chair.

The Prevention of Personation.

The first business was the adjourned consideration of the report by the Committee on the Prevention of Personation.

The Council having gone into committee of the whole Council,

Mr. HORSLEY, seconded by Dr. BRUCE, moved the adoption of the first recommendation of the committee which was in the following terms, viz.:—

That in all cases where application is made for registration on the Students Register or Medical or Dental Registers under exceptional circumstances the facts of the case shall be furnished in the form of a statutory declaration.

Sir DYCE DUCKWORTH said that this recommendation applied to students and he should like to know whether the hundreds of students who asked to be antedated would require to make a statutory declaration.

Dr. REID said that this appeared to him to be a very cumbrous arrangement and he thought the Council should not adopt it.

The REGISTRAR (Mr. ALLEN) said that if students were brought within the arrangement it would apply to a very large number of cases, and a very heavy responsibility would rest upon the registrars in determining what were exceptional circumstances.

Mr. TOMES said that exceptional cases would be cases which did not follow the usual office routine and such cases he understood were not very numerous.

The PRESIDENT took exception to the proposal to extend the arrangement to students. He thought that the Students Register was already sufficiently protected by the Students Registration Committee who satisfied themselves of the *bona fides* of the certificates. The applications to be antedated came for the most part from students who had received their preliminary training and passed their preliminary examinations abroad and he was afraid it would give them a somewhat painful impression if they were called upon to go before a commissioner for oaths and make a statutory declaration before commencing their professional studies in this country.

Mr. HORSLEY said that all the committee wished to do was to strengthen the hands of the Students Registration Committee.

Sir DYCE DUCKWORTH moved that the words "Students Register or" be deleted from the recommendation, and this was seconded by Dr. REID.

The Council by a large majority decided to strike out these words and the recommendation thus amended was passed.

Mr. HORSLEY moved the second recommendation which was in these terms, viz.:—

With the view to identification of applicants for registration all forms of application shall be filled up in the handwriting of the applicant and in all cases for restoration to the Registers the applicant shall furnish in addition a statutory declaration of the facts of his case as well as a certificate of identity.

Mr. HORSLEY explained that the only alteration proposed in the present state of affairs was that every applicant should be called upon to fill up the application form in his own handwriting.

The PRESIDENT suggested that the recommendation should be divided into two parts.

Mr. HORSLEY agreed to the limitation of his motion to the words, "With the view to identification of applicants for registration all forms of application shall be filled up in the handwriting of the applicant." The three registrars had, he said, issued a note on the proposals of the committee, and he should like to know from Mr. Allen whether he still objected to employing handwriting as a means of identification.

The REGISTRAR (Mr. ALLEN) said that the comparison of handwritings was very useful indeed as corroborative testimony but he failed to see how it could be used as the foundation of a system of registration. The great difficulty was that the Council had not one office but three offices and there was a great deal of cross-registration. For instance, many Scotch students registered ultimately in England. During 1899 there were 43 Scotch students—at any rate, students who obtained their qualifications entirely in Scotland who ultimately registered in England. In such cases there would be no means of comparing the handwriting of the student with the handwriting of the applicant for registration in the Medical Register.

Mr. HORSLEY said he did not understand what the Registrar meant by a foundation of the system of registration. At present the office had no means of identification and he thought the office should be grateful to the committee for the suggestion which they now made. The suggestion meant no trouble for the office; the only trouble was put upon the person seeking registration. The committee could not understand why there should be any hostility on the part of the registrar, and especially when they found that the Scotch registrar had been carrying out this very process all his life.

The REGISTRAR (Mr. ALLEN) disclaimed anything like a feeling to hostility to the proposals of the committee. On the contrary, he should heartily rejoice to receive any scheme which would render personation less possible. His objection to the scheme proposed by the committee was that it seemed to him to be unworkable. The Act said that if a man presented his diploma he was entitled to be registered, and it would be a serious thing to place upon the registrar the responsibility of refusing or deferring registration because he had a doubt in his mind as to the identification of the handwriting.

Mr. BROWN said that if these recommendations were passed the whole system of registration would have to be modified and regulations could be made by which the registrar would be relieved of this responsibility that he dreaded. It seemed to him that the present system opened the door to personation. He thought that if students

registered in Scotland as students and took their course of education in that country and afterwards applied for registration in England as practitioners they should be sent back to Scotland for the purpose of this latter registration.

The PRESIDENT: You have no power to do such a thing.

Mr. BROWN: We have power to make regulations.

The PRESIDENT: The Act says that a person is entitled to be registered on producing his diploma or diplomas to the registrar of the Branch Council for England, Scotland, or Ireland. If he goes to a Branch Council the registrar of that Branch Council must register him.

Mr. BROWN: Surely that does not demolish the necessity for making regulations as to registration. Let sufficient time be given for the registrars to communicate in order to verify the documents.

The PRESIDENT: The Act does not allow for that and you must proceed by the Act.

Dr. MCVAIL said he was clearly of opinion that the applicant should make the application in his own handwriting.

Mr. HORSLEY thought the Council had a perfect right to make regulations so long as they were reasonable.

The PRESIDENT said there was another point. He understood that various of the examining bodies were in the habit of sending to the registrar lists which contain the names and addresses of the persons who had passed a given examination and he should like to know what the procedure was with regard to these lists.

The REGISTRAR (Mr. ALLEN) said that these lists were without the handwriting of the candidates who had passed. Yet it was competent for the Registrar to register these names without any other application in relation thereto. He did not, however, remember a single case in which a man had been registered in this way.

Sir JOHN BATTY TUKE submitted that the recommendation of the committee was contrary to the Act of Parliament and referred the Council to Section 15 of the Act.

The PRESIDENT read this section, which bore out what Mr. Allen had said.

Mr. HORSLEY pointed out that it was purely permissive.

The PRESIDENT said that there seemed to him to be a doubt whether it would be lawful for the registrar to interpose this new condition as to the handwriting and suggested that the Council or the committee should take the opinion of the legal advisers.

Mr. HORSLEY said that if there was any difference of opinion as to the interpretation of the Act it would be well to have expert advice.

As the outcome of some further discussion it was decided to refer the report back to the committee for further consideration with power to take legal opinion with regard to the legal questions raised in their report and its recommendations.

The Council then resumed and adopted the decisions of the committee of the whole Council. The whole subject therefore remains in abeyance.

Foreign Practitioners in Italy.

The Council proceeded to the consideration of communications, &c., from the Privy Council in regard to the practice of medicine in Italy by foreigners and the application of Part II. of the Medical Act of 1886 to Italy. The communications and documents read were as follows:—

Privy Council Office, London, S.W.,
April 6th, 1900.

SIR,—Referring to the letter from this office of the 29th instant I am directed by the Lord President of the Council to transmit to you, to be laid before the General Medical Council, the accompanying copy of a translation of the Draft Law, referred to in that letter, respecting the position of foreign doctors in Italy.

I am, Sir, your obedient servant,
J. H. HARRISON.

The Registrar of the General Medical Council.

[*Copy. Translation.*]

DRAFT LAW.

SOLE ARTICLE.

For the last paragraph of Article 23 of the Law on Public Health of December 22, 1888, No. 5849, is substituted the following:—

"From the present prohibition are excluded foreign doctors and surgeons expressly called in for special cases, and in the exclusive service of a particular person or family, and those who, holding the diploma of some university or school of medicine abroad, practise their profession among foreigners only; in all cases, however, with the reserve that these latter belong to States which concede the same (*equale*) treatment to Italian doctors and surgeons."

Privy Council Office, London, S.W.,
April 25th, 1900.

SIR,—I am directed by the Lord President of the Council to transmit to you the accompanying copy of a despatch from Her Majesty's Ambassador at Rome, and of its enclosure, on the subject of medical reciprocity with Italy; and I am to request that in laying these documents before the General Medical Council you will inform that body that Her Majesty's Government will, at the proper time, recommend Her Majesty to apply Part II. of the Medical Act to Italy.

A copy of the draft of a proposed order for that purpose is enclosed herewith.

I am, Sir, your obedient servant,
A. W. FITZROY.

The Registrar of the General Medical Council.

(*a*) DESPATCH FROM HER MAJESTY'S AMBASSADOR AT ROME.

Rome, April 14th, 1900.

MY LORD,—On the receipt of your lordship's despatch No. 26, of the 6th instant, I communicated with the deputation which has been charged by the English medical men resident in Italy to look after their interests; and I have now the honour to enclose a copy of a letter which they have addressed to me, declaring that they consider that the privileges enjoyed by them in Italy are just and reasonable, and would therefore justify the application to Italy of Part II. of the British Medical Act of 1886, so soon as these privileges have been confirmed by the Italian law now under consideration on the basis of reciprocity.

I have to request your lordship to communicate this letter to the President of the Privy Council and to ascertain whether he would be prepared, when the occasion arises, to act upon the recommendation thus made and admit Italian doctors in Great Britain to reciprocity. If this were done the position of British medical men in this country would be secure so far as the new Italian law is concerned.

I have, &c.,
(Signed) CURRIE.

The Marquess of Salisbury, K.G., &c., &c., &c.

(*b*) STATEMENT BY A DEPUTATION OF MEDICAL PRACTITIONERS AT ROME TO HER MAJESTY'S AMBASSADOR.

Rome, April 12th, 1900.

MY LORD,—When we, as a deputation representing the English medical men practising in Italy, waited upon your excellency yesterday, you communicated to us that, in the opinion of the President of the Privy Council, the moment appears favourable for the application of Part II. of the Medical Act to Italy.

As this can only be done "if, in the opinion of Her Majesty, Italy affords the registered practitioners of the United Kingdom such privileges of practising in the said country as to Her Majesty may seem just," the deputation beg to draw prominent attention to the fact that they are unanimous in affirming that, not only in their own interests and in those of the other English medical men at the present time in practice in Italy, but also in the interests of their fellow-countrymen who may in future years elect to practise in Italy, they consider that just and reasonable privileges are afforded to them by Italy under the Italian law that allows them to practise amongst foreigners.

The deputation would further add that they have no desire to practise among Italian subjects, and that they would consider it a great hardship, not only to themselves and to those whose interests they represent, but also to those Englishmen who may at any future time desire to practise in Italy, should the English Government refuse to grant reciprocity under the only terms that the Italian law can render it acceptable to the Italians.

In granting the full measure of medical reciprocity to the Italians we suppose that it would be fully understood that the reciprocity granted should only continue in force as long as the Italian law granting us our present privileges was not revoked.

The deputation would respectfully urge on your excellency that though they beg that immediate action should be taken with regard to the granting of reciprocity of medical practice to Italy, it would be advisable to delay the publication of the measure until the draft Bill now before the Italian Parliament has passed into law.

We remain, &c.,
(Signed) T. EDMONSTON CHARLES.
JOHN J. EYRE.
G. SANDISON BROCK.

His Excellency Lord Currie, &c., &c., &c.

(*c*) DRAFT OF A PROPOSED ORDER IN COUNCIL.

At the Court at
The day of
Present:

The Queen's Most Excellent Majesty.

Whereas by the Medical Act, 1886, it is provided (amongst other things) that Her Majesty may from time to time by Order in Council declare that the second Part of the said Act shall be deemed, on and after a day to be named in such order, to apply to any foreign country which, in Her Majesty's opinion, affords to the medical practitioners of the United Kingdom such privileges of practising in the said foreign country as to Her Majesty may seem just, and from and after the day named in such Order in Council such foreign country shall be deemed to be a foreign country to which the said Act applies within the meaning of the second part thereof, and that until such order in Council has been made in respect of any foreign country the said second part of the said Act shall not be deemed to apply to any such country.

And whereas the Kingdom of Italy affords, in Her Majesty's opinion, to the registered medical practitioners of the United Kingdom such privileges of practising in Italy as to Her Majesty seems just.

Now, therefore, Her Majesty doth hereby, by and with the advice of Her Privy Council, order, direct, and declare that, on and after the day of , in the year of our Lord one thousand nine hundred, the Second Part of the Medical Act, 1886, shall be deemed to apply to Italy.

The PRESIDENT said that in the remarks he made at the opening of the session he called attention to the question of reciprocity of medical practice between Italy and the United Kingdom and he practically gave an epitome of what had just been read. The Council now had all the facts before them and it rested with the members to say whether they wished to express an opinion. It seemed to him that the question of issuing an Order in Council lay entirely with the Privy Council, and according to the terms of the Act the Council had really nothing to do with the matter.

What they had to do with was what would arise at a future stage supposing an Order in Council were issued. It would then have to be determined whether the degrees to be registered furnished a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery, and whether the applicants were of good character and were by law entitled to practise in the foreign country whose degrees they possess.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, the communications and documents were entered on the minutes.

Mr. HORSLEY said that the Privy Council were proposing to give away all the privileges of practice in this kingdom to Italians, while Italians were only offering to British practitioners the privilege of practising among foreigners in Italy. That seemed so inequitable that it should not be passed over without some representation to the Privy Council. The General Medical Council had been advised last year that it was perfectly impossible to restrict the practice of anybody registered under Part II. of the Act of 1886; in other words, any person coming to this country would be entitled to practise among all classes of the community, whereas our countrymen in Italy would not be allowed to practise except amongst foreigners. The General Medical Council had never voted in favour of the application of the part of the Act in question, and the Council should approach the Lord President of the Privy Council and point out to him the inequity of the proposition. He wished to move to that effect.

The PRESIDENT asked Mr. Horsley to put his motion in writing.

Dr. MCVAIL said that while Mr. Horsley was doing so he would like to ask whether the Privy Council expected the General Medical Council to make any representation or observation on this subject, because in the letter of April 27th there was not a single word which indicated that the Privy Council asked the advice of the General Medical Council on the matter.

The PRESIDENT: That is so.

Dr. MCVAIL thought that then they should not offer any. The documents sent to them were put before them simply as an intimation and warning that when Part II. of the Act of 1886 was put in operation the General Medical Council would have to help in determining the value of Italian qualifications. It did not seem to him at all advisable for the General Medical Council to interfere.

The PRESIDENT: I have no information that the Privy Council has any mind that we should take any action at this stage.

Dr. MCVAIL: Quite so.

Mr. HORSLEY submitted the following as the motion he proposed:—

That it be respectfully represented to the Privy Council that the application of Part II. of the Medical Act, 1886, to Italy at present would not provide a basis of equal reciprocity of practice between the United Kingdom and Italy as suggested in the despatch of Her Majesty's Ambassador at Rome of April 14th, 1900.

Sir JOHN BATTY TUKE seconded this motion. He considered the matter the most important and serious question in connexion with medical registration that had ever come before the Council. It was not for to-day or to-morrow but for all time. No such action as that proposed on the part of the Government could ever be rescinded, and the possible consequence was that they would have a large number of foreign practitioners coming into Great Britain and Ireland over whom they had no possible control. He did not agree with his colleague who cried out "No, no." He claimed as much right to anticipate as that member did, and he supported his contention on this ground—Italy was a poor country, England was a rich one; as soon as the Italian knew that he could come to this country and have the full privilege of practising here they might look for a large influx of Italian practitioners over whom the Council had no control. He did not see that they should run the risk of having a gross injustice done to the profession all through the country and of having a serious complication of all their arrangements brought about simply because of the 35 or 40 British practitioners in Italy in whose interest the proposition was made, particularly as he understood that it was quite easy for a British practitioner in Italy to obtain from licensing bodies in Italy the qualification that would enable him to practise freely in that country. He hoped with Mr. Horsley that if the Act were applied its application would not be made retrospective.

Mr. TOMES said that the matter had become active in Italy only since a deputation from an association formed in Italy somewhat on the lines of the British Medical Association had converted to their views the Minister of Public Instruction, Professor Baccelli. But within the last month the Italian Chamber had been dissolved and it was possible that there might be a new Ministry. Nobody, of course, knew what that Ministry would do, if appointed, but the thing was stopped for the time being and very likely it would never come on again. He did not think the Privy Council would listen to anything from the General Medical Council on the matter of reciprocity.

Mr. BROWN did not see how it would be out of order to state their opinion to the Privy Council. He hoped the General Medical Council would agree to represent that they should give to foreigners only what they gave to them. He protested against the introduction of anything that would result in the influx of a large number of foreign practitioners into this country and he was sorry that Dr. McVail had somewhat changed his opinion on this occasion. They all knew how vigorous he was not long ago in protesting that such a measure as the Privy Council now contemplated taking would open up the medical practice of this country, not only to Italians, but to practitioners from all parts of the continent of Europe and of America also.

Dr. PETTIGREW, in supporting the motion, said that he quite felt the force of what Sir John Batty Tuke had said, that they should not upset the arrangements of this country for the sake of a small number of their brethren practising in a foreign land, but if they could arrange for mutual privileges he thought that would be a very good thing.

Dr. MCVAIL hoped it would be remembered that at former meetings they had had communications from the Privy Council which amounted to asking the opinion of the General Medical Council on the question of reciprocity and they had sent certain replies. The Privy Council did not need to ask their advice, for Section 17 of the Act of 1886 provided for the passing of an Order in Council. Now that the Privy Council announced a decision were they to go over the whole ground again and endeavour in some way to fight the Privy Council? If the General Medical Council thought that the Privy Council were taking a step that they should not take the only thing they could do was to petition Parliament. He entirely assented to the words of the motion, but he thought that the Council should not take any steps in the matter at all.

Dr. MACALISTER agreed very strongly with Dr. McVail that they should not go again to the Privy Council in regard to this matter. If they did go he believed that they would only get a snub, which they would rather deserve than otherwise. The motion would do no good and might do not only the Council but the cause great harm.

Mr. TEALE said he did feel that instead of strengthening the Council's position by making any representation they would weaken their position for making representation at some future time.

Sir CHRISTOPHER NIXON thought that this was a case in which the Council might have to appeal to Parliament in protection of the rights which Parliament had conferred upon it in the matter of the education of practitioners in this country.

Dr. GLOVER agreed with Sir John Batty Tuke that this question was one of the most important that had ever come before the Council. He did not rise to offer opposition to the motion—he was going to support it, but he was also going to propose an addition to it. The last course which had been recommended to the Council was that they should appeal to Parliament against the Privy Council. He had a very high opinion about the General Medical Council—the most interesting body in the profession—but when they asked him to be a party to set up the General Medical Council against the Privy Council and appeal to Parliament he hesitated to adopt such an audacious line of attack. But had they come to the point when that was necessary? Were they to assume that the Privy Council were not as anxious as the General Medical Council to secure reciprocity of practice He did not think so. He thought that the Privy Council were on the side of the General Medical Council and the side of the profession and he proposed to add to the motion these words:—

The Council would urge upon Her Majesty's Government to use their influence with the Italian Government in promoting legislation on this subject to make reciprocity complete in Italian law as well as English law.

Were they to sit still and let the legislation in contemplation be completed? If this legislation passed they would never have another opportunity to speak on the subject. This was the time when the principle of their procedure ought to be stated, the time for them to make any suggestion which they might have to make on the subject, and he thought that they would be perfectly within their rights and would also commend themselves to all reasonable men if they said that while they acquiesced in the step that was going to be taken let them still see that the proposed legislation was complete. That, he thought, would be perfectly reasonable, and if they voted as they felt he did not think that they would get a snub from the Privy Council if they said that they did.

After some remarks by Sir WILLIAM GAIRDNER,

Sir DYCE DUCKWORTH thought that it was not only British practitioners who were involved, but thousands of their fellow countrymen and country-women who resorted to Italy and would not consult Italian practitioners but wanted to be attended by English medical men. He thought that the Council should take care to see that as far as possible they should be able to obtain such attendance.

The PRESIDENT called upon Mr. Horsley to reply on the debate.

Dr. MCVAIL said he wished to make a proposal before this subject was concluded. He moved as an amendment:—

That as the Privy Council has not asked for the opinion of the Medical Council on the draft of the proposed Order in Council the Medical Council do not deem it expedient to offer any opinion.

Dr. HERON WATSON seconded.

Mr. HORSLEY asked the Council not to accept this amendment. He contended that this was the first time that the General Medical Council had had the opportunity to make up their mind on the great subject now before them. Was it quite certain that the Privy Council did not want to hear anything from the General Medical Council? He maintained that their letter was more than an intimation: it was also an invitation to the General Medical Council to consider their communications and, of course, express an opinion on them.

Dr. MACALISTER intended to support the amendment. He thought it suggested the wiser course.

Dr. LITTLE urged that if the General Medical Council did not take action now they would not be heard at all.

Sir JOHN BATTY TUKE regretted that Dr. McVail had put his amendment forward, for it was playing into the hands of the section of the Council who desired to carry this scheme through in spite of all and every consideration of policy and justice. If the amendment were carried their mouths would be shut and great injury would be done to the profession. He had listened to hear reasons in favour of the amendment; he had heard none. Nothing had been put forward except this, that it was in the interest of some hundreds of people in Italy. The wants of these could be easily supplied if the 35 British practitioners in that country would go and take the last qualifying examination in some Italian university. That was a certain, easy scheme, much easier than the upsetting of the whole arrangements of this country.

The Council divided. They rejected the amendment by 15 votes to 7, five members declining to vote and three being absent. The motion was then carried by 15 votes to 10, two members declining to vote.

Dr. GLOVER'S proposed addition was then put in the following form:—

That the Council would urge Her Majesty's Government to use its influence with the Italian Government in promoting legislation on this subject so as to secure for British practitioners full privileges of practice in Italy such as would be conceded by the law of this country to Italian practitioners.

Having rejected this proposal by 14 votes to 6 the Council adjourned.

TUESDAY, MAY 29TH.

The Council resumed to-day, Sir WILLIAM TURNER presiding.

Proceedings in Camerâ.

The PRESIDENT said that he had an important communication to make to the Council, but it was necessary that it should be made in private and consequently he moved that the Council go into *camerâ* for this purpose.

The Council sat *in camerâ* for two hours.

Financial Aid to the Irish Branch Council.

The PRESIDENT, when the public were admitted, announced that the following resolution had been come to by the Council, viz.:—

That having regard to the duties performed by the Irish Branch Council and to the funds at its disposal it is necessary for the purpose of the due execution of the Medical Acts that the General Council should, as part of its expenses, contribute to the income of the Irish Branch Council the sum of £500 in aid of the expenses of the Branch Council for the year 1900.

The Length of the Session.

Mr. TEALE asked the President what likelihood there was of the work of the session being brought to a termination within a reasonable time.

The PRESIDENT said he wished he were in a position to give a definite answer to this question. He had hoped that they might finish to-morrow, but he quite recognised that the important communication which he had had to make to the Council to-day—which was quite unexpected and was not contemplated in the framing of the Council's programme of business—had rightly taken up a considerable part of to-day's time. He hoped, however, that the Council would make up its mind to finish on Thursday.

The Memorandum on Reciprocity.

Mr. BRYANT, seconded by Sir DYCE DUCKWORTH, moved:

That the memorandum upon reciprocity of medical practice in relation with foreign countries as revised by the Executive Committee be received and entered as an appendix to the minutes and be approved for issue as one of the Council's publications.

The memorandum contains a statement prepared on August 10th, 1899, by Mr. Muir Mackenzie on the instructions of the Council and adopted by the Council on Dec. 2nd, 1899, as expressing the present state of the law of this country in regard to reciprocity of medical practice.

Mr. TOMES suggested that certain corrections with regard to Italy should be made in the memorandum before it was finally approved. In some respects the statement of circumstances was not quite up to date, and while nothing could be described as absolutely incorrect there were passages calculated to convey a wrong impression.

The PRESIDENT said that if Mr. Tomes had any corrections to suggest he might lay them before the Executive Committee and they would be attended to, and other members might, perhaps, adopt the same course and thus simplify matters.

Mr. HORSLEY said there was a fundamental correction which he thought was necessary. This was in effect a legal document and he thought the Executive Committee had made a mistake in having it translated into a foreign language. He was strongly of opinion that the memorandum should be issued without the French translation and he moved as an amendment that it be omitted.

Dr. MCVAIL, in seconding this amendment, said it was impossible for anyone to be quite certain that he had translated accurately a legal document of this character.

Dr. MACALISTER said that the suggestion that there should be a French translation was approved by the Council as a body. As the object of the memorandum was to provide in convenient form an answer to the inquiries frequently received from foreign countries as to the state of our law he thought it most desirable that it should be translated into the language of diplomacy. He might explain that the translation had been revised by a French notary as well as by Mr. Muir Mackenzie.

Mr. HORSLEY said that the Executive Committee had not been instructed by the Council to have a translation prepared.

The PRESIDENT said that the impression made upon his mind by the conversation which took place on this question in December was that the feeling of the Council was that the statement should be translated and he was responsible for moving in the matter in the Executive Committee.

Dr. PAYNE thought that the translation should be retained as likely to contribute to the usefulness of the statement.

The amendment received the support of only two members, Mr. Horsley and Dr. McVail, and the motion of Mr. Bryant being put to the Council was carried.

The PRESIDENT said he thought that it ought to be stated that the revision of the memorandum as to the law in foreign countries had been carried out after communication with the Foreign Office.

The Dental Board of Victoria.

Mr. BRYANT brought up a report from the Dental Education and Examination Committee on an application from the Dental Board of Victoria. The application was for the

recognition of the diploma of the board as entitling its holder to registration in this country, and the committee, after explaining the regulations for the examinations, said they could not advise the Council to accede to the application.

On the motion of Mr. BRYANT, seconded by Mr. TOMES, it was agreed :—

That the Council is unable to recognise the diploma of the Dental Board of Victoria as entitling its holder to registration in the Dentists Register of this country.

The Royal College of Dental Surgeons, Ontario.

Mr. BRYANT brought up the following report on an application from the Royal College of Dental Surgeons, Ontario, viz. :—

The proposition of the Royal College of Dental Surgeons, Ontario—contained in a letter referred to the committee by the Executive Committee on Feb. 26th, 1900—is that a measure of reciprocity in the matter of dental degrees should be instituted between that province and Great Britain. In their opinion it would be more desirable that the respective authorities should establish facilities for admission of persons holding the degrees of the one to the examinations held by the other, than that privileges of registration without examination should be accorded. They further suggest that they make application to the General Medical Council rather than to the several British licensing bodies, because they suppose that it may be necessary that the Council should authorise the bodies to grant this recognition.

Although the matter is one which, perhaps, falls within the discretion of the licensing bodies, such expression of opinion from the General Medical Council may be of use as tending to uniformity in their action. The scheme proposed is that on either side the preliminary examination, apprenticeship and curriculum of the other, be accepted, but that prior to admission to examination an attendance during the last year be required in the country in which the candidate seeks examination.

This does not apply to students, but only to those who have already obtained their qualification in their own country. It therefore becomes desirable to examine into the nature of the curriculum and, so far as possible, of the examinations of the Ontario College.

So far as the special dental side of their curriculum is concerned it appears to be sufficient and to be, roughly speaking, the equivalent of our own. Unfortunately, as much cannot be said of the general side, in which there are some weak points.

Minute anatomy of the head and neck is to be taught at the Royal College of Dental Surgeons instead of at a recognised medical school, and nothing is explicitly said about dissections.

Similarly the lectures on physiology, on medicine, and on surgery are to be delivered at the Dental College, so that the student need never go near a medical school or general hospital, and clinical work would amount to next to nothing—at most the seeing of a few selected cases brought for the purpose.

Had the request submitted been for registration this would have sufficed to ensure its refusal, but as practically an extra year of study in this country is proposed the real question is whether this year will sufficiently supplement the weak points in their curriculum. The principle which has heretofore been adopted in the case of foreign graduates applying for admission to examination by at least one of our licensing bodies has been that the curriculum gone through shall all be accepted if of a *bonâ-fide* character, but that any parts in which it falls short of our own shall be made up by attendance on the subjects in question here; the proposition submitted differs from this existing practice in that attendance upon the courses required of a second year's British student should be accepted in lieu of a detailed filling up of deficient attendance. It appears hardly to constitute a full equivalent; at the same time, it is only examination which is sought, and no one will be found to adopt it by way of getting an easier and shorter curriculum, as it involves attendance upon courses for an additional year after qualification elsewhere. The curriculum of the Ontario College only takes three and a half years as against our four, but the additional year attended here would bring up the total to four and a half.

This being the case it becomes a question whether, whilst one year is required of the Canadian graduate for admission to examination here, bringing his total curriculum up to four and a half years, a somewhat shorter period—namely, a half year—should suffice in the case of a British graduate applying for examination in Ontario, which would bring his total also up to four and a half years.

So far as it is possible to judge, the preliminary examination required in Ontario appears to be sufficient and the questions set in the professional examinations are of an appropriate nature and are sufficiently searching. Some subjects, indeed, are made the subjects of special examination which are not so treated here by all of our boards—e.g., materia medica and jurisprudence as applied to dental cases.

Upon the whole the diploma of Ontario appears to be of a high character, and should the several British licensing bodies, with whom the decision must rest, take a favourable view of the application, and consider that the requirement of general equivalence to their own curricula is adequately secured by the means proposed, your committee think that the General Medical Council need offer no objection.

The subjects of the several professional examinations being somewhat differently distributed in the two countries it would be a question with the licensing bodies whether the final examination here should alone be required.

Your committee recognises the desirability of acceding if possible to a reasonable proposition from one of our colonies.

On the motion of Mr. BRYANT, seconded by Mr. TOMES, the Council resolved to forward a copy of the report of the committee to the dental licensing bodies for their information.

Dentists Act for Western Australia.

Mr. BRYANT reported that the committee had received from the Executive Committee a copy of the Dentists Amendment Act, No. 23, of Western Australia, transmitted by the Secretary of State for the Colonies. The committee were pleased to say that the Act seemed to be quite satisfactory.

The Case of Mr. E. L. Oldfield.

The Council dealt with an application from Mr. Edwin Lenthall Oldfield for registration as a colonial dentist under Sections 8 and 10 of the Dentists Act of 1878. Applicant's letter stated that he was of British parentage and was born in Hobart Town, Tasmania. Since October, 1879, when his apprenticeship with a dental practitioner in the city of Melbourne, Victoria, Australia, terminated, he had continuously practised as a dentist in or near Melbourne, and at the date of his application, April 10th, 1900, was still in practice. When the Victorian Dentists Act, 1887, came into operation he was duly registered as a dentist and received a certificate which entitled him to practise as a dental practitioner in the colony of Victoria. With a view to improving dental education in the colony he founded the Dental College and Oral Hospital of Victoria in 1895. This hospital was for the destitute and was as far as possible carried on in the same educational system as the Dental Hospital of London, Leicester-square. This was the first institution of its kind in the colony and it had been incorporated by the Victorian Government under the Charities Act, 1890. He had been for three years a member of, and an examiner on, the Dental Board and students who had passed the examination held by the board had been admitted by the General Medical Council to the Dentists Register. He had been for three years honorary dentist to the Melbourne Hospital, which was attended by the medical students at Melbourne University. As a practising dentist he had always endeavoured to carry on his business in a professional manner and he had never advertised. His reasons for desiring to be registered were that he should be able to proceed to the L.D.S. Ireland *sine curriculo*, which it was his intention to do. Students articled to him would (other requirements being fulfilled) then have the advantage of such articles on proceeding to England to complete their dental education. He did not desire to be registered for the purposes of practice but for the sake of the advantage that such registration would give him in his endeavours to improve dental education in the colony, upon which work he had been engaged since and prior to the Colonial Act of 1887.

Mr. TOMES said that Mr. Oldfield's application had been made before the Dental Education and Examination Committee came to the conclusion not to recognise the diplomas of the Dental Board of Victoria. But Mr. Oldfield came before the Council as a gentleman who had deserved very well of his profession. Mr. Oldfield had done a very great deal for the advancement of dental surgery in the colony in which he lived, and the falling off in the standard of the education given under the Victorian Dental Board which had recently taken place was not due to him. It had taken place since he left on a visit to this country, and when he (Mr. Tomes) saw Mr. Oldfield lately he had promised that he would use his best efforts to bring the Victorian dental curriculum up to the British standard. Mr. Oldfield was a man to whom one would extend consideration—nay, special consideration.

Mr. TOMES was proceeding to refer to some documents and matters that the Council had considered *in camerâ* and it was deemed advisable that the further proceedings in the case should be in private. Strangers accordingly withdrew. Three-quarters of an hour later, on their re-admission,

The PRESIDENT said: I have to intimate that the Registrar has been instructed to enter the name of Mr. Edwin Lenthall Oldfield in the Colonial List of the Dentists Register.

Medical Aid Associations.

The next business was the reception of a report from the Medical Aid Associations Committee respecting references made to it by the Executive Committee on Nov. 27th, 1899, as to communications in regard to medical contracts received by the Executive Committee on Feb. 26th, 1900, and directed to be transmitted to the General Council.

Dr. GLOVER read the report, which was as follows :—

The Medical Aids Committee met on Tuesday, Dec. 5th, and considered several communications referred to them by the Executive Committee at its meeting on Nov. 27th on the subject of medical contracts in which the question of canvassing arises. These communications were, respectively, from Messrs. Graham and Shepherd, joint secretaries of the County of Durham Medical Union; from L. Cooke, Esq., honorary secretary of the Wigan and District Medical Guild, Wigan; and from the Ashton-under-Lyne Medical Society. The

Medical Aids Committee suggest that these gentlemen should be informed that in any given case where the Medical Council is desired to take action facts and evidence of the implication of the particular registered practitioner complained of will have to be furnished by the complainants (in a statement attested by affidavit).—J. G. GLOVER, Chairman, Dec. 5th, 1899.

On the motion of Dr. GLOVER, seconded by Dr. BRUCE, the report was received, entered on the minutes, and approved.

Dr. GLOVER next read the following as an interim report which the same committee desired to present to the Council:—

On Tuesday, May 22nd, the Medical Aid Associations Committee of the General Medical Council held a conference with four members of a committee of the Council of the British Medical Association on the subject of the formation of a conjoint board for the promotion of a better understanding between the medical profession and the friendly societies. Sir William Turner presided and the following gentlemen represented the committee of the Council of the British Medical Association: Dr. F. M. Pope, Leicester; Mr. C. H. W. Parkinson, Wimborne; Dr. Dawson Williams; and Mr. Andrew Clark.

After a full discussion of the many points of difficulty in establishing a Conciliation Board, the deputation from the British Medical Association Council expressed themselves as having got much light on the subject, and stated that they would report to their Council the result of this meeting. The hope was expressed that at the forthcoming meeting of the Association in August the Association will be able to report its definite conclusions on this important subject to the General Medical Council.

J. G. GLOVER, Chairman.

On the motion of Dr. GLOVER, seconded by Dr. BRUCE, this report was received and entered on the minutes.

The Council adjourned.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the Congregation on May 24th the following were admitted to medical degrees:—

Degree of Doctor of Medicine.—C. P. White, Sidney.

Degree of Bachelor of Medicine.—W. M. Fletcher, H. M. Harwood, W. H. Maxwell, and D. P. Watson, Trinity; N. G. Bennett, St. John's; B. J. Collingwood and J. C. A. Rigby, Caius; and A. Killick, Downing.

Degree of Bachelor of Surgery.—O. F. F. Grünbaum, W. Norbury, and G. R. Slade, Trinity; J. C. Matthews, St. John's; A. E. Bodington, B. J. Collingwood, J. C. A. Rigby, and A. Whitmore, Caius; and A. Killick, Downing.

Mr. F. G. Parsons, F.R.C.S. Eng., has been appointed an additional examiner for the Second M.B. examination this term.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College:—

Mr. J. H. Conway, Mr. F. C. Crawley, Miss S. Gray, Mr. K. L. G. Gunn, Mr. S. H. Law, Mr. M. J. Madden, Mr. J. F. Mannix, Mr. L. R. More-O'Ferrall, Mr. M. O'Sullivan, and Mr. W. G. T. Posnett.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Wilhelm Zinn, son of the well-known alienist Dr. August Zinn, has been given charge of the Internal Department of the Bethany Hospital.—*Cracow:* Dr. Ignaz Lemberger has been recognised as *privat-docent* of the Pharmacognosis and Microscopy of Food Stuffs.—*Rome:* It having been proposed to establish a clinical professorship of Urinary Diseases, Professor Posner of Berlin has been asked if he would accept it. This, however, he is unwilling to do.

DR. J. L. JONES was at the last meeting of the Melton Mowbray Board of Guardians appointed medical officer and public vaccinator for the parish of Wymondham.

THE NEW INFIRMARY, HIGHGATE-HILL.—The formal opening by the Duke and Duchess of York of this new parochial infirmary, erected at a cost of £200,000, has been fixed for July 16th.

MUNIFICENT GIFT.—Mr. William W. Astor of Cliveden has contributed unconditionally a donation of £10,000 to the Maidenhead Cottage Hospital on his son attaining his majority, and at a meeting of the Hospital Committee on May 25th the institution was declared free to all patients.

APPRECIATION OF MEDICAL SERVICES.—On May 25th the Sanitary Committee of the Hull Corporation awarded a gift of £105 and an increase of salary of £100 per annum to Mr. John W. Mason, M.B., D.P.H. Aberd., the city medical officer of health, for services which he rendered the city during the recent epidemic of small-pox. Gifts at the same time were awarded to every member of the staff employed at the small-pox hospitals varying from one to 50 guineas.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MAY 24TH.

The Medical Allowance of Volunteer Adjutants.

LIEUTENANT-COLONEL PRYCE-JONES asked the Under Secretary of State for War if he would explain how the medical allowance of 2*d.* each per week to an adjutant of auxiliary forces for himself, wife, and servant was arrived at, seeing that an ordinary medical practitioner would charge about 10*s.* per visit; and, seeing that an allowance of 1*s.* per diem had been found insufficient for providing himself with a servant, and having regard to the fact that the present rate of wages for a groom was about 3*s.* per diem, whether he would consider the advisability of increasing the allowance.—Mr. WYNDHAM replied: These allowances are given in aid of the expenses of medical attendance and of finding civilian servants. The State does not in either case undertake to indemnify the officer for the full expenditure.

Boric Preservatives in Cream.

Mr. LAWRENCE asked the President of the Local Government Board whether he was aware that, while a committee of his department was inquiring as to the use of borax or boric acid as a preservative in cream tradesmen in Liverpool were being frequently prosecuted for its use, and whether until such departmental committee had reported he would use his influence with the local authorities to stop such prosecutions.—Mr. CHAPLIN replied that he was aware that there had been prosecutions of this kind, though his attention had not been drawn to the particular cases referred to by his hon. friend. The Local Government Board had no power to restrain local authorities in the exercise of their powers under the Sale of Food and Drugs Acts, and it did not appear to him that they could intervene in the manner suggested in the question.

Famine and Cholera in India.

Lord GEORGE HAMILTON, replying to a question on this subject, said: There is as yet no material change in the famine situation. Showers have done good in some parts, but the monsoon rains are not yet due. For the past few months a weekly telegram from the Viceroy giving the numbers on relief and the famine outlook has been published in the newspapers. According to this week's telegram the total numbers on relief were 5,607,000. These figures would have been higher but for the cholera which has attacked some of the relief camps in Bombay and in Rajputana, and caused the workers to be dispersed. As yet, however, I have received no detailed reports on this subject. I propose to lay on the table papers showing the spread of the famine during the past six months and the steps taken to relieve distress caused thereby.

Medical Officers in Ireland.

When the House was in Committee of Supply on the vote for the salaries and expenses of the Local Government Board in Ireland, Mr. JOHN DILLON argued that the Board had endeavoured to over-ride the local authorities, and stated by way of illustration that they had issued a ukase to the Ballymena Board of Guardians directing them to allow their medical officers a month's holiday and to pay a substitute, but the Ballymena Board of Guardians appealed against the order, and the Chief Baron decided that it should be quashed, as the Local Government Board had exceeded their powers in the matter.—Mr. GERALD BALFOUR, in reply, said that one of the general rules laid down by the Local Government Board was that each medical officer should be allowed an annual vacation not exceeding four weeks, and that the guardians should pay the medical practitioner temporarily employed such reasonable remuneration for his services as the Local Government Board should approve or direct. He remembered perfectly well stating across the floor of the House last year that the Local Government Board had laid down an order of this kind and that the statement was received from the benches opposite with something like approval. He admitted that the Local Government Board, to the extent of the decision of the courts, made a mistake, but he did not understand that the judges laid it down that the Board had no power to enact a rule or suggested for a moment that such a rule would not be a proper one. Accordingly the matter came down to this, that the Local Government Board did not draft a rule in such a way as to give them the full power they desired to have. The best way to cure any mistake that might have been made would be to alter the rule and no doubt that would be done in due course.

FRIDAY, MAY 25TH.

Carburetted Water-Gas.

Mr. STEADMAN asked the President of the Board of Trade whether there was any legislative regulation or restriction in regard to the use of, and supply by the London gas companies of, carburetted water-gas; whether he was aware that in 1898 a departmental committee appointed by the Board of Trade recommended that the admixture of water-gas with ordinary coal gas should be limited to 12 per cent. and that by a Parliamentary return in the same year it was shown that some of the London companies were even then using considerably over double that proportion; and whether, in view of the fact that there was reason to believe the amount had since been largely increased and that water-gas was four times as poisonous as coal-gas and could not be detected by its odour, he would consider the advisability of taking steps to initiate legislation on the subject, as had long been urged by medical and sanitary authorities and by some means acquaint the public with the fact that they were being supplied with a poisonous article in the name of ordinary gas, so that due care might be taken in its general use.—Mr. RITCHIE replied: The hon. Member must not assume that I admit to the full the accuracy of all the statements contained in the question, some of which might be made the

subject of argument and controversy, but the answer to the first paragraph is in the negative, and with regard to legislation I can merely say that if undertaken it should be general in its character and not confined to London. In any general legislation my right hon. friends the Home Secretary and the President of the Local Government Board would probably have a larger interest than the Board of Trade and I cannot make any promise on the subject at this period of the session.

MONDAY, MAY 28TH.

Proposed Vaccination Return.

Mr. CHANNING asked the President of the Local Government Board whether he had received and considered the resolution of the council of the Association of Poor-law Unions in support of a return of the expenditure of boards of guardians in respect of vaccination in the years immediately preceding and following the commencement of the Vaccination Act, 1898, and whether he would consent to the motion for such a return in the form now on the paper or in some other form.—Mr. CHAPLIN replied: I have caused a communication to be addressed to the Poor-law Unions Association in reply to the resolution referred to. For the reasons stated in the communication it does not appear to me to be expedient that the return should be ordered.

Fatal Accidents in the Railway Service.

Mr. CHANNING asked the President of the Board of Trade whether he could state the total number of coroners' inquests held upon railway servants killed by accidents in which the movement of vehicles used exclusively on railways was concerned in the years 1895 to 1899 inclusive: in what number of such inquests the coroner had applied to the Board of Trade, under Section 8 of the Regulation of Railways Act, 1881, for a representative of the Board to act as assessor; and whether in any other, and if so in how many, such inquests the Board of Trade had been represented by any of its officials to watch or take part in the proceedings.—Mr. RITCHIE replied: Section 8 of the Regulation of Railways Act, 1871, does not apply to Scotland or Ireland. The total number of fatal accidents in which the movement of vehicles used exclusively on railways was concerned that occurred in the five years' period 1895 to 1899 to railway servants and contractors' servants employed on railways in England and Wales was 1869. An inquest was, no doubt, held in each case. In 15 of these cases application was made by the coroner for a representative of the Board of Trade to act as assessor, and in 12 cases such appointment was made. In the remaining case a sub-inspector was directed to attend the inquest and assist the coroner. In four other cases during the period referred to an officer of the Board of Trade has attended the inquest to watch the proceedings.

The Famine in India.

On the motion for the adjournment of the House over the Whitsuntide holidays there was some debate on the famine in India and the steps taken by the Government to relieve distress. Lord GEORGE HAMILTON, in the course of his reply, said that the great difficulty they had to contend with was that not only was the famine more intense in its operation, not only did it cover a larger area than any famine recorded in the present century, but it affected a large number of areas and districts where famine and drought had been unknown. In 1896-97, when they had had no experience for 20 years of famine, he was nervous as to how far the machinery of the Indian Government would respond to the strain then thrown upon it. He was glad to say that on the whole it responded well and the result of the exertions of the Indian Government was that, although there was a considerable loss of life, yet the effects of famine were averted more than in any previous struggle in which the Government had been engaged. The machinery was carefully supervised. A commission was appointed; it went from district to district after the famine was over making suggestions and taking evidence as to how the famine administration code could be improved and strengthened. When the famine broke out he had the satisfaction of having to apply to it machinery which two years before had stood a great stress. But in those districts where famine had never occurred before there had been very great difficulty in getting the people to come rapidly enough into the famine camps. There was a deplorable loss of life—166 died from insanition or from having arrived at the camp so emaciated and in such a deplorable condition that they could not stand the efforts made to revive them. The Government had lent officers to these Native States as well as large sums of money. The advances which had been made to the Native States amounted to 63 lakhs, and this was independent of a very large loan to be made to the State of Haiderabad amounting to two crores. He could assure the House that the Government were watching with the closest attention the progress of the famine. In the course of the next few days the normal rainfall might be expected to begin and then in the next few weeks there would be a steady diminution of those now receiving relief in the famine camps. If it were found at any time that there was any difficulty in supplementing the numbers of officers, medical men, and nurses the Government would not hesitate to draw to the utmost extent on the reserves available in this country; and in the same way, if it were found that there was any lack of financial resources, he should not hesitate to ask the Chancellor of the Exchequer to give the Indian Government the assistance which, as he had already informed the House, he was ready to give.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., New York.
Transactions of the Twenty-first Annual Meeting of the American Laryngological Association, held in May, 1899. 1900.

BAILLIÈRE, J. B., ET FILS, Paris.
Traité de Médecine et de Thérapeutique. Par P. Brouardel et A. Gilbert. Tome septième. 1900.
Maladies de l'Estomac. Par H. Frénkel. Preface par J. Teissier. 1900.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Medical Monograph Series. Nos. 2 and 3. The Bacteriology of Every-day Practice, by J. O. Symes, M.D. Lond., D.P.H. Appendicitis, by A. H. Tubby, M.S. Lond., F.R.C.S. Eng. 1900. Price 2s. 6d. net each.

BAUERMEISTER, F., Glasgow.
Handatlas der Anatomie des Menschen. Von W. His. Bearbeitet von W. Spalteholz. 3. Band, 1. Abtheilung. 1900.

BLACKWOOD, W., AND SONS, Edinburgh and London.
Mona Maclean—Medical Student. A novel. By Graham Travers (Margaret Todd, M.D.). Fifteenth edition. 1900. Price 2s. 6d.

CARRÉ, GEORGES, ET C. NAUD, Paris.
L'Orientation. Par P. Bonnier. 1900.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Cause and Prevention of Decay in Teeth. By J. S. Wallace, M.D., B.Sc., L.D.S. 1900. Price 5s.
The Pharmacopœias of Thirty of the London Hospitals. By Peter Squire. Seventh edition. 1900.
Commercial Organic Analysis. By A. H. Allen, F.I.C., F.C.S. Third edition. By H. Leffman, M.A., M.D. Vol. ii. Part 2. 1900. Price 18s.

CLAY, W. F., Teviot-place, Edinburgh.
Manual of Midwifery. By W. E. Fothergill, M.A., B.Sc., M.D. Second edition. Illustrated. 1900. Price 9s. net.

DUCKWORTH & Co., Henrietta-street, Covent-garden, London.
Agricultural Botany, Theoretical and Practical. By J. Percival, M.A. Cantab., F.L.S. 1900. Price 7s. 6d. net.

LIVINGSTONE, E. & S., Edinburgh.
The Conservative Treatment of Tubercular Joint-Disease and Cold-Abscess as carried out by Professor J. von Mikulicz, L.L. Edin. By Dr. A. Henle. Translated by C. W. Cathcart, F.R.C.S. 1900.

LONGMANS, GREEN, AND Co., Paternoster-row, London.
A Manual of Surgical Treatment. By W. W. Cheyne, M.B., F.R.C.S., and F. F. Burghard, M.D. Lond., F.R.C.S. In six parts. Part 3. 1900. Price 12s.

MACMILLAN AND Co., London.
Diseases of the Genito-Urinary System; a Thorough Treatise on Urinary and Sexual Surgery. By E. Fuller, M.D. 1900. Price 21s. net.
The Medical Diseases of Childhood. By N. Oppenheim, M.D. Illustrated. 1900. Price 21s. net.

OLDENBOURG, R., München.
Taschenbuch der Mikroskopischen Technik. Von Dr. A. Bohm und Dr. A. Oppel. 1900.

OLIVER AND BOYD, Edinburgh.
Edinburgh Hospital Reports. Edited by G. L. Gulland, M.D., F.R.C.P. Edin., and J. Hodson, M.D., F.R.C.S. Edin. Illustrated. Vol. vi. 1900. Price 12s. 6d. net.
Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by John B. Tuke, M.D., and D. N. Paton, M.D. Vol. vii. 1900.

REBMAN AND Co., Shaftesbury-avenue, London.
The International Text-book of Surgery. Edited by A. P. Gould, M.S., F.R.C.S., and J. C. Warren, M.D., LL.D. Vols. i. and ii. Illustrated. 1900. Two vols. 54s. net.
A Text-book of Pharmacology and Therapeutics. By A. C. Cushny, M.A., M.D. Aberd. Illustrated. 1900. Price 21s. net.
The American Year-book of Medicine and Surgery. Edited by G. M. Gould, M.D. Two vols. 1900. Price 30s. net for two vols., or single vol. 17s. net.
The Pocket Formulary for the Treatment of Diseases of Children. By L. Freyberger, M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Second edition. 1900. Price 7s. 6d. net.
The Diseases of Women. By J. Bland-Sutton, F.R.C.S. Eng., and A. E. Giles, M.D., B.Sc. Lond., F.R.C.S. Eng. Second edition. Illustrated. 1900. Price 11s. net.
Refraction, and How to Refract. By J. Thornington, A.M., M.D. Illustrated. 1900. Price 7s. 6d. net.

SAMPSON LOW, MARSTON, AND Co., Fetter-lane, Fleet-street, London.
Twentieth Century Practice. Edited by T. L. Stedman, M.D., New York City. Vol. xix. 1900. Price 30s.

SPRINGER, J., Berlin.
Mikroskopie und Chemie am Krankenbett. Von Dr. Hermann Lenhartz. 1900.

STATE HOSPITALS PRESS, Utica, N.Y.
The Archives of Neurology and Psychopathology. Vol. ii. 1899. Nos. 3 and 4. 1900.

UNWIN, T. FISHER, Paternoster-square, London.
The Century Invalid Cookery Book. By Mary A. Boland. Edited by Mrs. Humphry. Price 1s.

Magazines, &c., for June: Strand Magazine, Boy's Own Paper (with Summer Number), Girl's Own Paper (with Summer Number), Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANDERTON, W.B., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Resident Assistant Medical Officer for the Crumpsall Workhouse, Township of Manchester, vice A. T. Sissons.

BEGGS, J. E., M.D. Camb., D.P.H., has been appointed Medical Officer for the Grove Hospital, Metropolitan Asylum District.

BENNETT, W. F. COCKAYNE, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.S.A. Lond., has been appointed House Surgeon to the Staffordshire General Infirmary, vice F. W. Bonis, resigned.

BROWN, R. B., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of Health for the Howdenshire Sanitary District.

BROWNE, B. S., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Alcester District Council.

COOPER, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Abbey Homes, Kendal Union.

CURTIES, W. S., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the Ida Hospital, Leeds.

DICKINSON, THOMAS VINCENT, M.D., M.R.C.P., has been appointed Honorary Assistant Physician to the Italian Hospital, Queen-square, London, W.C.

DUNLOP.—J. G., M.B., C.M. Glasg., has been appointed Medical Officer for the Lincoln Workhouse.

EVANS, T. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Llandovery Union.

FAIRFAX, E. W., M.B., Ch.M. Sydney, has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, London, S.W.

FORSTER, FREDERICK C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Royal United Hospital, Bath.

FORSTER, R., L.S.A., has been appointed House Physician to the General Infirmary at Leeds.

GORDON, J. J., L.R.C.P., L.R.C.S. Edin., M.R.C.S., has been appointed Medical Officer for the Sidney-road Homes, Hackney Union.

GRIFFITH, A., M.D. Lond., has been re-appointed Medical Officer for Hove and Superintendent of the Sanatorium.

HILDYARD, R. LOXHAM, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the 2A and 2B Districts of the Langport (Somerset) Board of Guardians.

JONES, C. W., M.B., C.M. Edin., has been appointed Medical Officer of Health by the Hale Urban District Council.

JONES, F. S., M.B., B.S. Durh., F.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Prittlewell Sanitary District of the Rochford Union.

LÜCKHOFF, J., M.B. Edin., has been appointed House Physician to the General Infirmary at Leeds.

MACKAY, J. D., M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Knaresborough District Council.

MAIDLOW, W. H., M.D., B.S., F.R.C.S., has been appointed Medical Officer of Health for the Ilminster (Somerset) Urban District.

MESSITER, A. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Epworth Sanitary District of the Thorne Union, vice H. W. Pullan, resigned.

MITCHELL, A. M., M.D. Camb., D.P.H., has been appointed Medical Officer of Health for the Borough of Guildford, vice J. Morton.

MORRISON, W. H., M.B., Ch.B. Vict., has been appointed House Surgeon to the General Infirmary at Leeds.

MORTON, S. ERNEST, M.R.C.S., L.R.C.P., has been appointed Assistant Honorary Medical Officer to the Children's Hospital, Sheffield.

MUNDEN, CHARLES, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Third (C) District by the Langport (Somerset) Board of Guardians.

MURRAY, ALLEN, has been appointed a Public Analyst under the Food and Drugs Act for Cardigan.

PURSLOW, C. E., M.D., M.R.C.P. Lond., has been appointed Ingleby Examiner in the University of Birmingham.

RODDIS, T. E. E., M.B., C.M. Edin., has been appointed Medical Officer for the Snettisham Sanitary District of the Docking Union, vice J. W. Hopkins, resigned.

SADLER, BERNARD F., L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to the Burton-on-Trent Infirmary.

SHEEN, A. W., M.D. Lond., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Cardiff Infirmary.

SNAPE, LLOYD, has been appointed a Public Analyst under the Food and Drugs Act for Cardigan.

STEWART, A. H., M.B., C.M. Glasg., has been appointed Medical Officer for the Eighth Sanitary District of the North Bierley Union.

TELLING, W. MAXWELL, M.B., B.S. Lond., has been appointed Resident Medical Officer to the General Infirmary at Leeds.

THORNTON, R. G. C., M.B., B.Ch. Irel., has been appointed Medical Officer for the Second Sanitary District of the Wellington (Salop) Union.

Vacancies.

For further Information regarding each vacancy reference should made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon for twelve months. Salary £100 per annum, with board, residence, and laundry.

BOOTLE HOSPITAL, Liverpool.—Junior Resident Medical Officer. Salary £80.

BOROUGH HOSPITAL, Birkenhead.—Resident Junior House Surgeon. Salary £75 a year, with certain fees usually obtained.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board).

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY (not Provident).—Resident Surgeon, unmarried. Salary £150 per annum, with apartments (not board). Also House Surgeon. Salary £150 per annum, with apartments (not board). Apply to the Hon. Sec., 23, Lowther-street, Carlisle.

CARMARTHEN UNION.—Medical Officer and Public Vaccinator, to reside at Conwil, for the Conwil (a Welsh) District. Salary £60, with certain extra medical fees. Applications to the Clerk, 7, Hall-street, Carmarthen.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist. Tenable, subject to annual re-appointment, for not more than three years. Also Clinical Assistant. Tenable for three months on payment of 8 guineas.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CORPORATION OF MANCHESTER.—MONSALL FEVER HOSPITAL.—Third Medical Assistant for one year. Salary £100, with board and lodgings. Applications to the Chairman of the Sanitary Committee, Public Health Office, Town Hall, Manchester.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about three months. Salary £3 3s. per week, and all found but liquors.

CRAIGLEITH POORHOUSE AND HOSPITAL, Edinburgh.—Medical Officer, resident. Salary £100 per annum, with board and apartments. Apply to the Clerk, Parish Council Chambers, Castle-terrace, Edinburgh.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Locum Tenens. Terms 3 guineas per week, with board and residence.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months, unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £85.

LINCOLN COUNTY HOSPITAL, Lincoln.—Assistant House Surgeon for six months. Honorarium for that period £25, with board, residence, and washing.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70, with board, lodging, and washing.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MEDICAL MISSION HOSPITAL (SETTLEMENT OF WOMEN WORKERS), Canning Town.—Female Resident Medical Officer. Salary £100, with board and furnished apartments. Apply to the Hon. Secretary, Miss C. Spicer, Montclair, Woodford Green, Essex.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Fully qualified Medical Woman as Resident Obstetric Assistant, to take charge of the Maternity Department.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant House Surgeon for six months. Honorarium £20, and board, lodging, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £125 per annum, with furnished apartments, board, attendance, and washing. Also Assistant to the House Surgeon for six months. Board, lodging, and washing provided, and an honorarium of £25 given.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, London.—House Surgeon for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also House Physician for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £85 per annum, with board, washing, and residence.

PARISH OF FULHAM.—Second Assistant Medical Officer at the Infirmary, Fulham Palace-road, W., for six months. Salary at the rate of £60 per annum, with board, furnished apartments, and washing.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

QUEEN'S HOSPITAL, Birmingham.—House Physician and House Surgeon for twelve months. Salary £50 per annum, with board, lodging, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £60 a year, with board, lodging, and washing.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both appointments for one year.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary at the rate of £50 per annum, with residence, board, and washing.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Honorary Anæsthetist for twelve months.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, with residence, board, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

TOWER HAMLETS DISPENSARY, White Horse-street, Stepney, E.—Resident Medical Officer for one year. Salary £120, with furnished rooms, coals, gas, and attendance.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £100 per annum, with first-class rations, apartments, &c. Subject to statutory deduction. Applications to the Union Clerk, Broughamterrace, West Derby-road, Liverpool.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Assistant House Surgeon for three months.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium given at the rate of £50 per annum, and board, lodging, and washing.

WOOLWICH UNION.—Resident Assistant Medical Officer at the Infirmary at Plumstead. Unmarried. Salary £100 per annum, rising £10 yearly to a maximum of £130, with apartments, rations, and washing. Subject to statutory deductions. Applications to the Clerk to the Board, Union Offices, Woolwich.

Births, Marriages, and Deaths.

BIRTHS.

BENNETT.—On May 23rd, at Vancouver-road, Forest-hill, S.E., the wife of Colin E. Bennett, L.R.C.P. Lond., M.R.C.S. Eng., of a daughter.

EDKINS.—On May 27th, the wife of J. S. Edkins, M.B. Camb., of Parkhill-road, Hampstead, and St. Bartholomew's Hospital, of a daughter.

FOULDS.—On May 27th, at Ashlea, Droitwich, the wife of Francis H. Foulds, of a daughter.

HUNTER.—On May 25th, at Duncairn, Helensburgh, the wife of J. Ewing Hunter, M.B., C.M., of a daughter.

LATHAM.—On May 23rd, at Hemingford-road, Barnsbury, the wife of Denyer W. F. Latham, M.R.C.S., L.R.C.P. Lond., of a daughter.

MAC VICKER.—On May 25th, at Street, Somerset, the wife of C. G. MacVicker, B.A., M.B., of a son.

MALDEN.—On May 27th, at St. Lawrence, Tunbridge Wells, the wife of Walter Malden, M.B. Camb., M.R.C.S., of a daughter.

WALKER.—On May 26th, at The Towers, Wakefield, the wife of Frederick Walker, L.R.C.P. Lond., M.R.C.S., of a daughter.

WEEKES.—On May 25th, at Mansion House, Old Brompton, Chatham, the wife of H. Holman Weekes, M.D., M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

BOND—LAURIE.—On May 12th, at Holy Trinity Church, Worcester Charles Hubert Bond, M.D., D.Sc., the Heath Asylum, Baldwyn's-park, Bexley, to Janet Constance, the only daughter of Fred R. Laurie, of Worcester.

DE MÉRIC—HARRIS.—On May 23rd, at Saint Mary's, Fulham, Henry Eugene de Méric, M.R.C.S., to Edith Huici Harris, eldest daughter of James Harris, of West Kensington.

GOODSON—WATKINS.—On the 16th inst., at the parish church of St. Pancras, London, by the Rev. W. Mirrieless, William Henry Goodson, M.R.C.S. Eng., L.R.C.P. Lond., of Buxton Villas, Leytonstone-road, Stratford, Essex, to Alice Mary, youngest daughter of the late John Watkins, of Halnaker, Chichester, Sussex.

HUNT—STRANACK.—On May 10th, at Saint Paul's Church, Matheran, Bombay, Edward Lewis Hunt, M.R.C.S., L.R.C.P., of Dorset-square, London, to Daisy Beryl May, daughter of F. D. Stranack, of Bombay.

DEATHS.

GIMSON.—At Witham, Essex, on Sunday, May 27th, William Gimson Gimson, M.D., in his 62nd year. Funeral at All Saints' Church, Witham, on Thursday, May 31st, at 3.45 P.M.

GODDE-SMITH.—On May 26th, at Redbourn, Herts, Fredk. Martin Godde-Smith, M.R.C.S., L.R.C.P. Edin., aged 43 years.

HUNT.—On April 4th, at Ferry-road, Christchurch, Canterbury, New Zealand, Frederick Everard Hunt, M.R.C.S., L.R.C.P. Edin., aged 59 years.

LIDIARD.—On May 26th, at Springbank-road, Hither-green, S.E., Sydney Robert Lidiard, M.D., aged 48 years.

SHIRTLIFF.—On May 25th, at Newlands, Ryde, Isle of Wight, Edward Matthew Shirtliff, M.D., aged 63 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE DEGRADATION OF CONSULTATION.

THE following two advertisements occur next to each other in the columns of a Birmingham paper, and the juxtaposition seems to us to warrant our describing the Consultative Medical and Surgical Institution of Birmingham as calculated to bring medical consulting into disrepute:—

POLYPATHIC MEDICAL INSTITUTE, 109, HAGLEY ROAD, EDGBASTON, BIRMINGHAM.

All Chronic Diseases treated on improved and progressive principles. This, together with our perfect system of diagnosis, makes a complete and successful treatment.

INSTITUTES IN ALL CIVILISED COUNTRIES.

Where more capital is invested a larger staff employed, more patients treated, more cures made than by any other known system, and where in the scientific examination and cure of all long-standing diseases and deformities their system has, so far, no equal.

FREE TESTS WITH THE POLYPATHS is offered from May 1st to July 1st, and all who call during these months and book for treatment will receive CONSULTATION, ADVICE, EXAMINATION, and ABSOLUTE TREATMENT OF ALL CURABLE DISEASES FREE OF ALL EXPENSE. Medicine only to be paid for. Hours of Attendance—10 a.m. to 1, 2 p.m. to 4; Evenings, 7 to 9.

The POLYPATHIC COURSE OF LECTURES EVERY THURSDAY, at MASONIC HALL. Afternoons at 3 o'clock (Ladies only); Evenings (Men only), 8 p.m.

To all Lectures in our Educational Work Admission is FREE. All Seats are Free. No collection.

THE CONSULTATIVE MEDICAL AND SURGICAL INSTITUTION, BIRMINGHAM.

OBJECTS.

To LESSEN the STRAIN UPON HOSPITAL CHARITY by PROVIDING, on terms within and under conditions suitable to their pecuniary means and position, MEDICAL and SURGICAL AID to those who would otherwise seek it gratuitously, or be unduly taxed by paying the usual consultation fees.

COMMITTEE.

Arthur Chamberlain, J.P. (Chairman), Messrs. John Bedford, Alderman Cook, J.P., George Cowley, H. A. Garner, George Hookham, J.P., J. S. Nettlefold, J.P., W. T. Smedley, and J. L. Tough.

Consulting Rooms: Cornwall Buildings, Newhall Street.

HOURS OF ATTENDANCE.

10 a.m. to 12 noon, 1 p.m. to 4 p.m., 6 p.m. to 8 p.m. Saturdays: 10 a.m. to 12 noon, and 1 p.m. to 4 p.m. only. Sundays: No attendance.

CONSULTING FEE, Half-a-guinea.

THIS INSTITUTION WILL BE OPEN TO THOSE IN NEED OF MEDICAL ADVICE TO-DAY (MONDAY) THE 21st INSTANT.

When the Birmingham Consultative Medical and Surgical Institution was started it was proposed, if we remember right, to pay two "consultants" £500 per annum and place the rest of their earnings, estimated at £3000 per annum, to the credit of the institute. Such a project for exploiting the earnings of medical men could only be regarded by us with the disfavour with which we regard the action of most medical aid associations. Nor are the medical profession the only persons wronged under the scheme. The public are led to believe that a surgeon or a physician becomes a "consultant" by simply calling himself so. We do not imply for a moment that the medical officer to the institution is other than an entirely capable man and a man of large experience; but the possession of these qualities does not at once constitute him a consulting physician and surgeon, or excuse the institution for selling his services to the public in such a capacity.

A HERBALIST FINED.

OUR readers will remember that in THE LANCET of Jan. 27th we published a letter from a correspondent who had been called in too late to see a patient whom he found dead. The patient had been attended by a man named Purdue, who puts the letters F.C.S.M. after his name. An inquest was held upon the case and the jury returned a verdict of "Death from natural causes." At the beginning of February it came to the knowledge of the medical officer of health of Limehouse that Purdue had been attending sundry cases of diphtheria, Purdue having sent in the usual notification form to that effect. The Limehouse District Board came to the conclusion that something must be done and after some time it was found that the only body which could take any proceedings was the Society of Apothecaries and accordingly the outcome was an action brought in

the Bow County Court on May 23rd, before Judge French and a jury, in which the Society of Apothecaries sought to recover from Mr. Purdue the penalty of £20 which he had incurred by practising and prescribing as a qualified medical man. Mr. Lane appeared as counsel for the plaintiffs and Mr. Young was counsel for the defendant.

Mr. Lane, having explained the legal position of the Society of Apothecaries, went on to say that he did not disguise from the jury the fact that the Society for which he appeared considered the present case a most grave and serious one and one in which it was their bounden duty to take these proceedings. Purdue appeared to practise the calling of a herbalist. He had a shop in Limehouse, but he had no qualification of any kind. In February last a man named Jeffery, the father of seven little children, finding one of them ill and others sickening, went to the shop of the defendant and asked for some ipecacuanha wine. Now, if the defendant had simply supplied that wine nothing more would have been heard of the matter. But the defendant asked Jeffery what was the matter with the child, and Jeffery told him the symptoms as far as he knew, whereupon the defendant said, "I will come round and see it." He went round and examined the child, and finding the throat sore he syringed it, adding, "I have got some medicine at my shop which will do your child good." He subsequently attended the child, declared it to be suffering from diphtheria, and supplied it with medicine, for which he received fees.

Mr. Jeffery deposed to having gone to Purdue's shop. If he had known that the defendant was not qualified he would have gone to a proper medical man when he learnt that his children were suffering from diphtheria. The defendant told him that he would have to report the case to the sanitary authorities.

Mr. Daniel Lewis Thomas, medical officer of health of the Limehouse District, deposed that on Feb. 5th last he received notice from the sanitary clerk of the fact that there were some cases of diphtheria at Jeffery's house. The notice came on the usual notification form. It was usual for these notices to be sent in by medical practitioners when they came across infectious cases. One part of the form contained the query as to whether the case notified occurred in the course of the notifier's private practice, and this was filled up by the defendant with the words, "private practice." He signed himself "J. C. Purdue, Fellow of the Council of Safe Medicine, London." He went to Jeffery's house and found four children suffering from diphtheria. They were all in one room and the mother was also there. Diphtheria took three days to appear fully, and the proper treatment was to administer antitoxin on the first or second day.

John Charles Purdue was then called. He said that he lived at Galt-street, Limehouse, where he had carried on business for three years as a herbalist. He had also prescribed as a herbalist in the City of London. He had been a herbalist for 20 years altogether. On a Saturday night in February, at about 12 o'clock, Jeffery came to him and said that his child was very bad. It seemed to have an obstruction in the throat and he was frightened it would choke. He offered then to go with him and see the child. Nothing was said about medicine at that time. He saw the child and syringed the throat. Next morning, between nine and ten o'clock, Jeffery again came to his shop and said that the child was still very bad, and he went again with him to see the child. He told Jeffery that his child was suffering from diphtheria.

The Judge: But why didn't you tell the people on the Saturday night to call in a doctor?

Witness: Because I knew that nobody could improve on my treatment.

The Judge: Have you passed any examination connected with your practice?

Witness: I had to be examined before I got my diploma from the Council of Safe Medicine.

The Judge: That is, your Herbalists' Institute.

Witness: Yes; it was registered by the Board of Trade in 1893.

The Judge: Registered in the same way as any limited liability company is registered.

Mr. Lane pointed out that the labels on defendant's bottles contained the inscription, "J. C. Purdue, F.C.S.M., London."

The Judge: The defendant admits that he acted as a doctor and that he did not attempt to call in anyone. What else can be said?

Mr. Young said he proposed to address the jury on the question of law. By an Act of Parliament of Henry VIII., 34, 35, a herbalist was entitled to practise so long as he did not infringe the rights of apothecaries by dealing with cases which were not covered by the Act.

The Judge: Is diphtheria covered by the Herbalists Act?

Mr. Young maintained that it was, inasmuch as one of the cases which herbalists were allowed to deal with under the Act was "sores." One of the symptoms of diphtheria was sore-throat and hence that would come under the definition of sores. He submitted that the defendant had not infringed the Apothecaries Act in any way.

The jury discussed together for some time without arriving at a decision.

The Judge reminded them that no personal consideration as to whether or not the defendant had acted wisely or humanely must influence their verdict. The simple question for them to decide was whether the defendant attended as an apothecary.

The jury thereupon returned a unanimous verdict for the plaintiff.

Judgment was thereupon given for the Apothecaries Society, with costs.

This case is eminently satisfactory as far as it goes, but the whole system of unqualified practice in these islands is very far from satisfactory. Granted that unqualified practice or the sale of quack remedies will never be made illegal, we cannot see why vendors of quack remedies or advertising quacks should not be made to pay a far more expensive licence for their trade than the present 1½*d.* stamp. No one may sell tobacco without a licence and the licence does not imply any guarantee as to the genuineness of the article sold. If persons of the Purdue type had to pay £300 a year for a licence or the proprietors of Bodger's Blue Boluses had to pay the same for the right to sell their stuff the deceitful trade would soon be a thing of the past. The present stamp licence on patent medicines is useless, and, despite the notice printed on the label, is still, we fancy, taken to mean that Government guarantees the preparation.

DRUG HABITS.

To the Editors of THE LANCET.

SIRS,—I would like to draw the attention of the profession to what is surely an evil—viz., the treatment of the victims of drug habits in emergency cases. Whenever one of these unfortunates finds himself in an accident ward or a police-station his customary drug is immediately stopped. This is inflicting unnecessary torture and agony. With the chronic alcoholic it is bad enough, but with the opium, morphine, and cocaine *habitué* it is quite a different matter, as the control of the nerve centres is here involved. A person accustomed to take from 10 or more grains of morphia a day is suddenly placed in a position where the drug cannot be obtained. His whole system is tuned in the morphia key, his nerve centres have been for months or years inhibited and his circulatory system stimulated by the poison. To suddenly withdraw this inhibition, &c., is to let nerve storms rampant and to throw the whole working harmony of the organs out of tune, producing intense suffering and agony, as once described to me as "living hell." The victim either becomes insane, collapses, or sinks into extreme neurasthenia. Now, the proper and humane treatment is to give the drug in gradually diminishing doses, and not to totally withdraw it. There is too much prejudice among the profession and the moral is too often enforced at the expense of the victim. In such cases as these drug *habitués*, who are as helpless as babes in the grip of the tyrant, the medical man should think of the suffering and perhaps death that may follow sudden withdrawal.

I am, Sirs, yours faithfully,
ARTHUR A. COTTEW, L.R.C.S. Irel., L.R.C.P. Edin., &c.

Portslade, Sussex, May 27th, 1900.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can your readers tell me of any home where an officer's wife (who is very badly off) can be surgically treated for uterine disease free of cost? I am, Sirs, yours faithfully,

May 25th, 1900. PAT.

TWO QUERIES.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged if any of your readers can inform me where I may obtain the following:—1. Albert Smith's "Physiology of the London Medical Student." 2. Report of the Royal Commission on the Utility of Experiments on Animals, 1876.

I am, Sirs, yours faithfully,

May, 1900. MIZPAH.

*** 1. Albert Smith's "Physiology of the London Medical Student" was originally published in *Punch* and was afterwards, we fancy, issued as a small book. Our correspondent might apply at *Punch* office or write to a second-hand bookseller. 2. Messrs. Eyre and Spottiswoode could doubtless supply the report if there are any copies left in stock.—ED. L.

THE SEWERAGE OF RYE.

To the Editors of THE LANCET.

SIRS,—On the east side of Rye harbour, Sussex, hundreds of tons of fish are caught every summer and sent to London. The fish are caught in stake nets and are taken out at low water. The longest of these nets goes seawards about a mile. The ground on which these fish are caught is a flat sand and the tide ebbs about a mile. The shore is converted into the famous Rye golf links and is also a favourite place for bathing for children and people who cannot swim. A long stone pier runs out on the east side of the harbour, but it is not high enough and the tide runs over it as well as past it. The set of the ebb stream is to the east, with great force, against and over the wall. The fact that most of the refuse is carried on to the Camber sands is proved by the number of dogs and cats, buoys that have got adrift, &c., that are often strewn along this shore. It is proposed to turn the sewage of Rye harbour into the sea. If so it will mean serious danger to London and other places. Owing to the tons of fish sent away Rye harbour needs a good water-supply. In the tideway on this coast the change of the direction of the stream does not take place at high and low water, as it does in most places, but at half flood and half ebb. The consequence is that no sewage can be carried away. The first three hours of the flood is to the east and the rest to the west, so the sewage would only be washed about, dry on the burning flat sands, and dust, &c., would be blown ashore, and over the fish in the nets. Mr. Moss Flowers, C.E., says the drainage of Rye harbour is a very simple matter. Well, it is easy enough to turn sewage into the water, but not to get rid of it. I believe if Mr. Moss Flowers had stood on the shore three miles west of Rye harbour that he would have formed an opposite opinion. The

land (which is all fishing ground) from Rye to Dungeness stretches out nearly at a right angle to the set of the true tides. It is about 10 or 11 miles from Hastings to Rye harbour, but lots of things out of the Hastings drains are found at sea off this coast. Surely, it is folly to turn sewage right on to a fishing and bathing ground.

I am, Sirs, yours faithfully,

May 29th, 1900. VIATOR.

PS.—The people who understand these things are fishermen, not engineers. Turning sewage into the sea is an abomination on this coast.

"APOMORPHINE AS A HYPNOTIC."

To the Editors of THE LANCET.

SIRS,—Mr. J. Miller in an interesting communication in THE LANCET of May 19th, p. 1481, draws attention to the hypnotic action of apomorphine in certain cases of delirium tremens and is apparently surprised that emesis did not follow the usual hypodermic dose. I would draw his attention to the fact that apomorphine is absolutely inert in alcoholic poisoning (either injected or taken by the mouth). I think this fact cannot be too widely known in view of cases of poisoning complicated with previous injection of alcohol.

I am, Sirs, yours faithfully,

Cheltenham, May 26th, 1900. C. E. ABBOTT, M.R.C.S. Eng.

During the week marked copies of the following newspapers have been received: *Leicester Daily Post, Lancashire Daily Post, Clifton Chronicle, Daily Mail (London), Westminster Gazette, Gainsborough Leader, Sun (London), News of the Week (London), Irish Figaro (Dublin), Bradford Observer, Dundee Advertiser, Nottingham Daily Guardian, Folkestone Herald, Birmingham Daily Post, Macclesfield Courier, Kelso Mail, Hereford Times, Staffordshire Advertiser, Daily Express (London), Sheffield Daily Telegraph, Times of India, Pioneer Mail, Citizen, Scotsman, Builder, Architect, Leeds Mercury, Bristol Mercury, Cape Times, Buchan Observer, Liverpool Daily Post, Brighton Gazette, Yorkshire Post, Aberystwyth Observer, Birmingham Daily Gazette, English Mechanic and World of Science, Sanitary Record, Reading Mercury, City Press, Hertfordshire Mercury, Local Government Chronicle, Mining Journal, Local Government Journal, Surrey Advertiser, London Argus, The Anglo-Celt (Cavan), Madras Times, Walsall Advertiser, Weekly Free Press and Aberdeen Herald, Tunbridge Wells Standard, Nuneaton Observer, Highland News (Inverness).*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 31st, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
May 25	29·96	N.W.	0·05	110	64	47	50	54	Cloudy
„ 26	30·20	NNE	...	100	64	48	47	49	Overcast
„ 27	30·23	S.W.	...	115	74	47	55	60	Fine
„ 28	30·20	S.W.	...	115	71	55	55	58	Overcast
„ 29	30·29	N.W.	...	114	70	52	52	59	Fine
„ 30	30·30	N.	...	107	66	49	49	53	Overcast
„ 31	30·25	N.E.	...	83	58	49	49	53	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (9th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown. Paper:—Mr. A. Doran (President): A Case of Extra-uterine Gestation in which Fœtal Death occurred at the Eighth Month after Spurious Labour, Abdominal Section two months later.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Consultation. (Skin.)

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. W. Rose: Clinical Lecture.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. F. C. Abbott: Acute Intestinal Obstruction in Children. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: The Dynamics of the Circulation in Disease.

THURSDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2-3.30 P.M. Mr. H. Pinch: Class. Clinical Microscopy. Demonstration VII. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. P. Dunn: External Diseases of the Eye.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Murray: Medical Cases. (Post-graduate Course.)

FRIDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

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Two Clinical Lectures
ON
PRIMARY SYPHILITIC CHANCRES.

Delivered at the London Hospital on Feb. 16th and March 2nd, 1900,

BY JONATHAN HUTCHINSON, JUN., F.R.C.S. ENG., &C.,
SURGEON TO THE LONDON HOSPITAL, ETC.

LECTURE II.[1]

Delivered on March 2nd, 1900.

GENTLEMEN,—With regard to the bubo that accompanies primary syphilitic chancres, in the last lecture we noted that out of 125 cases of which I had careful records it was not absent in a single one, and that in only two out of the 125 cases had it the unusual characters of suppuration or of inflammation. The characters of the bubo are really in many cases of greater diagnostic value than are those of the actual sore. It has been said that sometimes the bubo is absent, and some French observers have estimated that in about three per cent. the glands are not appreciably enlarged. Well, you see, there are obvious fallacies. The patient may be stout and his inguinal glands may be very difficult to examine, and I believe that this fact probably accounts for most of these supposed exceptions. The bubo is, at any rate, practically constant and can be found if careful search be made for it. Almost the only case which I could personally adduce in favour of a belief that sometimes the nearest lymphatic glands are not enlarged with the primary syphilitic sore was, briefly, as follows. A man came with a large hard chancre at the furrow of the penis and with tortuous lymphatic cords running up the penis. He was repeatedly examined during the four weeks that ensued after the sore had been noticed, and no enlargement whatever of the inguinal glands could be detected during the whole of this time. He was not at all a stout subject. I regret that the case was then lost sight of, and therefore it is only an incomplete observation. I mention it merely to emphasise the slight evidence in favour of the belief that the bubo is sometimes entirely absent in the case of primary syphilitic chancres. On the other hand, it has been asserted that sometimes there occurs a syphilitic bubo without any primary sore, the so-called "*bubon d'emblée*." That I believe in, though it is excessively rare. And recollect there is a fallacy, with regard to women especially, that the primary sores are very easily overlooked, and although a primary syphilitic chancre, as a rule, will persist (unless diagnosed and properly treated) for weeks and even months, there are some primary syphilitic sores which are quite insignificant and which very soon spontaneously heal leaving no trace behind. As will be readily understood, in women it is often difficult to find the primary sore. One often comes across cases of secondary syphilis in women in whom no history of a sore or evidence of a bubo can be found. Some of these cases are accounted for by the chancre being on the cervix uteri, in which case the bubo will be within the abdomen. The vaginal wall is not a common site for chancres, but the cervix uteri is more often affected and I have seen several examples.

You all know the characters of the typical syphilitic bubo, how the oblique set of inguinal glands—sometimes only the innermost of them, sometimes the more central ones, occasionally the highest glands of the vertical femoral set—are enlarged. Some of the lymphatics of the penis and scrotum can occasionally be dissected out into the upper glands of the vertical femoral set, confirming what has been observed clinically. The bubo is often situated on the opposite side to the primary sore—e.g., the sore being on the right side of the penis the chief bubo may be on the left side owing to the crossing of the lymphatics. As you know, the inguinal glands may be swollen first on one side and then after a time those of the opposite side become also affected. Enlargement of the inguinal glands may develop during the secondary stage as part of the general adenopathy. For instance, you may see a case of chancre of the lip in which the inguinal glands are enlarged, due to general infection through the blood-stream.

A few words as to what may be termed the giant bubo; and the following case may be quoted since it illustrates many points of interest in connexion with syphilis. A young man, aged twenty-two years, florid and healthy-looking, with a good family history (though phthisical tendencies were not excluded from it), contracted a chancre on his lower lip in October, 1894. He went to a medical man, but it was not until January, 1895—that is to say, four full months afterwards—that the syphilitic nature of the sore was recognised and the proper treatment instituted. There were then large buboes of both sides of the neck. He took mercury for only three months, and then irregularly, so that one would say that the treatment was very imperfect. He came to me in November, 1895—that is to say, over a year since the contraction of the syphilis. The site of the chancre was then conspicuous, and he still had a huge bubo on each side of the neck. These buboes were painful and threatened to break down, looking exactly like masses of tuberculous glands. However, in the belief that they were syphilitic I prescribed four grains of grey powder per diem and made him rub in oleate of mercury ointment. After a time both tonsils became ulcerated and had to be cauterised with nitrate of silver, sulphate of copper, &c., but the bubo did not disappear. He was markedly anæmic from the first, and though he had no cough and no signs of mischief in the lungs I could not help thinking that it might be a case of tuberculosis in a syphilitic patient. Iron was prescribed with the mercury, and at length, after nine months of steady treatment, or nearly two years after the infection, the glands wholly subsided without breaking down at all. I must admit that at one time I was inclined to advise him to have them excised, believing that they were in part tuberculous. But they all went down, so one may be certain that it was a case (and a very unusual one) of syphilitic adenopathy. In September, 1896, at the end of two years after infection, and after nine months of steady treatment by mercury, he came again with painful synovitis of the knees. This subsided under iodide of potassium and mercury and cod-liver oil, leaving no trace behind. In March, 1897, at the end of two and a half years after infection, he was florid and healthy again, and there was no trace of enlargement of the glands. He still showed an interesting symptom, that of recurrent induration at the site of the chancre in the lower lip, which soon yielded to treatment.

This case illustrates, first, the danger of overlooking a primary chancre—for it was four months before the right diagnosis was made; secondly, the difficulty in getting the usual rapid therapeutic effects of mercury in such a neglected case; thirdly, the long persistence of huge buboes, their slow but complete yielding to treatment, and the occurrence of relapsing induration at the site of the sore; and, finally, the coincidence in the same subject of symmetrical syphilitic joint-disease and syphilitic disease of the lymphatic glands.

Although syphilitic joint disease and syphilitic gland disease are both rare—I am not thinking of primary buboes, but tertiary syphilitic gland disease—there is a strong tendency for both to occur in the same individual. Now is not this of extreme interest in comparing syphilis with tubercle? In tubercle disease of lymphatic glands and disease of joints are two of the main symptoms, and it is so with syphilis. If you look up the literature you will find many cases recorded in which a patient who has had tertiary syphilitic gland disease subsequently has syphilitic arthritis, or *vice versâ*. The case which I have just narrated raises the question, which is discussed from time to time, Is syphilis which is contracted from congenital chancres more severe than that which is contracted from the ordinary primary chancres on the genitals? The answer is a very simple one. The reason why these cases often seem to be more severe than those following genital chancres is simply that the nature of the sore is overlooked. They are exceptional cases in this, that for perhaps two, four, or six months the nature of such a sore is not diagnosed, the patient, therefore, has no treatment, the virus gets a thorough hold on the system (if I may use the term), and one knows that in these cases of severe primary and secondary syphilis with much delayed treatment you will have more difficulty in overcoming the virus, and the later symptoms will probably be severe.

[1] Lecture I. was published in THE LANCET of June 2nd, 1900, p. 1575.

That leads me to state briefly my belief as regards severe and mild attacks of syphilis. You ask yourself the questions, Is syphilis the same disease in all its victims? Are there mild and are there severe attacks, or does the severity depend wholly on the individual? As to whether the dose of the poison varies we know and can say nothing. I certainly believe in one man having a mild attack of syphilis and another a very severe one, but the influence of treatment is a most important thing and especially the date at which that treatment is begun and the persistence with which it is followed up. At the same time it must be granted that, apart from treatment, some cases are comparatively mild. This may partly account for the strange statement seen in some of the books, especially foreign ones, that case after case of undoubted syphilis was "cured" with a dozen subcutaneous injections of small doses of mercury. It is certain that ordinary cases of syphilis are not, and cannot be, cured by any such treatment. We know this fact also—that where secondary symptoms have been mild, either as a result of treatment or not, there is no guarantee (if mercury be not continued for a long time) that tertiary symptoms will not occur or may not be very severe. Examples of this are seen in those who wilfully conceal their malady or in whom it is not diagnosed. I will mention to you an instance. An elderly married man, with every inducement to conceal his frailty, deliberately deceived a practitioner as to the nature of a secondary syphilitic eruption which was at first of the ordinary erythematous type, and then it became much more complicated, ultimately ending in a very severe attack of syphilitic pemphigus. Although he had the remains of a chancre present for several months he persuaded his medical adviser that his symptoms were due to anything but syphilis, and the consequence was that he never had any specific treatment until he got into such a deplorable state that he very nearly died from syphilitic cachexia. The case would probably have caused no trouble whatever had mercurial treatment been commenced early.

Now, a word or two as to phagedenic chancres. You will probably not see many nowadays, but they may give a great deal of trouble. We will briefly note that the term is very vaguely used. Many primary syphilitic sores are destructive without being really phagedenic, especially when they occur in concealed sites—e.g., at the furrow of the penis—and become complicated by a great number of septic organisms. Any primary syphilitic sore may be phagedenic in a sense, but of the true acute destruction, the real rapid phagedena, one would say that it is not necessarily a sign of syphilis. The following are some of the characters of this true phagedena. The incubation stage—the period between the inoculation and the development of the sore—is very short (generally only a few days), much shorter than is the case with a syphilitic sore which assumes its typical characters in three weeks. The bubo is slight or absent with a phagedenic sore and mercury has little or no effect in checking the destructive process. Finally, many cases of phagedena—I do not say all—escape secondaries. These are briefly the conclusions one has learnt from a study of a good number of cases of phagedena. Although it usually occurs in concealed sores, where there is phimosis, it may attack the more open parts, such as the vaginal orifice. I remember one case in which the greater part of the vulva and labia on both sides were destroyed by a rapid phagedena, not followed by syphilis. I would, of course, impress upon you the significance with concealed sores of hæmorrhagic discharge. A little oozing of blood may mean that the ulcer is rapidly eating into the tissues, and if there be a foul-smelling discharge the two signs indicate that the prepuce should be slit up without delay and the sore thoroughly exposed. It should be thoroughly cleaned under an anæsthetic and either pure carbolic or acid nitrate of mercury should be applied. The patient should then be kept in a bath of very weak solution of bichloride of mercury, the hot water being frequently changed, and he should remain for some days in this bath. The continuous immersion and exposure of the sore to the action of the water should be employed until the sore begins to take on a healthy appearance. The value of continuous bath treatment in phagedenic chancres, although it has been known to the profession for very many years, is forgotten now and then, and at the last meeting of the British Medical Association two cases of fatal phagedena were narrated (in one the patient was a woman), the chief point of which to my mind was that the bath or immersion treatment had not been thought of or tried in either. All sorts of escharotics had been used, but no immersion treatment, yet that is the safest, least painful, and simplest of all the methods. There is of course danger of severe hæmorrhage in phagedenic chancres. I have known troublesome bleeding occur from the dorsal artery of the penis under such circumstances. Then there is the risk when the sore is on the under surface of the penis of ulceration into the urethra and fistula. I have seen several cases where the glans penis had been wholly eaten away, and of course a stricture followed in the urethra. You know that tertiary syphilis does cause phagedena, and in one such case, a rather slow phagedena of the penis where the glans had been reduced to a mere fragment and the penis was entirely mis-shaped and distorted, I was driven to amputate at the man's own express wish, and gave him a decent-looking organ, although it was shorter than usual.

The question of phagedena leads me to mention a peculiar form of primary sore which, though it is not phagedenic, is somewhat alarming in appearance, and that is the primary chancre which resembles a malignant pustule. Its characters are these: there is a great deal of surrounding inflammation and the part is much swollen: in the centre is a sore covered with a thick blackish dry scab looking like a dry eschar. The ugly term "ambustiform" has been recently applied to this form of chancre, suggesting to classical minds the slough produced by the cautery. I believe these chancres are always syphilitic, but they are not common.

Now we come to the important question of the difficulties in the diagnosis of primary infecting sore—difficulties which every surgeon is certain to be confronted with. First, as to the decision between "soft sores" and true infective chancres. The term "soft sore" is so useful that we shall be obliged to retain it. You know that a soft sore may become indurated after the lapse of a certain time. The soft sore is said to be due to a specific bacillus, but it is premature to speak positively as to that. As to the true primary chancre, we are ignorant as to what sort of bacillus causes the infection or whether it is a micro-organism at all, and this in spite of the work of a great number of skilled bacteriologists. As you know, soft non-infecting sores are attended in many cases by abscesses in the groin, and the sores themselves are usually multiple. We saw that the primary infecting sores of the genitals were multiple in only about one in five cases. Out of 125 examples of primary infecting sores these were single in a little over 100. Where you have eight or ten or more pus-secreting sores you can feel little doubt about the diagnosis, especially if the glands are already painful and inflamed. But it must not be forgotten that one of these soft sores may take on induration and prove infective. Note that the longer the time which has elapsed before the sore is noticed the greater the probability is that it is infective. The soft sore chiefly comes on from three to five days after infection; the primary chancre may not show itself for from two to three weeks or even longer. The character of the bubo is often of more importance than the chancre; that point we have already dwelt upon. But I want to urge this point, that those who have had the most experience in the diagnosis become more and more cautious in giving a final opinion until a certain amount of time has elapsed from infection. The patient will say, "Is this sore a primary chancre or not? When can you say positively?" The answer is that in three or four weeks after infection you can generally decide, but that before that time no one can tell with certainty, and that sometimes it may be six weeks or even more before you can say positively. Every one of us will, in all probability, make mistakes in diagnosing between soft sores and primary syphilitic sores. The more experience one has the more cautious one gets in giving a positive diagnosis until a certain time had elapsed. I wish that bacteriological examination were likely to be of assistance, but I doubt if it ever will be. Even granted that the soft chancre has a peculiar bacillus its presence would not prove that the patient had not acquired the syphilitic virus also. We must therefore go mainly on the clinical investigation of the chancre and bubo from all their aspects, not forgetting to examine for indurated lymphatic cords.

It may be said that the mercurial treatment can now be conducted with so little damage to the general health that in any case where you are doubtful as to diagnosis the real benefit of the doubt will come in giving the patient mercury. That is to some extent true, but it is not a very satisfactory position, say, at the end of six months after you have been

giving mercury, to feel still doubtful as to the true nature of the case. The patient may ask you at the end of that time whether he has had syphilis or not, and whether he may marry in a year or two, or whether he is to go on with the treatment for two years. You will at once see that the position then is a difficult one. Still, some authorities hold that when in doubt you should give mercury. The general opinion seems to be veering round towards that, and it is so because nowadays mercury can be given with proper safeguards with so little damage to the patient's health, occupation, or his general habits that it has become a mere bagatelle to go in for nine or eighteen months' mercurial treatment. Still, you should certainly wait a little time before making a diagnosis. I may mention, by the way, that I knew of a case where a gentleman went to a surgeon, a specialist, on the day after contagion—that is to say, within 24 hours. The gentleman said, "I think I have got syphilis." There was nothing abnormal to be seen, not even an abrasion. The surgeon said, "You had better have mercurial injections; anyhow it will prevent your getting tertiary symptoms." So that though there was never the slightest symptom of venereal disease this man went through a course of mercurial injections until he got tired of them. That is perhaps going to extremes and I do not think it should be held up as an example to follow.

There are some interesting cases of tertiary ulceration of the genitals which may readily lead you astray. The patient himself or herself thinks that the ulcer is syphilitic and you are apt to treat such lesions as primary sores. I show you a picture of a primary sore which fairly resembles a gummatous ulcer in its shape and in the slough. I will now give you the notes of a case in which I made the mistake myself. A man had slight secondary syphilis in 1893. He was treated with green iodide of mercury and, as generally happens when green iodide of mercury is given, the treatment was imperfect. In 1895 he suffered from severe ulceration of his cheek and palate. He was given liquor hydrargyri and iodide of potassium for 12 months. In 1896, three years after his secondary symptoms, he came to me with a supposed chancre spreading round the furrow of the prepuce. It was 10 days after suspicious intercourse and it looked uncommonly like a fresh chancre. As he had had syphilis two years before it was hardly likely to be a second infection. I treated it locally with black-wash, calomel, iodoform, and pure carbolic acid applied repeatedly and vigorously. It was only at the end of two months that I recognised that it was merely a tertiary sore and I gave iodide of potassium with the result that it speedily melted away. This example may impress upon you the fact that tertiary sores on the genitals are very apt to give rise to mistakes in diagnosis. I have known of a number of cases of which I will mention only one or two of the most interesting.

A woman came to the out-patient department here with a large inveterate ulcer of the leg which was diagnosed to be epitheliomatous. The leg was amputated through the knee-joint and the microscopical sections, which I saw myself, were not conclusive as to epithelioma; they were more like those of a gummatous ulcer. Six months later she came under my care with a large hard-edged ulcer of the left labium majore and some swelling of the inguinal lymphatic glands. This ulcer was very like a commencing epithelioma. On the other hand, it was fairly like a tertiary ulcer. Having seen these sections of the ulcer of the leg I thought that it was tertiary syphilis. But as it was in a perfectly convenient position for excision and she was an elderly woman, and as therefore there was likelihood that it might be epithelioma, I excised it, and microscopical examination again negatived epithelioma and pointed strongly to tertiary syphilis.

A man who admitted having had gonorrhœa ten years and two years previously came to me on account of a large gummatous ulcer on the under surface of the penis, unaccompanied by any marked enlargement of the lymphatic glands. There had been exposure to contagion within a short time. On examining his body all over I found a large inflamed node on the right clavicle which he had not mentioned, and another softening one over the manubrium sterni, proving the tertiary nature of his complaint, although we could get no history from him of primary syphilis. All the lesions were cured by iodide of potassium.

Cases of extreme interest sometimes occur of what is called relapsing induration at the site of a former chancre. As a matter of fact, my father and Professor Fournier were the first to call attention to these peculiar cases. The main facts about them are the following. At the site of a primary chancre, years after the infection and with or without exposure to fresh risk, induration occurs, which as a rule does not lead to ulceration but persists an indefinite time, sometimes, however, breaking down in the centre. It is hardly ever accompanied, as far as my experience has gone, with marked enlargement of the inguinal glands. It may occur quite apart from any fresh contagion, though it is curious how often you get a history of this. The recurring or relapsing indurations may occur any number of years after the primary disease, and one's belief is that they are of the same nature as gummatous infiltrations. That is the best way of regarding them and it emphasises the fact that as a rule iodide of potassium effects a speedy cure and is the best drug to give. The subject is of great interest with regard to the germ theory of syphilis. We know how closely syphilis imitates tubercle in many of its effects and that residual tuberculous abscesses or relapses of tuberculous affections in the lungs and the joints occur in an individual many years after the disease has quieted down. It is tempting to suggest that these relapsing indurations and gummatous ulcerations at the site of primary sores are due to a sort of re-awakening of the germs of the syphilitic virus which have lain dormant for years close to the scar. But it is pure theory; we cannot dogmatise as to the syphilitic virus; we do not even know that it is a bacillus.

I would impress upon you the importance of not overlooking an epithelioma of the genital surfaces (especially of the penis), thinking it is a primary sore. Most of the cases of epithelioma of the penis which I have operated upon here—and they amount to a considerable number—have been those of patients who have come up to the Lock Hospital believing that they had a venereal sore. In the last case, which was here a week or two ago, the patient had been sent up from the country and had been for six months under treatment with epithelioma of the penis, the treatment having been, however, entirely anti-syphilitic. I need not impress upon you the danger of making that mistake in diagnosis. It does not matter very much, perhaps, if you overlook a primary sore for a few weeks, but it is of the greatest importance that an epithelioma should not be neglected or overlooked. And I would say this: Never prolong unduly the trial of mercury and iodide of potassium in a doubtful case. If the ulcer is a primary chancre it melts away, as a rule, under mercury properly given. If it be epithelioma no effect will be produced in the course of two or three weeks, and that time should be enough to enable one to come to a decision as to the nature of the sore. Epithelioma of the penis may occur either in the form of a cauliflower growth or of a disc of induration, the latter being extremely like a primary sore, and if it be concealed by the prepuce the diagnosis is undoubtedly difficult. In doubtful cases one must slit up the prepuce, and if that be done the difficulty in diagnosis is soon cleared up. It may here be noted that molluscum contagiosum occurs on the genitals not infrequently. I have seen many cases and have a strong belief that they are usually due to inoculation during intercourse. If one of these molluscum nodules is shed spontaneously the ulcer left may possibly be mistaken for a chancre.

The following case is true though it may appear incredible. A man came with a sore on his penis which proved to be due to vaccination. The history was this. He was a married man and his wife was suckling a child who had lately been vaccinated. In some way the vaccination virus had been conveyed from the infant to the genitals of the mother and she had a vaccination sore on her vulva. The man also was susceptible and contracted a vaccination sore on the penis from his wife.

As to the treatment of primary sores I will be very brief. As a rule, whether the sore be hard or soft one should avoid ointments. They rarely suit, and I never use them. Drying powders are far better, and it is interesting to note that in England in the fourteenth century, before they had any experience of true syphilis, soft sores of the penis were directed to be treated with the ashes of burnt linen. They could not have devised a more sensible treatment. Under simple antiseptic treatment soft sores will generally heal rapidly, and undoubtedly for the soft sores and for the doubtful sores iodoform and boric powder—e.g., in the proportion of one to four—can hardly be improved upon. Calomel powder, either diluted or not, and the old-fashioned

black-wash are excellent applications for venereal sores. For soft chancres I believe strongly in cauterisation with pure carbolic acid, with which there is no need to apply cocaine as there is not much pain and it causes the soft sores to heal up rapidly. The treatment is also valuable because in many cases I believe it prevents the occurrence of suppurating bubo. If, and as soon as, your diagnosis is certain that the case is one of primary syphilis, give mercury. There is nothing which will cause the induration to melt away so rapidly as the internal use of mercury. With regard to excision in doubtful cases I could give several instances where excision has proved quite useless, although it has been done within a few days of contagion.

A word, in conclusion, as to the history of the occurrence of primary sores. Be very cautious in accepting patients' statements. They often conceal the fact that they have had primary sores, and, of course, when months or years have elapsed they forget all the characters of them. You will learn to distrust the statements of patients as to the non-occurrence of venereal sores in the dim and distant past. Sometimes you will be told that although the patient had certain sores it was quite impossible that they could have been venereal, because the individual was "above suspicion." If a man ostentatiously parades the statement that he is above suspicion distrust him all the more. You probably know Sir Peter Teazle's opinion of humanity in general; if you do not know it I will not spoil your pleasure in looking it up.

Two Clinical Lectures

ON

THE USE OF MASSAGE IN RECENT FRACTURES AND OTHER COMMON INJURIES.

Delivered at St. George's Hospital on Jan. 30th and Feb. 27th, 1900,

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LECTURE II.[1]

Delivered on Feb. 27th.

GENTLEMEN,—In my previous lecture the expiration of the time at my disposal compelled me to omit any mention of two varieties of fractures of considerable importance from the point of view of the treatment by immediate massage—viz., fracture of the patella and of the olecranon. Until recently, as you know, the classical method of treating these fractures was by long confinement in splints or fixed apparatus (the period in the case of fracture of the patella extending sometimes to as much as a year or even more) with the object of obtaining as firm a union between the fragments as possible. Under such circumstances it cannot be considered remarkable that in many cases the difficulty in obtaining free movement at the knee at the end of the splinting period was extreme and that in some cases, indeed, the pain and distress entailed in the necessary treatment were more than the patients could endure. Those of you who have had no experience of the old treatment will get a good idea of the difficulties connected with obtaining subsequent free movement by reading the account which John Hunter gives of his own case. So great, indeed, was the pain sometimes under these circumstances that a certain number of people who had sustained a fracture of the knee-cap rather than bear the pain entailed in getting free movement preferred to remain with the limb more or less stiff. Speaking generally, the stiffness that follows on a fracture of the patella treated upon the old lines depends largely on the fixation of the upper fragment to the anterior aspect of the femur at the time when attempts at movement are commenced—not, of course, by bony ankylosis, but by adhesions which, forming around the margin of the knee-cap, so tighten the soft parts about it that it is sealed to the surface of the femur. In attempting to get movement in these cases when treated, as I have said, in the olden way, no really good result could be obtained until the adhesions were loosened—a difficult and painful process which was rendered necessary merely because the parts had been confined so long in splints without movement. Moreover, the strain put upon the parts under these circumstances frequently led to a great stretching of the uniting medium. The upper fragment of the patella remained, in fact, at first fixed and before the exercises had resulted in the breaking-down of the adhesions any movement obtained was at the expense of the stretching of the union, the stretching in some cases being very great; but even in such cases so long as the upper fragment ultimately became freely moveable on the femur a fairly good limb resulted in the majority. In the absence of the treatment by suture now so commonly employed the final result is dependent mainly upon two points: (1) the amount of laceration of the lateral expansions about the knee at the time of the injury (the less the lateral expansions are ruptured the more strength is there left in the joint after the fracture); and (2) the amount of mobility finally retained by the upper fragment of the patella. If the fragment does not contract inveterate adhesions and finally becomes freely moveable upon the femur a more or less useful limb follows, the strength of the limb, as a rule, then being in inverse ratio to the length of the uniting medium. If, on the other hand, fixation of this upper fragment occurs, then the interference with the mobility and strength of the joint is so great that the patient is greatly crippled.

The first object, then, in a case of a fracture of the patella, whether wiring has been practised or not, is to prevent by constant manipulation any chance of adhesion of the upper fragment to the femur—a treatment which excludes any form of splint which makes the patella inaccessible. This necessity for securing free mobility of the patella is not confined to cases of fracture, but if a rapid and perfect result is to be obtained it should be used in all cases of inflammation of the knee-joint, traumatic or otherwise, liable to be followed by stiffness. This is a point to which reference will again be made.

As I have already said, this method of treatment makes the use of fixed immoveable apparatus impossible, such, for example, as plaster-of-Paris, silicate of potash, and the like. I may at once state that I have no doubt that the sooner these stiff immoveable appliances become obsolete the better it will be in all cases of damage of joints and in the neighbourhood of joints. The stiffness and pain which so often followed in fracture of the patella when treated upon the old lines were much more frequently due to the treatment than to the injury. The best results which follow fracture of the patella when not subjected to the wiring treatment will be obtained by immediate smooth massage and patellar manipulation, followed in a fortnight or earlier by gentle passive movement of the knee. By such means in the majority of instances a useful limb may be expected in three months, all splints being discarded at the end of the first month. It is remarkable how little, if any, stretching of the union occurs in cases treated in this way *when care is taken from the outset to secure free movement of the patella upon the femur.*

The same observations apply with equal weight in the case of fracture of the olecranon. You will find upon examination that in the majority of cases of fracture of the olecranon treated by long-continued immobility in splints the detached fragment of the olecranon is practically fixed to the humerus. I do not mean that it is always fixed by bony ankylosis, but it is connected to the humerus by such strong adhesions that it is very difficult to move it at all. Further, you will find that the utility of the limb in such cases is in direct proportion to the mobility of the detached fragment upon the humerus—in fact, the utility of the limb depends more upon this factor than upon the apparent strength of the union. When the fragment is fixed it will be found upon commencing to bend the joint that movement is obtained not by the gliding downwards of the upper fragment upon the humerus, as should be the case, but by a stretching of the union, the fragment remaining fixed; and in such cases, although flexion may be obtained to a great degree, and sometimes completely, extension power is almost, if not entirely, wanting. So much is this the case sometimes in exaggerated cases that although the patient may be able to semiflex the arm or, perhaps, to flex it completely, if the limb is raised above the shoulder or by the side of the head

[1] Lecture I. was published in THE LANCET of June 2nd, 1900, p. 1562.

the forearm falls down almost as in a paralysed limb, in consequence of the triceps having lost its power from the fixation of the detached olecranon to the lower end of the humerus. If in the treatment of such a case trouble be taken during its early progress to constantly move the detached portion of the olecranon upon the humerus by a little gentle flexion and by lateral manipulation all adhesion is prevented and the patient probably recovers with a limb which is practically almost as useful as if there had been no fracture at all—the utility of the limb here, as in fracture of the patella, when the union is fibrous, depending as much or, indeed, more upon the freedom of movement of the detached fragment than upon the actual strength of the uniting medium.

The two great cardinal facts to bear in mind in the rational treatment of fracture of the patella and fracture of the olecranon are these: 1. The avoidance under all circumstances of any chance of the upper part of the patella or of the olecranon becoming adherent to the sub-jacent bone. Such adhesion may be prevented by massage and lateral manipulation combined with gentle flexion and extension, during which the detached fragment is made to move as much as possible with the distal portion of the limb—i.e., with the leg or forearm as the case may be—the lateral movement being the most readily managed and resulting in the least disturbance of the parts generally. 2. All manipulation and passive movement should be preceded by smooth rubbing of the muscles. By this treatment you will in the majority of cases provide the patient with a limb which is useful to an extraordinary degree beyond that which follows provided you do not adopt this plan. I am, of course, speaking generally only, because occasionally a case treated on other methods will leave a sound and good limb, but many of the cases so treated are very imperfect both in movement and in power. When the fracture of an olecranon is treated by wiring, screws, or pegs the same cardinal points must be borne in mind. Massage and passive movement cannot be practised too soon nor can the patient be encouraged too soon to use gentle voluntary movement at the elbow-joint.

I may perhaps be allowed a moment's digression here to explain, in order to avoid any misunderstanding, that the remarks which I have just made must not be held to imply that I have any wish to substitute in a general way treatment by massage and manipulation for the operative measures now so commonly employed in fractures of the olecranon and patella. I am second to none in my estimation of the value of these measures; but there must always remain a number of cases which, for reasons which it would be foreign to my present purpose to discuss, are not suitable for operation—some in themselves, some because the patient does not desire operation, and some in consequence of the circumstances in which the practitioner finds himself being not such as to justify his undertaking operative measures. In such cases intelligent massage and manipulation will produce a better result than any other plan and in many instances will restore the limb to a degree of usefulness which cannot even be excelled by operative treatment.

IMMEDIATE MASSAGE AND MANIPULATION IN DISLOCATIONS.

For the better understanding of the remarks which follow it is necessary to insist upon the following elementary points. If a dislocation be complete in the ordinary acceptation of the term the capsule of the joint must, as a matter of course, be torn, the rent in the capsule being of large or of small extent. The obstacles to the reduction of a dislocation depend comparatively little, as a rule, upon the situation or character of the laceration in the capsule; occasionally only do some of the difficulties met with in attempts at reduction lie with this structure. The real difficulty is for the most part due to muscular contraction—a fact which is amply proved by the manner in which most difficult dislocations will often reduce themselves as soon as the patient is fully anæsthetised. The longer a dislocation remains unreduced the more marked does this contraction of the muscles become and the more difficult is it to remove the bone from its abnormal site. Supposing that a dislocation remains unreduced for five, or six, or eight weeks in a case such as that of the shoulder, physiological shortening of the muscles takes place; and in consequence a reduction of the dislocation by ordinary means may become practically impossible. I mention these facts not because I suppose you are unfamiliar with them, but because I wish to emphasise as strongly as possible the importance of muscular contraction and shortening as the principal obstacles to reduction in the vast majority of the dislocations with which we are ordinarily called upon to deal. For practical purposes the capsule and surrounding bony points may be ignored, since if they afford any obstacle to reduction it is generally secondary to the condition of the muscles. It is further a most important point to bear in mind that under ordinary circumstances after the reduction of a dislocation the retention of the replaced bone in its normal site depends not so much upon the state of the capsule, which in reality has little to do with the matter, as upon the muscles, aided in certain cases by atmospheric pressure. In fact, the question of the healing of the rent in the capsule is of small importance compared with that affecting muscle-waste. The capsule will heal equally well whether the joint be kept fixed in splints or whether it be subjected to passive movement from the first. The muscles about the joint, especially those supplied by the same nerves, waste rapidly if the joint be kept fixed for ever so short a time and if the fixation be persisted in for long periods this wasting may proceed so far as to be incurable. On the other hand, if massage and passive movement be at once commenced then wasting can be entirely prevented. If the muscles are allowed to waste to any great extent, as you can easily see for yourselves by watching an ordinary case, the whole joint becomes loose and flabby. There is no such thing as a primary tonic condition of the capsule of the joint; the capsule of the joint is a passive structure and has no contractile vitality of any sort beyond that which it derives from muscular attachments and expansions. Hence prolonged fixation of a joint after the reduction of a dislocation allows the muscles to waste, which is tantamount to bringing about the precise conditions leading to recurrent dislocation if attempts to obtain free movement are made. The effect of even temporary fixation of a joint in the production of adhesions which have subsequently to be treated, often for long periods, I need hardly, I suppose, impress upon you—although I fancy that if you were to examine a large number of patients who have had dislocations, say of the shoulder-joint, at a long period after the injury, you would perhaps be surprised to find that the percentage of cases in which some stiffness still persists from this cause is considerable. In the practice of the older school of surgeons prolonged fixation of a joint after dislocation was almost universal, the main object being to allow of a firm and rapid union of the rent in the capsule. So much was thought of the value of the healed capsule in retaining the parts in position that the disadvantages of adhesions and muscle-waste were held to be of no account compared with the vital importance of the completely restored capsule. I strongly recommend you to reverse these conditions by concentrating your attention upon measures for the avoidance of adhesions and muscle-waste. Ignore the torn capsule; the rent will heal soundly in spite of any manipulations or movement it may be subjected to in treatment. Ingenious operations which from the nature of things cannot effect material good have been from time to time invented with a view to the cure of recurrent dislocation by shortening the loose capsules—the fact having been overlooked or forgotten that looseness of the capsule is secondary to muscle-waste, which is the real thing to be combated. The only available method by which muscle-waste can be avoided in these cases of dislocation, especially of the shoulder, is by massage, commencing immediately after the reduction of the displacement—smooth rubbing only for the first two days, after which passive movement follows the massage. *This passive movement may be very free in all directions save that which is in the direction of the muscles which tend to waste. For example, in the case of the shoulder, abduction of the arm from the trunk should not be practised for a week or 10 days after the injury, because the strong action of the adductors, unopposed for the time being by the weakened deltoid, tends to displace the head of the humerus inwards.* For the same reason in the first week no *voluntary* movements should be allowed, all movements being *passive*. Treated on these lines any dislocation of a major joint—e.g., shoulder or hip—may be cured in from two to three weeks without adhesions and with no stiffness remaining. All cases of recurrent dislocation will be found to be associated with marked muscle-waste. The cardinal principle in their treatment is in the direction of rectifying the atrophy of the muscles by massage and methodical exercises with or without electricity, and not in the direction of shortening the lax capsule by operation.

The beneficial effect of massage in dislocations is not limited to the treatment after reduction; it is sometimes of great use as an aid to reduction. The following case will serve as an illustration of this point. A highly sensitive and nervous lady, considerably beyond middle age, dislocated her shoulder in a fall which followed a slip on some parquet flooring. There was extreme pain and the muscular spasm was intense, the least attempt to move the parts eliciting loud cries of pain from the patient. Whilst waiting for the arrival of an anæsthetist, as the muscular spasm was so great, I gently massaged the region of the shoulder, upon which the pain seemed soon to be modified and by degrees disappeared. In the course of the rubbing I noticed that the muscles became less hard, and especially I observed that the *hollow tension* of the deltoid was succeeded by a feeling of softness. Seizing the favourable moment I passed my right hand into the axilla and with a sudden outward jerk reduced the dislocation easily (the displacement was sub-glenoid); in fact, had an anæsthetic been administered reduction could not have been more easily effected. In two other cases of dislocation of the shoulder of a similar kind, one being subcoracoid, the other sub-glenoid, I have in the same way effected reduction with remarkable ease. Cases like these show further the point I have already insisted upon—viz., the importance of concentrating your mind upon the condition of the muscles in cases of dislocation.

Before leaving the subject of dislocations allow me again to refer to the question of muscle-waste in these cases because I do not think in some instances it is sufficiently understood. In the case of the fleshy joints—e.g., the shoulder and hip—muscle-waste, unless the massage treatment is adopted, is too obvious to require comment. Wasting in the same manner occurs uniformly in all dislocations, although I hardly think that this is recognised by some people. The wasting, for instance, of the quadriceps in certain conditions of the knee is of common knowledge, but I venture to think that the wasting of the muscles controlling the ilio-tibial band is but little realised. Again, it would at first sight seem almost impossible that any wasting of muscles should follow upon dislocations of distal joints like the phalanges of the finger which are quite remote from muscular bellies, yet in these it will be found if examination be made that there is universally some wasting of the forearm, and further that the permanent sense of weakening which is complained of by some of the patients who have suffered from these injuries can only be rectified by voluntary exercises or by thorough massage of the forearm muscles. The bearing of these points upon the scientific treatment of these injuries is too obvious to require explanation, but it is, I am sure, of much more importance than is commonly thought. It would, of course, be interesting to describe *seriatim* and in detail the management of the various dislocations throughout the body by immediate massage and passive movement, but time will hardly allow of this. I hope, however, that what I have been able to say will be sufficient to indicate the general principles upon which the treatment should be conducted. Its modification to the requirements of the different joints is merely a matter for the exercise of ordinary intelligence.

IMMEDIATE MASSAGE IN SPRAINS, WRENCHES, AND BRUISES.

As in the case with dislocation, as I have endeavoured to explain, the objects to be attained in the treatment of sprains, wrenches, and bruises are the restoration to the normal state by the rapid removal of effused products, the prevention of adhesions, and the avoidance of muscle-waste. Any treatment which fails to obtain these ends is defective. Further, it is, I am sure, undeniable that the only plan of treatment which will attain the desired end with certainty and in a reasonable time is that by immediate massage and very early passive movement—a plan which is, if intelligently used, applicable universally, with the exception, perhaps, of a few special cases.

First, with regard to sprains. For our present purpose by a sprain is meant an injury to a joint, a muscle, or other soft parts by a wrench, a bend, or a twist. There is always some laceration of the tissues but there is no open wound. In the case of a joint the injury always involves some tearing of the fibres of the capsule, synovial apparatus, or cartilage. There is pain of variable degrees and there may or may not be effusion into the joint. Generally, if the sprain is of any severity there is effusion into the joint, if the effusion follows immediately upon the injury it is blood, if it follows a day or two subsequently it is due to synovitis. I must again crave your indulgence for emphasising such elementary points. The occurrence of this laceration in cases of sprain—which means, of course, a subcutaneous wound—led to the faulty practice of former times, which is even now, I fear, far too prevalent, of placing parts so injured for a long period in splints. This is the best possible method for facilitating the formation of adhesions and the perpetuation of muscle-waste, the main object of this mistaken treatment being to allow of the rapid healing of the wounded tissues—a point of comparatively small importance.

In order to make clear the plan of treatment which I use and which I strongly advise you to adopt in these injuries let us take the case of a man who has sprained his knee. At the time of his coming under observation—say a few hours after the injury—the joint is painful, swollen from effusion (probably for the most part blood), and any attempt at movement of the joint is resisted. The first indication is the removal of the effusion. With this object the patient is, if possible, sent to bed and the limb is placed upon a light back-splint—a ham-splint being the most convenient—applied so that free access is left to the joint. Gentle smooth massage over the swollen joint is commenced at once. (In very severe cases this is sometimes resented at first by the patient, whose resentment, however, soon subsides when he realises the soothing effect which the gentle rubbing produces.) In the intervals of the rubbing fomentations of lead and opium may be laid upon the joint; the opium soothes somewhat and the lead hardens the skin a little, which is useful in the subsequent management. From the first gentle passive movement of the patella is used, for the reasons which I have already sufficiently indicated. As soon as the effusion has distinctly commenced to subside, as is shown by the decrease in the tension of the joint, gentle passive movement (flexion and extension) is commenced, and if upon the commencement of the passive movement no increase of effusion occurs the splint is put aside altogether. When the patient comes under treatment immediately after the injury the splint can generally be dispensed with on the third day. With the discarding of the splint gentle massage of the thigh and leg is added to the rubbing of the joint itself, the passive movement and the massage becoming more and more thorough as the effusion subsides. A compress of the kind mentioned may be used in the intervals if it is comfortable to the patient. Treated in this simple way there are few cases of severe sprain of the knee in which the patient may not be getting about comfortably in a fortnight, at the end of which time another fortnight of methodical exercises, either in a gymnasium or by means of a "home" exerciser, will generally complete the cure. I have taken as an example a severe case requiring confinement to bed. The treatment of the milder forms is modified to the necessities of the case, the great points to be borne in mind being the necessity for avoidance of the use of splints after the effusion has commenced to subside, the immediate use of massage to the joint, and early passive movement. In all cases the early movements should be passive—the habit of sending the milder forms of sprains at once to the gymnasium is to be avoided. In no case of sprain should a cure be considered to have been obtained if any sign of wasting of muscle beyond that which comes from mere disuse remains. The longer the time which intervenes between the receipt of the injury and the commencement of the rational treatment the greater is the difficulty in rectifying the muscle-waste with its necessarily concurrent weakness, and in cases in which the parts have been long confined in splints a cure in the true sense is sometimes impossible.

The following points in the carrying out of passive movement in cases of sprain are of some moment. The first movements used should be those of the simplest kind; for example, flexion and extension in the hip or knee, antero-posterior movement in the shoulder, abduction and adduction should then follow, and finally rotation and circumduction in joints permitting of that movement. This sequence, however, is always interrupted for the following reason which is of paramount importance—*the last movement to be practised should be that which, so far as can be ascertained, was concerned in the production of the injury.* Let me make myself clear. Suppose for a moment that a severe sprain of the shoulder has been caused by a fall on the hand or elbow, the arm having been at the time widely abducted from the side—the damage will be probably about the inner aspect of the capsule or under the acromion.

n such a case passive abduction should be the last movement practised, as it would be the movement most likely to irritate the part immediately lacerated or bruised. Although it should be the last movement to be commenced it should not, however, be long deferred, seven days being probably the limit of time which can with safety be spared before its commencement. Again, in the sprain occurring in internal derangement of the knee-joint the injury is almost always caused by either internal or external rotation. In such a case, therefore, the last movement to be practised is rotation. Indeed, it is, speaking generally, better to avoid rotation altogether in that particular class of case.[2]

In sprains complicated by external wound it is clear that the plan which I have been advocating cannot immediately be adopted in its entirety, nor can massage be comfortably practised immediately over the damaged part when the skin is abraded or raw; but in such circumstances massage of neighbouring muscles and passive movement should always be practised, the peculiarities of each case dictating the modifications which are necessary in the application of the treatment.

I had intended giving some details of the treatment of simple bruises by this same plan of massage and movement, but the allotted time has been more than spent. All, therefore, that I can say is that in these cases the method of its application and the objects are the same as those already mentioned—viz., the rapid removal of effusion and the prevention of matting of the injured parts.

In conclusion, allow me to say that I have no desire that the treatment which I have been now advocating should be used to the exclusion of all others. My main object is to urge upon you the desirability of shaking off to some extent the incubus of the traditional routine treatment of fractures and the other kinds of injury of which I have been speaking by prolonged splinting, strappings, counter-irritants, &c, and, unless unavoidable circumstances prevent, to substitute a line of treatment which is, I am sure, rational and will in the end be found, by anyone who will take the trouble to acquire a personal experience of it, to produce results far superior to those obtainable by other plans.

THE PRIMARY DISORDERS OF GROWTH.

BY HASTINGS GILFORD, F.R.C.S. ENG.

THERE is a widespread belief that, apart from its antiquarian interest, medical history is of no practical use. Is not this largely because we do not apply the lessons which that history teaches to the circumstances of the present day? Neglect of the teaching of the past causes us to go astray in two opposite directions. On the one hand we are prone to treat the beliefs of our forefathers with more or less of contempt, while on the other hand we attach so much importance to them that we regard it as sacrilege to question their truth. Nothing, for example, can exceed our disdain of the practice which was in vogue during the early part of the century, yet much of our own practice is founded upon a groundwork which was laid down at the same period, and we are no more inclined to question its stability than we are to doubt the permanence of some stately cathedral.

Now, both these attitudes of mind are undoubtedly wrong. Both are due to a misapprehension of the principles which underlie all history. Perhaps the best corrective to that irreverence of mind which despises all that our forbears esteemed is the thought that this same history tells us beyond all denial that just as we look back upon the medical practitioners and the methods of 100 years ago so will our descendants of a century hence regard us and our methods. We are far too prone to view our work with a satisfaction and complacency which should go only with final achievement. We cannot realise that we are still running our race and are not even within sight of the goal.

We also have to lay it to heart that history teaches quite as emphatically that old-established theories must be constantly tested in the light of more recent days. They are good maxims which assert that we should accept nothing which is based solely upon authority and which bid us to be sceptical even of that of which we are most sure. The fact is, that we of the present day suffer from our very nearness to the work of our time—we have not the immense advantage of being able to look upon its facts and circumstances from a distance. Our ideas suffer from a want of perspective, and we are therefore apt to attach far too much importance to certain particulars and far too little to others. There is no better example of this form of distortion and of its possible consequences than the absorbing attention which is now being given to the causes and pathology of one class of diseases and the almost equal neglect which is meted out to others. Much good work has been done of late in the investigation of the influence of certain fungi in the production of disease, but there are indications that we are already losing all sense of proportion and are attaching too much importance to these fungi in their relation to etiology and pathology, and that we think far too highly of the effect of their destruction in the eradication of disease. There was at one time a sanguine hope that a method had at last been found whereby the bacillus of phthisis could be killed in the body without the destruction of its host. It was thought that the discovery had actually been made and that it was "the greatest medical discovery of the century"; but we have every reason to be thankful that these expectations were disappointed, for it is difficult to conceive of anything that would have been more disastrous to human health and happiness. Nothing is more certain than that these fungi, bad as they may seem in the individual, are salutary, and that, on the larger stage of human affairs, they play their allotted part wisely and well. They are as essential to our welfare as are decay and death, wherever they are found. Now, in these days the direct treatment of the fungus of phthisis is no longer the chief object of the physician, but it plays a secondary part, subordinate to the far more important clinical measures of fresh air, sunshine, regulated exercise, and food. There can be no doubt that could some method be found of safely and directly killing the fungus of phthisis, or of cholera, plague, or other disease, we should be inclined to rest content while the conditions which favour its growth would go on unheeded. We should in each case cast out one devil and leave a state of affairs which would favour the entrance of seven other devils far worse than the first. Yet there is still the same eager pursuit of the germs of disease and the same elusive hope that we shall gain by their destruction. It would be absurd to deny that good arises from this pursuit, but, unfortunately, there is evil as well; and not the least is the comparative neglect of the study of other diseases and their origins, some of which are more important and more worthy of investigation. Hence it has come to pass that while on the one hand we are rapidly gaining acquaintance with the appearance and habits of the parasites of phthisis, enteric fever, cholera, the plague, and other bacterial diseases, we know almost nothing of the factors which are responsible for the appearance of a large number of other disorders. Some of these, such as myxœdema, osteitis deformans, and acromegaly, have not long been brought to light, while others, and among them cirrhosis of the liver, ichthyosis, and primary Bright's disease, are comparatively old. With few exceptions they are regarded as diseases which have been well discussed by great authorities who are still living or are but recently dead, and it is commonly supposed that there is not much more to be learned about them. But it is contended that our knowledge of these diseases is by no means exhausted; moreover it is believed that their study will throw light on the causes and nature of innocent tumours and cancers and on the conditions which underlie the appearance of some of the bacterial diseases. In fact, there is reason to believe that their relation to some of the bacterial diseases is as that of the horse to the cart, and that they ought, therefore, to take a corresponding place in order of investigation. The most important of the diseases referred to are as follows, viz.: the different forms of leukæmia and primary anæmia; the muscular dystrophies; the scleroses of the brain and spinal cord; cirrhosis and acute atrophy of the liver, and primary Bright's disease; idiopathic obesity and emaciation; myxœdema and Graves's disease; Addison's disease, acromegaly, and gigantism; scleroderma and ichthyosis; and osteitis deformans and osteomalacia.

It is true that theories are not wanting to account for the appearance of these diseases, but as a rule they are indications rather of the existence of a natural horror of an

[2] For details of the author's treatment of these cases see THE LANCET, Jan. 6th, 1900, p. 6.

etiological vacuum than of a serious attempt to deal with the question which they are supposed to settle. This may be said, for example, of three of the most popular of these hypotheses—namely, the inflammatory, the bacterial, and the nervous. In nearly all cases one or other of these theories is torn out of its proper setting and forced to do duty in a way which is foreign to its nature. Each when applied to any one of these disorders is as a round cork to a square hole: it may be made to go in but will not fit.

Now it is the object of this paper to show that all the diseases in question belong in reality to the same type or group. At first this appears to be quite impossible, seeing that they differ so widely that they do not seem to have anything in common; but on subjecting them to that form of inquiry which has for its object the sifting of principles from details, it will be found that these differences, great as they may appear, are not in reality such as separate classes or orders, but only genera or species. They are in all cases due to differences of form, use, or age of the organ affected, and to these alone. They are secondary or accidental, and not primary or essential. If we put these accidental differences on one side and keep in view only those which are essential it will be found that the diseases in question resemble each other and differ from all other diseases in the following particulars.

A. Form.—The form which is assumed is invariably one of four kinds, the differences between them establishing the genera. The organ affected shows either: (*a*) hypertrophy (enlargement with increase of function), as of the thyroid gland in Graves's disease and of the bones in gigantism; (*b*) degenerative hyperplasia (enlargement with destruction of function), as of the thyroid gland in goitre, the bones in osteitis deformans, the blood in leukæmia, and the lymphatic glands in Hodgkin's disease; (*c*) hypoplasia (simple defect of growth), as of the brain in microcephalism and of the kidney in congenital "atrophy" of that organ; (*d*) degenerative hypoplasia (degeneration and wasting), as of the anterior horn of grey matter of the spinal cord in progressive muscular atrophy and of the liver in acute atrophy of that organ.

These forms may be still further reduced to two. In one (hypertrophy and hypoplasia) the constituent elements remain unaffected in proportion and quality though the organ itself may be either larger or smaller; in the other (degenerative hyperplasia and degenerative hypoplasia) together with alteration in size of the organ involved the constituent cells are degenerated, and running with this degeneration is more or less increase of tissue of low type. Some of the conditions included in the first of these two are on the boundary line between health and disease, as in hypertrophy of bone (gigantism), muscular hypertrophy, and obesity. While on the one hand they merge into conditions of health, on the other hand they shade off into the next group and show an especial tendency to degenerative changes. The following group characters must therefore be understood to apply more particularly to those diseases which are distinguished by degenerative atrophy or excess, though all diseases share in them more or less.

B. Functional characters.—1. All the diseases under consideration are *sporadic*, though some may be also endemic. Among the chief of these latter are goitre and osteomalacia. Others show the same tendency in a minor degree, as, e.g., osteitis deformans and pernicious anæmia.

2. All are *idiopathic* in origin, using the word in its widest sense as signifying, not that they have no cause (which would be absurd) but that their causes are not recognised or are unknown. This is true of every one of them, for though many diseases undoubtedly owe their appearance to certain more or less well-defined causes yet in no case can it be said that these causes account for all cases of the disease. Moreover, in those instances in which these proximate causes are so obvious as to admit of no question, they must still be regarded as idiopathic, since there is always some remote but necessary cause at work, of the nature of which we have to express our ignorance. Thus we well know that cirrhosis of the liver is produced by the action of alcohol; yet it is quite as certain that behind this there is an ultimate cause with the nature of which we are unacquainted and which is still more important than alcohol, for it is only in this way that we can account for the fact that hard drinking will produce the disease in one drinker and not in another, or that cirrhosis may occur in a teetotaler and not in a drunkard. On the other hand, no disease is truly idiopathic, in whatever sense the word is used, for not only must each have some primary cause, but, as a rule, some secondary influence can also be traced in its production. Thus, pernicious or idiopathic anæmia, notwithstanding its name, is undoubtedly sometimes partly caused by influences which have an exhausting effect upon the body at large and upon the blood in particular. Depressing mental emotion, excessive bleeding, insufficient food, and frequent child-bearing may each be regarded as a cause of pernicious anæmia. In most of these diseases a multiplicity of secondary causes, differing more or less in kind, can be traced, and this fact by itself at once shows that there is some one unknown, but essential, cause at work, for only on this ground can it be explained why different actions should produce the same effects.

3. All are *progressive* in their course, though this course is, in most cases, liable to interruptions. Periods sometimes occur during which the progress of the disease is arrested or positive improvement takes place. This is especially the case with pernicious anæmia, osteomalacia, lymphadenoma, the leukæmias, cirrhosis of the liver, granular kidney, Graves's disease, and disseminated sclerosis and other scleroses of the spinal cord, but it is also noticeable in other diseases of the group. These periods of abatement or arrest are irregular in their appearance and are more marked in some cases than in others.

4. All are *pernicious* in their results—i.e., when well established their course terminates only with the destruction of the part affected or in death. Exceptions to this rule are met with in some of those affections which are most exposed to external influences, such as scleroderma and ichthyosis, and, in a less degree, in other diseases. It is probable that in no case is the disease absolutely hopeless, though in most we are justified in pronouncing it to be so.

5. No remedy has been found of any certain effect in any one of them with the exception of the skin diseases. They are *incurable* by drugs. A modified exception must, however, be made in favour of three or four drugs, one of which is arsenic, which has been found to do good in pernicious anæmia, in the allied anæmias and leukæmias, and in some other diseases. Another is extract of the thyroid gland, which is of use in reducing obesity, goitre, and some other enlargements. Iodide of potassium and some of the salts of mercury may also have an influence in the direction of cure.

The diseases of the group have also certain other features in common.

6. They show peculiar liability to attacks of inflammation. This is most evident in the various forms of leukæmia and in fibrous degeneration of the liver, kidneys, lungs, prostate, and ovaries.

7. There is also close affinity between many of these diseases and the infective granulomata. This is especially shown in fibrous degeneration of the lungs, in lymphadenoma, and in local gigantism of the hands or feet. So close is this relation in certain cellular diseases of the adrenal and pituitary bodies that it may be almost impossible to say in a given case whether we have to do with a degenerative hyperplasia or with one form of granulomata or another. Sometimes, moreover, syphilis or tubercle may pass by almost imperceptible steps into hyperplasia or atrophy, as when it produces fibrosis of the lungs or liver, or when syphilis in its congenital or tertiary form affects the nervous system. It is probable that every one of the diseases of this group may be either produced or successfully imitated by syphilis alone.

8. They are all closely related to the innocent tumours and to the cancers. This is shown in the following ways—viz., (*a*) By their occasional occurrence together in different parts of the same body, as when fibrous or fatty tumours are found on the trunk of a patient affected with local giant growth of the extremities, or when myeloma occurs with Hodgkin's disease or with goitre,[1] or sarcoma of the stomach with osteitis deformans. Cancer of the breast, the rectum, or other part sometimes also occurs in patients affected with fibrous or cystic disease of the ovaries, or tumours of the suprarenal capsules (two cases) with sexual precocity.[2] I have seen the conjunction of idiopathic obesity with a cartilaginous outgrowth and with a third mark of degeneration—viz., diabetes. Instances are also reported of the association of splenic leukæmia[3] and of Hodgkin's disease[4]

[1] St. Bartholomew's Hospital Museum, 453*a*.

[2] Sir J. Burdon Sanderson: Transactions of the Pathological Society of London, vol. xx., p. 384; THE LANCET, Feb. 7th, 1885, p. 252.

[3] Archives de Médecine Expérimentale, March, 1895.

[4] Transactions of the Pathological Society of London, vol. xxix., p. 313.

respectively with carcinoma. Israel and Leyden[5] give details of a case which they believe to be one of mixed splenic anæmia, pernicious anæmia, and multiple sarcomata, but this opinion cannot be considered conclusive, for no microscopical examination of the blood appears to have been made during life. They refer to some cases reported by Grawitz in which sarcoma seems to have occurred with pernicious anæmia, and similar cases by Ehrlich and Litten are also mentioned. None of these cases, however, is of recent date. (*b*) More often the relation is indicated by the direct origin of tumours from parts affected with these diseases, as when fibrous or fatty tumours spring from giant extremities, tumours of bone, cartilage, marrow or sarcoma tissue from affections of bone (osteomalacia or osteitis deformans), carcinomata or sarcomata from cirrhosed livers, from cystic ovaries or breasts, or from goitres, and when fibro-myomata spring from enlarged prostates. (*c*) Innocent tumours and cancers also show a resemblance in having no known origin and in being pernicious and progressive, but irregular in rate of growth, incurable, and resistant to medicinal treatment.

9. There also appears to be some connexion between these diseases and congenital excesses and defects. This is shown (*a*) by the occurrence of a congenital malformation and one of these diseases in the same individual. As a rule the two occur together in the same organ or organs, as when macrodactyly affects a hand with webbed fingers (two cases)[6] or when misplaced or malformed kidneys, breasts, or testicles become the seat of fibrous or cystic disease. Dr. Hale White[7] gives a good instance of this combination of malformation with fibrous metaplasia. The patient was a child, aged nine years, each of whose kidneys was cut into by a band of fibrous tissue in such a way as to constrict off one-third of its substance. The smaller portion of each kidney, so constricted, was affected with cirrhosis. There was also an associated "hypertrophic" cirrhosis of the liver which was not due to alcohol. In another case we find cirrhosis of the liver occurring in an organ in which the left lobe was rudimentary.[8] The left kidney and suprarenal capsule were absent. Instances are also not very uncommon in which one organ is misplaced or malformed while the other is fibrous or cystic. At other times the malformation and degenerative disease occur in different organs, of which two instances have just been given and many others are reported. Thus Dr. Carrington[9] writes of a case of pernicious anæmia in which there were also various congenital deformities of the genito-urinary organs of the left side. Such cases as that of the association of malformation of an eye with hypertrophy of the sexual organs, of amyelus or atrophy of the thyroid gland with ichthyosis, of congenital heart disease with congenital splenic leukæmia,[10] or of retinitis pigmentosa with lymphadenoma,[11] are by no means uncommon. Sometimes the association occurs so often that it has become an item of ordinary information, as when polydactylism occurs with a particular form of idiopathic obesity, deaf-mutism with goitre, or cleft palate with cretinism. (*b*) At other times they are associated in different members of the same family. Of this, too, there are many instances, though it cannot be said whether they are sufficiently numerous to establish a connexion between them from this association alone. (*c*) Like congenital malformations, also, they show hereditary tendencies or occur as family diseases. This heredity may be direct or indirect. There is good evidence that *direct* and family heredity is sometimes shown by splenic leukæmia, osteomalacia, granular disease of the kidneys, goitre, Graves's disease, scleroderma, ichthyosis, and various fibrous degenerations of the muscular and nervous systems. There is also reason to believe that osteitis deformans, Addison's disease, lymphadenoma, and cirrhosis of the liver may be transmitted in the same way. *Indirect* heredity is that form of heredity which is manifested by the occurrence of one or more diseases of the group in a family of which other members are affected with some disorder which is recognised to be hereditary. Thus there are many instances on record of one or more members of a family being the subject of diabetes, hare-lip, goitre, polydactylism, or other stigma of a transmissible nature, while others are affected with some disease of the group now being referred to. This association when it takes place is nearly always alluded to incidentally. Probably many other cases occur in which it is not thought worth while even to make mention of it, the connexion between the different diseases being thought to be too remote. (*d*) They also behave like congenital malformations in showing a tendency to occur together in the same individual. Moreover, like them, they as a rule affect those parts which are related physiologically or by continuity of tissue. Thus hyperplasia commencing in one hand or foot is prone to extend to the rest of the limb or to the other hand or foot. In granular disease of the kidney both organs, as a rule, are involved, though one may be much worse than the other, and it is rare not to find other parts of the cardio-vascular system affected as well, while cirrhosis of the liver is a frequent concomitant. Hyperplasia of the lymphatic glands, in the same way, soon leads to degenerative changes in the blood or spleen. In the same way, also, hypoplasia or hyperplasia of deep layers of the skin sometimes leads to corresponding defect or excess of the underlying connective tissues, or even of the bones, as in facial hemi-atrophy and hemi-hypertrophy. There is also reason to believe that degenerative hyperplasia of the bone marrow and bone (osteomalacia and osteitis deformans) may occur together. Many other instances occur. Thus splenic leukæmia may be associated with chronic Bright's disease,[12] splenic anæmia with cirrhosis of the liver,[13] and primary uncomplicated splenomegaly with cirrhosis of the liver.[14] (*e*) Or they may occur in different members of the same family. Thus among the many cases which are reported in different journals we find one in which one member of a family had muscular dystrophy, another cirrhosis of the liver, while yet another died from granular disease of the kidneys. In another case one had cirrhosis of the liver and another disseminated sclerosis. Sänger,[15] in describing a case of congenital splenic leukæmia, mentions that the mother was affected at the time of the child's birth with chronic Bright's disease. I myself was recently present at the post-mortem examination of a child (a patient of Dr. Francis Hawkins) who had died from cirrhosis of the liver and in whom the spleen was found to be large and in a more advanced stage of fibrosis than the liver. A brother of this patient was suffering at the time from muscular dystrophy. No cause could be found for these diseases. Many other similar cases might be mentioned, but perhaps the most striking is one which is incidentally referred to by Professor Clifford Allbutt,[16] who says that he was "once called in consultation to a father and three children, whose maladies were as follows: carcinoma, lymphadenoma, pernicious anæmia, and pseudo-hypertrophic palsy." All these are examples of heredity showing itself in an indirect manner. They furnish evidence as to the unity of the different diseases. Other instances will be referred to presently.

SIGNIFICANCE OF ASSOCIATION.

The association of these diseases in the same family or the same individual has hitherto been held to be due either to mere coincidence or to the one disease being the direct outcome of the other. The latter view may, however, in most cases be at once dismissed, seeing that it is usually founded on the fact of association alone and has no other basis. In regard to the former view it is obvious that it cannot be entertained if in the case of any given disease it can be shown that those affected with it are far more subject to either of these diseases than are the population in general. Due allowance in such cases must, of course, be made for the action of some common exciting cause—such as alcohol or syphilis. As a matter of fact it is widely recognised that after making such deduction certain of these diseases occur in association much more frequently than can be explained on the score of mere chance. Under these circumstances the aid of a "diathesis" has been called in and an individual affected with degenerative hyperplasia of two or more organs, such as the lungs, the liver, and the spinal cord, or the kidneys, is said to be suffering from the effects of a "fibroid diathesis." In other words, it is recognised that behind these associated diseases there is some dyscrasia which predisposes the tissues to mixed overgrowth and degeneration.

[5] Berliner Klinische Wochenschrift, 1890, p. 231.
[6] Bulletin de la Société de Chirurgie, December, 1880; Guy's Hospital Gazette, July 30th, 1898, p. 336.
[7] Transactions of the Pathological Society of London, vol. xxvi., p. 262.
[8] Brit. Med. Jour., vol. i., 1883, p. 115.
[9] Transactions of the Pathological Society of London, vol. xxxv., p. 257.
[10] Münchener Medicinische Wochenschrift, 1898, vol. xlv.
[11] Brit. Med. Jour., vol. ii., 1896, p. 1781.
[12] Von Jaksch: Clinical Diagnosis, translated by Dr. Cagney, p. 20.
[13] Virchow's Archiv (Oestreich), Band cxlii., p. 285.
[14] L'Union Médicale, 1892, No. 90, p. 177.
[15] Archiv für Gynäkologie, Band xxxiii., H. 2, p. 198.
[16] Brit. Med. Jour., vol. ii., 1888, p. 287.

This is, in fact, identical with the view which is now being put forward. Here, however, it is widened in scope so as to embrace degenerative overgrowths of all organs and tissues. It includes not only morbid excesses of growth, but defects, especially where they are combined with degeneration, and these excesses and defects may date from all periods, either before or after birth.

But although it is recognised that there is some common factor underlying the appearance in the same person of such prevalent diseases as cirrhosis of the liver and granular kidneys, the same cannot be said of the rarer of the diseases under consideration. Yet the statistics of some of the less common of these diseases seem to tell the same tale. Thus, in writing of splenic leukæmia Sir William Gowers [17] says that among 111 cases the state of the kidneys was referred to in 62, and that in six of these they were affected with Bright's disease; while among 109 cases of leukæmia there were three instances of cirrhosis of the liver. Now the percentage of liver and kidney diseases here is far higher than it is among the healthy, yet it is quite possible that there was some common exciting cause, such as alcohol or syphilis, which accounted for the association, though Sir William Gowers himself says that it was accidental. The same explanation may also be given of the conjunction in the same person of Addison's disease and cirrhosis of the liver (Dr. Leva [18] and also Dr. Carrington [19]), of Addison's disease and chronic Bright's disease (Dr. Thompson [20]), or of pernicious anæmia and goitre.[21] But it is evident that the more these instances multiply and the rarer the diseases themselves are, the less likely it is that their conjunction is due to mere chance. Thus in a case of Addison's disease in a man, aged 36 years, which was carefully examined by Dr. Bergtold,[22] it was found after death that there was not only the usual lesion of the suprarenal capsules, but that there was also slight emphysema of the lungs, cirrhosis of the liver, fibrosis of the spleen, chronic Bright's disease of the kidneys, and obliterating degeneration of the arteries. The diseased capsules were examined for tubercle bacilli, but none was found. Now, it is true that this man "had been in the habit of drinking a great deal of beer," but nevertheless the bare fact of the occurrence of such a number of degenerative diseases in one man goes a long way towards proving their family connexion and dependence upon some remoter origin than beer. Perhaps even more may be said of the association of two such rare diseases as Hodgkin's disease and osteomalacia (Dr. Goodhart [23]) or of Graves's disease and osteomalacia.[24] Equally significant is the occurrence among different members of the same family of Addison's disease and Graves's disease (Dr. Hale White [25]), and it would be contrary to all the rules of evidence to believe it possible that the before-mentioned instance of the occurrence of carcinoma, muscular pseudo-hypertrophy, pernicious anæmia, and lymphadenoma in a father and his three children respectively (Professor Clifford Allbutt) should have no other explanation than that of fate. Finally, some diseases are associated so often that there seems to be no possible escape from the inference that there is some common but remote factor which connects one with the other. This may be said, for example, of the conjunction of cirrhosis or atrophy of the stomach and intestines with pernicious anæmia, of fibrous degenerations of the spinal cord with pernicious anæmia, of similar degenerations of the brain and spinal cord with osteomalacia, and perhaps Dr. R. Saundby's [26] cases of hereditary enlargement of the spleen with atrophy of the suprarenal capsules. In each of the first three of these instances the usual explanation is that the association is due either to the one disease being the direct cause of the other, or to both being the result of the same poison acting in different ways on different parts. The view which is held here is that they are related to one another as cleft palate is related to club-foot, that they are the expression of some intrinsic and unexplained anomaly of growth or malformation, and that, like all other malformations, they tend to occur in different parts of the same body and in different members of the same family.

Beyond what has already been said, evidence as to the class unity of these diseases and as to their nature is furnished by the occurrence of certain links which connect two or more of them together. Thus diabetes, which is one of these links, is found in association with cirrhosis of the liver, idiopathic obesity, splenic leukæmia, pernicious anæmia (Osler), osteomalacia, acromegaly, Graves's disease, general paralysis, and tabes dorsalis. Goitre is another such link, and scleroderma another. These and chronic Bright's disease, or "dropsy," or "liver disease," are not infrequently found as comcomitants or as family complaints in the clinical reports of the rarer diseases.

Some of the associations which have been mentioned are by no means convincing and are doubtless capable of explanation on other grounds than that of a common origin of the associated diseases in a depravity of growth. But it must be insisted upon that the subject is not like a chain whose strength resides in its weakest link. It is like a collection of sticks, some of which may be mere twigs and easily snapped when they are taken separately, but when bound up together they form a bundle which cannot so readily be broken. It must be recognised that that the subject is one which is strengthened by everything that supports it, however weak it may be. Taken as a whole, in this way the facts are consistent with the view that the diseases which have been mentioned owe their origin to the same ultimate cause acting in the same way upon different tissues. They form a group which is closely connected with that of the granulomata and the tumours, and which differs in no essential particular from that which is formed by congenital malformations, but differs in every important respect from all other groups.

RELATION TO OTHER DISEASES.

Mixed forms.—This group of primary growth diseases comes in contact with other groups in many directions. Thus it is mixed more or less with other groups in rheumatoid arthritis, in the infective granulomata, and in inflammation. Hereditary and tertiary syphilis in particular sometimes give rise to such overgrowth and degeneration as may be indistinguishable from that which is idiopathic. This is the case, e.g., in some instances of locomotor ataxia, of general paralysis, and of leucoplakia of the tongue.

Relation to inflammation.—Inflammation runs by such imperceptible degrees into degenerative hyperplasia that instances occur of which it is almost impossible to say whether they are more inflammatory or more hyperplastic. This is well shown in a case which I once reported,[27] in which these two processes also merged into that of new growth. In this case a concretion in a vermiform appendix gave rise first to inflammation with the formation of pus and then to a large hyperplastic swelling which finally ended in sarcoma. As a rule, however, inflammation, when it arises in the course of lymphadenoma, splenic enlargement, cirrhosis of the liver, or any other of the group, is not primary but is an addition to the morbid process; or, at most, it acts but as a secondary or exciting cause. It then signifies no more than that tissues affected with overgrowth and degeneration are thereby rendered more vulnerable to those micro-organisms which give rise to inflammation. But though inflammation and hyperplasia are closely connected they are in reality very different processes. Inflammation is essentially a protective and *destructive* process; whereas the process which gives rise to scleroderma, muscular pseudo-hypertrophy, Hodgkin's disease, osteitis deformans, and other diseases of the group, is essentially self-contained and *constructive*. The one has a motive, the other has none.

Relation to malformations.—While degenerative hyperplasia and inflammation are distinct from one another the same cannot be said of hyperplasia and the malformations, or errors of development. Everything that is known of these two goes to prove that they are identical. It is so usual to associate developmental errors with fœtal life that we sometimes forget that the processes of growth and development, with the possibility of running too far or in wrong directions, do not stop at birth, but continue even up

[17] Reynolds's System of Medicine, vol. v., p. 216.
[18] Virchow's Archiv (Oestreich), Band cxxv., 12 f., p. 85.
[19] Transactions of the Pathological Society of London, vol. xxiv., p. 454.
[20] American Journal of the Medical Sciences, October, 1893, vol. cvii.
[21] Brit. Med. Jour., vol. ii., Nov. 14th, 1885.
[22] New York Medical Journal, Jan. 13th, 1891, p. 665.
[23] Transactions of the Pathological Society of London, vol. xxxix., p. 262.
[24] Twentieth Century Practice of Medicine, vol. iv., p. 787.
[25] Brit. Med. Jour., vol. i., 1890, p. 1197.
[26] Transactions of the Pathological Society of London, vol. xxxvi., p. 440.
[27] THE LANCET, July 29th, 1893, p. 241.

to middle age, and then only to give place to processes which end in decay. During the whole of this period of the rise and decline of life growth may go astray, and the disorders which show themselves at different periods are necessarily tinged with the characters of the particular period in which they first appear. Thus we can hardly expect that a mistake in the processes of growth originating in the first month after birth will show itself in exactly the same way as one which takes place in the first month of fœtal life, nor ought we to suppose that a fault of similar nature starting in infancy will lead to the same results as one which first shows itself in middle or old age.

The differences that may in this way arise at different ages may be formulated as follows. Errors of growth taking place in early life may be expected to differ from those which first appear at a later age. 1. They will differ in being more rapid, in accordance with the greater rapidity of the processes of natural growth and development. 2. They will differ in being more definite and complete, owing to the same cause. 3. They will differ in being more widespread, for the same reason and because of the comparative smallness of the area to be covered. 4. They will differ in being more often multiple, because an affection taking place in a plastic tissue will naturally tend to implicate each of the different organs into which that tissue is moulded. 5. Errors of development occurring in early life must also be more often hereditary or family diseases, because it must of necessity happen that the stronger the taint the earlier will it tend to show itself. 6. Also in the case of double organs the more complete will be the compensation when only one is involved. On the other hand, when single organs are diseased the more profoundly will all those tissues be affected which are dependent upon them. 7. As a rule, the earlier in life the disease occurs the more defined will be its cause. Those malformations which occur in fœtal life we have no hesitation in calling idiopathic; those which first show themselves in infancy or childhood (e.g., cretinism, pseudo-hypertrophic paralysis, cirrhosis of the liver, or granular kidneys) we suspect may have some other cause; but those which first appear in adult life, such as myxœdema, cirrhosis of the liver, granular kidneys, splenic leucocythæmia, or Hodgkin's disease, we attribute to many causes. These etiological differences arise from the fact that before birth influences which can be brought to bear upon processes of growth are so scanty that, with the exception of syphilis and alcohol, they are a negligible quantity. But in later life there are many influences which may affect growth adversely and play their part in the production of disorder.

If we keep in view such considerations as these we find sufficient explanation for the fact that some diseases which were at one time thought to be distinct are now known to be in reality the same diseases modified by age. Thus, the skin disease of the harlequin fœtus is now recognised to be the same disorder as the ichthyosis of the youth or the young adult. It is the same disease, but more rapid in its development, more definite and complete, covering a wider area, more often hereditary, and affecting the functions of the body more profoundly. Goitre and arrest of growth of the thyroid gland in the fœtus give rise to a condition which is so different from the cretinism of the infant that it is sometimes looked upon as a different disease and called fœtal rickets. Cretinism of the infant, again, was at one time regarded as a totally different disease from the cretinism of the adult, and it was for this reason that the latter was so unfortunate as to receive a different name. It is now clearly recognised that these three diseases are but instances of the same disease affecting people of different ages. Myxœdema is the same as congenital and infantile cretinism, but is slower in its appearance, less definite and complete, less hereditary, and less disastrous in its effects. All these differences are due to the fact that in one case it first shows itself in an individual who has reached an age when all the processes of life are more subdued, while in others it acts upon the body at times of life when changes are rapid.

In the same way it may be shown that scleroderma, primary lymphatic enlargements, cirrhosis of the liver, granular kidneys, hyperplasia of bone, and similar affections of other organs are sometimes so modified by age that at different periods they may appear to be different diseases. But by making allowance for the effects of age and by tracing disease step by step in different cases, from fœtal life or early infancy to its appearance in adult life or middle age, we find that there is no gap between the conditions we meet with in early periods of life and those which we meet with in the later periods. In this manner we can trace, for example, an unbroken connexion between the granular kidney of the adult, and the absence, or mere fibrous vestige, of that organ which is sometimes met with in the fœtus; between complete absence of a thyroid gland and a fibrous goitre; between an atrophied suprarenal body and one which is cystic, fibrous, or "tubercular."

PATHOLOGY.

These facts and deductions enable us to understand the nature of the morbid process with which we are now dealing. They show that the four different forms which were referred to at the outset are but modifications in rate of growth or maturity. Simple excesses and defects of growth (hypertrophy and simple hypoplasia) are abnormal manifestations of the developing stages of tissue life, and may or may not terminate in premature degeneration. Degeneration and degeneration with overgrowth (degenerative hypoplasia and degenerative hyperplasia) are disorders of the declining periods of tissue life, and at whatever age they occur may be regarded as manifestations of local senile decay or of that which is equivalent to it. In no other way can the anatomical and clinical features of these diseases be accounted for.

Further evidence of the nature of these diseases is furnished by comparing these growth diseases with normal growth.

1. The clinical characters are such as we might expect to find in a primary perversion of growth. Thus the diseases are sometimes inherited because peculiarities of normal growth are to some extent heritable. They are progressive and remittent because natural growth is progressive and proceeds, not with absolute regularity, but by successive impulses, alternating with periods of comparative quiescence. They are pernicious and incurable for the reasons that healthy senile changes terminate either in complete extinction of the function of an organ or in death, and no one has yet been able to permanently arrest the progress of old age.

2. That they are disturbances of growth is also indicated by the way in which they are affected by those changes which influence the rate of normal growth. Hence they are peculiarly liable to appear during fœtal life, early infancy, puberty, and the menopause, and often originate in, or are improved or aggravated by, pregnancy and the puerperal state. Chronic Bright's disease, pernicious anæmia, and other primary anæmias and leukæmias, osteomalacia, Graves's disease, goitre, acute yellow atrophy of the liver, and Addison's disease are especially implicated in the physiological rise and fall of growth and nutrition which are incidental to child-bearing and the puerperal state, and such a fact as this is of the greatest significance in its bearing on the nature of these diseases.

3. The two kinds of degenerative changes (degeneration and degenerative overgrowth) are identical in nature, if not in quantity, with those which occur in organs affected with senile decay. Thus in the case of the liver granular and fatty degeneration of liver cells sometimes takes place in the old of exactly the same character, though less in quantity and intensity, as that which is found in "acute atrophy." Moreover, there is often decided increase in the quantity of connective tissue in old livers, like that which is sometimes so excessive in cirrhosis; and we may speak in a similar manner of the kidney, spleen, bone, and other organs. Anatomically, in short, degeneration, and degeneration with overgrowth, are exaggerations or caricatures of that which takes place physiologically in old age.

4. Moreover, all those factors which help to give rise to leucocythæmia, granular kidney, acromegaly, pernicious anæmia, and other disorders of their class are essentially of a depressing or ageing character. On the contrary, all those factors which have any influence in delaying the progress of these diseases have actions which are physiologically of the opposite nature. Hence, on the one hand, we find that anxiety, grief, and other depressing emotions, low-lying malarious districts or sunless valleys, repeated pregnancies, insufficient food and clothing, frequent losses of blood, syphilis, alcohol with its offspring gout, and old age itself, all act as causes of these degenerations; and probably nothing has been left outside this list that is of any consequence. All are debilitating and depressing, and the only one to which exception might

be taken on this score is, perhaps, the worst offender of all. I allude to alcohol. It both stimulates and narcotises, both elevates and degrades. It narcotises or depresses all the higher functions of the body and of the mind and lessens the acuteness of the sensations and perceptions. At the same time, it not only impairs functions but disturbs them. It acts upon one part more than another. It diminishes the influence of the inhibitors or controllers and thus indirectly stimulates those functions and qualities which it is their office to control. It stimulates also by dilating the blood-vessels and accelerating the action of the heart. But the action is that of a drug and not of a food: it is pathological and not physiological. This action, which is obvious when alcohol is taken in great excess, differs only in degree from that which is manifested when it is taken in small doses. A stimulant-narcotic action of this character is just that which is best calculated to bring about mixed overgrowth and degeneration and it amply accounts for the disastrous and paramount influence which is played by alcoholic excess in the production of cirrhosis of the liver, granular kidneys, and fibrous degenerations of the brain, lungs, and other organs. On the other hand, the only remedies which are of any use in delaying the progress of these diseases have in health an "alterative" effect which is of an opposite character to the above. These remedies are, among drugs, arsenic, mercury, the iodides, and thyroid extract; and, among hygienic measures, fresh air, sunshine, bracing climates, electricity, massage, good food, and congenial occupation and lively society.

5. Another feature of the degenerative diseases which points to their being of a senile character is their proneness to set in at times of life when the organs they affect are becoming extinct. Thus, myxœdema, though it may appear at any age, is prone to first show itself in women at the time of the menopause, whereas Graves's disease, which is a true hypertrophy of the thyroid gland, generally sets in during early adult life. Osteomalacia appears, as a rule, in women in the prime of life, at a time when the activity of the bone marrow is on the wane, while osteitis deformans does not show itself until middle age or old age, when the shafts of the bone usually first show signs of degeneracy. Prostatic enlargements generally first give rise to trouble between the ages of 55 years and 60 years, when the male sexual organs are becoming extinct.

6. These diseases also resemble senile conditions in their liability to become the seat of innocent tumours and cancers. Thus, degenerative hyperplasias of the stomach, pylorus, breast, tongue, thyroid gland, liver, bone marrow, and shafts of the bones, are all prone to give rise to innocent or malignant tumours. Of these diseases it is noteworthy that degenerative hyperplasia of the shafts of the bones (osteitis deformans) is far more often associated with malignant disease than is similar hyperplasia of the marrow (osteo malacia). This probably arises from the fact that osteitis deformans does not appear until late in life, when there is a double proclivity to the formation of cancer, the special proclivity of the disease being added to the general proclivity of old age.

Notwithstanding all that has been said, it is by no means certain that it is correct to speak of organs, the seat of degeneration or degenerative hyperplasia, as being affected with premature old age; for, as a matter of fact, exactly the same effect might take place as the result of mere defect of development. We might very well suppose that when an organ has been arrested in the course of its development those influences which give rise to growth or nutrition, though insufficient to produce or maintain cells of higher type, may yet be amply sufficient to lead to overgrowth of cells of a lower order. It is possible that we may in this way account for the fact that in these diseases we have not only degenerated cells, but embryonic cells, as in the large white kidney of Bright's disease, in the liver affected with pseudo-hypertrophic cirrhosis, in the bone marrow in osteomalacia, and in the blood in pernicious anæmia. On the other hand, it is conceivable that a senile change taking place in youth may be expressed in this same manner. We may well imagine that it may be attended, not only with considerable overgrowth of tissue of low type, but that there may also be some attempt at progress or repair due to infusion of new (embryonic) cells into the part affected. All that we are justified in saying is that the diseases which have been discussed are not primarily due to the action of any external or internal agent with which we are acquainted. They are further distinguished by the anatomical appearances of degeneration and atrophy of tissue of higher type with overgrowth of tissue of lower type; by the clinical features of sporadic origin, progressive but interrupted course, pernicious effects, and resistance to treatment; by showing as a rule some hereditary tendency; and by being influenced for the worse by certain depressing agents and conditions and improved by others which have the opposite physiological effect. They are especially liable to inflame, have near relations with the infective granulomata, and constitute favourable soil for the growth of innocent and malignant tumours. In these and other respects they show that they are malformations or errors of growth produced either by defective development or premature senile decay.[28]

(To be continued.)

ON THE RELATIVE VALUE OF SYMPTOMS OF ACUTE PERITONITIS.

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ANY operating surgeon must have found great differences of opinion existing amongst practitioners as to the presence or absence of acute peritonitis in cases where his interference is required. Why should this difference of opinion exist? Is it that peritonitis itself differs in different patients, or is it not rather due to the vague teaching to be found in text-books and in lectures on the subject? I believe that the latter reason is the true one, and yet the question is an extremely simple one. It is at the same time a most important one to settle and to settle quickly. In the old days the supervention of peritonitis was held to be tantamount to a sentence of death. That is not by any means the case at present. By opening the abdomen and free flushing with saline solution, accompanied or not by incision and emptying of the small intestine, some lives have been saved, but the symptom may be due to some mechanical condition which an intraperitoneal operation, if done early, may easily put right and peritonitis be averted; whilst if is deferred, under the erroneous impression that peritonitis is present alone, such delay may bring about the very condition which has been believed to exist and the complication of both, together with the exhaustion produced during the time which has elapsed, may render the chances of any effective interference hopeless, or at least extremely slight. Given a patient complaining of sudden and great pain in the abdomen we should be able to say at once and without hesitation whether he or she is suffering from acute peritonitis or not. Can we do so?

Let me collate a few authoritative statements from various sources. Spence[1] gives as symptoms of this condition "great pain, of an acute burning and persistent—not spasmodic—character, extending gradually from the vicinity of the wound over the whole abdomen. This pain is greatly increased by pressure over the abdominal surface or by stretching out the lower limbs. The patient generally lies with the limbs drawn up and the thighs flexed on the pelvis to relieve tension. The features at first are flushed and have an anxious expression. The skin is hot and dry and the urinary secretion is diminished. The tongue is at first of white milky appearance, but soon becomes foul and loaded. The pulse varies from 98 to 120 beats per minute and has a hard, wiry feel. As the disease proceeds the abdomen becomes tense and tympanitic and vomiting supervenes, at first of a bilious character, but subsequently of dark-greenish watery fluid. When the disease progresses to a fatal termination the vomiting, or the attempt to vomit, becomes almost incessant. The features become sharp, the pulse increases in frequency but becomes weak and irregular, and the patient gradually sinks."

Heath's "Dictionary of Practical Surgery" gives the following: "Pain, tenderness, and the impairment of visceral muscular functions; alterations in the temperature,

[28] Dr. Meigs of Philadelphia in his book on the "Origin of Diseases" has thoroughly elaborated this view of the identity of the changes which are found in certain fibrous degenerations with those which are produced by old age. This work is solely on the anatomical side and is well illustrated by many drawings from his own specimens.

[1] Lectures on Surgery, vol. ii., p. 973.

pulse, and respiration; the temperature commonly elevated a few degrees at first, followed in later stages by depression; the pulse is characterised by greatly increased rapidity and hardness, which in the acute form is almost 'wiry' to the finger; the respiration is sometimes quickened and shallow. There are changes in the demeanour and facial expression. Lastly, there is the act of vomiting."

Jakob[2]: "Severe abdominal pain, vomiting, greatly distended abdomen, elevation of the diaphragm, tympanitic percussion note, or if exudation has taken place dulness in the dependent portions, Hippocratic facies, and, after several hours, heart failure."

Treves[3]: "Initial rigor. Intense, widely diffused, sudden pain, with shock, collapse, and vomiting. Pain may exhibit exacerbations. It is at first referred vaguely to the umbilicus but soon becomes general. The face shows exhaustion, pain, and terrible distress. The abdominal walls are at first sunken in and in some cases of perforative peritonitis this contraction of the belly-wall may be extreme. They then become rigid and board-like and the abdomen—except in corpulent subjects—is flat. There is very considerable tenderness to the touch, which depends mainly on hyperæsthesia of the skin. Later, as meteorism appears, the abdomen becomes ..... rounded and barrel-like. The extreme hardness of the muscular wall is less noticeable and towards the close of the case the parietes may become comparatively flaccid. Abdominal respiration ceases, the movements of the chest are exaggerated. The patient, in order to relax as much as possible the strain upon the abdominal muscles, lies with his knees drawn up and with his hands above his head. This attitude is very characteristic. Meteorism may be absent during the whole progress of the case. Constipation is usually marked, but the bowels may be loose. The temperature is liable to such extreme variation that no certain type of fever can be described. The pulse is at first small, sharp, hard, and wiry—averages 120 to 160 per minute; becoming softer and feebler towards the close. Respirations are increased."

Senn,[4] who distinguishes between plastic and suppurative peritonitis, gives as the symptoms of the latter: "Shock, variable temperature, normal, subnormal, or gradually reaching 104°. Vomiting and diarrhœa frequently conspicuous. May be persistent vomiting and absolute constipation. The symptoms may be mistaken for those of intestinal obstruction, and the abdomen has been opened with this idea." Henrot, quoted by him, has described a number of cases of perforation of the gall-bladder and the processus vermiformis where the symptoms pointed so strongly to the existence of intestinal obstruction that a wrong diagnosis was made by able clinicians. Physical signs and symptoms are sometimes utterly inadequate to distinguish between acute intestinal obstruction and diffuse peritonitis. In differentiating it must be remembered that in the absence of a tumour absolute constipation and fæcal vomiting are the most characteristic symptoms of obstruction, and that in peritonitis the pain is severe and continuous, with diffuse tenderness, tympanites, and absence of visible intestinal coils. "*In mechanical obstruction of the bowels the temperature is, as a rule, not above normal unless complications have set in, while in peritonitis a rise in temperature is the rule, although in some of the gravest cases it is subnormal.*" I have emphasised this sentence because it seems typical to me of most of the assistance to be found in these works—not that it is any worse than many to be found in English or German books of the same kind. The fact may be true enough, but this section is supposed to be written in order to clear up our difficulties, not to increase them; and for any help to be gained from it it might as well, and indeed far better, have been left out. I defy any man to make out from such a statement whether in any given case any reliance is to be placed on the temperature or not. The first half of the sentence would imply that such reliance is justified. In our supposititious case the temperature is not raised. It is below normal. Then it cannot be peritonitis—but the second half of the sentence shows that this is a mistake. It may, on the contrary, be one of the gravest and most dangerous cases. What can result but mental confusion from such statements? They may be as true as you please, but they are utterly irrelevant and irritating in a paragraph which is presumedly written for the illumination of those who consult it.

[2] Atlas of Clinical Diagnosis, p. 203.
[3] System of Surgery, vol. ii., p. 612.
[4] Principles of Surgery, p. 298.

Now, if you combine and analyse all these statements you will find that they may be reduced to the following list: sudden and continuous pain; tenderness; hot dry skin; temperature elevated, normal, or depressed; hard "wiry" pulse; quickened respiration; tympanites; clear note on percussion, unless effusion has occurred, when there is dulness in the flanks; distended abdomen; altered facial expression; flexed thighs and characteristic position of the body; and, later, vomiting.

Take these symptoms in detail. Is there one of them characteristic, except, perhaps, the expression of the face? Such an expression is known well enough to those who have had much experience of this condition, but can anyone describe it? Describe it, I mean, so that a novice will recognise it when he sees it for the first time? I have never seen such a description, and I do not believe it to be possible. It is called an expression of great anxiety; but it is much more than that. It is a combination of anxiety, pain, dread, and a piteous inarticulate appeal for help, but no one who has never seen it would recognise it merely from that description. Photographs might here be useful, but there is something so cold-blooded in attempting to photograph a patient in great pain and misery that few would submit to it unless morphia were first given, and then the characteristic expression would be lost or so modified as to render it useless for teaching purposes. Besides, these patients are so restless that any photograph would be spoilt in the process of taking.

Sudden and continuous pain in the abdomen is possible in too many things to be of any value. Besides, pain being a subjective sensation cannot be accurately gauged by anyone but the patient herself, and everyone knows that during the experience of great pain any statement made by the sufferer is not to be relied on for any scientific purpose. Then the capacity for endurance of pain, even the very sensation of pain, differs so widely in different people that no standard by which an outsider can estimate it is possible.

It is said, for instance, that the continuous character of the pain differentiates it from that felt in intussusception or impacted calculus where the pain is dependent upon the wave of peristalsis in the tube affected, but this is simply an academic distinction; true enough, doubtless, but utterly untrustworthy at the bedside. You must rely for the estimation of this upon the patient's own statements, and if she is at the moment suffering she will answer "Yes" or "No" indifferently, careless altogether of your academic distinctions and only anxious to hurry you into giving her something which shall relieve the torment. Moreover, peritonitis, as Treves points out, has its periods of exacerbation, due equally to peristaltic action, and he need be a very acute observer indeed who can feel certain in his own mind that during the intervals the patient is feeling no pain at all or is still suffering some. Besides, does a patient with impacted calculus or intussusception suffer no pain except when peristalsis is in action? The alternative conditions shade so easily into one another as to this symptom that it is practically valueless from a diagnostic point of view. There is pain, and intense pain: that is all that, in the majority of cases, can be said.

And if this is true of pain how much more of tenderness upon which some writers—Treves, for example—lay so much emphasis? A woman with pyosalpinx will be acutely tender over the iliac and inguinal regions, though there may be no peritonitis whatever present. Pressure over an inflamed gall-bladder will usually elicit this sign. A patient with cystitis may be distinctly tender on pressure over the hypogastrium, and yet there may be no peritonitis. The most tender abdominal wall is that in which there is cellulitis of the subcutaneous tissue, wholly unconnected with the peritoneum which itself is absolutely healthy. Who does not know the hysterical abdomen, with its abnormal—apparent—tenderness? And who can possibly say how much of what appears to be tenderness in any given case is not nervous shrinking from possible anticipated pain?

As to hot dry skin I confess it conveys no special meaning to my mind. In the first place I have seen peritonitis when the skin has been distinctly cold to touch, and the temperature, as marked by the thermometer, has been subnormal, whilst a hot dry skin is found in so many abdominal conditions that its value as a diagnostic sign is absolutely *nil*.

The pulse is described by many as hard and "wiry." Will anyone define what a "wiry" pulse is? This, indeed, seems to be one of those terms which have been copied from text-book to text-book without due consideration. It is a

term which conveys no definite idea and, as a matter of fact, the pulse in peritonitis is not always even hard; by which is meant, I suppose, incompressible. Suppose an impacted urinary calculus in the ureter, with coincident nephritis, but no peritonitis at all. Is not the pulse in this condition harder, more incompressible, more "wiry," if you will, than in any septic peritonitis?

Tympanites and distended abdomen are two symptoms which are certainly as often absent as present. I have seen, as many others have done, peritonitis with a distinctly scaphoid abdomen. When they do occur they do so in a comparatively late stage and suggest intestinal paralysis or obstruction, which may be the result of peritonitis or of a good many other causes. What abdomen can be more distended or more tympanitic than that of a case of sigmoid volvulus, for example, where there may not be a trace of peritonitis?

Vomiting, again, is not a symptom upon which any dependence can be placed. It may be due to irritant materials in the stomach or intestines, it may be due to foul smells, it may be due to many things besides peritonitis. When it becomes persistent it is too late to be of any service and even then is far more the consequence of intestinal paralysis, however produced, than of the peritonitis itself.

As to flexed extremities, if one was to trust to this alone we should diagnose peritonitis in all cases of simple colic, whether caused by lead or by improper and indigestible food, by the passage of gall-stones or of a ureteral calculus.

But it is often said you must not diagnose peritonitis by any one symptom, but by the combination of all. The same authorities, however, warn us that all may not be present, so that it is difficult to know in what cases we must depend on the first rule and in what we must depend on the presence of certain symptoms, and which. Such teaching is certain to leave the mind of the learner in a chaotic condition, with no feeling of certainty when in face of a definite case. And the fundamental reason is this, that whilst all these symptoms may or may not be present they are most of them not of the essence of the thing but represent possibilities in the case which may or may not occur.

Is it true, however, that we cannot depend upon any one symptom which when present is an absolute sign of this condition, and *vice versâ* the absence of which is an equally certain proof that peritonitis does not exist? a sign, moreover, which is objective and therefore does not depend for its security upon the loose statements of a patient half-maddened with pain. I believe that it is not true—that such a sign does exist easily demonstrable in all cases and capable of being estimated and estimated correctly by the observer himself. With acute peritonitis there is always rigidity of the abdominal muscles. Without peritonitis there is no rigidity. But it must be "rigidity." The surgeon who goes to his patient's bedside, flings down the coverings, and places a cold, possibly wet, hand suddenly on his patient's abdomen and relies on this sign will find all his patients suffering from this condition. But they are not. Such stiffening of the abdominal walls as he will meet with is not true rigidity, it is spasmodic contraction of the recti. The patient is not suffering from peritonitis, she is suffering from a totally different complaint, and its proper name is Dread of the Doctor. The physician who boasts of a list of from 60 to 100 patients every day is not to be trusted with this pathognomonic sign. He has no time to distinguish, and often, I fear, he has not the patience. Patience and time are essential. The hand must not be suddenly applied, nor should it be used in the standing position. The surgeon must find time to sit down. His hand must be warm, warmer, if possible, than the patient's skin. The tips of the fingers are not to be used. The entire hand should come in contact with the abdomen like a feather, so that it is almost impossible for the patient to say when actual contact is made. It should then lie without any weight almost entirely supported by the surgeon's own muscles for a few moments motionless, then gradually and gently move with an imperceptible sliding action over the surface. Thus, and thus only, will he be qualified to say whether or not there is actual muscular rigidity.

Can we demonstrate the truth of this? I think we can. Analogically, the abdomen is a large joint. To create a joint bone and cartilage are not necessary. A joint is primarily a normal solution of continuity between structures permitting of their movement the one upon the other. Such movement is produced by the action of muscular fibre. Between the structures is a membrane which secretes sufficient fluid to enable this movement to be easy, smooth, and painless. There is a telegraphic, automatic communication by means of a nerve arc with nerve centre, afferent and efferent nerve fibres, connecting the interior of the joint with the muscles which move that joint. Hilton long ago demonstrated this with reference to the bony joints of the body, and Thomas based his method of treatment—now of world-wide acceptance—upon this fact. Any inflammation of the lining membrane produces such irritation of the intra-articular afferent nerves as to be at once and automatically referred to the nerve centre in the spinal cord whence it is as instantaneously conveyed to the muscles moving that joint, and produces in them a tonic contraction, nature's own admirable method of securing rest to the parts affected; and this is precisely what occurs, and must occur in this, the largest joint of all. The rigidity is not confined to the abdominal muscles, though its occurrence in them is perhaps the more easily noted. But it is the cause of the flexed thighs which have been pointed out by so many observers as a separate and distinct sign, but which is now seen to be correlated with the abdominal contraction and explainable by the same law; the psoas and iliacus muscles are part of the muscular coating of the abdominal cavity, influenced by the same nerves and forced to contract in the same way, and show their sympathetic contraction by the flexed drawn-up thighs. It is probable, too, that some of the difficulty experienced in obtaining fæcal evacuations in peritonitis is due to a rigid condition of the levator ani which also forms part of the muscular covering of the peritoneum. Many of the symptoms noted are thus seen to depend upon a common cause—a cause which is inherently present in all cases from the very nature of the condition.

The operation of this law may, indeed, be traced in other "visceral joints," as Kelynack terms them. In acute pleurisy where the "synovial" membrane, the pleura, is affected is not one of the earliest and most characteristic signs the fixation of that side of the chest in which the pleurisy is situate? In inflammation of the tunica vaginalis is there not tonic contraction of the cremaster and dartos muscles, so markedly different from simple hydrocele, which is not dependent on any process of inflammation at all, but is due simply to a loss of the normal balance between secretion and absorption. In cerebral meningitis we have the rigid neck so characteristic of that affection, and in infective spinal meningitis the rigid erector spinæ, but however that may be, and whatever importance may be attached or not to such additional illustrations of Hilton's law, it is indubitable that in the case of the peritoneum it furnishes us with a clear, concise, and scientific criterion upon which we may safely base our diagnosis, a symptom which we can all appreciate, and which will put an end to the miserable indecision from which we have all suffered—no one, perhaps, more than the present writer.

Are cases required to illustrate this dictum? Here are three, each in its way, I think, instructive. In March of this year I operated upon a man who suffered from intussusception of the sigmoid flexure into the rectum. 14 days after a preliminary colotomy I performed Maunsell's operation through a median abdominal incision. Two days later I received an urgent message from my house surgeon to the effect that peritonitis had developed. It was very possible. In such an operation, as is well known, the interior of the intestine is exposed, and the fingers and instruments of the operator, after touching the mucous surface in removing the intussusceptum, are applied again to the peritoneal surface whilst closing the longitudinal incision in the intussuscipiens. No one under such circumstances can feel sure that he has performed an aseptic operation. When I saw the patient he had been vomiting, he was complaining of pain, and his pulse was thin, rapid, and weak. The temperature was 101° F. and his general appearance was decidedly bad. He was lying low in bed, and altogether, if one was to rely on the symptoms usually detailed in text-books, my house surgeon was fully justified in his diagnosis. But the abdominal wall was everywhere supple and with perfect confidence I put peritonitis altogether on one side. The result justified my opinion. A hypodermic injection of strychnine, repeated in four hours, together with stimulants and some stomachics, put a totally new aspect on affairs, and everything went well. The patient recovered and nothing more was heard of peritonitis.

The second case was even more critical. A woman, aged 23 years, came into hospital with the largest double pyosalpinx I have yet seen. The mass extended to the level of the umbilicus, her temperature was 103° F., her legs were drawn up, and she was in very severe pain. During removal of the greatly enlarged tube of the left side some thickened omentum which had plugged the fimbriated extremity tore away, allowing the escape of some thin, ichorous pus. The majority of this was caught on sponges, but one could not be by any means sure that some had not escaped and soiled the peritoneum. The abdomen was dried out and closed without drainage. She suffered from bronchitis and for some days was extremely ill. The temperature went up again on the fifth day to 103° F. The pulse was 116 and the respirations were 36. But the abdomen remained supple throughout. A month later she developed a subdiaphragmatic abscess which was opened and washed out. At length the patient perfectly recovered. Now, although this pus was virulent enough to produce cellulitis behind the peritoneum, ending in abscess, peritonitis was never present. This case proves perhaps still more forcibly the power of the peritoneum to dispose of micro-organisms under prompt purgation with calomel, but it demonstrates also the value of this sign (muscular rigidity), absence of which was throughout depended upon and proved reliable.

The third case, ending in death as it did, enabled us to prove by post-mortem examination the truth of my contention. It has not been the only one, but is, I think, sufficient.

During the last few years I have been investigating as to the possibility of sealing all abdominal wounds with celloidin, so as to avoid the use of dressings, bandages, &c., and I published in April of last year in the *Medical Chronicle* several cases illustrating this practice. One of my earliest cases was fatal. A large subcutaneous hæmatoma formed, owing no doubt to defective hæmostasis, and deceived by the absence of swelling and redness, which is one of the results of this method, I did not diagnose it. The skin was, as might be expected, extremely tender; the patient's temperature rose to 102° and she died five days afterwards, with all the symptoms so common in septic peritonitis, from septic intoxication, but the abdominal wall, tender as it was, was always supple. Post-mortem a large accumulation of broken-down offensive blood and pus was found in the subcutaneous and submuscular tissues. The peritoneum beneath, however, was absolutely closed and free from all signs of inflammation. There were no adhesions, no redness; all was absolutely smooth and unchanged. The intestinal coverings were absolutely normal. No case has to my mind, although I have seen many, so absolutely proved the value of muscular rigidity in determining the presence or absence of acute peritonitis.

The presence or absence of acute peritonitis can, therefore, in all cases be gauged with absolute certainty by the presence or absence of this one essential sign. Inasmuch as this rigidity is temporary, lasting about three or four days, it is useless as a pathognomonic sign in cases of chronic peritonitis, which differs from acute in course, causes, importance, and treatment. But in acute peritonitis it is always necessarily present, and that during the time in which a diagnosis has to be made if it is to be of any value at all.

Manchester.

SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.—The eleventh annual meeting of the Bristol branch of this society was held on May 29th, under the presidency of the high sheriff. The report stated that 428 complaints were attended to during 1899 and these affected the welfare of 967 children and involved 570 offenders. The financial statement showed that the total local expenditure amounted to £560 and there was a favourable balance of £3 remaining.

VACCINATION LAW.—At the meeting of the Frome (Somerset) Board of Guardians held on May 30th the vaccination officer for the Nunney sub-district reported the result of a prosecution at the magistrates' court on May 24th, when one of the arguments of the defending barrister was that there was no evidence of any kind to show that the notice which the public vaccinator had sent by halfpenny post had reached the person to whom it was intended. The public vaccinator for the Nunney district was therefore requested to send the notice in future by registered post, the cost of which would be defrayed by the guardians.

THE INFLUENCE OF THE BUXTON THERMAL WATER ON THE EXCRETION OF URIC ACID.

BY WILLIAM ARMSTRONG, M.R.C.S. ENG.

THE Goulstonian Lectures of 1897,[1] in which Dr. Luff so ably dealt with "The Chemistry and Pathology of Gout," marked a distinct advance in the treatment of that disease. It was shown that in the Gowland-Hopkins method there was at command a test which, while it showed the exact amount of uric acid passed, did not throw down the xanthins and hyper-xanthins—the great blot on certain other methods in general use; the necessity for the purpose of exact observation of testing a sample of the mixed urine of the 24 hours was pointed out; and more than all it was clearly demonstrated that the gouty patient, so far from passing uric acid in excess, in the great majority of instances passed too little; that there was a daily storage going on which, although small in amount, was still sufficient to keep up certain morbid conditions; or if it had no such gradual outlet eventually culminated in an acute attack of articular gout. In repeating these experiments I observed that in patients drinking or bathing in the Buxton thermal water there was a constant and in some cases a considerable increase in the quantity of uric acid excreted, and that this action was the more marked as the natural temperature (82° F.) was approached. Neither the mineral constituents nor the temperature of the water accounted for the facts observed, while nitrogen gas, although present in very large quantity, had always been looked upon as a simple element which was therapeutically inert. It seemed rather significant, however, that Wildbad, Gastein, and Buxton—all associated with relief to the gouty—possessed nothing in common, both temperature and mineral constituents differing, except the presence of nitrogen, and it could not be overlooked that the recent researches of Lord Rayleigh and Professor Ramsey had shown that gas to be not an element but really a very complex body, the whole chemistry of which is probably not yet known.

With a view to finding, if possible, the *rationale* of the "gout cure" for which the Buxton thermal water had so long been noted, a large number of observations and many control and cross-experiments have been made. Over 300 persons have contributed to this investigation. They were of various ages; all except ten suffered from gout in one form or another; these ten were persons in normal health, showing no signs of the gouty diathesis. Their ordinary mixed dietary was not altered in any way. Some of the patients only drank the thermal water, 24 ounces being taken daily, divided into three doses; some bathed only; while a third section both drank and bathed. In all cases the 24 hours' urine was tested, and the first two examinations were made before either the bathing or drinking "cures" were commenced.

The Buxton thermal water is discharged from the earth at a temperature of 82° F. It is soft, clear, and of a light bluish colour, almost free from taste, and without odour. Several exhaustive analyses have been made, the most complete by Dr. Thresh, who devoted much time and care to the investigation. His results were as follows. Calculated into grains per gallon the water was estimated to contain: bicarbonate of calcium, 14·01; bicarbonate of magnesium, 6·02; bicarbonate of iron, 0·03; bicarbonate of manganese, 0·03; sulphate of barium, 0·05; sulphate of calcium, 0·26; sulphate of potassium, 0·62; sulphate of sodium, 0·84; nitrate of sodium, 0·03; chloride of calcium, 0·02; chloride of sodium, 3 10; chloride of ammonium, trace; chloride of magnesium, 0·95; silicic acid, 0 95; organic matter, 0·02; carbon dioxide, 0·20; nitrogen, 0·19; total, 27 32. Lithium, strontium, lead, and phosphoric acid, traces. There were six cubic inches of nitrogen gas to the gallon and a small quantity of carbonic acid gas. This nitrogen has been carefully tested and contains 2 per cent. of argon and a trace of helion. It will be seen that the mineral constituents are small in quantity and of slight therapeutic power and that

[1] THE LANCET, March 27th and April 3rd and 17th, 1897.

there is a large quantity of nitrogen gas, a little in suspension, but by far the greater quantity in solution.

The following lines were laid down for the purpose of this investigation: (1) to note the effect of drinking the thermal water as it emerged from the spring; (2) to eliminate (*a*) by cooling and (*b*) by heating, the contained gases and to note the comparative effects; (3) to test the relative effects of drinking ordinary water at the same temperature; and (4) to note the effects of bathing in the thermal waters at 82° F., 90° F., 96° F., 100° F., and in the ordinary water at 82° F. and at 100° F. The average quantity of urine for the 24 hours before treatment commenced was a little under 46 ounces in the non-gouty and about 41 ounces in the gouty; in the former the uric acid averaged 0·780 grammes per day and in the latter 0·660 grammes.

Drinking (over 60 cases).—1. Thermal water drunk at the spring at 82° F. Average urine after one week, 57 ounces; uric acid, 0·799 gramme. 2. Thermal water allowed to cool to 70° F. Average urine, 45 ounces; uric acid, 0·700 gramme. 3. Thermal water heated in closed vessel to 110° F. Average urine, 48 ounces; uric acid, 0·696 gramme. 4. Ordinary drinking water at 110° F. Average urine, 47 ounces; uric acid, 0·696 gramme.

Bathing (over 100 cases).—1. At 82° F. Average urine, 55 ounces; uric acid, 0·939 gramme. 2. At 90° F. Average urine, 50 ounces; uric acid, 0·874 gramme. 3. At 96° F. Average urine, 47 ounces; uric acid, 0·777 gramme. 4. At 100° F. Average urine, 40 ounces; uric acid, 0·680 gramme. 5. Bath in ordinary water at 82° F. Average urine, 41 ounces; uric acid, 0·675 gramme. 6. Bath in ordinary water at 100° F. Average urine, 38 ounces; uric acid, 0·669 gramme.

Drinking and bathing at 82° F. (over 100 cases).—Average urine, 60 ounces; uric acid, 1·004 grammes.

While drinking the water the quantity of uric acid excreted gradually reached its maximum in from 14 to 20 days, kept about this figure for another seven or eight days, and then gradually declined to the normal amount. This was also the rule when bathing in the water heated to 90° F. and over; but *immersion* alone in the water at its natural temperature (82° F.) was often followed by a considerable increase in uric acid excretion from the very first bath. It will be noted that this bath contains the full amount of nitrogen gas undisturbed by heating.

The results of this investigation may be summed up as follows: (1) that the excretion of uric acid and the flow of urine are both largely increased by the drinking of, and by immersion in, the Buxton thermal water; (2) that it is more efficacious when bathed in than when drunk as regards uric acid excretion; (3) that the diuresis is somewhat greater when drunk than when used as a bath; (4) that any deviation from the normal temperature either by heating or cooling interferes with its efficacy; and (5) that while the alterations in temperature would not be likely to diminish the therapeutic properties of the salts they would, on the other hand, greatly interfere with the contained gas.

The late Dr. Robertson, so long the leader of the medical profession in Buxton, who did so much to press forward its claims as a gout spa, wrote: "It may be advanced that the modern researches of chemistry have caused more and more importance to be attached to the great elementary principle with which the Buxton tepid waters are surcharged. The very large proportion of nitrogen contained in the essential crystallisable principles of tea, coffee, and cocoa, in taurine, the great azotised constituent of the bile, in the various fibres and tissues, in the secretions and excretions of the body, the consumption of nitrogen shown to be involved in every movement and process of the animal systems, are so many indications of the inference deducible from the great advance of modern chemistry, and so many reasons why this nitrogen in an available form for internal and external use may have a significance which may hardly admit of exaggeration. Argon being much more soluble than nitrogen and therefore more rapidly absorbed through the skin and mucous membranes appears to give an additional explanation of the influence on the tissues of the body of these nitrogenous waters."

Dr. Thresh writes: "Doubtless much of the gas is liberated within the very pores of the skin itself during bathing and acts in what may be considered its seminascent state, producing effects altogether unattainable by the use of the same agent in any other condition."

It is also interesting to note some recent work regarding the chief mineral constituent of the Buxton thermal water, calcium bicarbonate. Kionka of Breslau gave powdered eggshells to birds and by this means increased the excretion of uric acid from 40 to 50 per cent. Van Noorden has recommended the use of lime in this form as a remedy for gout. It is not impossible therefore that in the combined action of the nitrogen gas and of the lime salts may be found the explanation of the undoubted influence of the Buxton thermal waters on uric acid excretion. If it be true, as seems to have been proved beyond doubt, that the manifestations of gout are largely due to deficient excretion of uric acid, it is of importance that a natural water which so largely increases that elimination should have its therapeutic position placed upon a definite scientific basis.

Buxton.

ON SUPRAPUBIC LITHOTOMY IN OLD MEN WITH ENLARGED PROSTATE.[1]

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WE have but to look through any pathological museum to realise how irregularly an enlarged prostate disports itself and to notice a well-marked pouch behind the middle lobe in a great number of the specimens. The capacity of this pouch during life is readily ascertained by measuring the quantity of so-called "residual urine" that can be drawn off, quantities of two, four, or even more ounces being met with. Gravel in small fragments or well-formed calculi coming down the ureters emerge into this pouch and there lie, unable to surmount the barrier offered by the middle lobe of the prostate to escape per urethram; they may remain there unsuspected for months without causing symptoms. Cystitis with decomposition of the urine does not always follow; in two of my cases the calculi were numerous, uric acid in composition, and the urine was acid. The symptoms under these conditions are so slightly different from those of enlargement of the prostate that the existence of stone is sometimes overlooked. Slightly increased frequency of micturition and occasional pain may attract attention; in one case a little blood was noticed in the urine on one occasion. Should catheter life be entered upon then cystitis often complicates the case, septic in character in most cases from want of due precautions; the urine becomes ammoniacal and purulent, severe pain is often present, blood is more frequently passed, and the calculus becomes encrusted with rough phosphates. When in a case of enlarged prostate with any degree of residual urine symptoms become in any way exaggerated it is well as a routine practice to sound for stone and if the prostate be very large to use a special sound (Kane's) or cystoscope to explore the pouch behind the middle lobe. An ordinary bladder-sound will occasionally fail to discover a stone in this pouch and aspiration sounding is not always to be relied upon. It is hardly necessary to emphasise the importance of a thorough cleansing of the urethra and the sterilising of the sound before use; the bladder in these cases is particularly liable to be infected, and if it becomes so it adds greatly to the gravity of the condition. Having ascertained the presence of a stone, how best to deal with it becomes the question. Given an old man with an enlarged prostate, the stone in a pouch behind it, a congested, friable, possibly ulcerated mucous membrane, maybe some degree of septic cystitis, and the bladder-wall containing numerous small pouches bounded by prominent fasciculi—is the operation to be lithotrity or lithotomy?

The objections to crushing in these cases are: (1) the difficulty, or even the impossibility, of seizing the calculus; (2) if caught and broken, then the difficulty in finding the fragments; and (3) granted the possibility of crushing, then, aspiration diffusing the fragments into the innumerable pits in the mucous membrane, the great uncertainty of washing out all the pieces, for in these cases the patient cannot be trusted to pass any portions left behind, they will lodge behind the prostatic enlargement and form nuclei for fresh calculi.

[1] A paper read at the Liverpool Medical Institution on March 8th, 1900.

The difficulty of seizing a calculus behind an enlarged middle lobe with a lithotrite will be readily understood on examining museum specimens. In the first case to be mentioned, after luckily finding the stone with an ordinary sound before placing the patient under an anæsthetic, we utterly failed to find it afterwards with sound or lithotrite, although the patient was rolled about on the operation table and the base of the bladder manipulated through the rectum. That fragments are left behind after lithotrity seems very likely when we read of cases crushed many times (five, six, nine, and ten times). Over 20 per cent. of cases in a recent table published by a skilled lithotritist required subsequent crushings. Perineal lithotomy is not applicable owing to great increase in the depth of the perineum, to such an extent in some cases that neither finger nor forceps can reach the stone. The suprapubic operation carried out with modern precautions is simple and almost bloodless; it enables the bladder to be thoroughly explored and allows of the extraction of the calculus and of treatment of the enlarged lobe if thought advisable. It becomes the proceeding of choice in the cases under consideration. Further, the bladder can be sutured and the wound be treated antiseptically.

Before resorting to the operation it is advisable to render the urine and urinary tract as sterile as possible. If cystitis with ammoniacal urine be present, the administration of urotropine in five-grain doses thrice daily and washing out the bladder with chinosol lotion (1 in 1200) twice a day, or oftener, have answered best in my experience. Boric acid is much too feeble an antiseptic if the urine be "high." Chinosol is non-poisonous and a powerful antiseptic. It is imperative that every aseptic and antiseptic precaution should be taken in urethral and bladder surgery; to do so means absence of rigors and complications. There is an idea far too prevalent that any catheter from an old drawer or hand-bag smeared with that abomination—carbolic oil—will do. The catheter should be boiled or steamed, the glans penis should be thoroughly cleansed with chinosol lotion, and the urethra should be washed out with the same. The lubricant used is a mixture of soft soap, glycerine, and water in the proportions of eight, six, and four. Four grains of potassium mercuric iodide dissolved in four ounces of water before mixing makes a proportion of nearly 1 in 2000.[2] In ordinary cases, without ammoniacal urine, the administration of urotropine is enough. It is useful in all bladder, urethra, and kidney cases that require surgical treatment to administer urotropine internally for a few days before operation—that is, of course, if the condition does not urgently demand operative proceedings.

Operation.—The pubic hair having been shaved and the skin prepared for an aseptic operation, a purgative is administered on the day before, and the rectum is washed out on the morning of, the day of operation. The patient having been anæsthetised, a catheter is passed to empty the bladder and to allow of washing out if necessary. An inflator, ball syringe, or, better still, a small bicycle pump, is attached to the catheter. An incision, three or four inches long, is made in the middle line of the abdomen above and extending on to the pubes, the cut is deepened until the extra-peritoneal fat is exposed immediately above the pubes, retractors now keep the sides apart, one rectus being nicked if enough room is not obtained. Air is pumped into the bladder until the viscus rises into the wound like a balloon; the peritoneal reflexion is seen moving upwards. A couple of silk loops are passed through the muscular coat of the bladder by means of a handled needle; these serve as fixation points and are held by an assistant to keep the bladder well up in the wound after opening. A small incision is made in the bladder and the air escapes. The catheter is withdrawn and the finger is passed in to locate the calculus and to ascertain its size. If small, the stone can be readily extracted by Tait's gall-stone forceps, which takes up less room than the unnecessarily clumsy lithotomy forceps; if large, the wound in the bladder is extended, the mucous membrane being divided to a lesser extent than the muscular coat, blunt hooks are inserted above and below to keep the opening on the stretch, and a pair of lithotomy forceps is used to seize the calculus. After the calculi have been removed the bladder is thoroughly examined with the finger and an inspection is made of the interior, aided by light from a forehead electric lamp. The bladder wound is sutured, continuous chromic gut for the mucous membrane and continuous silk *à la* Lembert for the muscular coat being employed. The bladder suture is now tested by air distension, and if secure a few ounces of chinosol lotion are used to wash out any small blood-clot that may be in the bladder. The silk loops are removed and a small incision is made through the skin to one side of the middle line to accommodate a small glass drainage-tube passed down to the neighbourhood of the sutures in the bladder-wall. The original skin incision is closed by sutures and a gauze dressing under a double spica bandage is applied. The catheter is left in the bladder, tied in position, and by means of a rubber tube attached to it it conducts urine into a vessel containing lotion for a few days. The bladder is washed out with a few ounces of chinosol lotion daily. Four cases in old men have been operated upon, the above description in all its details being, however, only applicable to the last two. The patients' ages were 61, 63, 70, and 80 years, they all recovered without complications, and they have remained free from calculi. The following are the cases.

CASE 1.—The patient was a man aged 61 years. On August 22nd, 1897, he had severe renal colic, right-sided, which lasted 48 hours in all; the urine was thick and he had great pain in the penis when passing urine. He had been troubled with frequency of micturition for months, but had never required catheterising. On August 24th, when he came under observation, the urine was faintly acid, of specific gravity 1022, and contained blood but no pus. The bladder had two ounces of residual urine. The ordinary sound revealed a calculus. On the 27th before administering an anæsthetic the stone was sounded under chloroform. On asking the dressers to "feel" the stone the sound could not strike it, and although we rolled the patient about and had the base of the bladder manipulated from the rectum neither sound nor lithotrite could find the stone. Lithotrity was thus clearly out of the question. Suprapubic lithotomy was performed, boric lotion was used to distend the bladder, and the stone was found in a deep pouch behind the middle lobe of the prostate. No ordinary lithotrite could possibly have grasped it. On the sixth day the catheter was withdrawn and on the ninth day the glass drainage-tube was removed. Two days later he developed an attack of bronchitis, which delayed his convalescence, but his bladder remained all right, but on two occasions we washed the bladder out as a precaution. The calculus removed weighed 46 grains and consisted of uric acid coated with phosphates. In January, 1900, it was ascertained that he had had occasional turbid urine since the operation, but washing out with chinosol lotion put that right. The bladder was examined with no evidence of calculus.

CASE 2.—A man, aged 70 years, was seen in consultation with Mr. J. F. Ronayne of Liverpool on June 26th, 1897. For the last six months the patient had been troubled by greatly increased frequency of micturition, and latterly dribbling of ammoniacal urine; he had occasional severe spasms of pain on micturition and some blood had passed. He had a very large prostate as felt through the rectum. On passing a sound a calculus was found at the bladder orifice of the urethra; the passage of the sound pushed it into the bladder, and it became lost in a pouch behind the enlarged prostate. On June 29th suprapubic lithotomy was performed. The catheter was removed in 48 hours on account of the urine passing alongside it. A glass drainage-tube was removed in 72 hours. On the fourth day a little urine escaped through the sinus left by the drainage-tube; this was not repeated and on the eleventh day the patient was up and about. The calculus weighed 120 grains and consisted of uric acid covered with rough phosphates. On June 23rd, 1899, there was some cystitis, the urine was acid, and there was ropy mucus. There was no calculus. The bladder was washed out.

CASE 3.—The patient was a man, aged 63 years, under the care of Dr. W. McGeagh of Liverpool. He was seen on Feb. 17th, 1899. For two years he had had greatly increased frequency of micturition and blood was noticed in the urine once. Lately he had suffered from severe pain in the perineum. The prostate was much enlarged. There were two ounces of residual urine. The bladder was examined by the cystoscope; a collection of reddish-brown calculi was seen in a pouch behind the prostate. On the 20th suprapubic lithotomy was performed; at the operation Dr. R. T. McGeagh and Dr. W. McGeagh assisted. Air distension was used. 15 calculi, uric acid in composition and weighing 140 grains, were removed. The catheter was removed daily, cleansed, and re-introduced. The catheter and drainage-tube

[2] Messrs. Clay and Abraham, chemists, Liverpool, put up this lubricant soap in collapsable tubes.

were removed on the third day. On the fourth day the patient was much troubled by flatus, the abdomen became distended, and he vomited. A turpentine enema was administered which caused a free evacuation and he was soon well. On the tenth day he got up. In February, 1900, he was well and strong, doing heavy farm work.

CASE 4.—The patient was a man, aged 80 years, under the care of Mr. J. Herbert Sykes of Birkdale. He was seen on March 2nd, 1899. 15 months previously he had passed some gravel. He had experienced extreme irritability of the bladder since. Hurrying caused pain. The urine was acid and contained blood. Cystoscopic examination revealed several calculi behind the middle lobe of the prostate. On March 16th suprapubic lithotomy was performed, Mr. Sykes assisting. Air distension was used. Six calculi were removed; they were uric acid in composition and weighed 133 grains. The catheter was removed on the sixth day and the glass tube on the eighth. The patient got up in three weeks. He had no complications, but he was feeble and the weather was cold, so he was kept in bed longer than were the other patients. On March 3rd, 1900, the patient was keeping very well. He had some tenderness over the operation scar but no pain. He passed urine every two hours and occasionally uric acid dust.

Liverpool.

MONOGAMY IN ITS RELATION TO LONGEVITY AND THE DISEASES OF LATE LIFE.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH WEST LONDON HOSPITAL AND TO THE WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

THE increase in the death-rate from cancer has of late attracted, and rightly attracted, the attention of medical men, and various opinions have been advanced to account for it. One reason doubtless is that owing to the increased average length of life more people live into the cancerous age now than formerly. Some hold this to be the entire explanation and doubt if there has been any increase in the individual tendency to the disease. I believe, however, that I can see one reason why the individual tendency should increase, and though the suggestion I have to offer may at first sight appear chimerical I yet hope to advance a convincing argument in its support. My contention is that monogamy tends to favour the increase in our race of all late-life diseases, cancer among others, and to shorten the vital span.

Intent on his microscope and test-tubes the pathologist is all too prone to overlook first principles. I have long wondered at his indifference to some of the grand truths of biology—at his failure to realise, for instance, that in order to maintain a high standard of racial efficiency there must be a ceaseless and rigorous elimination of the unfit. The belief that we can rear a healthy race by a perfect system of sanitation, and by that alone, is one of the most grievous fallacies of our time. Sanitation is doing much, and will do more, but it will never by itself secure a supremely healthy race. This end can only be attained by a vigilant weeding-out of the unfit. We are seeking, but shall ever seek in vain, to elude the inexorable law.

No species is, or ever can be, stereotyped. No two organisms are born exactly alike. Taking all the children of a family, and striking their mean standard of fitness, we find that some surpass, while others fall short of, this standard, and it is quite impossible to prevent racial deterioration unless those who fall *far* short are eliminated. I here refer to general fitness, but my proposition applies to each and every character of the individual. To take an example. A high *racial* (I use this term as distinguished from *individual*) excellence in respect of visual accommodation can only be maintained by a stringent elimination of those displaying errors of refraction. In civilised communities such are not eliminated, and consequently the race is deteriorating in respect of eyesight. In this instance the defect is remediable and the loss is in the main an æsthetic one, but countless other instances could be mentioned in which defective elimination is lowering the efficiency of our race, and in consequence we have among us a vast multitude of the unfit. As a physician I am seeing every day of my life people whom I am compelled to class among nature's failures—people who fall short of the standard which makes life worth living, people who in virtue of their unfitness suffer more than they enjoy. When, therefore, I see, and share in, the vain struggle to patch up such failures and when I read elaborate systems on treatment I ask myself: Why not look facts sternly in the face and strike at the root of the evil by conforming to the supreme and inexorable law? I am convinced that some day this will be done, and that the wilful begetting of inefficient humans will be looked upon as scarcely less serious than the destruction of those already launched into being.

I make these observations because it is needful for my argument to insist upon the importance of this factor of elimination in keeping down the tendency to disease. In my work on "The Causation of Disease" I lay it down as an axiom that all non-accidental deaths occurring before the end of reproductive life are, racially considered, deaths of the unfit, such deaths acting beneficially on the race by limiting the production of unfit offspring. If the unfit individual dies before the procreative period he can leave no offspring whatever to inherit his unfitness; if he dies during this period he has an opportunity, increasing with every year of survival, of leaving unfit offspring; while if he dies after the procreative period he has had the opportunity of leaving his full complement of such offspring. Hence so far as the racial effect of death from unfitness is concerned, it is greatest when it occurs before the reproductive period, becomes less and less as it occurs later and later in this period, and ceases altogether when it takes place after it. The purifying action of elimination varying thus at different ages, we find the tendency to grave disorder is least before procreative life, steadily increases during it, and rises enormously at its termination. Inasmuch as post-procreative life comes not at all under the corrective influence of elimination I should expect to find the organism manifesting many defects directly this period is entered upon. I should, indeed, be prepared to find, not only an enormous increase in the tendency to disease at this time, but *a tendency for all organisms, vegetable as well as animal, to die soon after* the cessation of reproductive life. How far this conclusion is borne out by observation I know not, but I believe it is true of man.

This line of thought renders it important to determine the average limit of the procreative period in man. The most vigorous specimens of the human male certainly retain procreative power beyond the allotted age of the Psalmist; and we owe it, I believe, to this very circumstance that many of us are able to reach or even live beyond this limit. Had no man during the last 100,000 years got offspring after the age of 50, we should all probably tend to die of old age about this time. There has, however, been no such limit to reproduction. In primitive communities, e.g., the man who by his great physical superiority becomes the warrior-chief or king may continue to get children until well on in years, and may thus leave many more children than the average man. Now children thus got, female as well as male, tend by the law of heredity to live as long as their father, to resist deadly disease as long as he. It is true that children got by fathers who procreate into old age must have always formed a small proportion of the total number of children born. Nevertheless, they have, I contend, exercised a leavening influence on the race, an influence which has been at work from the time of the ape-like man. The ability to live into the sixties and seventies, or even longer, we owe to the vigorous man of fine physique who retains his procreative power into advanced life. The woman, on the other hand, has played no part in the evolution of this power: her ability to live beyond 40 or 45 has no racial influence, since it does not increase her opportunity of leaving offspring to inherit it.

Now in civilised communities the tendency, observed in the more primitive ones, for the man who lives to a vigorous old age to leave more children than the average man is not great. The majority of men among the civilised have children by one wife only, and she is generally about the same age as the husband. The effect of this is to reduce the age-limit of reproduction in the man to that of the woman. A man, therefore, marrying a woman about his own age, and possessing the power of propagation into advanced life, leaves no more children to inherit his superior death-resisting powers than the inferior man who dies at 45. Monogamy in such a case reduces the superior man to the reproductive level of the inferior man, and robs the race of a number of

individuals whose birth would diminish the racial tendency to disease in the later years and increase the racial span of life. The effect of monogamy, in fact, is to increase the racial tendency to disease after middle life and to shorten the vital span.

Among the diseases one would expect to be increased by the monogamous limitation of procreative life is carcinoma. Reckoning for the sake of argument 40 years (which is, indeed, below the mark) as the average age-limit to procreation among monogamous people, we must regard carcinoma as essentially a disease of post-procreative life and one on which elimination has little or no racial effect. Before the individual with a tendency to this disease develops it he has had abundant opportunity of leaving children to inherit the morbid tendency. Nothing hinders his contribution to the species being as great as that of the individual possessing the minimum tendency to malignant disease. Thus monogamy tends to increase the percentage of cancerously disposed individuals.

While, however, monogamy is thus exercising an injurious influence on our race, polygamy is a sociological impossibility, and happily we have at our disposal a much more efficacious means than is afforded by it of securing to the fittest the largest number of offspring—of giving full play to that searching process of elimination which alone can sustain a high level of racial fitness. Nature's method of elimination is a merciless one; she unceremoniously sacrifices the individual for the benefit of the race—so careful of the type is she, so careless of the single life. The sole object of individual elimination, racially considered, is to prevent the unfit individual from leaving offspring to inherit his unfitness, and Nature in her rough-and-ready way achieves this object by simply wiping him out of existence. The same end can be attained, however, by the unfit abstaining from getting unfit offspring and choosing to join the ever-increasing army of the non-marrying. Elimination from the racial standpoint means not having offspring, and all who do not leave offspring are racially eliminated—unrepresented in posterity.

The best way, therefore—indeed, the only way—effectually to raise the racial standard is for the unfit to submit to voluntary elimination and to abstain from getting unfit variations. Not only would it be possible in this way to diminish the tendency to cancer and a host of other fell diseases, but it would also be possible, though some may think it undesirable, to extend the span of life almost indefinitely. I have elsewhere shown that a man does not grow old, as is so often assumed, by wearing out, like his boots. If such were the case he would begin to wear out from the very beginning of his existence, whereas it is precisely in the years of developmental life when most energy is expended that there is least evidence of wearing out, the organism, on the contrary, steadily advancing in efficiency. The period of senility is as much a part of the physiological vital cycle as that of development itself.

I would observe, in conclusion, that I do not advocate any startling measures of reform. The change I have hinted at can only come gradually, but come it must, and who fitter than ourselves to help on the consummation?

Wimpole-street, W.

UNIVERSITY OF CAMBRIDGE.—The Examiners for the Final M.B. Examinations have been appointed as follows:—Medicine: Dr. D. B. Lees, Dr. Isambard Owen, Dr. D. MacAlister, and Professor Greenfield. Surgery: Professor Chiene, Professor E. Ward, Mr. Bernard Pitts, and Mr. Golding-Bird.—The Regius Professor of Physic and Dr. W. Collingridge, medical officer of the Port of London, are to represent the University at the Paris Congress of Hygiene and Demography in August.—A course of laboratory work in chemistry, &c., for the D.P.H. examination will be given by Mr. J. E. Purvis at the Chemical Laboratory during the ensuing long vacation. The course will be open to practitioners who are not members of the University and it will begin on July 6th.—The Vice-Chancellor, Mr. Chawner, has been elected to hold office for another year.—Mr. Wilberforce of Trinity College has been appointed Lecturer on Experimental Physics in the place of Mr. W. N. Shaw, F.R.S.—The plans for the medical school buildings having been approved by the Senate it is proposed during the summer to obtain specifications and tenders for the erection of the first portion facing Downing-street.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ADDISON'S DISEASE FOLLOWING ENTERIC FEVER.

BY HAROLD W. EVANS, M.R.C.S. ENG., L.R.C.P. LOND.

ON Feb. 26th of this year I was called in to see a girl, 17 years of age, who said she had felt unwell for 10 days. Her temperature was 103° F. and she complained of a fulness at the lower part of her abdomen. I ordered her to bed on milk diet and found in a day or two that the case was one of enteric fever in the second week, and of moderate severity—i.e., she had from three to four loose stools a day which had the colour of yellow ochre and were occasionally streaked with blood. Typical rose spots appeared in crops. The temperature remained between 101° and 103° till March 10th when it dropped to normal, corresponding to the end of the third week from the time the patient first dated her illness. For the next week all seemed to be going well, the temperature keeping down, the tongue cleaning and becoming moist, and the motions lessening in number and improving both in colour and consistency. The following week, however—i.e., the fourth in which I had attended her and the fifth of the disease—vomiting commenced and occurred two or three times a day and once or twice a night. The vomit was of a greenish colour and of watery consistency, and did not seem to have any connexion with the diet which at that time still consisted of milk, the most marked feature being its persistency and the great difficulty I had to control it. At the time I was greatly puzzled by this symptom and thought it must be due either to irritability of the stomach as a result of the general debility caused by the enteric fever or to a gastric ulcer, though there were no symptoms of the latter, such as pain after food or blood in the vomit. About this time I noticed a marked increase in the pulse rate which made me think that the patient was going to have a relapse, but though I repeatedly took her temperature I never found any rise, nor was there any return of the other symptoms—viz., rose spots or diarrhœa.

One day in the sixth or seventh week when examining the girl's abdomen I noticed a brown discolouration of the skin immediately above the pubes. At the time I did not pay much attention to this point, thinking that as the patient and her surroundings were none of the cleanest it was probably due to the want of soap and water. The following week, however, I noticed this discolouration had increased considerably in extent and tone, and the patient remarked to me what a funny colour she was turning. On closer examination I found this staining to be made up of a number of small brown spots somewhat resembling sun-freckles. The deepest colour was immediately above the pubes, from which it extended nearly up to the umbilicus, gradually fading into the adjacent skin. I found a similar condition around the nipples and in the axillæ. Though I repeatedly examined the mucous membrane of her lips and mouth there was never any staining to be noted.

The further course of the case was one of steady decline. The pulse became weaker and weaker—in fact, for many days it was quite imperceptible at the wrist. The vomiting continued, being some days better, other days worse. There was great emaciation, though this may have been due partly to the enteric fever and partly to the patient's great disinclination to take food. Towards the end very troublesome constipation occurred and in the last week a number of purpuric spots appeared upon the chest and abdomen which showed up in marked contrast to the brown discolouration. The patient gradually sank and died from asthenia on May 19th—i.e., 11 weeks and five days from the time of my first seeing her.

As the patient lived at a distance of seven and a half miles from my house I was unable to visit and observe her as closely as I should have liked. I was not able to obtain a

necropsy to verify my diagnosis, though with the three cardinal symptoms so well marked I have little doubt in my mind that it was a true case of Addison's disease.

I should like to have the opinion of my professional brethren on the questions: Was there any direct connexion between the last and first diseases, or was it simply the case of a body debilitated by a wasting disease becoming a suitable nidus for the invasion of the bacillus tuberculosis, if, as seems generally to be acknowledged, that be the cause of Addison's disease? I examined the patient thoroughly on more than one occasion but was never able to find any tuberculous mischief elsewhere.

Littleport.

NOTE ON A CASE OF FAILURE OF RESPIRATION UNDER ANÆSTHESIA.

BY FRANK E. MARSHALL, M.B., CH.B. VICT., L.S.A.,
ANÆSTHETIST (PRO TEM.) TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

IN a recent issue of THE LANCET[1] there was a report of a meeting of the Society of Anæsthetists at which three cases of Failure of Respiration under Anæsthesia were reported by Mr. Carter Braine. As I have recently had a case somewhat on the same lines I think an account of it may be of interest to anæsthetists generally.

The patient was a well-built lad, aged 18 years, upon whom osteotomy of the neck of the femur for old fracture and subsequent ankylosed hip was being performed. The first stage and second stage passed off normally, except that perhaps the second stage was rather more prolonged and more violent than is usually seen in patients of this class. The operation had been in progress about 10 minutes, nearly an ounce of chloroform having been used in an ordinary open inhaler, when the patient suddenly stopped breathing with his pupils widely dilated and not reacting to light. The heart continued beating, as far as one could judge, quite normally. The tongue was pulled out and the jaw was jerked forwards and upwards several times with no result. The patient's head and the upper part of the trunk were hung over the edge of the operating-couch and artificial respiration was commenced, air entering and leaving the chest quite naturally. No attempt, however, was made by the patient to continue breathing. His colour remained good, though slightly pale. The pulse was very fair, but the pupils still kept widely dilated. Owing to the apparently good condition of the circulatory functions the operation was continued and completed, 10 minutes being thus occupied, during which time the above-mentioned position was maintained and artificial respiration was persisted in. After about 10 minutes the patient's breathing recommenced just as suddenly as it had stopped, the pupils returned to their normal condition, and after another two minutes he began to regain consciousness. The after events were quite normal. At no time was there any sign of approaching vomiting—the patient, indeed, did not vomit at any time after the anæsthesia. The lower jaw, I may mention, was quite flaccid; in fact, it had dropped. The heart sounds were quite normal and there was no albuminuria. Curiously enough, a week later the same patient was again operated upon, and this time a wedge-shaped piece of bone was removed from the neck and great trochanter of the femur. The operation on this last occasion occupied three-quarters of an hour, chloroform being again administered, and at no time did anything unusual occur.

To me this case appears as a true paralysis of the respiratory centre, the circulatory centre being uninterfered with; the chloroform which was used (Duncan and Flockhart's) being above suspicion.

Liverpool.

[1] THE LANCET, May 26th, 1900, p. 1518.

NEW MEDICAL FACULTY IN RUSSIA.—The University of Odessa has hitherto lacked a medical faculty. The necessary buildings have been already partly erected and a commencement will be made next session. There will be at first seven clinics with 195 beds, 14 ordinary and nine extraordinary professors, and nine prosectors and six assistant prosectors. The first dean of the medical faculty will be Professor Podvysotski.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.

A CASE OF OMPHALITIS RESULTING IN ULCERATION AT THE UMBILICUS; CLOSURE OF ULCER BY A PLASTIC OPERATION; RECOVERY, WITH A FIRM CICATRIX.

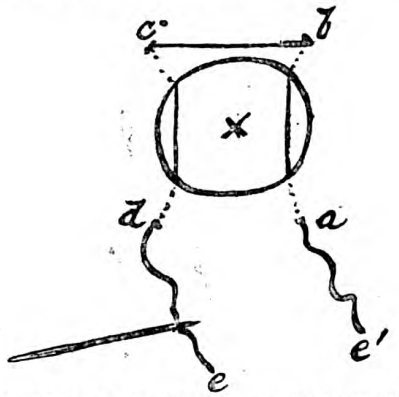
(Under the care of Dr. J. PINKERTON.)

FOR the notes of the case we are indebted to Mr. William Herbert, late house surgeon.

A female infant, aged one month, was on April 15th, 1898, taken by the mother to the Birkenhead and Wirral Children's Hospital for treatment on account of an inflammation of the umbilicus. The mother stated that the inflammation had been present for about a fortnight. The infant, who was born at the eighth month, was small and ill-nourished. On examination there was found to be an extensive inflammation around the umbilicus, the margin of the inflammatory zone being about two inches from the centre. The skin over this area was very red but not boggy. There was no discharge from the umbilicus, nor could a sinus be detected. A dressing of equal parts of saturated boric acid lotion and carbolic lotion (1 in 40) was prescribed, to be applied four times a day. A quarter of a grain of hydrargyrum cum creta was prescribed for internal administration every night. The child was being hand-fed and an ounce of lime water was added to each bottle of diluted milk. When seen a week after this the redness had somewhat subsided. A purulent discharge, however, had made its appearance at the umbilicus; the treatment was continued. On the 30th the discharge of pus continued, but the zone of redness had disappeared and the general health of the infant had improved. Boric acid lotion was prescribed and the grey powder was ordered to be taken every other night. The patient was not again seen till May 17th. The mother then said that on the 15th a "core" had come away from the umbilicus. On inspection a circular ulcer with roughened edges occupied the site of the umbilicus. It was about one-third of an inch in diameter and involved all the soft structures of the abdominal wall. Forming, as it were, the floor to this resulting cavity was a glistening structure which was found to be the peritoneum; but it had escaped, as it showed no inflammatory change. There was no bulging at the opening. The infant looked better. The powders were stopped.

On May 25th (with the consent of Dr. Pinkerton, the honorary medical officer) Mr. William Herbert performed a plastic operation with a view to close the ulcer as the general health of the infant seemed to permit this. No anæsthetic was given. First the edge of the ulcer was pared all round with a hernia bistoury. This instrument was chosen on account of its blunt end which could not injure the peritoneum. A clean, raw margin was obtained, as little healthy tissue as possible being removed. A curved needle, threaded with medium-sized catgut, was pushed through the abdominal wall (inferior right hand corner) about an eighth of an inch from the freshened edge (see figure, *a*). It passed through the whole thickness of the parietes, carrying the suture across the floor of the ulcer, again through the parietes, to emerge at the superior right hand corner (*b*). The suture then curved to the corresponding left upper corner and was inserted there; again carried across the floor it emerged at the left lower angle. The two ends (*e*, *é*) were then tied; good apposition was thus obtained with a certain amount of puckering. A dry dressing (double cyanide gauze) was applied and a flannelette bandage was firmly bound over this. On May 31st the suture was removed and except for a slight superficial portion union was complete. Boric acid in powder was dusted on the wound,

covered with dry lint, and the bandage was re-applied. On June 2nd union by first intention was complete. The child was last seen at the beginning of July. The cicatrix then appeared to be very firm and the flannelette binder was



The freshened edge of the ulcer is represented by the circle. *x*, Floor of the ulcer lined by peritoneum. *a*, *b*, *c* *d* indicate the course of the needle carrying the suture. *e*, *e'*, Free ends of suture ready for tying.

discontinued. The infant's general condition was good and there was no trace of any bulging at the cicatrix.

Remarks by Mr. HERBERT.—Little is said in the text-books both on surgery and on children's diseases about inflammation at the umbilicus and an unfavourable prognosis is given. The inflammation runs much the same course as elsewhere and is doubtless caused by septic organisms. In the above case the condition was no doubt a septic one, the resulting ulceration being dependent upon its severity. It would be interesting to have had more particulars about the "core" which the mother said had come away previously to the ulceration manifesting itself. Three features in the case, however, seem to be noteworthy. 1. The absence of any bulging at the site of the ulcer. This was doubtless due to the fibrous ring of the umbilicus being left more or less intact and capable of offering sufficient resistance to internal pressure. 2. The complete peeling off of the structures superficial to the peritoneum, leaving this membrane to form the floor of the resulting cavity. 3. The absence of toxic symptoms during the free employment of both carbolic and boric solutions, both of which have given rise to unpleasant symptoms in their use in infants and young children. I am indebted to Dr. Pinkerton for permission to publish this case.

LUCEA HOSPITAL, JAMAICA.

A CASE OF PROLAPSE OF THE RECTUM AND A CASE OF FIBROIDS OF THE UTERUS.

(Under the care of Dr. E. R. C. EARLE.)

THE case of prolapse of the rectum and sigmoid flexure described below may be looked upon as really an example of intussusception, for the upper part of the rectum had become invaginated into the lower. Many cases of prolapse commence in this manner, but so long as there is a sulcus between the protruding mass and the anus the case is one of intussusception. A case in many respects resembling the one appearing below was recorded by Dr. C. B. Kelsey,[1] though the intussusception had existed for a longer time. The second of Dr. Earle's cases illustrates well the fact that of all forms of uterine fibroid the most easily removed is the pedunculated subperitoneal variety, and with modern asepsis the risk to life is but slight. In this case the size of the tumours was very great and would have justified even more severe measures.

CASE 1. *Prolapse of the rectum with invagination of the sigmoid flexure; recovery.*—A feeble old coloured man, 89 years of age, was admitted into Lucea Hospital at 11.30 A.M. on Oct. 22nd, 1899, with a large tumour protruding from the anus. He stated that at 2 P.M. on the previous day, whilst straining at stool, he felt the bowel come down and that it had remained in that condition ever since. On examination it was seen that a large tumour, eight inches in length and between two and a half and three inches in diameter, protruded from the anus. The tumour consisted of prolapsed rectum and sigmoid flexure. It was conical in shape and slightly smaller at the lower end than at the middle; at the lower end there was an opening similar to a large os uteri, up which the finger could be passed. The surface of the tumour consisted of mucous membrane with concentric sulci; it was dark red in colour and much congested and swollen, with small, dark, submucous hæmorrhages. It was not strangulated at the anus and there was no odour of gangrene. The anus was lax and the finger could with ease be passed up for two or three inches between the sphincter and prolapsed bowel all round the tumour. The patient complained of severe pain in the back but not in the tumour; he was very old, poorly nourished, and very weak.

At 12 noon he was put under chloroform and the tumour, which was thoroughly cleaned and warmed, was replaced gradually and slowly without any great difficulty, owing to the lax condition of the anus. There was a slight laceration in the posterior wall of the anus. Powdered tannic acid and a morphia suppository were put in the rectum and a perineal pad and band were applied. Hot-water bottles were placed at either side and the hips were raised on a pillow.

At 6 P.M. his condition was fairly good. He had slept a little and was in no great pain. Five minims of liquor opii sedativus were given after the operation and one and a half ounces of whisky in water. He passed a good night. On Oct. 23rd, early in the morning, a stool was passed containing serous bloody fluid and small blood-clots. The bowel was washed out with boric acid lotion and a five-grain suppository of tannic acid was inserted. The patient was comfortable and was stronger. At 5 P.M., after an enema of boric acid lotion, no fæcal matter came away; the fluid was dark-coloured and was mixed with shreds of mucous membrane. The tannic acid suppository was repeated. The patient rested well during the night. There was no action of the bowels; the pain in the back was relieved, but he had pain in the left shoulder and front of the chest. At 5 P.M. an enema was administered; the stool was very offensive. The suppository was given as before. On the 25th he had slept well; the former pain was relieved, but he now had pain in the left hip. No stool had been passed during the night. The enema and suppository were administered morning and evening as before. On the 26th he had slept well. The bowels had acted once during the night; the stool was offensive. The treatment was continued. On the 27th the patient passed three liquid stools, on the 28th and 29th two, and on the 30th and 31st one each day. There were no signs of prolapse and there was no pain. On the 31st he became very weak and low and had much difficulty in speaking, but he became stronger on Nov. 1st. He was discharged from the hospital on the 5th.

CASE 2. *Large fibroids of the uterus; removal; recovery.*—A coloured woman, aged 40 years, was admitted into Lucea Hospital on June 1st, 1899, complaining of great distension of the abdomen which had gradually increased during the previous three years. On examination the abdomen was found to be much distended. There was a large moveable tumour felt in the front and right side of the abdomen, passing into the right lumbar region and upwards under the liver, filling the right half of the abdomen; the tumour was firm, elastic, and freely moveable. A second tumour similar in character, freely moveable, but of smaller size, was felt in the left lumbar region. By vaginal examination a large firm elastic tumour was felt, filling the right lateral fornix of the vagina, the cervix being small and displaced towards the left side. The tumour appeared to be situated in the right lateral wall of the uterus. As the patient was in poor health she was kept in the hospital for three weeks prior to operation in order that her physical condition might be improved.

On June 21st, at 8 A.M., chloroform was administered. A dose of castor-oil had been given the night before and a rectal enema and vaginal douche had been administered early in the morning. The abdomen had been thoroughly cleaned and asepticised and the pubes shaved on the previous day and the urine had been drawn off just before the operation. An incision was made in the mid-line from a point two inches below the umbilicus to about one inch above the symphysis and the abdominal cavity was opened; some ascitic fluid escaped. The tumours were seen to be dense, solid fibroids attached to the uterine wall by

[1] The Post-Graduate, New York, August, 1895.

short pedicles. The incision had to be enlarged in an upward direction to a point two inches above the umbilicus before the large tumour could be got out of the abdominal cavity. Its surface was covered with apron-like folds of peritoneal membrane through which coursed tortuous vessels of large size, and the omentum was adherent to it in several places. The large vessels were ligatured and cut, the adhesion bands were torn through, and the pedicle, which was about one inch long and as thick as a finger, was ligatured close to the uterus and cut and the tumour was removed. The smaller tumour on the left side was removed in a similar manner. A third tumour, of about the size of a fowl's egg, was found attached by a short pedicle to the posterior wall of the uterus under and behind the large tumour, and this was also ligatured and removed. A fourth large fibroid tumour was now clearly defined, of about the size of a man's fist, in the right half of the pelvis, apparently arising from and in the right lateral wall of the uterus, and situated between the folds of the broad ligament. It was found to be impossible to remove this large sessile tumour without also removing the uterus, and as it was not deemed to be justifiable to increase the patient's risk it was left *in situ*. Bleeding from the stump of the pedicle of the large tumour gave trouble owing to the ligature having slipped from retraction, but it was eventually controlled by stout silk ligatures. The abdominal cavity was wiped out with sponges but very little blood had escaped into it. The wound was then closed by approximating the edges of the peritoneum with a continuous fine silk suture and the abdominal wall by deep and superficial silk sutures. No drainage-tube was inserted. Tension was avoided by long strips of plaster from loin to loin. A morphia suppository was administered and she was put into bed between blankets with hot-water bottles on each side. The operation was completed and the patient put into bed at 10 A.M.

The patient was only allowed to have small quantities of warm water at intervals until 10 P.M., when milk and barley-water were given every two hours. The urine was drawn off by catheter every four hours. On the 22nd, 23rd, and 24th a vaginal douche was given each evening. Before noon each day the temperature remained normal but each afternoon and evening it rose to between 100·4° and 100 8°F., the pulse remaining at 74. The patient remained comfortable and cheerful. On the evening of the 24th small repeated doses of sulphate of magnesia were given and the diet was more generous. On the 25th the morning temperature was 101·2° and the pulse was 76. The bowels acted, a copious loose stool with much flatus being passed, the patient sleeping well afterwards. The urine was clear. The wound was dressed and was healing well. At 4 P.M. a slight, bloody, offensive discharge came from the vagina; there was no pain. The temperature was still above 101°. On the 26th the morning temperature was 99·6° and the pulse was 72. The patient passed a good stool without pain. There was a bloody vaginal discharge. The evening temperature was 101·4° and the pulse was 74. On the 27th the morning temperature was 100·4° and the pulse was 72. A copious bloody discharge was still present—bright arterial blood; there was no pain. The patient felt well. The evening temperature was 101·6° and the pulse was 74. On the 28th the morning temperature was 100·8° and the pulse was 74. The hæmorrhage from the vagina was less in quantity. An enema was given and a slight amount of flatus was passed. The evening temperature was 101·2° and the pulse was 70. Ice was applied locally in the vagina. On the 29th the morning temperature was 99° and the pulse was 70. At 4 A.M. a sero-purulent discharge came from the lower end of the wound and soaked the dressings. There was a firm lump felt in the uterine region. The lower stitches were removed to allow free exit for discharge. A probe inserted in the sinus passed upwards and backwards in the mid-line. The hæmorrhage from the vagina was much less. The evening temperature was 99·2° and the pulse was 70. On the 30th the morning temperature was 98·2° and the pulse was 70. Sweet pus was still discharging from the sinus. The lump in the uterine region was smaller. The temperature was normal all day. The vaginal discharge had almost ceased. On July 1st all the sutures were taken from the wound except three deep middle ones. After this the discharge gradually ceased and the temperature and the pulse remained normal. The patient convalesced rapidly, made an uninterrupted recovery, and was discharged from the hospital on August 13th.

Remarks by Dr. EARLE.—Case 1 was undoubtedly one of invagination of the sigmoid portion of the colon into the rectum, with prolapse of the invaginated bowel through the anus. The lower two or three inches of the rectum were not prolapsed, as was proved by the insertion of the finger through the anus between the sphincter and the tumour, when the fold between the two layers of rectal mucous membrane could be easily felt round the whole circumference of the tumour. The extreme age (89 years) and the weak condition of the patient, the large amount of prolapsed bowel, and the interval that elapsed before the prolapsed bowel was replaced, namely, 22 hours, all tended to increase the gravity of the patient's condition, and the favourable result must be considered noteworthy, as the mortality rate in these cases amongst the aged and infirm is as a rule very high.

In Case 2 the three tumours weighed respectively 6 lb. 6 oz., 2 lb. 2 oz., and 2 oz., and were composed of dense fibrous tissue. The tumour in the right lateral wall of the uterus became much smaller in size before the patient left the hospital. The continued rise in the temperature was, I think, due to the suppuration which occurred in the locality of the large silk ligature, for the temperature became normal as soon as efficient drainage of pus occurred. The temperature rose only once above 101° and the pulse never went beyond 80. I was ably assisted during the operation by Dr. C. M. Phillips of Philadelphia and Sister Annie Douglass of St. Bartholomew's Hospital, to whom I desire to convey my thanks for their valuable aid.

Medical Societies.

HUNTERIAN SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on April 11th at the London Institution, the President, Dr. DUNDAS GRANT, being in the chair.

Dr. BUTLER HARRIS showed a case for Diagnosis—an infant with a Sublingual Swelling.—Dr. F. J. SMITH said that he had no doubt that the lump was some form of developmental error, most probably a persistent thyroglossal duct. He thought that this was so because of its position in the middle line of the body and from the softish, cystic feeling of the lump. For treatment he advised waiting till the child was a little (a year or more) older and then radical excision.—Dr. RAWES considered it to be a case of venous nævus and he based his diagnosis upon the presence of distended veins in the neighbourhood and upon the fact that the tumour could be so easily compressed between the forefingers.—Mr. J. H. TARGETT suggested that it was a nævoid growth.

Sir HUGH BEEVOR showed a case of Hemianopsia occurring in a man 49 years of age. In September, 1897, he had a sudden attack which left him with much loss of sensation on the left side, slight left paralysis, and impaired intelligence. In November, 1897, he was under Dr. Ferrier's care and the record then made was to the effect that his family history had been good and that he had had no ailment but syphilis 17 years before. A few months previously he had noticed a sudden loss of sensation on the left side and his eyes were so affected that in his work he used to spoil material by not cutting it properly; he had noticed little alteration since the attack commenced; the loss of power in his arm and leg had been increasing; he had no loss of consciousness at the time of the attack and had no headache or vomiting. He was a well-built man, looking stupid and listless. Tests of sensation gave the following results: the taste and smell were normal; the hearing was less acute on the left side after removing the cerumen; vision—hemianopsia, left, complete to middle line; analgesia of the left arm and leg; anæsthesia of the face, arm, and leg; and loss of muscular sense in the arm and leg. He walked with a slight stagger and a tendency to fall backwards and to the right. The grasp of his left hand showed loss of power. Ankle-clonus and exaggerated knee-jerk were present. Ophthalmoscopic examination was normal. Cranial tenderness on deep pressure was elicited over the right parietal eminence. In February, 1900, he was attacked

with vomiting and left-sided convulsions and with conjugate deviation of the eyes to the left, followed by paralysis of the left side and of the right external rectus oculi; for a few days he was semi-conscious. In a few weeks the ocular movements became normal and the patient's condition seemed little altered by his recent attack.—Dr. F. J. SMITH said that from the absence of neuritis and from the stationary nature of the symptoms for over two years the lesion was probably a softening, either thrombic or embolic. He thought a tumour was ruled out by these facts. He thought that the lesion must be more central than in the optic tract. The staggering in the gait might possibly be due to hemi-paresis of sensation leading to incoördination, and not necessarily to subjective unsteadiness. He was inclined to place the lesion at the hinder part of the posterior limb of the capsule (the sensory crossway), believing that a single lesion here might cause all the symptoms, and if possible he would prefer to ascribe the symptoms to one lesion rather than to multiple lesions. If the gait were ascribed to cerebellar influence he thought that the hemianopsia would require a second focus of destruction to explain it, as it was so very complete.—Sir HUGH BEEVOR said that from the recent attack it seemed evident that a tumour was present.

Dr. F. J. SMITH showed, by permission of Dr. F. WARNER, a case for which he thought a provisional diagnosis of Friedreich's Ataxy was most likely. The patient was a girl, 14 years of age, the eldest of four children, and was quite well till she reached the age of seven years when she had measles. After the measles she was noticed to have twitching of the limbs, which was diagnosed as chorea. With this twitching there was noticed a difficulty in walking and this, it was said, had got steadily worse. In fact, at the end of 1899 she was still thought to have chorea. Coördination was markedly interfered with in all her limbs; she could not stand alone, much less walk, even with her eyes open; with the hands she could pick up small objects fairly naturally and easily so long as her eyes were open, but on closing the eyes she completely lost the power of touching her nose with the finger and could not locate her limbs at all. There were no knee-jerks and no ankle clonus; on testing the plantar reflex the big toe was first extended. The cranial nerves seemed unaffected, though her intellectual faculties were somewhat deficient.—Mr. TARGETT called attention to the marked degree of scoliosis present in this case and the resemblance which it bore to the trophic scoliosis of syringomyelia. In the latter affection scoliosis occurred in more than half the cases. Pes cavus was present in both disorders, though it was more characteristic of Friedreich's ataxy. Neuropathic arthritis, such as was well known in connexion with locomotor ataxy and syringomyelia, had not been met with in Friedreich's ataxy.

THE PRESIDENT showed a case of Syphilitic Lesion of the Facial Auditory and Spinal Accessory Nerves. The patient, a man, 41 years of age, had come under Dr. Grant's care in June, 1899, on account of extreme deafness in the left ear. The left side of the face was almost completely paralysed as was also the left half of the palate and the left vocal cord. He had, therefore, a lesion involving the facial, the auditory, and the spinal accessory nerves simultaneously. In July, 1890, he fell down on his way to his work and was unconscious for some three days, and on recovery was found to have some weakness on the right side of the body. Two years later he had a second attack which developed suddenly in the middle of the night and left him with paralysis of the left side of the face, complete deafness in the left ear, hoarseness of voice and giddiness. The history of acquired syphilis was elicited and there seemed little doubt that the combination of nervous conditions was due to a syphilitic lesion either in the medulla oblongata or external to it at the point of exit of the nerve mentioned.

THE PRESIDENT also showed a case of Rhinoscleroma, occurring in a woman, 26 years of age. A microscopic preparation of a portion of the tissue when removed was made by Mr. Wingrave, and Dr. St. George Reid made a cultivation which, he considered, answered to that typical of rhinoscleroma, as showing the capsuled bacillus.

Dr. W. H. KELSON showed a case of Lupus of the Nose, Palate, and Tongue.

Dr. J. H. SEQUEIRA showed a case of Birth Palsy occurring in a male infant, aged four months, the first child of healthy parents. There was no history of syphilis. The labour was apparently an easy one, the mother being attended by a midwife. It was stated that the child was born "head first," and so far as could be gathered no undue efforts were necessary for delivery. Immediately after birth it was noticed that the child's fingers were bent into the palm and that the left elbow could not be straightened.

Dr. J. H. SEQUEIRA also showed a case of Lupus Erythematosus occurring in a woman, aged 21 years, who had suffered from the disease for two years. The eruption began as two symmetrical patches just in front of each ear and gradually spread on to the cheeks.

Facilities have been provided for Fellows to dine together before the meetings at an hotel near the London Institution. This is found to be a great convenience to Fellows living at a distance and is quite in accordance with the social traditions of the "Old Hunterians."

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.

The Hill Stations of India as Health Resorts.

THE annual meeting of this society was held on May 30th, when the members dined together. A conversazione was subsequently held at 20, Hanover-square with a reception by the President, Dr. J. IVOR MURRAY.

Sir JOSEPH FAYRER, Bart., F.R.S., K.C.S.I., gave an address on the Hill Stations of India as Health Resorts. He wished, he said, to consider these stations not merely in reference to the treatment of disease and convalescence but also as resorts in which the European might preserve his health and avoid the physical deterioration which inevitably resulted from protracted residence in the plains; places indeed, where it seemed even possible that he might take root, thrive, and propagate his race—a subject of ever-widening interest to our rapidly increasing population. For this there were grounds of belief that the prospects of success were not altogether unfavourable, though so far no conclusive proof of it was forthcoming. Past history, however, showed that colonisation by the unmixed European races in the plains of India was impracticable. In the very rare instances in which the third generation had been reached it had evidently attained its utmost desirable limits, whilst of the Portuguese who preceded us no descendant unalloyed by native blood could be said to exist. The physiographic characters of British India were next described, there being three natural divisions: (1) the Himalayan and sub-Himalayan region; (2) the Indo-Gangetic basin and deltas; and (3) the Peninsula proper formed by the elevated plateau of the Deccan bounded on each side by the Ghauts and the littorals between them and the ocean. In these areas there were very many varieties of climate which depended upon the latitude, elevation, and soil. There were three seasons in the year—the hot season, which extended from March to June; the rainy season, which extended from July to October; and the cold season, which extended from November to March. These seasons varied considerably according to the latitude and elevation. They were also greatly influenced by the monsoons or rain-bearing winds. The monsoons did a great deal to determine the conditions of climate and health as well as the production of food. They resulted from the northern flow of air bearing moisture from the ocean and they were more or less deflected or modified by the physical conditions of the country over which they passed. The south-west monsoon was the great carrier of rain in India, which it deposited upon the Western Ghauts, where it first impinged, and where the greatest amount fell. Then passing over extensive tracts of desert land it came in contact with the Himalayas where a large fall took place. Every variety of climate, Sir James Fayrer said, could be met with in India. Malaria was widespread in the plains and here no Europeans could exist for any continuous length of time, but there were many hill stations where they could live, and many others which had never been fully explored or taken advantage of, and he believed that such an investigation as this would form a worthy object for this society, the opinion of which would carry much weight. There were, for instance, the elevated plateaux of the Khasia, and the Syntea Hills between Bengal and Assam, which were at a height favourable to the European constitution, and the range of high country parallel to the Ganges presented fine table-lands at Sohagpore, the elevation of which had been estimated at from 3000 to 5000 feet. Both of these were favourably

spoken of by the late Inspector-General MacLelland. The district of Ramghur in the Saugor and Nerbudda territories and other regions were also mentioned as being only imfectly explored. Although much had been done since Dr. MacLelland wrote there was good reason to believe that in the vast mountain ranges and table-lands of India the physical and climatic conditions necessary for the preservation of health, and perhaps even for the permanent colonisation of the European, would be found to exist to a much greater extent than had hitherto been supposed. As illustrative of the extra-tropical (i.e., the Himalayan) districts Darjeeling, Naini Tal, Simla, and Mount Abu were described, and as examples of the tropical districts Mahableshwar, Matheran, and the Nilgiris. Only a brief account of these could be given, but it touched the fringe of a large subject, one which might with advantage be investigated by the British Balneological and Climatological Society.—The PRESIDENT, who spoke in very high terms of the address (to which, he said, those present had listened with much pleasure) proposed a vote of thanks to Sir Joseph Fayrer.—This was seconded by Dr. ROBERT BARNES and carried by acclamation.

A collection of meteorological instruments was shown by Messrs. Negretti and Zambra, surgical instruments were exhibited by Messrs. Allen and Hanburys, drugs by Messrs. Oppenheimer, books by Mr. H. K Lewis, Mr. H. Kimpton, and Mr. Bale, and dietetic preparations by Messrs. Van Abbott and Sons. Excellent music was provided by the Leoni Ladies' Quintette.

ISLINGTON MEDICAL SOCIETY.—A meeting of this society was held on May 15th, at 25, Highbury-place.—Dr. Ford Anderson opened a discussion on the subject of Placenta Prævia, pointing out how dangerous this variety of complex labour was to the mother and especially to the child, the maternal mortality being 5 per cent. and the infantile mortality 90 per cent.; the maternal mortality, however, was one-third less in cases of partial placenta prævia than in cases of central placenta prævia (Glasgow Maternity Hospital). The appalling infantile mortality was largely due to prematurity, but where it was not so there was hope that it might be reduced by better treatment. The pathology of placenta prævia was described as were the peculiarities of the lower uterine segment which indicated that it was useful as a passage only, not possessing contractile power and therefore fitly called the "dangerous placental seat." The diagnostic signs of placenta prævia were then described and their importance as a prelude to treatment was pointed out. Hæmorrhage was generally the first sign and suspicion was aroused by its apparently causeless occurrence, often when the patient was lying down and sometimes when she was asleep. The history of a case of placenta prævia might differ in no respect from any other case till the middle of the ninth month of pregnancy, when a hæmorrhage occurred which was really unavoidable and was generally large and sometimes fatal. If this late appearance of hæmorrhage were the invariable rule there would not be so much divergence with regard to treatment. More frequently there were warning hæmorrhages in the course of pregnancy from accidental separation of the placenta and many miscarriages were probably due to this cause. Vaginal examination showed bogginess of the lower uterine segment and absence of ballottement; if the placenta were felt that was pathognomonic. Abdominal palpation was most useful to those who practised palpation in all cases. The method as described by Pinard and others was best and with practice there was no difficulty in diagnosing the presence of the soft placenta below the head in the pelvic excavation. In the treatment it had been the practice to temporise till the child was viable, that is, till the seventh month; and perhaps where the patient could be kept under constant skilled supervision in a hospital this was permissible if the hæmorrhages were neither too frequent nor too great, but, considering the small chance to the child and the great risk to the mother from waiting, it was better in a case of early pregnancy with diagnostic signs of placenta prævia to empty the uterus as quickly as possible compatible with safety. This was certainly the best course for the patient as well as the practitioner. In general practice the ordeal of waiting was very trying, and no one who had gone through it once would care to do so again. The details of treatment as generally applied were next described—that is to say, bi-polar version preceded in cases of contracted cervix by puncture of the membranes and the use of the cervical plug; but, contrasted with the traditional methods, the Champetier de Ribes bag was eulogised as an invention which could be used at almost any stage of delivery in placenta prævia. It was an inverted cone when introduced, the apex being at the os internum and it formed a gentle and uniform dilator of the os uteri; it imitated the bag of the membranes, and the base of the larger Champetier de Ribes bag was of such a size that when it had passed through the os delivery could be completed. By traction on the pipe the uterine sinuses could be compressed and, if necessary, the traction could be maintained for many hours by a light weight. The introduction into the amniotic sac, after puncturing the membranes, by the special forceps, was always easy, even when the os was dilated only to the size of little more than one finger, and the bag should be previously scrubbed with soap-and-water and a nailbrush and should be dipped in carbolic solution (1 in 20). This was the rival treatment to sponge tents and even to turning. Dr. Anderson referred to two cases in which he had used the bag. In one the placenta was marginal and when he was called in the night he found the patient flooding freely and the os uteri admitting little more than one finger. He introduced the bag immediately after rupturing the membranes, distending it with water by means of a syringe, and by using ergot and a bandage and by traction on the pipe he controlled the hæmorrhage for several hours when the bag was expelled, and as the child lay transversely he turned and delivered. It seemed all so simple compared to the old treatment. Referring to the objections raised to the use of the bag he remarked that in order to avoid sepsis it was well to begin by removing clots at the cervix by a douche. As the bag was introduced into the amniotic sac it took the place of water which escaped and there was no recorded case of rupture of the uterus. It was well, however, to ascertain previously the capacity of the bag and to fill the bag slowly, stopping during uterine contractions. There might be some risk of rupture in induction of premature labour, as the membranes were not previously ruptured, but here a small-sized bag might be used in the first instance. There was no doubt that displacement of the presenting head might be caused by the bag, but this could be rectified on withdrawal, if not before. Already statistics showed an improvement as regards infantile mortality—which in Dr. G. F. Blacker's collected cases was 54 per cent.—with no increased risk to the mother, and Dr. Anderson concluded by expressing his belief that this encouraging result would be maintained and improved as the value of the Champetier de Ribes bag became more widely recognised.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The annual meeting of this society was held on May 24th when the following officers were elected for the ensuing year:—President: Dr. A. J. Harrison. Vice-Presidents: Dr. H. A. G. Brooke, Mr. Alfred Cooper, Dr. H. Radcliffe-Crocker, Sir George Duffey, Dr. Robert Liveing, Dr. J. F. Payne, and Dr. J. H. Stowers. Council: Dr. P. S. Abraham, Dr. Alfred Eddowes, Dr. W. T. Freeman, Mr. Hope Grant, Dr. A. J. Hall, Mr. T. J. Hitchins, Dr. H. H. Phillips-Conn, Dr. Leslie Roberts, Dr. Arthur Shillitoe, Dr. R. Travers Smith, Dr. F. Rufenacht Walters, and Mr. Campbell Williams. Treasurer: Mr. George Pernet. Honorary secretaries: Dr. C. Herbert Thompson and Dr. E. Graham Little.—Clinical cases were shown by Dr. Stowers, Dr. Abraham, Dr. Eddowes, and Dr. Freeman.—The President read an inaugural address on the subject of Erythema Nodosum. His experience had caused him to question its supposed causal connexion with acute rheumatism.—Mr. W. Anderson read a paper on the Chief Constitutional and Local Conditions Associated with Seborrhœa. Seborrhœa oleosa was a physiological condition giving rise to disease only in so far as the increased secretion offered a nidus for bacteria. Coronal baldness was usually due not to seborrhœa or parasitic invasion but to senile change. Alopecia areata was not in his experience associated with seborrhœa. Seborrhœa sicca was an inflammatory disease due to parasitic invasion; the baldness in such cases was usually in the first instance temporal. Seborrhea sicca favoured the development of other diseases, such as acne vulgaris and rosacea, seborrhœic dermatitis, lupus erythematosus, pityriasis rubra; and influenced the distribution of other affections, such as lichen circinatus.—The President, Dr. Abraham, Dr. Eddowes, Dr. Stephen Mackenzie, Dr. Radcliffe-Crocker, Mr. Pernet, and Dr. W. B. Warde

joined in the discussion.—Numerous drawings and photographs were exhibited, notably a collection of drawings shown by Dr. Radcliffe-Crocker and a series of photographs by Dr. Arthur Hall.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on June 1st, Dr. J. B. Ball, President, being in the chair.—A case of Retro-peritoneal Abscess was shown by Mr. Stephen Paget.—A case of Myxœdema in a Child, aged five and a half years, illustrated by three photographs, was shown by Dr. Leonard Guthrie. (The case was discussed by the President, Mr. McAdam Eccles, Mr. George Pernet, Mr. Rickard Lloyd, and Dr. P. S. Abraham, and Dr. Guthrie replied.)—Mr. L. A. Bidwell showed a case of Arthrectomy of the Elbow, and remarks were made upon it by Mr. McAdam Eccles.—Mr. McAdam Eccles showed: (1) Cases illustrating Swellings in the Digits—(*a*) Tuberculous Enlargement of the First Phalanx of the Thumb and (*b*) a Cystic Tumour of the Middle Finger; and (2) cases of Injuries about the Elbow-joint—(*a*) a case of Separation of the Lower Epiphysis of the Humerus and (*b*) a case of Fracture of the Olecranon. Skiagrams of all these cases were shown by Dr. F. H. Low and remarks were made upon them by Mr. Bidwell and Dr. A. H. W. Clemow. Mr. Eccles replied.—Dr. Abraham and the President showed a case of Tuberculous Disease of the Skin and Mucous Membranes.—Dr. Abraham also showed a case of Acute Erythematous Lupus.—The cases were discussed by Mr. Pernet, Mr. Bidwell, and Mr. Rickard Lloyd. Dr. Abraham replied.—Mr. Pernet showed Sections of Leprous Nodules containing Bacilli.

Reviews and Notices of Books.

Archives of Neurology and Psycho-pathology. Volume II. Nos. 3 and 4. 1899. Issued from the New York State Hospitals Press at Utica, New York, March, 1900. Royal 8vo, pp. 265 with 16 Plates and several Illustrations in the text. Price $3.00.

THE present volume contains a number of papers dealing with various subjects of interest to the alienist and neurologist. The scope of the general ground covered is wide, extending from such matters as embryo-chemical studies on the developing egg to clinical studies in epilepsy and cerebral palsies. Dr. L. Pierce Clark, Assistant Physician to the Craig Colony for Epileptics, New York, contributes three papers comprising a series of Clinical and Pathological Studies in Epilepsy. The first in the series deals with the subject of Exhaustion-Paralysis in Epilepsy, and after a brief historical sketch there follows a discussion of the various hypotheses and theories of exhaustion-paralysis together with illustrative cases from personal study and from medical literature. The second and third papers deal respectively with the comparatively rare association of Paramyoclonus Multiplex and Epilepsy and the still rarer clinical phenomenon the Hypertrophic Form of Infantile Cerebral Palsy. Several of the cases of exhaustion-paralysis have yielded opportunity for study after death by anatomico-pathological methods. Dr. Clark's papers are a valuable contribution to the study of the causation and sequelæ of epilepsy and much interesting information is brought together in his three articles. The critical digest of cases in the form of abstracts from the literature of the subject must have involved much labour and will be of great value for reference. 47 illustrations in the text and five photographic plates accompany the paper on exhaustion-paralysis. The next two papers on Paramyoclonus Multiplex associated with Epilepsy and on Hypertrophic Infantile Cerebral Palsy and Phocomelos associated with Epilepsy have a more limited interest, but both show the same excellent qualities of lucidity, fulness of information, and excellence of illustrations and plates characteristic of the first paper.

Dr. P. A. Levene and Dr. I. Levin supply a paper on the Absorption of Proteids based on work at the Physiological Laboratory of Columbia University, New York. As regards digested proteids it was till recently very generally believed that they were taken up from the alimentary canal by the intestinal blood-vessels into the general circulation. This view at first controverted by Leo Asher has since been confirmed by L. B. Mendel. Dr. Levene and Dr. Levin experimented with iodoproteid, a pure proteid substance obtained from the white of eggs, and their experiments tend to confirm the older view of the absorption of digested proteids by the intestinal blood-vessels as against the view of absorption by the intestinal lymphatics. The next subject—viz., Embryo-chemical Studies, by Dr. Levene—deals with the distribution of nitrogen among the various egg proteids at different stages of development of the ovum and is only a preliminary communication.

Messrs. Richard Weil and Robert Frank publish a very brief paper on the Theory of Neuron Retraction, a subject much discussed of recent years among psychologists and neurologists, and they seem to conclude that the evidence is not positive enough as yet to furnish a satisfactory basis for the explanation of facts. Dr. P. A. Levene furnishes a preliminary communication on the Chemical Relationship of Colloid, Mucoid, and Amyloid Substances, showing that the acid radicals common to these substances are very similar to each other, though the question of their identity is still unsettled. Mr. Ward A. Holden contributes a paper on the Changes in the Optic Nerve produced by Acromegaly, as exemplified in three cases. All three patients were middle-aged women, and the symptoms of compression of the optic chiasma and degeneration of the optic nerve fibres following the growth of the pituitary tumour are clearly described and illustrated by a plate. The present volume of the Archives is equal in interest to its predecessors and speaks well for the progress of neurology and psycho-pathology in the United States.

Anæsthetics: their Uses and Administration. By DUDLEY W. BUXTON, M.D., B.S. Lond. Third edition. London: H. K. Lewis. 1900. Price 6*s*.

IN the third edition of his well-known work Dr. Dudley Buxton has made many useful additions and generally brought the subject up to date. In the introduction he gives an account of Dr. G. B. Flux's open method of administering nitrous oxide, not hitherto published in any text-book, and later he describes Dr. F. W. Hewitt's gas and oxygen apparatus with the mode of its employment. Other important additions are descriptions of new methods of prolonging nitrous oxide anæsthesia, Schleich's solutions for general anæsthesia, and his infiltration method of local anæsthesia.

The physiological chapters have been revised and amplified, the most recent researches of Waller and others being mentioned. This part of the work is particularly good and the accounts of the physiological actions of the various anæsthetics are briefly but completely and clearly given. Dr. Buxton goes fully into the important question of the choice of an anæsthetic in various conditions and for different operations. We are glad to see that he advocates the use of ether preceded by nitrous oxide for ordinary surgical work unless there is good reason against it, and also that he recommends the same anæsthetics in operations for adenoids. In the account of the method of using Clover's portable regulating inhaler some authorities will not agree with Dr. Buxton when he directs that during induction the ether chamber should be rotated till the indicator points to F, and that it should afterwards be brought back to 2 and there kept till the operation is over; in many cases there is no need to go beyond 2 or 2½ during induction, and after ten minutes or so most patients can be kept

satisfactorily anæsthetised with the indicator half way between 0 and 1. In this section the possibility and the importance of avoiding cyanosis by frequently raising the face-piece are very properly insisted on. It is a pity to advise the administrator to adopt the practice of blowing out the bag himself. It can be satisfactorily distended by raising the face-piece during inspiration and firmly applying it during expiration.

A very good account is given of the various forms of ether inhalers and their uses. In the section on Chloroform we should like to see more stress laid on the importance of maintaining the pupil at its greatest possible degree of contraction with reference to the fact that a contracted pupil is one of the most valuable signs of safety, and also on the fact that the size of the pupil is a good measure of the depth of anæsthesia. We see no mention of the fact that chloroform is borne much better and that the liability to cardiac and respiratory depression is much less if the administration is begun with ether or gas and ether, so that the patient is efficiently stimulated. There can be no doubt of the advantage of this succession of anæsthetics in long abdominal operations.

The directions for the preparation of patients for anæsthesia and for the after-treatment, and the description of the measures to be adopted in alarming complications and emergencies, are exceedingly good and practical. Dr. Buxton rightly attaches great importance to the horizontal posture during and after the administration of chloroform.

A good plan is adopted in the introduction, where suggestions are given as to the order in which the different chapters are to be read. This is likely to be useful to students who are studying the subject for the first time. The illustrations are admirable.

The Nervous System of the Child: Its Growth and Health in Education. By FRANCIS WARNER, M.D., F.R.C.P. Lond. London: Macmillan and Co. 1900. Pp. 233. Price 4*s.* 6*d.*

DR. WARNER'S name is so well known in connexion with child study that whatever he writes will be read with interest by those concerned in the education and upbringing of children. In this book Dr. Warner describes the brain and body in infancy, tracing the gradual development of the mental faculty from birth onwards to school age. He very rightly insists that the training of a child must begin from birth and shows how the formation of regular habits as to sleep and bodily requirements and the cultivation of a healthy state of mind prepare the child for a methodical life later. A very clear and excellent chapter dealing with the food, clothing, and the general hygiene of childhood ought to be helpful to anyone in charge of the young. Wrapped up in not always clear language and illustration is the sound idea that children should be taught to use their senses in an orderly manner when called upon to form judgments; "the confusion arising from seeing, hearing, and feeling at the same time" must be removed by "methodical procedure in looking carefully, attending to what may be felt in handling objects, and in hearing distinctly what is said."

Amidst much that is interesting and profitable to teachers and parents, to whom the book is primarily addressed, there is not a little that suggests criticism. Many of the methods proposed for mental training seem to be more adapted for dull or feeble-minded children than for those of average capacity. We cannot imagine a normal child either submitting to, or profiting by, such instruction as is recommended on page 159: "Make him hold out his hand and move the fingers A, B, C, D, E, one at a time in succession, and again all together; then, dropping his hand, look at you while you say and he pronounces the word 'five.' Make him turn his eyes to five similar objects at equal distances apart, then look at you and say 'five'; thus in each case you make five impressions by muscle sense and teach the numeral. Put an ounce weight in his hand, add others up to five ounces, and make him say 'five'; he feels by his muscles the strain added by each weight and feels the 'five' heavier than the one." A normal child who was old enough to appreciate and carry out such directions would already know "how many beans made five."

The Norwegian North Polar Expedition, 1893–1896, Scientific Results. Edited by FRIDTJOF NANSEN. Vol. I. London: Longmans. viii.+16+26+53+137 pp. 46 Plates. 1900. 40*s.* net.

THIS, the first instalment of the account of the results of the *Fram* expedition, forms a large and handsome quarto volume. It commences with an account of the *Fram* itself, which is illustrated by three plates portraying the structure of that vessel; this is followed by a sketch of the geology of Cape Flora, Franz Josef Land, including a description of fossil plants and animals. The purely zoological part of the work contains a report upon the birds collected and the crustacea. Dr. Nansen himself, with the collaboration of the well-known ornithologist Professor Collett of Christiania, deals with the birds, and it is almost unnecessary to state that Professor G. O. Sars is responsible for the crustacea. As might well be supposed, the ornithological section is not interesting from the point of view of new species; so much has been done in this part of the world that new forms could hardly have been expected to turn up. In the crustacean section, however, Professor Sars finds much that is new, especially among the smaller forms, and most particularly among those minute creatures belonging to this order known as copepoda. These are illustrated in 36 plates by the author himself, who is a skilled draughtsman and, we believe, always draws and lithographs his own plates.

LIBRARY TABLE.

Golden Rules of Ophthalmic Practice. By GUSTAVUS HARTRIDGE, F.R.C.S. Eng., Senior Surgeon to the Royal Westminster Ophthalmic Hospital. Bristol: John Wright and Co. London: Simpkin, Marshall, and Co. May, 1900. Pp. 69. Price 1*s.*—This little duodecimo volume is one of a series which may be very well carried in the pocket of the country practitioner's carriage to be consulted when occasion may require. The author, who has had large experience, has compressed much information into a small compass. The diseases mentioned are placed alphabetically and the diagnosis and treatment are given clearly and concisely. The treatment might in some cases be more fully given with advantage and without materially increasing the size of the book.

Manual of Chemistry, Inorganic and Organic, with an Introduction to the Study of Chemistry. By ARTHUR P. LUFF, M.D., F.R.C.P., B.Sc. Lond., F.I.C., and FREDERIC JAMES M. PAGE, B.Sc. Lond., F.I.C., A.R.S.M. London: Cassell and Co. 1900. Pp. 541. Price 7*s.* 6*d.*—Among the many text-books of chemistry written mainly for the use of the medical student perhaps few have been more favourably adapted for hospital schools than the work now before us. The first edition, however, as we pointed out in THE LANCET of July 16th, 1892 (p. 145), contained certain serious errors of omission and commission. Otherwise the plan of the book was excellent. We are glad to see that the whole work has now been thoroughly corrected and revised and brought up to date. By medical students, indeed, such a treatise will be much appreciated in that it provides them with the

work which they require for examination purposes without being essentially a cram book. It must be confessed, however, that the descriptions in many instances are very bare. Short accounts are added of some of the organic compounds of the antipyretic and analgesic series, such as antipyrine, acetanilide, and phenacetin. Another distinctly useful feature is the frequency with which equations are employed in the descriptions of the various chemical reactions. In addition to the theoretical portion of the book a series of tables is provided for the detection of simple salts containing the metals included in the syllabus of both the Preliminary Scientific and Conjoint Board examinations. Some notes are also given on the preparation of those salts that now find a place in the practical work of the latter examination. We have no doubt that in its revised form this manual will be in greater demand than it has been in the past, and it may be confidently recommended to the student now that it is sound in theory and in fact.

The Absent-minded Beggar. By RUDYARD KIPLING. London: The Printing Arts Company, Limited. 1*s.*—The Printing Arts Company, Limited, have published a "Royal Edition" of this wonderfully popular poem illustrated by Gordon Browne, Frank Dadd, and W. Hatherell. The printing, which has been done on an Orloff press, is a curiosity, as the eight different colours have been obtained in one impression. The publishers estimate that in an edition of 100,000 copies their profit would be 3*d.* per copy and they intend to give 3*d.* upon every copy sold to the "Absent-minded Beggar Relief Fund" organised by the *Daily Mail.*

Mona Maclean. By GRAHAM TRAVERS (Margaret G. Todd, M.D. Brux.). Fifteenth and cheaper edition. Edinburgh and London: William Blackwood and Sons. 1900. Pp. 474. Price 2*s.* 6*d.*—We reviewed the first edition of Miss Todd's novel in our issue of Dec. 17th, 1892. When a book has reached its fifteenth edition it is needless to say any more, but we may add that the publishers should be thanked for putting a cheap edition of a clever and wholesome story within the reach of everyone.

Paris. Guides Conty Series. English edition. Paris: 12, Rue Auber. Pp. 336, with appendices and index. Price 2*s.* 6*d.*—The Guides Conty are so well known and so trustworthy that it is hardly necessary to say anything more about them. However, as in all probability many English and Americans will flock to Paris during this year we may remark that they will find almost everything in this guide that they can require. In addition, if the traveller will read a work called "The Stones of Paris" which has been recently published he will learn a great deal about the history of the city which will add to the interest of his visit.

JOURNALS.

Annales de Gynécologie et d'Obstétrique. March and April, 1900. Paris: Steinheil.—In the March number Dr. I. Ronsse discusses the presence of acetone in the urine during pregnancy. He concludes that a minute quantity of acetone is normally present in the urine. The amount is increased in almost all cases during the last 15 days before delivery, as a result of labour, especially when this is prolonged, and during the puerperal period. The author is unable to confirm the statement that the amount of acetone in the urine increases as a result of the death of the fœtus. Dr. Gouillioud contributes a paper upon Salpingostomy and Dr. Labusquière a clinical review of a case of Accidental Hæmorrhage reported by Dr. Fieux, in which condition the latter advocates manual dilatation of the cervix as giving better results than the use of the Champetier de Ribes bag. A summary of the obstetrical and gynæcological communications made to the Anatomical Society of Paris and the usual bibliography conclude the number.

The April number contains a paper upon two cases of Spontaneous Rupture of the Uterus and their Surgical Treatment in which MM. Weiss and Schuhl recommend in the presence of symptoms pointing to a complete rupture of the uterus the termination of the labour as rapidly as possible by the natural passages and the performance of laparotomy. If possible the tear should be sutured, otherwise supra-vaginal or total hysterectomy should be carried out. Dr. A. Fraikin contributes an exhaustive paper upon Sclerocystic Changes in the Ovaries. The number also contains a paper upon Dystocia caused by Uterine Fibroids by M. G. Lepage, and an account of an interesting case of Fibromyoma of the Abdominal Portion of the Round Ligament by M. André Claisse. The proceedings of the Society of Obstetrics, of Gynæcology, and of Pædiatrics of Paris and the tri-monthly bibliographical index are also given.

ARRANGEMENTS FOR THE CELEBRATION OF THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN extraordinary meeting of the Council was held on May 31st, the President, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., being in the chair.

A report from the Centenary Committee was received and adopted. The following arrangements have been made:—

On Wednesday, July 25th, there will be a conversazione at the College from 9 to 12 P.M.

On Thursday, July 26th, a centenary meeting will be held in the theatre of the University of London, Burlington-gardens, at 3 P.M. The President will give an address and the Honorary Fellowships will be conferred. On this occasion academic costumes, uniforms, and orders will be worn. At 8 P.M. on the same day a festival dinner will be given in the Hall of Lincoln's Inn by kind permission of the Benchers.

On Friday, July 27th, the Right Hon. the Lord Mayor will give a conversazione at the Mansion House.

In addition to these arrangements Professor Stewart, the conservator, with Mr. S. G. Shattock, the pathological curator, and Mr. R. H. Burne, the anatomical assistant, will be in attendance each morning between 11 A.M. and 1 P.M. to conduct visitors over the museum.

In the library a collection of objects of interest in connexion with the history of the College will be displayed, and Mr. V. G. Plarr, the librarian, will be in attendance each morning to receive visitors.

At the Examination Hall Dr. T. G. Brodie, director of the laboratories, will give lantern demonstrations of the work done in the laboratories.

Many invitations have been issued to foreign and colonial surgeons, and numerous invitations have also been sent to persons of distinction residing in Great Britain and Ireland.

A limited number of seats at the dinner will be reserved for Fellows and Members of the College and the price of the dinner ticket will be two guineas. Applications should be made not later than June 16th to the Secretary, but as it may be necessary to ballot for places subscriptions should not be sent until the Fellow or Member learns that a seat has been allotted to him.

Tickets for the conversazione at the College and the inaugural meeting at Burlington-gardens (including admission for a lady) may be obtained by Fellows and Members on application to the Secretary.

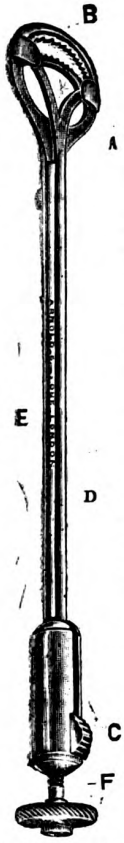
A short history of the College with eight illustrations has been prepared, and it is proposed to present this to guests invited to the centenary celebrations.

THE JOHNSON HOSPITAL AT SPALDING.—The trustees of this institution have received £5000 from the estate of the late Misses Johnson, of Holyrood House, Spalding. The hospital was built and endowed by the generosity of these ladies.

New Inventions.

TONSIL CLAMP.

THIS instrument has been devised by me as a means whereby we may be secure against the hæmorrhage which too frequently occurs in ordinary cases and which is so great a source of alarm to the patient. Much more important is the service which it renders when the operation has to be done upon a young subject under chloroform. When it is understood that with the aid of this clamp the tonsils can be removed with the loss of scarcely a drop of blood its advantages will be readily acknowledged. But a further merit is that it can be applied so as to permit the removal of exactly the amount of tissue desired. If Sir Henry Thompson's postulate be granted—viz., that an instrument should be entirely under the control of an artistic hand and made to do exactly what the surgeon desires—then the superiority of this clamp over the ordinary guillotine must also be conceded. It may also be claimed that the chances of secondary hæmorrhage are much lessened. The instrument in general form resembles the guillotine, but what corresponds to the blade and which is figured A in the cut, has instead of a cutting edge a somewhat broad and serrated border. When the instrument is in action this border presses the tonsillar tissue, which it constricts, against a similarly serrated surface on the concavity of the ring B. After the fashion of the lithotrite the instrument has a male blade D and a female blade E. On bringing the former home upon the part where constriction is desired the button C throws the screw F into gear, so that as much pressure as is desired can be effected. The lump of adenoid tissue can now be shaved off with a blunt-point bistoury. The instrument is made by Messrs. Arnold and Sons, West Smithfield, London.



D. W. AITKEN, M.B., C.M. Edin.

Packington-street, Islington, N.

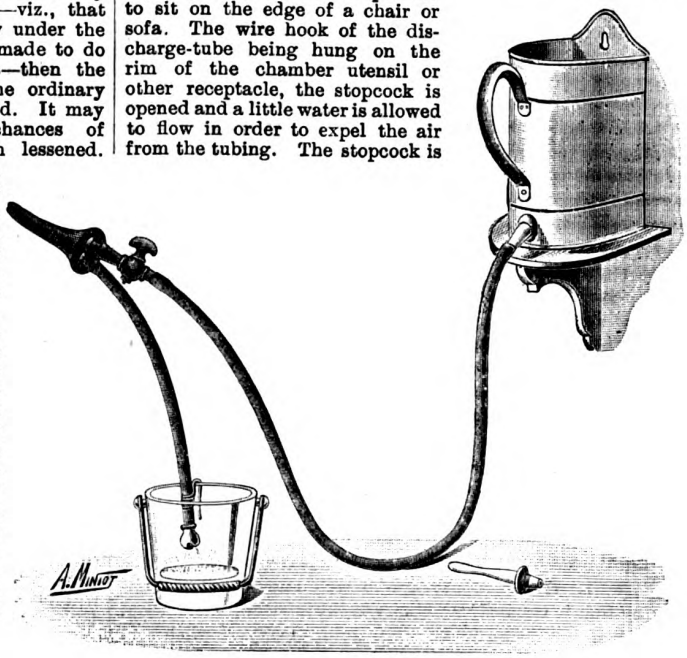
A POCKET SPITTOON.

THE sputum of sufferers from phthisis being the most active agent in the propagation of the disease, all phthisical patients ought to be provided with some means of guarding against their sputum becoming a source of danger to others. The essential precaution is to prevent the sputum from becoming dry and mixing with dust which is everywhere present, so that the tubercle bacilli are carried up with it and float in the atmosphere. One of the appliances for accomplishing this object is shown in the illustration. It is a bottle of blue glass, made all in one piece, having a funnel-shaped neck and a total height of four inches. It is provided with an easily fitting nickel-plated lid, and from its size and shape may be conveniently carried in the pocket with very little risk of the contents escaping. The price is 1*s.* 6*d.* and the maker is Mr. G. T. W. Newsholme, pharmaceutical chemist, High-street, Sheffield. The contents are disposed of by being thrown on a fire or mixed with a disinfectant and emptied into a water-closet, after which the bottle is thoroughly cleansed.



THE ONAH VAGINAL DOUCHE.

MOST of the many methods that have been devised for the giving of vaginal injections are open to the objection that either the bed-clothes or the patient's under-garments are liable to be wetted during the process, and this in the case of certain metallic solutions and astringent lotions has the further disadvantage of causing indelible stains. To meet this difficulty the Onah douche has a separate tube for the discharge of the used liquid, so that it can be employed without danger of wetting the clothes, especially as the enlarged end of the nozzle prevents any liquid escaping round its base. The douche-can being placed on a high shelf or hung on a nail, the water is supplied under pressure which tends to obliterate the folds of the vagina and causes a constant renewal of fluid round the nozzle. During the injection it is best for the patient to sit on the edge of a chair or sofa. The wire hook of the discharge-tube being hung on the rim of the chamber utensil or other receptacle, the stopcock is opened and a little water is allowed to flow in order to expel the air from the tubing. The stopcock is then closed, the nozzle is inserted in the vagina curving upwards, and the stopcock opened. The can holds two quarts. The instrument can be obtained through any dealer in articles of its kind. For the giving of enemata a bone rectal pipe is supplied fitting into the same stopcock as the detachable vaginal nozzle.



"PORTIA" COMBINED STOCKING SUSPENDER AND SHOULDER SUPPORT.

THE stocking suspender represented in the illustration is made of elastic webbing three quarters of an inch wide, one portion of which is formed into two loops passing over the shoulders and meeting in the middle of the back where it is fastened by means of a crossing buckle. The stockings are held up by two lengths of the same webbing stitched one to each loop and provided with buckles which permit of adjustment according to the height of the wearer. It is intended to be worn between the underclothing and corset and can be easily adapted to any figure. The stockings are suspended directly from the shoulders and by use of this article the circulation is not impeded as it is by garters. In some of the patterns there are rubber clips to make them especially suitable for use with thin silk stockings. The makers are the "Portia" Company, 202, Romany-road, West Norwood, Surrey.



THE LANCET.

LONDON: SATURDAY, JUNE 9, 1900.

AMONG the multifarious questions which occupied the time of the General Medical Council at its last session few were of more importance than that of legislation in Italy and England respectively upon the rights of reciprocal practice. The conditions of medical practice at home and the regulations for acquiring the right to medical registration are pretty well defined, and there is not likely to be any great departure from them as far as domestic legislation is concerned. But we enter another region altogether when we contemplate the British practitioner abroad, and try to lay down laws or principles of law for the acceptance of other States, which shall give our practitioners the right to practise in alien lands and which shall concede to foreigners a similar right in our own country. And this is the region into which the Council has had to enter *nolens volens*, inasmuch as the Privy Council have promised to consider the question of recognising in this country Italian medical degrees.

We are called an insular people. But there are few people in the world less so than we are. Our travellers explore every country, and in ever-increasing numbers reside in other lands. Our commerce permeates everywhere, our ships carry for the world. To be just to ourselves it must also be admitted that we entertain strangers. We have in London, to look at another aspect of the matter, more Germans than there are in some large German towns, more Scotsmen than there are in Edinburgh, more Welshmen than there are in Cardiff, and more Jews than there are in Jerusalem. The men of Britain are at home on every continent, in every capital, and on every sea. They are said at the present moment to be unpopular. That is a passing phase. Complaint is soon heard if they withdraw their custom or withhold their presence from any country, and provision is soon made to conciliate and attract them. In short, with all our insularity we are the most ubiquitous people in the world. It is due to this quality that the General Medical Council has had to face the question of the exclusiveness of our medical laws. The discussion has been forced upon them and upon the Privy Council by men on our own Medical Register. They invade foreign countries, they follow their wealthy compatriots into France, Italy, and Switzerland, and they do so in such numbers and with such success as to excite the jealousy of the practitioners in these countries and to provoke the passing of protective measures against them. Other countries have had their attention aroused to the subject of the exclusive tendency of medical legislation—Germany and Russia, to wit—and have entered into communication with our own Government on the subject. So far we have been as exclusive in our medical laws as other nations if we have not been desirous of inflicting any penalties for encroachment. We have not opened our doors for the free admission to the privileges of the profession in Great Britain to foreign medical practitioners. We have not legalised their position, and it may be admitted that we have not, even in London, recognised the right of foreigners, except in the case of "any hospital established exclusively for the relief of foreigners in sickness," to have medical practitioners of their own nationality. But we have not been cruel in our exclusiveness. We have seldom or never threatened with penalties any practising physician or surgeon possessed of reputable foreign diplomas; we have actually provided by legislation for foreigners in their own hospitals being treated by their own countrymen without English qualifications; and we passed a law 14 years ago, the Medical Act of 1886, for the recognition of foreign diplomas under reasonable conditions. This measure it is now proposed by the Government to apply to Italy, and out of their expressed intention arose the debate on the subject which is reported in our columns.

A great feature of the Act of 1886 was the proposal to enter into reasonable and just relations with other countries as regards the recognition of their medical diplomas; and, in order to do this, it was left to the Privy Council to determine when this law should be acted on in relation to any given country. The medical profession would perhaps have liked the Act better if it had left the determining function in the hands of the General Medical Council. To the latter body, however, is intrusted the decision as to whether the diploma of any given foreign institution furnishes a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery. The General Medical Council has done well to pass a resolution pointing out to the Government that the concession contemplated by the Italian Government is not equal to the concession which we should have to make to them. We think that our medical brethren in Italy were a little too ready to express satisfaction with the imperfect privilege of attending only their own countrymen, whereas the Act of 1886 would concede to Italians here the full rights of practice. Many will be disposed to agree with Sir JOHN BATTY TUKE that after all the most satisfactory solution of the difficulty would be the acquisition by English practitioners of the qualification of the countries in which they wish to practise. This course has already to a certain extent been adopted in those countries where no other is open, for there are not a few of our countrymen practising in France who have added to their English qualifications the distinguished degree of M.D. Paris. If, however, the Government is bent on "reciprocity" there must be *real reciprocity* and not a mere travesty of the principle of enjoyment of equal rights. Whatever be the departure, if any, decided upon, all will agree that practitioners already established in a foreign country cannot be disturbed in their vocation without a risk of the infliction of considerable hardship upon them being incurred.

THE second reading of a short Bill introduced by the Government in the House of Commons to amend the Housing of the Working Classes Act of 1890 recently produced an interesting discussion on the problem of how to provide the poor in large towns with wholesome dwellings. By Part III. of the above Act local authorities may provide lodging-houses, as the Act calls them, the term including separate

cottages, for the working classes in their district, and the new measure enables councils, other than rural district councils, to go outside the limits of their own locality in order to acquire by purchase suitable sites or houses for this purpose. The present Bill has now been read a second time and would probably have passed this stage of its progress towards maturity almost unobserved but for an amendment moved by Mr. ROBSON, Q.C., which sought to import powers into it to compel railway companies to provide train accommodation for the people who, when the Bill becomes law, may be expected to be housed at a distance from their work. This amendment was ultimately dropped, it being apparently conceded that the existing law was strong enough to meet the requirements of the situation, and that the railway companies had hitherto gone as far as could reasonably be expected of them.

We can well understand that the London County Council, for instance, may be enabled with advantage to purchase land outside the costly area in which it holds sway, in order to build houses which, instead of being of the big block order of architecture, may provide pleasanter and more healthy homes in the form of separate cottages at a smaller total cost. At the same time, no one can deny that to compel railway companies to provide trains in order to further such schemes, and to provide them at a possible loss, is to lay upon the railway companies a large share of the burden of re-housing the working poor, and this view seems to have been adopted by the House of Commons in rejecting a private member's Bill to increase the facilities of railway travelling for workmen living in the suburbs, just at the time when Mr. ROBSON'S amendment was also before it. The debate upon Mr. ROBSON'S amendment produced from Mr. A. J. BALFOUR an interesting pronouncement of the right honourable gentleman's views upon the future conditions of travelling which the coming generation should preserve in order to be able to criticise him in the future in the character of a prophet. "I believe," said Mr. BALFOUR, "we are on the eve of an immense social reform, of an immense augmentation of the means of communication. I believe that electrical traction and other forms of traction are going to play a far larger part in the solution of this difficulty than any of the strange schemes which I have analysed to the best of my ability for the benefit of the House. I sometimes dream—perhaps it is only a dream—that in addition to railways and tramways we may see great highways constructed for rapid motor traffic, which would have the immense advantage, could it be practicable, of taking the workmen from door to door, which no tramway or railway would do." Let us hope that Mr. BALFOUR may be correct in his vaticination; still at the same time let us remember that such a state of affairs as he predicts will ameliorate the condition of the artisan and of the labouring man in regular work, but will hardly touch the vast army of the poor who fail to come under either of these classes, although they have nothing save their own fitful exertions in one direction or another for their support. We can scarcely picture the sweated sempstress or the foreign refugees from Poland, who toil and starve in overcrowded slums within half an hour's trudge from the place where their ill-rewarded work is given out to them, dwelling in a more or less airy suburb, and coming to town in a workman's train or a workman's motor-car to fetch away the materials on which they are to labour unceasingly for the next 16 hours. We can hardly even picture the coster, as a class, travelling in similar wise to take his donkey and cart or his barrow out of a livery stable and proceed to commence his day's operations at the early market where his stock-in-trade is purchased. The seconder of Mr. ROBSON'S amendment, Mr. STEADMAN, M.P., L.C.C., spoke of 400,000 human beings in the county of London living in one-room tenements, 30,000 living six in a room, and 3000 eight in a room. It is not easy to believe that many of these will benefit greatly either by the Government Bill when it becomes law or would have been greatly affected had the amendment in question been passed. Members of this class, if they are ever to live in healthy conditions at all, will still have to live near where their work, such as it is, lies, or where they may most easily seek it. The building of houses for them by the London County Council so as not to form a perpetual drain upon the rates of London seems well-nigh impossible, whatever may be done by private enterprise and philanthropy. The high value of land in all central localities is the main obstacle. It has been the cause of the Bill we have referred to, and it was more than suggested during the debate that the price is inordinately enhanced where the County Council buys under compulsory powers, slum dwellings being then paid for as if they were substantial buildings earning honest profits for their owners.

Under the Housing of the Working Classes Act of 1890, when the arbitrator fixes the compensation payable under an improvement scheme in respect of premises situate within an unhealthy area, he is bound to receive evidence as to the premises being used for illegal purposes and as to overcrowding or defective sanitation. He is then to base his compensation on the rental obtainable if the premises were used for legal purposes and without overcrowding, while their value if in a sanitary condition is to be computed and the amount necessary to put them in such a condition deducted. On the other hand, if the premises are incapable of being made habitable their value is to be the value of the land and the materials on it only. It will be seen from this that, if unhealthy areas are rigorously treated as such, the compensation need not be excessive and, indeed, cannot be so without gross mismanagement. It is, in our view, wiser to urge the strict enforcement of the existing law against the slum-owner, using the law to the full to provide better dwellings to replace those forcibly closed, than to stand idle while hoping for some better or vaster scheme to be devised, such as a tribunal in the nature of a land court to fix the rents of workmen's dwellings. This particular proposal has features which appear to commend it at first sight, but for the reasons given by Mr. BALFOUR to the House of Commons, if for no other, it hardly seems likely to take a definite form at present.

A TREATISE by the renowned ancient physician, GALEN, concerning the foods best adapted for preventing or reducing obesity, entitled in the Latin "De victu attenuante Liber," has now for the first time been edited in the original Greek by Dr. C. KALBFLEISCH of Fribourg. It is dedicated to his

confrère, Dr. J. ILBERG of Leipsic, and is published by TEUBNER of that city. This is the last work of GALEN catalogued at the British Museum, and, so far as we can discover, the editor's statement that its Greek text has never before been printed is undeniable. That its attribution to GALEN is correct is apparently confirmed by the fact that it is quoted and referred to by such classical medical authors as AËTIUS, whose date is disputed, although it was probably about the end of the fifth or the commencement of the sixth century, by an anonymous author who addressed a treatise, "De Medicinâ," to CONSTANTINUS POGONATUS (668 to 685), and by MICHAEL PSELLUS, a philosophical writer of the eleventh century. Besides these, ORIBASIUS, who according to the best authorities was born at Pergamos, in Mysia, the birthplace of GALEN, in his work "De Victûs Ratione" made large use of GALEN'S treatise; and HONEIN-IBN-ISHAK, an Arabian physician of the ninth century, is authoritatively asserted to have made an Arabic translation of it. Dr. KALBFLEISCH, in his elaborate preface, examines at considerable length the origin and nature of the Latin versions in existing editions of GALEN, and particularly states that four pages are wanting in all of them which refer to certain Asiatic wines, of which GALEN says, ἀλλα γάρ οὗτοι ἐναντιώτατοι τῇδε τῃ διαιτῃ (but these are most opposed to this kind of regimen), evidently implying that the western translator into Latin thought it worthless to trouble himself or his readers about Oriental liqueurs. Dr. KALBFLEISCH then proceeds to show whence he obtained the codex of his Greek text—viz., through the researches of a certain MINOIDES MYNAS, whom he amusingly describes as "vanus homo et impurus, sed idem in codicibus pretiosis investigandis prosperâ fortunâ adjutus." This worthy, about 1840, returned from the East with manuscripts in the original Greek of this and other writings, and after they had been temporarily deposited with Messrs. ABBOTT, bankers, at Salonica, they were purchased by various libraries, this treatise finding its home in the Bibliothèque Nationale. With true German diligence Dr. KALBFLEISCH minutely compares the Latin versions—particularly that made by NICHOLAS RHEGINUS for the edification of ROBERT of Sicily in the fourteenth century—with that made by MARTIN GREGORY, medical professor at Paris, about 1580, though his version, he believes, is only a paraphrase of that of NICHOLAS. Without going into the complex details and many referential figures of this introduction to the Greek text we will briefly analyse the contents of the text itself. The entire work is a sort of scientific anticipation of the notorious "Banting" treatment of some 40 years ago. The author deprecates the use of drugs for the dissipation and destruction of fatty particles in the system, stating that in his experience he has known of many cases of renal and rheumatic complaints cured or alleviated by use of a proper diet. Chapters I. to VII. treat of herbs and seeds which are calculated to produce the required result. GALEN here recommends leeks, onions, mustard, and nasturtiums as beneficial, also watercress and pennyroyal, though these are better taken green than dry, since when dry they in a measure become drugs. Generally speaking, herbs and vegetables grown upon hills are stronger than those grown in the valleys. Chapter VIII. describes the birds and fishes which are suited to his regimen, and recommends fishes which haunt rocks and birds frequenting mountains, saying that aquatic birds are fat-producers. All wild birds and game are less fattening than those which are brought up domestically. In Chapter IX. GALEN says that beetroot is not to be taken, neither the roots of vegetables which are round. Chapter X. treats of fruits, saying that mulberries are good as a laxative. Peaches should be eaten rather in a soft pulpy state than in a hard one, but these fruits must not be eaten εἰς κόρον—i.e., to excess. Persian and Armenian melons should also be avoided, but the Seric, or Chinese, melon may be eaten. In Chapter XI. GALEN recommends vegetables which have been preserved in vinegar or brine; and in Chapter XII. he discourses of the effects of honey, milk, and various wines, stating that sweet wines produce thickness of blood. It would be interesting to the profession if a competent medical scholar would translate this treatise into English, but this could only adequately be done by one who had made a considerable study of GALEN'S works in the original Greek.

Annotations.

"Ne quid nimis."

WOUNDS CAUSED BY MODERN SMALL-ARM PROJECTILES IN THE CUBAN CAMPAIGN.

SIR WILLIAM MAC CORMAC in his address at the meeting of the Royal Medical and Chirurgical Society on May 22nd[1] referred to a valuable communication made by Professor Nancrede of the University of Michigan to the last meeting of the American Surgical Association. Professor Nancrede's paper, so opportune at the present time, is published in vol. xvii. of the Transactions of the American Surgical Association and deals with the effects of modern small-arm projectiles, as shown by the wounded of the fifth army corps during the campaign resulting in the capture of Santiago de Cuba. Professor Nancrede gives the outcome of some 1500 cases of gunshot wounds which he had himself observed during the war in Cuba in 1898, about 1400 of which were cared for at the hospital with which he was connected. His present attitude in regard to many of the questions discussed should, as he rightly urges, carry greater weight because it is opposed to that which he formerly held as the result of what his past experience had taught him. The trivial, almost incised, character of most flesh wounds might have been anticipated, because with such immense velocity, if little resistance is experienced, the missile will retain nearly all its energy, practically imparting none to the tissues and the devitalisation of the ball-track is consequently reduced to a minimum. He considers that the greatest advance in military surgery on the battlefield in recent times is the "first-aid" packet and the greatest boon conferred on the wounded soldier has been asepsis and antisepsis, because in the majority of instances rendering his injuries so painless and their complications so slight that even anæsthetics no longer occupy the chief place as a blessing to the wounded because no longer needed. Professor Nancrede is emphatically in favour of prompt and energetic antisepsis, too, in order to minimise the evils resulting from infection. The ubiquitous pyogenic organisms

[1] THE LANCET, May 26th, 1900, p. 1485.

present in and upon a patient's skin immediately surrounding the wound would readily find lodgment in the wound unless at once inhibited by contact with an efficient germicide. The removal of limbs for extensive fracturing of long bones in the Cuban campaign was almost unknown. Exploration with extraction of splinters was sometimes done, but antiseptic occlusion was the rule and was followed by the best results just so long as infection was avoided. Joint wounds were likewise usually successfully treated by antiseptic occlusion with such fixation as was available. According to the official report, "more than a score of gunshot wounds of the knee-joint were thus treated with the happiest results." Antiseptic occlusion also proved the best treatment for most of the thoracic and abdominal injuries. Professor Nancrede was informed that of the perforating ball wounds of the abdomen all that were operated upon proved fatal, while he saw a number which were recovered from without operative intervention, antiseptic occlusion being relied upon.

MR. BARTLEY, M.P., AND THE SHOREDITCH VESTRY.

THE *Times* of May 28th contained a letter from the clerk of the Shoreditch Vestry written under instructions given by the Public Health Committee of that body. This official document deals with a speech recently made in the House of Commons by Mr. Bartley, the member for North Islington, in the course of a debate on the Bill for the Housing of the Working-classes. The Shoreditch Vestry contend that a serious and unmerited reflection has been cast on metropolitan authorities generally and on themselves in particular by Mr. Bartley's remarks. The paragraph in his speech to which they take special exception is as follows:—

"Another matter which hampered progress was the difficulty of satisfying local authorities. Within his own knowledge there was a case where everything that was possible was done in making good sanitary arrangements and providing an excellent water-supply to a block of houses. The local authority stepped in a few years afterwards and condemned the whole arrangement, which had to be altered at the cost of £500. Three years after that the same sanitary authority and the same inspector insisted on reinstating all the appliances which had been removed, and that was done at a cost of £300."

The Shoreditch Vestry believe that the dwellings referred to are within their own area and are the property of Mr. Bartley himself. On this assumption they quote from a report made in the year 1892 by their chief sanitary inspector on the dwellings to which they believe Mr. Bartley refers:—

"It was found that the various water-closets were fitted with tilting water-pans and iron containers—all in an extremely foul condition. In several instances the water-pans were gone and the emanations of the foul containers rose freely into the closets. The cisterns supplying the people living on the first, second, and third floors were found in the water-closets, close up to the ceilings, so that an examination of the state of the cisterns could only be made by removing the floor-boards of the water-closet overhead. This having been done the cisterns were found to be in a very filthy condition and there was abundant evidence that the water was fouled by excrementitious matters overflowing the closet pans. Against that contingency it did not appear that the builder or even the architect had thought it necessary to take any precautions whatever."

The clerk of the Shoreditch Vestry goes on to state that the cisterns were removed and each water-closet was fitted up "in a superior manner." Three years later the pressure in the mains of the East London Waterworks Company was insufficient to supply the upper floors of the tenements during the day time, and Mr. Bartley was required under a magistrate's order to supply storage cisterns in the roof. It is not stated who applied for the magistrate's order for the reinstatement of cisterns, but it is stated that the order was made under the "Public Health Acts." We should be glad to know under what section of what Act it has been held by a magistrate that a landlord can be compelled to supply a cistern in an area in which a metropolitan water company is under a statutory obligation to give a continuous supply of water. The Shoreditch vestry clerk remarks: "That the East London Water Company failed in giving a proper water-supply to the dwellings was not the fault of the sanitary authority who, during the recent water famines, have by every means in their power endeavoured to get Parliament to keep this defaulting monopolist company up to its duties to the public." It must be pointed out to the Shoreditch Vestry that Parliament has delegated the supervision of the water-supply to the vestries and to the County Council, and that these bodies are empowered by Acts of Parliament to insist that a constant supply of water shall be given to London water consumers. With a constant water service cisterns are not needed. The Shoreditch vestry clerk ends his letter by saying that two Royal Commissions and a Local Government Board inquiry have thwarted the efforts of the local authorities of London. It is hardly necessary for us to remind our readers that Lord Llandaff, on the contrary, severely and repeatedly blamed the local authorities of London for not availing themselves of their statutory privileges in dealing with peccant water companies.

SEATS FOR PARIS SHOP ASSISTANTS.

DR. FOVEAU DE COURMELLES is seeking to move the Société Française d'Hygiène so that an agitation may be organised having for its purpose to obtain seats for shop assistants. He declares that in the four leading drapery establishments of Paris there are no less than 6000 women whose health is gravely compromised by the conditions under which they work. They are condemned to sterility, or to dangerous and very difficult accouchements, or to uterine diseases, &c. But the men also suffer in common with the women from varicose veins and from a form of albuminuria which Stirling qualified as "postural albuminuria." Dr. de Courmelles says that in Paris the "demoiselle de magasin" has to be at her post at eight in the morning. She must then proceed to the sixth floor to renew her stock from the store-room. After this she must go to the control and labeling offices which are generally in a second basement. These journeys have to be repeated several times and thus it is necessary to climb 600 or 800 steps before the arrival of the customers. At breakfast time, from 11 to 12.30 A.M., the men are able to go out for half an hour to smoke and enjoy fresher air, but it would not be considered respectable for young girls to stroll about the streets alone. The vitiated air that is breathed in the large and crowded establishments renders the fatigue endured much more injurious and it must not be forgotten that the influenza epidemic began in one of these Parisian establishments shortly after the last Universal Exhibition held in 1889. The women also who are employed for trying on dresses and mantles, &c., depend on the elegance of their figures for their livelihood. Consequently they deprive themselves of some of the food they need for fear of becoming too stout, and then there is, of course, the temptation of lacing too tightly. The hope, so natural in women, of happy and healthy maternity must be abandoned unless they are in a position to leave their work altogether. Many are obliged to remain and are therefore prematurely aged and invalided. When late in the evening the great shop is shut the work is not over. All the goods have to be carefully folded up and put in their proper places. Then the accounts of the sales effected must be added up and the report thereon prepared. When this has been accomplished it is often necessary to wait a long time before it can be checked by the chief of the department and thus it is past 9 P.M.

before the shop assistants are able to go home to eat and above all to sit down. Under these circumstances, there is even more need in France of a Seats for Shop Assistants Bill than in England, where the hours of labour are not so long and where all shops are closed on Sundays and most shops close at 2 P.M. on one of the week-days. As in France so much is attempted by the State and by private charity to preserve infant life and to encourage maternity it is somewhat surprising that the need of providing seats for shop assistants, especially the women, is not better appreciated, and that comparatively little has been said or done in this direction.

THE SOLICITORSHIP OF THE GENERAL MEDICAL COUNCIL.

WE have already announced the resignation of Mr. Farrer who for many years has acted as the solicitor of the General Medical Council, and who will be remembered with respect and pleasure by its members. The Council has elected as its standing solicitor in his place Mr. W. H. Winterbotham, who is also official solicitor to the Court of Appeal. It is understood that the work of the Council as respects law and police-courts will be done by another solicitor to be approved by the Council.

DINNER TO SIR WILLIAM T. GAIRDNER.

IN THE LANCET of March 31st (p. 956) we gave a short outline of the eloquent speech in which Sir William Gairdner intimated to his class in the University of Glasgow his decision to resign his professorship of the Practice of Physic. We have now pleasure in announcing that his very numerous friends in the University and among the medical profession in the West of Scotland will entertain him at dinner in the Windsor Hotel, Glasgow, on Tuesday, June 19th. In view of the importance of the occasion the arrangements are being made by an influential committee, which includes the Rev. R. Herbert Story, Principal of the University, and Sir Hector Cameron, President of the Faculty of Physicians and Surgeons of Glasgow. Tickets, 21*s.* each, can be obtained from Messrs. James MacLehose and Sons, 61, St. Vincent-street, Glasgow, and the committee state that early application for tickets is necessary, as the number is limited, and no application can be entertained after June 14th.

THE DEVELOPMENT OF THE CRANIUM.

A CAREFUL study of the development of the primordial cranium has recently been made by an Italian physician, Dr. Giuseppe Levi of Florence, and the results of his researches, published in the *Archiv für Mikroskopische Anatomie*, Band lv., p. 341, 1900, are contained in the following propositions. The first rudiments of the primordial cartilaginous cranium in man occur in the form of isolated groups of closely compressed connective-tissue cells in looser tissue than that which forms the membranous primordial cranium. There is a certain homology between these aggregations of cell groups and those of the future bone. There is no homology between these rudiments of the skull of man and those described in mammals as parachordals and trabeculæ. The rudiments in question, even after their conversion into cartilage, preserve their identity for some time by the possession of a perichondrial layer. It is only just before the chondrocranium has attained its highest development that all the rudiments coalesce and then only does the chondrocranium form one continuous whole. The rudiments formed by connective tissue are not all formed coincidently; that of the occipital bone is the earliest, then follow those of the sphenoid and of the auditory capsules, and the last to appear is that of the ethmoid. The differentiation of the several rudiments does not progress with equal rapidity—as a general rule it advances with the greatest rapidity in the latest formed parts and presents in each case characteristic features; thus in the occipital region it takes place quickly and almost contemporaneously throughout its whole extent, whilst in other instances it commences at a definite spot by a kind of cartilaginous nucleus and spreads uniformly outwards. The enlargement of the rudiments is rapid at first but extremely slow afterwards. The development of the occipital region presents a great similarity to that of the vertebral column. In particular the histological features of the formation of cartilage are different from those of all other segments of the skull and are identical with those of the vertebral column. Moreover, there is one distinct rudiment of a vertebra—that is the occipital—which has a symmetrical origin, and further forwards there are parts of an indeterminate number of vertebræ. The occipital region, like the vertebral column in the first stages of its development, is in connexion with the chorda, but as the cartilage develops it becomes distinct from the chorda. All this supports the statement made by Froriep that the occipital region represents the true spinal segment of the skull in man. The symmetrical rudiments of the body of the occipital vertebra become the condyles of the occipital, the unsegmented portion represents the portio basilaris, and the lateral portion of the arch of the occipital vertebra the processus jugularis. The form of the rudiments antecedent to the appearance of cartilage does not always correspond to that of the cartilage when fully formed since parts of the rudiments undergo absorption. The chief changes that occur, however, are those consequent on the remarkable alteration of position of the occipital and sphenoid rudiments. The floor of the sella Turcica is the only segment of the whole skull which preserves its original position throughout the process of development.

A CURIOUS THEORY OF PLAGUE.

THERE should be no difficulty in preventing the spread of plague according to the remarkable theory put forward by a correspondent in a pamphlet recently published in India. In this pamphlet, a copy of which we have recently received, the author sums up his view in a final paragraph as follows: "I humbly state that the more close the investigations and experiments the more fairly we expect to be convinced of the fact (*sic*) that plague is nothing but slow and gradual poisoning of carbonic acid gas." According to this view we should expect plague to be a chronic disease in this country, having as a starting point mineral water works or breweries, for in these places there is constantly a large proportion of carbon dioxide in the air. As a matter of fact the health of the operatives in these industries, in spite of a high proportion of carbonic acid in the air at times, is good. Carbon dioxide is, of course, a poisonous gas, but only when present in great excess. As Dr. J. S. Haldane has shown air may contain from 3 per cent. or 4 per cent. of carbonic acid gas without producing any serious distress. The author of the pamphlet referred to suggests as a plan of prevention the placing of all patients on the second floor or third floor of the building, for he remarks that carbonic acid gas is a heavy gas and accumulates on the ground floor and it is on the ground floor where the disease flourishes. If there were no such thing as a law of the diffusion of gases human life would have ceased to be long ago, for there is sufficient carbonic acid in the air to form a layer over the surface of the earth of the dimensions of an ocean, and in such an ocean life would be, of course, impossible. It is a pity that the author's simplicity of idea as to the origin of plague is not true, for such a simple *fons et origo mali* could easily be removed. When, however, he speaks of over-crowding, ill-ventilation, and

dirty environment as factors in the etiology of the disease he is right, but to say that these conditions indicate nothing but the accumulation of a large quantity of carbonic acid gas and insufficient quantity of oxygen is to ignore the teachings of modern research and to manifest a lamentable ignorance of the nature of infection.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the list of candidates for vacancies upon the Council should be added the names of Mr. W. H. Bennett, surgeon to St. George's Hospital, and Mr. R. Clement Lucas, surgeon to Guy's Hospital. The full list will be found on p. 1674.

THE INTERNATIONAL CONGRESS OF MEDICINE.

IN answer to many inquiries which have been addressed to it, it is announced by the Executive Committee of the Thirteenth International Congress of Medicine that it has decided that dentists who are not doctors of medicine, but who nevertheless are registered or possess a *diplôme d'état*, either French or foreign, can register themselves as members of the Congress in the Section of Stomatology. Names must be sent to the Bureaux of the Congress, the address of which is 21, rue de l'École de Médecine, Paris.

LOSS OF MEMORY AND OF SENSE OF PERSONAL IDENTITY.

CASES of this sort, though decidedly uncommon in occurrence, are of considerable medical and legal interest. The record of a specially interesting case is published in the *Philadelphia Medical Journal* (May 19th, 1900) and recalls the occurrence of a similar case recently at Cambridge where a young undergraduate disappeared from his quarters and was not heard of for several days till he was discovered staying at an inn in the country some distance from Cambridge. He seemed to have had no recollection of leaving his rooms in Cambridge or of any of the incidents subsequent to that event and until his arrival at the inn, except that he was feeling tired and fatigued and that his boots and clothes were wayworn and dusty. The undergraduate was a youth subject occasionally to epileptic fits at infrequent intervals, and it appears that after such a fit he lost his memory and his sense of personal identity and wandered about until he came to the inn where, wearied and worn out, he took lodgings. He had lost all recollection of his former life and condition and stayed in the inn for some days. Then a second fit occurred after which the memory of his former self returned and he was able to realise his position and find his way back to the University. The case reported in the *Philadelphia Medical Journal* is that of a law student, aged 19 years, living in New York, who suddenly lost his memory and sense of personal identity and found himself wandering in the streets of what he considered a strange city. He was so perplexed that he asked people in the street if they could tell him who he was and went to the libraries and hotels to search in the newspapers for stories of missing persons in order that he might get some clue to his identity. He lived at a hotel and after spending five days in fruitless wanderings and inquiries he finally entered a police station and inquired of the sergeant on duty whether he could inform him in what city he was and requested that search might be made in the record of missing persons. When this was done it was found that there was a description closely tallying with his appearance. A detective was sent with the youth to the address given in the description, where the wanderer was received with great joy by his mother and sisters. To their great surprise, however, he thanked them very politely, but assured them that he did not know them or the place. The mother told the police that he was a somnambulist and had left home previously under similar conditions. In the youth's pocket there was found a diary in which he had entered the details of his daily experience since the time he left home and forgot who or where he was. "His physicians state that his attack of amnesia is gradually passing off, and that while he shows memory of other events in his past life any reference to himself seems to be the signal for another lapse of his memory." The import of cases such as the above is evident both from a medical and medico-legal standpoint, and it is interesting to note their affinities with such neuropathic conditions as epilepsy and somnambulism.

UNIVERSITY OF LONDON: THE ROGERS PRIZE.

AT a meeting of the Senate of the University of London, held on March 28th, 1900, it was resolved that one sum of £100 be offered as the Rogers Prize open for competition to all the members of the medical profession in Great Britain and Ireland for an essay under the following regulation as to the subject and conditions thereof, namely: an essay by any member of the medical profession in Great Britain and Ireland upon the Production of Immunity in Specific Infective Diseases; generally, and with particular reference to any one disease on which the writer of the essay has made original investigations. The essay is to be sent to the Registrar, University of London, South Kensington, S.W., on or before June 1st, 1901.

INTERMENSTRUAL DYSMENORRHŒA.

THE *Boston Medical and Surgical Journal* of April 19th contains an important paper by Dr. M. Storer on this rare and interesting affection. His observations lead him to conclude that intermenstrual dysmenorrhœa is not so rare as has been asserted: he had found it last summer 18 times in 400 "suitable cases" in which he inquired as to its existence. Analysis of 20 cases under his care and of 25 collected from literature led to the following conclusions. As regards regularity the pain in all cases appeared practically every month. In 22 cases it always occurred on a definite day from the beginning of the last menstruation; in 13 there was a variation of two days and in 4 of four days; in 2 with irregular menstruation it occurred on a definite day before the next menstruation. As regards day of appearance from the first day of the previous menstruation, out of 41 cases it came on in from the twelfth to the sixteenth days in 37. As to character, in a large number of cases it was described as paroxysmal, the attacks either coming on at intervals of several hours and lasting from five to 15 minutes or the pain being constant with exacerbations often of the greatest severity and resembling that of labour. As to duration, in 10 it lasted two days; in 9, three; in 8, one; and in 4, four or more. In no case was there a discharge like that of menstruation, but in two cases (one of bleeding fibroids and the other of hæmorrhagic endometritis) there was a slightly sanguineous discharge. Hence the term "intermenstrual dysmenorrhœa" is inapt. On the other hand, a marked increase of leucorrhœa is spoken of in 10 cases, which is evidence of temporary congestion. As to causation, the pain in most of the books is described as ovarian but it is not always so. In one case it disappeared after the removal of a hydrosalpinx; in another, after the uterus was curetted for endometritis; and in a third, stenosis of the internal os was apparently the only lesion. On the other hand, out of 40 cases in which the local condition is stated more or less of an inflammatory condition of the appendages is described in 30 ("ovaritis," 15; "salpingitis," 12; and "hydrosalpinx," three). The exact manner in which the

phenomenon is produced is not known. More or less doubtful explanations, mechanical and neurotic, have been brought forward.

MORTALITY AMONG SEAMEN.

IN the issue of the *Syren*, a paper dealing with mercantile marine matters, for May 30th, appears an article entitled "Deaths on Shipboard" which is particularly interesting from a medical point of view. The Registrar-General of Shipping and Seamen issues monthly mortality returns from which it appears that although the average number of deaths in the British Mercantile Marine is about 300, the returns for March show the very high total of 808. Not all of these deaths, however, actually occurred in March and by far the greater part were due to the heavy gale which swept over the North Sea in the month of February. Some deaths, too, reported in March were due to the hurricane which devastated the Bahamas in August, 1899, and the two together were responsible for the loss of 413 lives by drowning in the case of vessels now reported as "missing." Of the other deaths 26 were due to chest affections and 18 to heart disease. Yellow fever is credited with 11 and malaria with 10 deaths. Falls from aloft killed 10 seamen and 20 met with other fatal accidents. Only one case of death from typhoid fever is reported. The number of deaths due to "chest complaints" is very small and shows that diseases of this kind are due, not so much, as is popularly believed, to cold and wet as to dust and the various other abominations which are found in the atmosphere of great cities. Many forecastles and much sleeping accommodation in the mercantile marine are still far from being what they should be, but there is always plenty of fresh and dust-free air on deck. The tale of deaths from "missing" is, however, a terrible one, and these apparently occurred mainly among fishing craft and coasters. The latter class of vessel is in many cases, we fancy, by no means too well found, and a glance at any wreck chart will show how dangerous are our own coasts to this kind of vessel.

RECOVERY FROM MENINGITIS IN TYPHOID FEVER.

THE following case, described at the meeting of the Société Médicale des Hôpitaux of Paris by M. Troisier, is interesting as an example of recovery from typhoid meningitis. A patient, aged 24 years, had typhoid fever of the adynamic form. The disease ran a regular course and the only peculiarity was the intensity of the headache which began with the prodromal period and its persistence, though in less degree, throughout the whole of the febrile period. The temperature commenced to fall on the twenty-first day, and on the twenty-fourth day, when defervescence was complete, the patient, who had never ceased to suffer from her head, complained of violent headache and photophobia. There were painful contracture of the cervical muscles, which rendered flexion of the head impossible, and repeated vomiting which took place without effort. The pulse was small and irregular and had become slowed from 90 on the previous day to 65. The meningeal streak was well marked. Kernig's sign was absent. These symptoms persisted without fever for four days. The patient was in a state of torpor accompanied by agitation and slight nocturnal delirium. She comprehended what was said to her, but answered slowly and had an absent air. On the twenty-ninth day the vomiting ceased and all the other symptoms improved, the headache and stupor diminished, the stiffness of the neck disappeared, and the pulse became regular. On the thirty-seventh day phlebitis with marked œdema of the whole left lower limb appeared. On the following day the meningeal symptoms had completely disappeared. In about three weeks the phlebitis of the left lower limb had passed away, when the right was attacked, but less severely. Complete recovery ensued. M. Troisier insisted that in spite of the recovery the intensity of the symptoms established the diagnosis of meningitis which was produced by the typhoid bacillus or by some secondary infection. He quoted M. Dupré who has stated in the "Manuel de Médecine de Debove-Achard" that infectious meningitis might become cured. The phlebitis, he thought, was a mere coincidence and but another manifestation of typhoid infection.

THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THE members of the Yorkshire branch of the above society held their annual dinner on May 31st at the Hôtel Métropole, Leeds. Mr. T. B. Fairclough of Mirfield, the President of the branch, was in the chair, and among the guests was Professor Clifford Allbutt who proposed the toast of "Our Society." He referred to the exceedingly valuable results which had been accomplished within his own recollection by the labours of medical officers of health and by the science of preventive medicine. Malaria, plague, and typhus fever were extremely rare or even absent in this country and he thought that in time tuberculosis would become as rare as typhus fever was now. But perhaps the most interesting portion of the speech of the Regius Professor of Medicine of the University of Cambridge was that passage wherein he referred to cancer. He urged his hearers to lose no opportunity of tracing out the distribution of cancer and said that when he reflected what had been done within the lifetime of one man towards the extinction of typhus fever and that plague and malaria had been absolutely abolished in this country he was confident in thinking that even cancer might be wiped off the slate. They did not know much about cancer, but the weight of evidence was on the side of its being an infectious disease. Optimism in medicine is undoubtedly a thing to be cultivated, but we fear that it may be long before cancer is "wiped off the slate." Still, the labours of Mr. Alfred Haviland and Mr. D'Arcy Power with regard to the geographical feature of cancer distribution, to say nothing of the pathological and physiological researches of many other workers, even if no definite results have as yet been arrived at, are at any rate an earnest that the problem is being steadily attacked.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

THE first annual dinner of this institution was held at the Trocadéro Restaurant on May 31st. The Right Hon. Lord Strathcona and Mount Royal was in the chair and the large number present testified to the interest which is extended to the youngest of London's medical colleges. The gathering was a most successful one and the committee responsible for the proceedings may congratulate themselves on the results of their labours. The Royal toasts were received with the enthusiasm which characterises all references to the Queen and all members of the Royal Family at the present time. Sir Henry Burdett proposed "The Imperial Forces," referring more particularly to the services rendered by the chairman and other representatives of the colonies to the mother country. Surgeon-Captain Kingscote and the Hon. R. H. Lyttelton responded, the latter thanking those present for the manner in which they had received the mention of the name of his brother, General Lyttelton, now serving in South Africa. Lord Strathcona, in proposing the principal toast, "The Medical Graduates' College and Polyclinic," briefly explained the objects of the institution, the main one being to enable qualified men who had left the hospitals and entered on the practice of their profession to keep themselves

abreast with the advance of medical knowledge. Sir William Broadbent, President of the institution, in responding, further detailed the objects which the promoters of the Medical Graduates' College and Polyclinic had in view. He drew attention to the opportunities which were afforded to medical men to increase their knowledge of the special branches of medical science. Mr. Hutchinson proposed the toast of "The Hospitals and Kindred Institutions," and expressed the desire that the college might work in coöperation with the large hospitals and the principal medical societies. The toast was suitably responded to by the Hon. Sydney Holland who said that he sincerely trusted that the committee of the Medical Graduates' College would not attempt to start another hospital, but would seek to associate themselves with some existing hospital. The toast of "Our Guests" was proposed by Sir Joseph Fayrer and responded to by Mr. Brudenell Carter. The health of the chairman was proposed by Dr. Stephen Mackenzie.

THE "GOUTTE DE LAIT" SOCIETY.

UNDER the above title a society has for some time been at work in France, and Dr. Alfred Hill, the medical officer of health of Birmingham, has made certain inquiries with regard to it. The object of the society is the very laudable one of the reduction of infantile mortality. The method of procedure is by the substitution of a suitable for an unsuitable diet: (1) by encouraging mothers to nurse their offspring; (2) by furnishing a specially prepared milk to meet those cases in which the first of these propositions cannot be carried out; and (3) by arranging for the infant to have the exact quantity of prepared milk necessary. The efforts of the society are directed mainly towards the poorest class, and to them the daily quantum of milk is furnished for one penny. The artisan class is charged 3*d*. and the upper class 6½*d*. The infants thus provided for are weighed frequently with a view of judging as to an increase or decrease of the milk allowance. All milk supplied is sterilised. Dr. Hill reports to the Birmingham Corporation that this system is being attended with great success, there being a very marked decrease in the infantile mortality at places adopting these methods of milk-supply. Certainly the experiment is worthy both of study and encouragement; a diminishing supply of child life calls for vigorous steps to prevent an excessive infantile mortality.

ALARM OF PLAGUE IN SMYRNA.

IN THE LANCET of May 19th (p. 1456) it was mentioned that a case of suspected plague had been discovered in Smyrna and isolated outside the city on May 8th. On May 9th Dr. Cozzonis of Smyrna telegraphed to Constantinople a further description of the patient's symptoms which, although serious, were not precisely those of plague. The bubo in his right groin was still painful when touched, but his medical attendant, Dr. Amado, said that he had suffered from a similar bubo some years ago. His abode, which was a damp and unwholesome place nearly three feet under ground, was disinfected and closed. On May 16th Dr. Cozzonis telegraphed to Constantinople that Dr. Nouri Bey had examined pulp from the bubo microscopically and by inoculation of rabbits. The results were negative, but characteristic lesions were produced in guinea-pigs by inoculation with cultures of three days' growth; the animals, however, did not die. The patient was improving and the conclusion was that very few germs were present. No dead rats had been found. On May 28th Dr. Mizzi, *médecin sanitaire* at Smyrna, telegraphed to Constantinople that a Jewish carpenter, 23 years of age, a patient under the care of Dr. Corris, was suffering from pyrexia and enlargement of several glands in the right groin without any concomitant lesion to account for them. Both the patient and his friends declared that they had never been in the neighbourhood of the case already isolated; the abodes of the men were about 400 yards apart. The second case was immediately isolated outside the city and both patients were inoculated with anti-plague serum. Plague still continues at Jeddah and is spreading on the Turco-Persian frontier.

THE HEALTH OF GIBRALTAR.

THE population of this little peninsula varies but slightly and the census figures of 19,100 are still, the medical officer of health reports, applicable. The birth-rate for 1899 was 31·34 and the death-rate 22·03 per 1000. There were nine cases of small-pox with one death during the year, the source of infection having apparently been the Spanish Lines where the disease was prevalent. Primary vaccination is well carried out in Gibraltar, but revaccination is rarely practised. In the matter of milk supervision an example is set to this country by the registration of the street-vendors, stringent control being essential owing to the insanitary condition of the Spanish cowsheds. Major H. P. Elkington, R.A.M.C., the medical officer of health, suggests the establishment of a farm within the British lines, or, failing this, the milk should be sterilised. As regards water-supply it is interesting to note that arrangements have been made for an additional supply of rain-water, four large reservoirs having been constructed in the limestone rock in such fashion that neither bombardment nor fluctuations of temperature will affect the water stored therein. Before use the water will be filtered through "polarite" and aerated by falling as a spray through a distance of some 50 feet. Service pipes are apparently not in use in Gibraltar and Major Elkington strongly advises their establishment. He has, it would seem, no fear as to the action of the water on lead and he strongly condemns the present system of hawking water about the streets.

THE DUTIES OF AN ASYLUM SUPERINTENDENT.

A RECENT number of the *Portadown News* (May 19th) contains an account of the monthly meeting of the Board of Management of the Lunatic Asylum at Portadown, at which various opinions were expressed by the members concerning what they conceived should be the duties of a medical superintendent. Among such duties—in addition to the professional duties—expected of the medical superintendent appeared the following: keeping the subsidiary financial account of the institution, the care and supervision of china and crockery, and the planting of potatoes. The question of acquiring additional land was negatived as the committee were unanimously of opinion—considering that Mr. G. R. Lawless (the resident medical superintendent) did not know when potatoes should be planted—that there was no need of additional land. Among other things which fell within the medical superintendent's province was the selling of old clothes belonging to the patients as ordered by the board, though he (the medical superintendent) was of opinion that such clothes should be destroyed. On the motion of Mr. Best, seconded by Mr. Armstrong, "the board further instructed the medical superintendent to have mortar made on the grounds," and to keep a supply of the same for the needs of the institution. A member of the committee inquired if they could feed more pigs than they had at present and Mr. Lawless replied that they had not accommodation for more. The *Portadown News* concludes its report as follows concerning the committee and their doings: "After the meeting was over several of the governors visited the piggeries, and on finding that a number of them (the pigs)

were over two hundredweight and that in the ordinary course it would be two months before they could be disposed of by tender, it is said that some unprintable expressions were used regarding the management of the institution in general." It appears clear that the medical and professional duties required to be performed by the medical superintendent as the responsible physician in charge of the patients and of the administration of the asylum could not be performed were he to have to do the other work required by the committee. Evidently some of the committee think that the superintendent should be made a beast of burden and a jack-of-all-trades—a state of things which is not conducive to the best interests of the public asylum service if a medical officer in charge of patients is required to do the work of a steward, an accountant-clerk, a farm-bailiff, a housekeeper, and a manager of the piggeries.

A CYCLING DANGER.

A CYCLING accident which occurred near Leeds on May 26th is no less instructive than it is regrettable. The rider, while descending a steep hill with his feet on the rests, came at great speed against a parapet at the foot of the descent, was thrown over with his machine, and was buried in the mud of the canal which flowed beneath. When extricated he was dead. Such an occurrence is not singular. It has happened before under almost identical conditions. With some variation in details it has probably been less unusual than is commonly understood. For its prevention it is vain to search among mechanical contrivances. Not even the free wheel allows the cyclist such a measure of control as to ensure his safety in the circumstances which we have recorded. There is only one possible remedy, that is resolutely to refrain from riding down hill, and especially from "coasting," unless the rider feels assured of his control over his machine and understands the road he is travelling. The slope may end with a sharp curve or with more than one such in succession, or a country cart may be mounting the hill unseen and very possibly, too, on the wrong side. In either case there is danger, no matter how expert the cyclist. Yet not a few ride down hills which are notoriously dangerous and are so marked in the road maps. Another cause of accident is to be found in the habit of riding with the head down, the handle-bars being placed low. Of course, the rider can avoid this if he pleases and he ought certainly to do so when on a declivity. Even on a flat road there is strictly no more reason for the amateur to ride stooping than there is for an ordinary rider to sit like a racing jockey. To ride a bicycle so down a hill-slope is only to court misfortune.

LORD LISTER has consented to open the new clinical laboratories at the Westminster Hospital on Tuesday next, June 12th. Amongst those who have accepted the invitation of the president, treasurers, and committee to be present on the occasion are Lord Kelvin, the Dean of Westminster, Sir Michael Foster, the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, Sir John Burdon Sanderson, and Sir Joseph Fayrer.

THE St. Petersburg Military Medical Academy has received a considerable grant from the Minister of Finance in order to establish a clinic for persons suffering from the effects of alcoholism.

WE regret to announce the death at an early age of Dr. G. E. Williamson, F.R.C.S. Eng., surgeon to the eye department, Royal Infirmary, Newcastle-on-Tyne.

THE MEDICAL, SURGICAL, AND HYGIENIC EXHIBITION.

JUDGING by the satisfactory attendance of visitors, comprising medical men, pharmacists, hospital nurses, and others, "the fourth annual exposition of professional exhibits," which was held this week at the Queen's Hall, Langham-place, attained a success not less in degree than that which has marked former occasions. As we have pointed out before, this annual exhibition affords an excellent opportunity to practitioners in London of inspecting new preparations, appliances, and other objects of medical interest. Further, the exhibition being necessarily held on a small scale a good deal may be seen without experiencing that sense of fatigue which is commonly felt after a tour along row upon row of stalls. The exhibition at the Queen's Hall on the present occasion was tastefully arranged and very compact. One advantage which the hall offers for the purpose is that it is carpeted, so that the irritating noise of shuffling boots on plain wooden flooring is avoided, which makes conversation comfortable and enables the exchange of opinion between the exhibitors and the visitors to be carried on without interruption. The exhibition was opened on Tuesday, June 5th, by the president of the Organising Committee, Mr. Fred Weiss. In the course of a short and appropriate speech Mr. Weiss stated that every year showed an increase in the attendance of visitors, which fact was evidence of the increasing popularity of the exhibition. There was an increase last year of 2000 visitors over the previous year, the attendances being respectively 4000 and 6000. At the time when Mr. Weiss declared the exhibition open, which was shortly after 2 P.M., there were still a few stalls unfinished, but on the whole the organisers may be congratulated on having the exhibition practically ready for visitors at the time announced.

There was an abundant display of drugs, comprising the most recent introductions both in regard to special forms of administration and novelty of composition. The stall of Messrs. Cooper and Co. of 80, Gloucester-road, South Kensington, London, S.W., presented an excellently arranged and attractive display of drugs, special foods, and mineral waters. This firm prepares mineral water aerated both with oxygen and carbonic acid gas and very special precautions are taken to ensure the purity of the distilled water used. The water may be obtained plain, when it is known as "Globenaris," or it may be procured with definite amounts of lithia, piperazine, soda, and other soluble medicaments. The exhibit included also the flexible, tasteless, and readily soluble wafer capsules known as "cachoids" and other special preparations. A great number of interesting preparations were shown at the exhibit of Mr. W. Martindale of 10, New Cavendish-street, London, W. In addition to well-known drugs in various attractive forms there were amongst the specimens bacteriological culture media, stains and reagents, and other apparatus. The portable urine test case is very useful, as we have shown, for the requirements of the busy medical man, for it enables him to conduct an analysis sufficiently accurate for clinical purposes at the bedside. Amongst the interesting specimens of drugs shown were cacodylic acid which has recently been employed in the treatment of phthisis, and the sodium salt which is an excellent means of administering arsenic per rectum. Close by was the well-stocked stall of Messrs. Parke, Davis, and Co., of 111, Queen Victoria-street, London, E.C. A greater variety of drugs and related preparations, as well as various methods for their administration, could hardly have been displayed. The standard fluid extracts of this firm are well worth attention, as affording a fluid preparation containing definite active principles in known proportion. The drugs are carefully assayed before the extract is prepared, both chemically and when necessary physiologically, so that the therapeutic activity of a given measure of the extract may be relied upon. The exhibit included serums and toxins, euthymol preparations, antiseptics, mercurol, a nucleide of mercury which we dealt with recently in our analytical columns, and that interesting and powerful enzyme taka-diastase. The chocolate-coated tablets of this firm are also worthy of commendation. A very interesting series of pure chemicals,

alkaloids, and other preparations was exhibited by Mr. E. Merck of Darmstadt and 16, Jewry-street, London, E.C. This firm has a well-known reputation for the purity of fine drugs, and also in being enterprising in the manufacture of new pharmaceutical preparations which are suggested from time to time in medical practice. The exhibit included some organic iodine and bromine preparations and hæmoglobin. The preparations shown were excellent specimens of the art of obtaining pure crystallisable as well as non-crystallisable products in the laboratory. Some new interesting pharmaceutical products were shown by Messrs. Burgoyne, Burbidges, and Co., of 12 and 16, Coleman-street, London, E.C., who are the sole agents for the United Kingdom for Von Heyden's pharmaceutical products. Creosotal and duotal, which are respectively the carbonates of creosote and guaiacol, are examples. Besides these there were the interesting preparations known as "Collargolum," a form of metallic silver, but non-irritating and non-poisonous although a powerful antiseptic, and "Hyrgolum," which is described as "water soluble metallic hydrargyrum." As we have recently shown, this latter substance yields a clear but dichroic solution in water, and this novel substance in the form of an ointment is said to be more effective than ordinary mercury. The special preparation known as Wampole's perfected and tasteless preparation of the extract of cod-liver oil was submitted for inspection by the representative in this country, Dr. E. A. Martin, 4, Duke-street, Adelphi, London, W.C. As we have before pointed out it contains certain alkaloidal and other principles found in the liver of the cod, but the oil is carefully eliminated In addition to these it contains the hypophosphites, fluid extract of wild cherry bark, and extract of malt which contribute in no small degree to the undoubted tonic qualities of the preparation. Clinical experience is quoted in proof of the statements in regard to its administration in debility. Synthetics were, as might be expected, largely exhibited by the Bayer Co., Limited, of 19, St. Dunstan's-hill, London, E.C., and Elberfeld. Amongst comparatively recent introductions should be mentioned aspirin, a substitute for the salicylates which is said to avoid their unpleasant effects; heroin, a substitute for codeine; and protargol or proteinate of silver which has been used in the treatment of gonorrhœa. A stainless iodine ointment known as "Kelpion" is being introduced by the Kelpion Company, Norgrove Buildings, 59A, Bishopsgate-street Within, London, E.C. Kelpion is stated to be quite non-irritating, and statements are made in favour of its use in rheumatism and syphilis. Messrs. Arthur and Co., of 69, Berners-street, London, W., brought forward their well-prepared gold compounds; the one known as "Bromaurum," which is a brom-arsenate of gold, apparently acts in preventing the formation of urohæmatoporphyrin and in controlling the morbid process characteristic of muscular and chronic rheumatism. Samples of uric acid illustrating the control over the disease (by different degrees of pigmentation) were shown. Similarly samples of pigmented uric acid were shown illustrating the influence of an excess of alcohol in promoting the secretion of hæmatoporphyrin in antagonism to bromaurum. The exhibit included other well-known preparations which are specialities of this firm, as for example, sanochinol, described as a new atoxic derivative of quinine and a remedy for tropical fevers; tannopumilio, a remedy for irritation of the skin and bromidrosis, a compound of digallic acid with the principle of the essential oil of the pumilio pine. Messrs. Wyley's, Limited, of Coventry devoted the space on their stall chiefly to some excellent administrative forms of drugs, such as cachets, capsules, gelatin-coated pills, and "tropels" or compressed lozenges. Some elegant pharmaceutical preparations artistically relieved this display. Messrs. Oppenheimer, Son & Co, Limited, of 179, Queen Victoria-street, London, E.C., made a feature of palatinoids and bi-palatinoids in their well-arranged exhibit. There are many applications of this ingenious form of vehicle for drugs which deserve attention. In the first place the palatinoid administers the drug in the powdered condition, while preserving the contents against deterioration from atmospheric influences. An important application, too, of the palatinoid appears in the case of animal substances. Amongst the other specialities shown by this firm were palatinoids of liquids and tinctures and bi-palatinoids of Easton's syrup. Messrs. F. Newbery and Sons, of 27 and 28, Charterhouse-square, London, E.C., exhibited largely on behalf of Messrs. W. R. Warner and Co., of Philadelphia and New York, although the exhibit included a very comprehensive series of their own granular effervescent salts. Perhaps the most interesting and important subjects of exhibits by Messrs. J. F. Macfarlan and Co., of 93 and 109, Abbey-hill, Edinburgh, and of 9 and 11, Moor-lane, London, E.C., were the double cyanides of mercury and zinc used for the well-known dressing introduced by Lord Lister. The exhibit included the specially purified chloroform for which this firm holds a deserved reputation. In addition were the opium derivatives, morphine benzoyl, morphine diacetyl, and morphine ethyl hydrochlorides, which are said to be milder and less toxic than morphine and codeine and more certain in their action. Vitæ Ore affords a simple and ready means of producing a chalybeate water with tonic properties. As we have shown, it consists of oxidised pyrites and its properties were explained to the visitors by representatives of the Vitæ Ore Co., Limited, of 39, Temple-chambers, London, E.C. Amiral Soap may be mentioned in this paragraph, since the soap is but a vehicle for applying certain bile principles which are said to reduce corpulency by simple application to the skin. It is said to reduce the excessive fat of the body wherever applied, but on this point some evidence would seem to be required upon medical authority. The exhibitors were the Amiral Soap Co., Limited, 3, Throgmorton-avenue, London, E.C.

We shall continue our account next week by dealing with the special foods and other articles of interest which were on exhibition.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON Thursday, July 5th, a meeting of the Fellows will be held for the election of four members of Council. In consequence of the additional year of office of Sir William Mac Cormac, Bart., K.C.V.O., coming to an end during his presidency he will remain a member of the Council for another year.

The following list of the 24 members of the Council gives the date at which each member retires:—

Retire in 1907.—Mr. T. R. Jessop, Leeds General Infirmary (first elected 1891); and Mr. H. W. Page, St. Mary's Hospital.

Retire in 1906.—Mr. F. Richardson Cross, Bristol Royal Infirmary; Mr. Henry Morris, Middlesex Hospital; and Mr. John Langton, St. Bartholomew's Hospital (first elected 1890).

Retire in 1905.—Mr. H. G. Howse, Senior Vice-President, Guy's Hospital (first elected 1889); Mr. Edmund Owen, St. Mary's Hospital; and Mr. Rickman J. Godlee, University College Hospital.

Retire in 1904.—Mr. Thomas Bryant, Guy's Hospital (first elected 1880); and Mr. T. Pickering Pick, St. George's Hospital (first elected 1888).

Retire in 1903.—Mr. A. Willett, St. Bartholomew's Hospital (first elected 1887); Mr. H. T. Butlin, St. Bartholomew's Hospital; and Mr. F. Treves, London Hospital.

Retire in 1902.—Mr. Reginald Harrison (first elected 1886); Mr. Howard Marsh, St. Bartholomew's Hospital (first elected 1892); and Mr. J. Hardie, Royal Infirmary, Manchester.

Retire in 1901.—Sir William Mac Cormac, President, St. Thomas's Hospital (first elected 1883); Mr. N C. Macnamara, Westminster Hospital; Mr. A. W. Mayo Robson, Leeds General Infirmary; and Mr. W. Watson Cheyne, King's College Hospital.

Retire in 1900.—Sir Thomas Smith, St. Bartholomew's Hospital; Mr. J. Tweedy, Junior Vice-President, University College Hospital; and Mr. Alfred Cooper.

A fourth vacancy is occasioned by the death of Mr. Davies-Colley, whose term of office would have come to an end in 1904.

Sir Thomas Smith does not intend, we understand, to apply for re-election.

For the four vacancies two of the retiring members of the Council—viz., Mr. Tweedy and Mr. Cooper—are applying

for re-election. A former member of the Council, Dr. J. Ward Cousins of Portsmouth, is again coming forward, and ten other Fellows are offering themselves. These are Mr. C. H. Golding-Bird and Mr. R. Clement Lucas of Guy's Hospital; Mr. H. H. Clutton, of St. Thomas's Hospital; Mr. W. H. Bennett, of St. George's Hospital; Mr. John H. Morgan and Mr. J. A. Bloxam, of Charing-cross Hospital; Mr. A. Pearce Gould and Mr. J. Bland-Sutton, of Middlesex Hospital; Mr. W. J. Walsham, of St. Bartholomew's Hospital; and Mr. Jordan Lloyd, of Birmingham.

It is quite possible that all these thirteen candidates may not go to the poll. Nomination forms must reach the secretary by Monday, June 11th. At present St. Bartholomew's Hospital has five representatives; Guy's Hospital, University College Hospital, and St. Mary's Hospital have respectively two representatives; and the following hospitals have one representative apiece: St. George's, King's College, London, Middlesex, St. Thomas's, and Westminster. Two members of the Council are connected with special London hospitals and four are attached to provincial hospitals; Leeds General Infirmary has two representatives and Bristol Royal Infirmary and Manchester Royal Infirmary have each one.

THE PREVENTION OF TUBERCULOSIS.

THE interest in the prevention of tuberculosis, we are glad to see, is by no means abating, and the various local bodies throughout the country continue to further the erection of sanatoria and other means of fighting the disease which is responsible for so many deaths yearly.

PLYMOUTH.

The Borough Council of Plymouth at their meeting held during the second week in May received a report from the Sanitary Committee stating that a deputation from the Devon and West Cornwall Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis had waited upon them and had submitted a scheme for the voluntary notification of phthisis. The Sanitary Committee recommended that the scheme should be adopted and that notifying medical practitioners should be allowed a fee of 2*s*. 6*d*. for each private patient, and a fee of 1*s*. for each parochial or dispensary patient, notified. The recommendation was unanimously adopted.

DUNDEE.

The city of Dundee is about to erect a sanatorium for the treatment of tuberculous patients, the expenses of which are to be mainly defrayed out of the very generous gift of £10,000 contributed by ex-Provost Moncur. The plans were approved by the Works Committee on May 14th. The site is on the Airlie estate and has been given by Lord Airlie. The whole establishment is to cover an area of between 20 and 30 acres and the building will consist of three blocks. The residential block will hold 34 patients and will have a frontage of 200 feet, and there is accommodation for the matron, nurses, and resident medical officer, as well as for the patients. The second block is devoted to a dining-room, kitchens, and offices, while the third contains a laundry and a lighting plant.

YORKSHIRE.

The annual meeting of the Yorkshire Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held on May 14th in the Museum of York, Mr. Alderman E. Gray being in the chair.—Dr. W. A. Evelyn read the report which showed that the committee appointed to inquire into and to decide upon a site for the erection of a sanatorium had not yet been able to come to a conclusion. During the year 1899 there were 48 deaths of children under the age of five years from tuberculous diseases. This gave a rate of about 20 per 1000 births. There is great scope for the York branch to work for the promotion of a pure milk-supply.

LIVERPOOL.

A public meeting was held on May 18th in the Town Hall, Liverpool, its inception being due to an earnest request from the medical profession in Liverpool that a Liverpool Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis should be inaugurated. The Lord Mayor presided, and there were also present Lord Derby, Sir William Mitchell Banks, the Rev. J. Bell Cox, a large number of local medical men (including Professor Rubert Boyce), while Mr. Malcolm Morris came from London and Dr. Arthur Ransome from Bournemouth. An account of this meeting has been already given by our Liverpool correspondent.[1]

ARMY MEDICAL REPORT FOR 1898.[2]

SECOND NOTICE.[3]

IN our previous notice we took a preliminary canter, as it were, over the ground which is occupied by the last published volume of the annual series of these reports, and gave a brief and cursory outline of its contents accompanied by a summary statement of the general health conditions of the troops at home and abroad during 1898. Our purpose now is to select a few points of interest which lend themselves to consideration and comment rather than to touch upon the classified statistical results at the different stations or to compare these with one another. Those of our readers who are more particularly interested in such matters will naturally refer to the report itself for information. As everyone knows public interest is absorbed at the present moment, almost to the exclusion of everything else, in the events which are taking place in South Africa. A glance at the daily journals is unfortunately sufficient to show the important rôle which disease, and notably enteric fever, occupies in the history of the present war. This fever is a veritable scourge of armies in the field and this has been even more the case with the expeditionary armies of other military powers than with ourselves. We find abundant evidence of the prevalence of enteric fever in South Africa in the report under review—at Ladysmith, Pietermaritzburg, Wynberg, King William's Town, and Simonstown, for example—long before the arrival of the British expeditionary force had taken place in that country, and we are therefore not required to have recourse to the theory of any fresh introduction of the disease there by the newly arrived troops. As the subject is one of vast importance in relation to the diseases incidental to war service and camps we need make no apologies for dealing with it more especially. As we have said on previous occasions it is a generally recognised fact, be the explanation what it may, that there is an increased liability to contract enteric fever at certain periods of life; in other words, that there exists an enteric fever age-period which includes the time during which soldiers are serving with the colours in all short-service armies. But a still more powerful predisposing factor is recent arrival in a tropical or subtropical climate, especially during the hot season. We all know what the heat has been in South Africa, that most of the troops were young soldiers, and that all may be said to have newly arrived there. As far as India is concerned this susceptibility or vulnerability of the European constitution to enteric fever of fresh arrivals is at its maximum during the first year, markedly declines during the second and third years, and is, practically speaking, nearly exhausted between the third and fourth years of Indian service. It is not, of course, pretended that these are the only disease-factors, for if the real cause of enteric fever be the bacillus of Eberth and Gaffky then it follows that the presence of that specific germ or micro-organism is indispensably necessary to its production; but this bacillus must in that case be much more widely distributed in nature than our present knowledge would lead us to suppose in order to account for all the enteric fever that occurs, or, to put it another way, the number and extent of the infected areas on the surface of the globe must be greater than has been hitherto thought to be the case. Dr. Horton-Smith's recent Goulstonian lectures at the Royal College of Physicians of London on "The Typhoid Bacillus and Typhoid Fever" have opened out a wide field for further investigation in various directions, but especially in this respect that it has been found to be not uncommon for the

[1] See THE LANCET, May 26th, p. 1549.

[2] Army Medical Department. Report for the Year 1898, with Appendix. Vol. xl. London: Printed for Her Majesty's Stationery Office by Harrison and Sons, St. Martin's-lane, Printers to Her Majesty. 1900. Price 2*s*. 6*d*.

[3] The first notice was published in THE LANCET of May 12th, 1900, p. 1384.

bacillus to remain dormant for long periods of time in the bodies of those who have been attacked and have seemingly quite recovered and meanwhile remained in perfect health. Assuming that to be the case such individuals may prove so many sources of hitherto unrecognised infection. Touching the liability of the young soldier to contract enteric fever in the first year of his Indian service this is very strikingly brought out in the chart illustrative of the relation of service in India to cases of this fever which appears at page 179 of the Army Medical Report for 1898. The admission ratio of 91·5 per 1000 in that year is out of all proportion to those that follow in subsequent years, the next highest being 38·0 for men of the second year of service, while it is only 1·0 per 1000 for those of 10 years' Indian service and over.

The principal medical officer (Surgeon-General W. Taylor, C.B., A.M.S.) writes as follows concerning enteric fever amongst the troops in India:—

> The liability of troops on service to enteric fever, even when encamped on what appears to be virgin soil, is a fact in regard to which almost all observers are unanimous, and a considerable part of the increase in both the admission and mortality rates for 1898 can be accounted for by field service. The chief instances of increase from this source are the outbreaks in the Khyber and Malakand Forces, admissions from troops returned and passing through from field service at Rawal Pindi, and importation by regiments arriving from the front at Ahmednagar, Fyzabad, and Cawnpore. A second large source of increase was the Quetta epidemic. A small part of the increased admission rate may be due to improved means of diagnosis. Thus, at Quetta Widal's test was employed in 82 cases and was much relied on for the differentiation of typical cases. It was also used at Rawal Pindi and Ahmednagar.

Whilst on the subject of enteric fever in relation to troops on field service there is also another point to be considered. We remember that an army medical officer some years ago called attention to the fact that the period of incubation in the cases of soldiers returning from a campaign where enteric fever was epidemic or prevalent was often of a very prolonged kind in those attacked, and he cited numerous examples that had fallen within his experience. Turning to page 264 of the Army Medical Report dealing with Egypt and Cyprus we find the following statements which seem to be strongly corroborative of this and worthy of further attention. The table shows the period elapsing between the development of attacks of enteric fever and the data of the return of the individuals from "Up Nile" in all those cases which occurred amongst troops previously serving with the Khartoum Expeditionary Force.

Number of Cases of Enteric Fever occurring—

Stations.	Within first week after return.	Within second week after return.	Within third week after return.	Within fourth week after return.	Within fifth week after return.	Within sixth week after return.	Within seventh week after return.	Within eighth week after return.
Alexandria	14	19	49	31	12	3	1	—
Cairo	31	39	31	29	6	15	10	1
Cyprus	—	—	—	—	—	—	—	1
Total	45	58	80	60	18	18	11	2

Return of Cases of Enteric Fever occurring in Soldiers more than eight weeks after their Return from the Khartoum Expedition, 1898.

Date o return from the Soudan.	Date of admission to hospital.	No. of cases.
Sept. 15th, 1898	Nov. 23rd, 1898	7
,, ,, ,, ...	Dec. 7th, ,, ...	
,, ,, ,, ...	,, 18th, ,, ...	
,, ,, ,, ...	Nov. 27th, ,, ...	
,, ,, ,, ...	,, 28th, ,, ...	
,, 24th ,, ...	Dec. 9th, ,, ...	
,, ,, ,, ...	,, 27th, ,, ...	

It might, of course, be said that such cases caught it from one another after return from field service or that they were really suffering from the disease during longer and more variable periods than was supposed.

So far as our present experience extends—for we must await the official publication of the statistical results obtained during the present war before arriving at any final conclusion—it does not seem that the practice of inoculation as a safeguard against typhoid fever has been attended with that amount of success which had been hoped.

THE WAR IN SOUTH AFRICA.

IT is easy to sum up the war news of the week in a sentence. Pretoria is in our possession and the Union Jack now flies where the flag of the Transvaal Republic has flown for nearly 20 years. The entry of the British force into the capital of the Transvaal under Lord Roberts is an epoch-making event in history and the importance of the success which has been achieved has probably not even yet been thoroughly appreciated; but everybody recognises that with the fall of Pretoria the back of the Boer rebellion has been broken and that a long and painful chapter in the annals of our South African Dominion has been closed.

Although the war is not over we may confidently hope that a new and better era has been opened for all concerned with South Africa, not excluding the Boers themselves, for when the political settlement and arrangements have been made the same political freedom and equality of opportunity will be extended to all alike. But as we have said the war is not yet over. There remains a large body of discontented Boers scattered over the country who may still be expected to retain and exhibit signs of vitality and separate and independent action for some time to come, for their troops have usually succeeded in their encounters with us in effecting their retreat and in carrying off their guns. Still the Boer forces have no longer any organic cohesion. They have hitherto shown no strategical ability and are not likely to do so now, and their power to harass our troops and prolong the campaign by a guerilla system of warfare must inevitably become weaker and weaker until it finally ceases altogether. The sudden collapse of the burgher forces has demonstrated the hopelessness of resistance by unorganised armed forces, however brave, when opposed to a trained and disciplined army intelligently conducted.

There is still a large amount of enteric fever among the British troops in South Africa and the sufferings undergone by these unfortunate patients must be considerable under all the circumstances of this war, for they have usually to be transported for long distances to stationary hospitals in the rear where many of them arrive in a very pitiable condition. Although such large quantities of clothing and medical comforts have been sent out from this country by the Government and the numerous sources of charitable supply we do not think, from what we hear, that there is any reason for the public to relax their efforts, for the sick coming down from the front are in need of ample supplies of clean and warm clothing of all kinds. It is, after all, not so much the wounded who claim our help and sympathy in war as the sick—those suffering from enteric fever, dysentery, and acute respiratory affections. Their hardships, sufferings, and discomforts make up in the aggregate a terrible total, because, as we all can recognise, the many unavoidable conditions of war and field service are so unfavourable and inimical to cases of this nature.

The Imperial Yeomanry Base and Field Hospitals are increasing their accommodation in consequence of the large number of cases of enteric fever and kindred diseases. Further equipment is being sent out as rapidly as possible, and 10 additional nurses have left within the past few days. The field hospital and the bearer company have left Bloemfontein for the front.

Major-General the Hon. Herbert Heaton, the hon. secretary of the Portland Hospital, has received a letter from Surgeon-Major C. R. Kilkelly, R.A.M.C., commandant of the hospital, showing that from Jan. 8th to May 11th 92 officers and 613 non-commissioned officers and men were admitted into the hospital. When the letter was despatched 25 officers and 95 men still remained under treatment. Of the others 97 officers and men had been discharged for duty,

five discharged for garrison duty, and 98 sent to England. Four officers and 254 men were convalescent, 114 officers and men had been transferred to other hospitals, and only one officer and nine men had died. We are extremely glad to notice that the case of the Indian and native stretcher bearers is not likely to be lost sight of, for these men have rendered very valuable services in the present war which thoroughly deserve to be rewarded.

SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID COMMITTEE.

This committee, which includes many members of the profession in London and elsewhere, met on Wednesday last, June 6th, at Hampden House under the Presidency of the Duke of Abercorn to receive the report of the work accomplished to the present date. The management of the funds subscribed, the recommendation of invalided officers to the professional members of the committee, and the allocation of convalescents to the various private houses and hotels which have been kindly offered for their use is deputed to a confidential executive committee consisting of the following members: the Duke of Abercorn, the Hon. Arthur Brodrick (who acts as honorary secretary), Lieutenant-Colonel H. Charlesworth, R.A.M.C., and Colonel Stacpole, D.A.A.G. (who superintend the disembarkation of invalided officers at Southampton), Mr. Lyttelton Gell, Surgeon-General Hamilton, A.M.S., Dr. Donald Hood, Mr. F. A. Johnston, and Mr. J. H. Morgan.

The President reported that since the last meeting the following gentlemen had been added to the General Committee: Sir Felix Semon, Sir William MacCormac, Mr. Frederick Treves, Mr. Howard Marsh, Mr. Mackenzie Davidson, and Mr. Warrington Haward. Lieutenant-Colonel Knocker, A.A.G., Devonport; Lieutenant-Colonel Bourke, R.A.M.C., Woolwich; and Lieutenant-Colonel McLeod, D.A.A.G., Chatham, were elected members at the meeting.

In addition to the invaluable assistance rendered by physicians and surgeons on the committee over 200 offers of hospitality in private houses and from hotels (either gratuitously or on reduced terms) have been received either directly or have been transmitted to the committee by the War Office.

Many officers have already availed themselves of these invitations, though the chief demand upon them is likely to arise at a later date. The coöperation of the Countess of Dudley in arrangements for the wives or other relatives accompanying invalided officers has been very gratefully appreciated. 60 officers have already been assisted by the Executive Committee, while others either through their private circumstances, or through the improvement in their health during the voyage home, have not required the committee's assistance. 160 officers are at the present moment on their way to England, of whom a large proportion are likely to accept the committee's help; and the President called attention to the resolution passed at a previous meeting that surgeons or physicians who were consulted by such officers should receive a letter signed by a member of the Executive Committee. The cases which have so far received surgical or medical assistance from members of the committee fall under the following heads. 34 surgical cases have been dealt with and five new cases are coming forward at the present moment. 22 have had advice and treatment, several of whom have been sent to the country or abroad. Two have returned to South Africa for service. Ten have required operations in surgical homes, two for wounds of the knee involving artery or nerves or both, one for arterio-venous aneurysm of the femoral, one for severe fracture of the femur, two for loose cartilages in the knee-joint, one for appendicitis, and one patient has had fragments of lead removed from the thigh and scrotum, while three cases of amputation of the leg with stumps not healed, two cases of perforating wound of the chest and lung, and one case of gunshot fracture of the humerus with injury of nerve have been treated. One patient recovered after receiving five wounds one of which penetrated the abdomen. One patient was hit by four bullets, one of which fractured the left femur high up. He has been sent abroad. In the majority of cases of severe wounds the results of nervous shock have been marked and have in several instances lasted so long as to require rest and change before operation could be undertaken. Cases of injury to nerves have improved greatly under massage and change of air.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 6932 births and 3951 deaths were registered during the week ending June 2nd. The annual rate of mortality in these towns, which had increased from 17·8 to 18·4 per 1000 in the three preceding weeks, declined again to 17·7 last week. In London the death-rate was 17·0 per 1000, while it averaged 18·2 in the 32 provincial towns. The lowest death-rates in these towns were 11·0 in Gateshead, 11·1 in Croydon, 12·6 in Brighton, and 13 5 in Derby; the highest rates were 22·1 in Blackburn, 22 2 in Swansea, 22·8 in Halifax, and 25·5 in Plymouth. The 3951 deaths in these towns included 423 which were referred to the principal zymotic diseases, against 431 and 443 in the two preceding weeks; of these 142 resulted from measles, 115 from whooping-cough, 77 from diphtheria, 34 from diarrhœa, 29 from scarlet fever, and 26 from "fever" (principally enteric). No fatal cases of any of these diseases occurred last week in Norwich or in Gateshead; in the other towns they caused the lowest death-rates in Croydon, Brighton, Birkenhead, and Halifax, and the highest rates in Wolverhampton, Lercester, Derby, Blackburn, and Sheffield. The greatest proportional mortality from measles occurred in Plymouth, Cardiff, Derby, Blackburn, and Sunderland; from scarlet fever in Burnley; from whooping-cough in Wolverhampton, Salford, Oldham, and Huddersfield; from "fever" in Swansea; and from diarrhœa in Blackburn. The 77 deaths from diphtheria included 29 in London, nine in Leicester, nine in Sheffield, five in Birmingham, and four in Liverpool. No fatal case of small-pox was registered last week in any of the 33 towns. There were seven small-pox patients under treatment on Saturday last, June 2nd, in the Metropolitan Asylums Hospitals, and four new cases were admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1759, against numbers increasing from 1647 to 1784 on the five preceding Saturdays; 194 new cases were admitted during the week, against 203, 221, and 216 in the three preceding weeks. Influenza was certified as the primary cause of 14 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had declined from 417 to 269 in the four preceding weeks, further declined to 266 last week, and were 15 below the corrected average. The causes of 36, or 0·9 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Leicester, Salford, Leeds, Newcastle, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Halifax, Hull, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·7, 19·5, and 19·6 per 1000 in the three preceding weeks, declined again to 18·6 during the week ending June 2nd, but exceeded by 0·9 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 12·6 in Leith and 14·9 in Aberdeen to 20·7 in Glasgow and 23·6 in Perth. The 575 deaths in these towns included 25 which were referred to whooping-cough, 25 to diarrhœa, 16 to measles, four to diphtheria, one to small-pox, one to scarlet fever, and one to "fever." In all 73 deaths resulted from these principal zymotic diseases, against 85 and 76 in the two preceding weeks. These 73 deaths were equal to an annual rate of 2·4 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had risen from 22 to 36 in the three preceding weeks, declined again last week to 25, of which 21 occurred in Glasgow, two in Aberdeen, and two in Perth. The deaths from diarrhœa, which had been nine, 15, and 19 in the three preceding weeks, further rose to 25 last week, and included 13 in Glasgow, four in Dundee, three in Aberdeen, and two in Edinburgh. The fatal cases of measles, which had been 19 and 10 in the two preceding weeks, rose again last week to 16, of which 14 were registered in Glasgow. The deaths from diphtheria, which had been seven and five in the

two preceding weeks, further declined to four last week and included three in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 84 and 94 in the two preceding weeks, further rose to 104 last week, but were slightly below the number in the corresponding period of last year. The causes of 41, or more than 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·0 and 25·2 per 1000 in the two preceding weeks, declined again to 21·9 during the week ending June 2nd. During the past four weeks the death-rate in the city has averaged 24·1 per 1000, the rate during the same period being 16·5 in London and 18·5 in Edinburgh. The 147 deaths belonging to Dublin registered during the week under notice were 22 less than the number in the preceding week, and included three which were referred to the principal zymotic diseases, against nine and five in the two preceding weeks; of these, one resulted from scarlet fever, one from "fever," one from diarrhœa, and not one either from small-pox, measles, diphtheria, or whooping-cough. These three deaths were equal to an annual rate of 0·4 per 1000, the zymotic death-rate during the same period being 2·0 in London and 0·5 in Edinburgh. The fatal case of scarlet fever was the only one registered during the last 10 weeks. The deaths from "fever," which had been three and two in the two preceding weeks, further declined to one last week. The mortality from diarrhœa showed a decline from that recorded in recent weeks. The 147 deaths in Dublin last week included 29 of infants under one year of age and 36 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the number in the preceding week. Five inquest cases and five deaths from violence were registered; and 62, or more than a third, of the deaths occurred in public institutions. The causes of seven, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Deputy Inspector of Hospitals and Fleets E. R. H. Pollard to the *Victoria and Albert*. Surgeon S. T. Reid to the *Pembroke*.

VOLUNTEER CORPS.

Rifle: 4th Volunteer Battalion the Queen's Own (Royal West Kent Regiment): The undermentioned gentlemen to be Surgeon-Lieutenants: William Watson, Arthur Tresco Franklyn Brown, and Herbert James Bryan. 1st Herefordshire: Surgeon-Lieutenant James Neil Macmullan resigns his commission and is appointed Second Lieutenant (supernumerary). 2nd Volunteer Battalion the East Lancashire Regiment: Surgeon-Captain A. A. Watson to be Surgeon-Major and to remain supernumerary. 1st Volunteer Battalion, the Lincolnshire Regiment: Surgeon-Lieutenant-Colonel H. Wright is borne as supernumerary whilst serving with the Royal Army Medical Corps in South Africa. 19th Middlesex: Surgeon-Lieutenant J. J. Clarke resigns his commission.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Horace Stansfield Collier to be Surgeon-Lieutenant.

TRANSVAAL WAR NOTES.

The following officers were discharged from hospital to duty for the week which ended May 20th:—Royal Army Medical Corps: Major T. G. Lavie, Lieutenant C. S. Smith, Lieutenant M. H. G. Fell, Civil Surgeon Wynter, and Civil Surgeon Ashford. The following officers were discharged from hospital to duty for the week which ended May 18th:—Royal Army Medical Corps: Major A. Baird, Major R. Kirkpatrick, and Captain W. A. Ward.

A new infectious diseases block is being constructed in the grounds of the Military Hospital, Devonport, so that the whole of the existing blocks may be available for the wounded soldiers from South Africa.

Princess Christian will open a naval and millitary bazaar at Olympia on June 19th Mr. Goschen, M.P., will perform an opening ceremony on June 20th, and the Marchioness of Lansdowne on the third (the closing) day. Among the patrons of the bazaar, which is in aid of the Princess Christian's Home for Disabled Soldiers and Sailors, are Her Majesty the Queen and the Princess of Wales.

The Princess Christian Hospital, which has been presented to the Natal Government by Mr. Alfred Mosely, a Bristolian, was formally opened at Pinetown on May 18th by Colonel Morris, the military commandant. The Bishop of Natal (Dr. Baynes) was also present. The hospital, which is only for military purposes, has received patients since the commencement of April and contains 200 beds, all of which are now occupied. Mr. Mosely maintains the hospital at his own expense for four months, the estimated cost of this being £25,000.

The s s. *Cephalonia* arrived at Southampton from South Africa on the 3rd inst. She carried 418 invalids, who were admitted to the Royal Victoria Hospital.

TRANSVAAL WAR CASUALTIES.

LORD ROBERTS'S ADVANCE.

The following casualties are reported:—At Ladysmith, May 26th, Civil Surgeon Robert Irvine, from enteric fever; at Kheis, May 28th, Surgeon-Captain Dun, 5th Company Imperial Yeomanry, slightly wounded in leg; at Florida, May 29th, Lieutenant A. H. Benson, R.A.M.C., attached to Gordon Highlanders, slightly wounded.

ARMY MEDICAL SCHOOL, NETLEY.

Under orders from the Director-General A.M.S. a special examination was held in the Army Medical School, Netley, on May 29th, when the following surgeons-on-probation for the Royal Army Medical Corps were found duly qualified and were recommended for commissions as Lieutenants. They left Netley for Aldershot on Monday, June 4th: Mr. C. H. Carr, Mr. E. Bennett, Mr. F. P. Lauder, Mr. H. E. Weston, Mr. J. Tobin, Mr. A. C. Adderley, and Mr. G. E. Leary.

Correspondence.

"Audi alteram partem."

INDURATED LYMPHATIC CORDS.

To the Editors of THE LANCET.

SIRS,—In his interesting lecture on Primary Syphilitic Chancres Mr. Jonathan Hutchinson, jun.,[1] draws attention to the occurrence of indurated lymphatic cords in from 40 to 50 per cent. of cases of primary syphilis, the importance of which "is not mentioned in any published description." The frequency of these, associated with chancres at the furrow or at the inner aspect of the prepuce, is noted, while their diagnostic importance is questioned. Apart from these valuable statistics and observations may I point out that the late Mr. Henry Lee[2] devoted especial attention to the subject? He described mainly two conditions:—1. The suppurating non-infecting syphilitic sore, from which the poison may be traced to the suppurating bubo, "in the clearest way" along the absorbent vessels and which may inoculate them, producing a fresh inoculable sore or occasionally a small abscess. 2. "A similar series of phenomena may be observed in the affections of the lymphatic vessels accompanying an indurated primary syphilitic sore ..... noticed by Hunter in which a lymphatic vessel leading from the chancre appears like a cord extending along the back of the penis. Sometimes these arise from thickening of the prepuce in cases of gonorrhœa. In such cases, however, the prepuce is generally excoriated. ..... The cord can be easily pinched up between the finger and thumb. ..... The lymphatics in such cases arise from an excoriated and inflamed internal prepuce. ..... We have here an account of the specific adhesive inflammation as it affects the lymphatic vessels, and although mixed up in Hunter's description with the suppurating form of the disease yet has he given the distinctive characters of each

[1] THE LANCET, June 2nd, 1900, p. 1575.

[2] Lectures on Syphilis (Lymphatic Absorption), Lecture IV., second edition, 1862. Hunterian and Lettsomian Lectures, Ibid., Lectures VII. and X., 1870.

with his usual clearness and precision." Essentially regarding induration as indifferently affecting either the lymphatic vessel or gland rather than apparently attaching importance to locality of lesion he noted that the induration of the vessel is often in inverse proportion to that of the primary sore or gland and he thought if such induration appeared shortly after infection and remained its "existence would be a sign of the patient being syphilitic" or, in less marked form, the subject of re-infection.

I am, Sirs, yours faithfully,

Grosvenor-street, W., June 5th. JOHN A. SHAW-MACKENZIE.

"THE RÔLE OF EDUCATION IN THE PREVENTION OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—In my letter in THE LANCET of June 2nd, on the Rôle of Education in the Prevention of Tuberculosis, p. 1614, line 6, in the second column, "womankind" should be "mankind." Mr. Adler recommends among moral "duties" the inculcation of the laws of public and personal hygiene to children under the headings (*a*) duty to one's (physical, emotional, and intellectual) self—e.g., cleanliness, temperance, and chastity, &c.; (*b*) duty to mankind—e.g., justice, charity, &c.; and (*c*) duty to society—e.g., citizenship, parental and filial ties, &c. It may be equally claimed that such instruction in physical well-being is called for as an aid to morality. Practical illustrations of the effect of foul air might be shown with advantage to education and other authorities. This might bring the desired pressure to bear, as wished by the National Association.—I am, Sirs, yours faithfully,

F. BUSHNELL,

Honorary Secretary, Devon and Cornwall Association for the Prevention of Consumption.

Plymouth, June 5th, 1900.

THE LATE DR. G. F. CROOKE.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow us room to state what has been done regarding the Crooke Fund? The total amount subscribed is £219 14*s.* 6*d.* This we are handing over to Mr. J. T. J. Morrison—who was fellow-resident with Crooke at Guy's—and Mr. Arthur H. Foster, solicitor, of this city, who was his personal friend as well as legal adviser. They have consented to act as trustees, and we have not thought it wise to limit their powers except by the general instruction that the money was subscribed on the understanding that it would be used for the nurture and education of Crooke's only child—a little boy.

We are, Sirs, yours faithfully,

(Signed) A. FOXWELL, Treasurer of the Fund;
GILBERT BARLING, J. T. J. MORRISON, Secretaries.

Birmingham, June 4th, 1900.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—I have no intention of continuing this discussion. I beg to call attention to the fact that every point raised by Dr. Edmunds is fully dealt with in my report except the questions of albumin and sugar, both of which were absent.

I am, Sirs, yours faithfully,

Wigan, June 1st, 1900. GEO. MOWAT.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague and Cholera.—Official Indian Reports.—Increase of the Famine.

THE plague epidemic is subsiding throughout India. The returns for the week ending May 5th show the total plague deaths at 1771, compared with 2498 in the previous seven days. The plague mortality has dropped in Bombay city from 448 to 350 (these are the official figures and serve for comparison, but they are very wide of the mark); in Karachi from 284 to 187; in the Bombay Mofussil from 699 to 501; in Calcutta from 343 to 252; and in the Bengal Mofussil from 505 to 359. Notwithstanding the importation of one or two cases it is satisfactory to note that the cities of Madras and Rangoon have so far escaped. The present year has shown a remarkable diffusion of the epidemic. For the present a lull in the storm may be expected, but the forecast points to a further development after a period of rest. So many of the previous epidemics have lasted six, seven, and eight years that it is too much to expect that the present one will terminate this year. Cholera is now the chief pestilence and it caused no less than 811 deaths last week in Ahmedabad. It is raging also in some of the famine districts. The "normal" average for Calcutta is over 100 a week and for the whole of India half a million lives have often been lost in one year. The figures for plague look very small when the ravages of this disease are noted. Enteric fever is very prevalent in Rangoon. A committee of inquiry is about to be appointed. It will probably consist of the civil surgeon, the municipal engineer, three private medical practitioners, and possibly an engineer of the Public Works Department.

The official history of the progress of the plague in the Bombay Presidency has been published. It was compiled under orders of the Government by Captain Condon, I.S.C. Long reports on the medical aspects and the treatment of plague are included in the volume. The astonishing feature of some of these Government reports consists in the appointment of the editors. In this case at least one would have expected to see the name of a medical man rather than that of an officer in the Indian Staff Corps. Such a report would probably be best produced under the joint editorship of a plague expert and an experienced administrative officer. Apart from the expected report of the English Plague Commission it is time that the numerous reports from all parts of India were consolidated. There is now an immense waste of paper, while important observations get hidden away in small volumes.

The number of persons on famine relief continues to rise and now amounts to 5,600,000, being an increase of 123,000 on the returns of the previous week. The Central Provinces and Bombay Presidency are in the worst plight. The loss of human life has been extraordinarily small but the stock of cattle in some districts has been almost wiped out. An attempt is being made to transfer cattle from other areas, and 5000 have been ordered by the Bombay Government. The stock of wagons on the railways is so insufficient for the ordinary demands of trade that some difficulty will probably be found in conveying them. The present famine is far greater than any of its predecessors. This year water and fodder have failed as well as the crops, and over a wide area in the Punjab and Rajputana fodder has been absolutely unobtainable. Horses have been taken to other districts, but the cattle have been left to die and they have simply perished by hundreds of thousands.

May 10th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending April 21st show the following figures: remaining at the beginning of the week, 62; admitted, 16; died, eight; remaining at the end of the week, 70. The totals were as follows: admitted, 129; died, 46; discharged recovered, 13. Total "contacts" isolated, 719; cases among "contacts," five (see ante).[1]

The fall in new cases from the 23, 29, and 29 of the three preceding weeks to 16 during that under review has vastly cheered the popular mind and has even been the occasion of congratulatory paragraphs in the public press. This decline may stimulate to fresh exertions, and the rôle of Cassandra persistently played is not without its dangers for the impersonator. It is quite plain, however, that the disease continues to occur solely in relation to diseased rats, that the latter are far from having been killed off yet, and that cases come from localities further and further from

[1] THE LANCET, May 26th, 1900, p. 1548.

the original focus—which, notwithstanding the cleansing, still furnishes some. As Simond has said, the disease spreads like a spot of grease on paper. In four or five cases the patient, infected in the city, has fallen ill at a distance—in one case 140 miles away, in another 40 miles away, and in the remainder in suburbs about ten miles off--but these occurrences have been without consequences. The "contacts," of course, were inoculated in all these instances. It begins to appear that the medical officer of health is as helpless as anyone when the disease is not merely communicable directly but also originates with one kind of animal and spreads by the agency of another (or of other) animals. He may not and must not, derive comfort from the reflection that notwithstanding all that has been said and done in recent years epidemic plague has everywhere pursued its course, and has hardly been interfered with by the most strenuous efforts. A few small and solitary villages furnish the sole exceptions.

The mortality represented by the above figures, low as it is, represents a strictly "natural" mortality, for, as stated at first, it includes all deaths which occurred before admission to hospital and before any treatment had been applied. Were these deducted the hospital mortality (without further deduction for patients who died within 24 hours of admission) would probably not be above 30 per cent. For this result it appears that Dr. A. E. Salter, in charge, is to some extent directly responsible. His attention to the patients has been really unremitting, and probably several lives have been saved by his timely injections of five-minim doses of the pharmacopœial solution of strychnine beneath the skin; these he repeats every hour, two hours, or less often, till the imminent danger of death from failure of the heart has passed. To carry out treatment on this principle successfully the physician must be ever at hand. During next month consignments of Yersin serum are expected, one from the Pasteur Institute and another from the municipal laboratory at Messina (Dr. Terni and Dr. Bandi). They will be welcome, but the usefulness of treatment by this method can be judged only from the results attained in long series of cases; nothing, in the present writer's opinion, can be deduced from individual experiences. Plague is the most deceptive of all diseases. There is no member of the medical staff who has not had to admit again and again that patients have recovered whom he thought certain to die, and to die soon, and that others whom he thought in little danger have died within a few hours of his forming that opinion of their case. Calmette and Salimbeni have said something of the same sort as a warning not to refrain from injecting serum with a view to saving it for more urgent cases, for the latter cannot be distinguished with any certainty. A lengthened trial therefore is necessary.

The inter-colonial plague conference, after holding three meetings in Melbourne, concluded their deliberations at a fourth meeting held in Sydney. New South Wales could not, of course, be officially represented under these circumstances, but the meeting was held at the Department of Public Health and the chief medical officer of the Government was present by invitation. The members spent much time in the laboratories, visited the hospital, and visited quarantined areas in the city in order to make acquaintance with the methods of cleansing employed. This is a considerable business, estimated to cost not less than £30,000 a month in wages and material. The public gauge the return for this expenditure in loads of refuse removed and the like; they have not yet learned that it should be expressed in terms of rats. Nevertheless, rats are being killed in greater numbers than heretofore.

April 24th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Medical Benevolent Society.

THE seventy-eighth annual meeting of this society was held on May 23rd under the presidency of Mr. D. C. Lloyd Owen. The report read is of a very satisfactory kind and indicates the zeal and interest displayed in the society by the local officials. The invested funds now amount to £15,437, of which £6869 are invested in Birmingham corporation bonds and stocks. 16 annuitants were on the books at the beginning of the year. £467 had been expended in annual grants which ranged from £15 to £40. The number of members was then 384, 24 having been admitted during the year. The various officers were appointed and stress was laid upon the fact that so few members of the profession in the city and Midlands had joined the society, the advantages of which were so manifest. A dinner was subsequently held, at which a number of members and friends were present, and a pleasant evening was spent.

University of Birmingham.

The first meeting of the Court of Governors of the new university was held on May 1st. Mr. Chamberlain, as chancellor, presided. The Lord Mayor, Alderman Beale, was elected vice-chancellor and Alderman Clayton pro-vice-chancellor and treasurer. The first official act of the new chancellor was to invite the Court of Governors assembled under the authority of a Charter granted by the Queen to approve a loyal message congratulating Her Majesty upon the occupation of Johannesburg and Pretoria. The latter was a little premature, but subsequent events have realised the expectancy. Four members of the present Cabinet now hold the office of chancellor of a university. The energy and influence which Mr. Chamberlain has exercised in promoting the University of Birmingham have gone far towards developing this great scheme which is now an accomplished fact. The endowment fund now stands at £327,468. Although this sum exceeds the amount originally asked for it is now stated to be much below what is actually required, and another quarter of a million is sought. Time will show how far this great enterprise is to be a local or a national one, but if the hopes of its founders are to be realised a great and almost revolutionary model will be established to associate the progress of civil life with the industrial enterprise of a vast working community.

The Consultative Institution.

THE LANCET has already dealt in the issue of June 2nd with this subject in so far as it bears upon the medical profession and it remains to be seen how far the experiment will be successful or otherwise. The promoters express themselves as satisfied with the working of the first week and flatter themselves as to its ultimate result. The reasons adduced for the support of such a proceeding certainly do not appear sufficient to render it a justifiable one from a professional point of view. It is stated, for instance, that the class of people whom it is intended to benefit desire to have as a right what the profession would accord only as a favour, that is, in the diminution of a consulting fee to the sum of half-a-guinea. The questions of continued treatment, of operations, and of specialties, will become features which will involve much deliberation and care on the part of the promoters; the one medical gentleman who presides over the whole range of diseases and complications may find his position by no means an easy one.

June 5th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Horse Ambulances.

A DEPUTATION from the Medical Charities Committee of the city attended the meeting of the Watch Committee of the Manchester Corporation on May 24th to give reasons for the provision of horse ambulances. Mr. Alfred Simpson, chairman of the House Committee of the infirmary, said that in January last, on the advice of Professor D. J. Leech, the question was brought before the members of the Red Cross Society and a resolution was passed inviting the municipal authorities to provide horse ambulances and the resolution had been approved by the Sanitary Association of Manchester and Salford. Liverpool and other places in this country and various towns in America are far better provided as regards ambulance service than is Manchester. Mr. Alderman Rawson, chairman of the committee, assured the deputation that the committee were in sympathy with them and that a special sub-committee was already in existence for the purpose of considering the whole question. We may therefore hope that before long Manchester will not be thought lagging behind in the matter.

Manchester Water-supply.

At a meeting of the Waterworks Committee of the Manchester Corporation held on May 24th there was a discussion on the water-supply. The drought of last summer

put a considerable strain on the department. There has been no great rainfall since, and the demand for water increases so rapidly that the need for a larger supply is forcing itself more than ever upon the committee. An additional pipe two miles in length at Longdendale, to utilise flood water which now escapes, has already been decided on, but that will not meet the requirements of the near future. The committee, therefore, have decided to put before the Council the question of laying a second pipe from Thirlmere to Manchester. The cost is estimated at between £400,000 and £500,000.

Pollution of the Manchester Ship Canal.

The people of Grappenhall, through their parish council, have been praying the Cheshire County Council to deliver them from the grievous nuisance caused by the present condition of the Manchester Ship Canal, and have asked them to "take steps to abate the excessive obnoxious smells arising" from it. The vice-chairman of the Council (Mr. T. W. Killick) was not surprised that there was some annoyance at the delay in the purification of its waters. The Mersey and Irwell Joint Committee have been working for nine years with little apparent result, though it may be conceded that in some directions progress has been made—e.g., cinders and other solids are now kept out of the stream. The report of Mr. Tatton, the chief inspector, stated that "the manufacturers in the watershed had nearly all of them done their best to render their effluents innocuous. Considerable progress has been made in dealing with the local authorities, but it is not flattering to the self-complacency and tender sensitiveness of Manchester to hear that while some of the Cheshire authorities were behindhand in the work of purification "the winner of the wooden spoon was, of course, the Corporation of Manchester." A year ago the corporation was taken into court and Manchester was fined and promised "to amend its ways." The Rivers Committee of the Manchester Corporation have a sewage scheme, but it has not yet been sanctioned by the Local Government Board, and the Joint Committee are asking for a definite reply from the corporation "as to the steps they intended to take." Perhaps the court may see them again. But a faint hope was held out to the sufferers along the canal, for Mr. Killick thought there was "a possibility" that those who lived on the banks of the Manchester Ship Canal and its tributaries "would in the next year or two find a great reduction in the noxious smells of which the Grappenhall Parish Council complained." It seems a marvel that smells so strong and so vile can be produced, and a still greater marvel that they can be endured and that they kill so slowly.

June 1st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Royal Southern Hospital: Appointment of an Honorary Physician.

THE vacancy in the honorary staff of the Royal Southern Hospital caused by the retirement of Dr. John Cameron, the senior physician, has been filled by the appointment of Dr. Charles J. Macalister, physician to the Stanley Hospital. The elections to the honorary medical and surgical posts at the Royal Southern Hospital are carried out under the system which formerly prevailed at the Royal Infirmary and the Northern Hospital, where the electors comprised all subscribers of one guinea and upwards. In the case of the Royal Infirmary the limit was two guineas. Election committees, varying from 80 to 100 members, chosen from the subscribers at the annual meetings, have been established at the latter two hospitals and have been found to work in a most satisfactory manner. It is somewhat surprising that the Royal Southern Hospital has not followed the examples set by the Royal Infirmary and the Northern Hospital, where the old system was found to be both unwieldy and involving unnecessary expense to intending candidates. During the recent contest many subscribers to the funds of the Royal Southern Hospital took exception to being canvassed on behalf of the candidates, urging as a reason that they were not qualified to judge of the merits of the respective candidates and that the election ought to be in the hands of a special committee appointed by the subscribers for the purpose. I am informed that the electorate at the Royal Southern Hospital consists of about 1200 subscribers.

The Select Vestry and the Joint Committee on Tuberculosis.

At the last meeting of the select vestry four members were selected to serve until April 30th, 1901, on the joint committee for the provision, fitting up, furnishing, and maintenance of a hospital for the treatment of paupers suffering from tuberculosis pursuant to the order of the Local Government Board of April 5th, 1900. Miss Thorburn, one of the lady members of the select vestry, drew attention to the fact that as half the patients in the proposed hospital would be females the experiment would not be carried out under the most favourable circumstances unless the ladies were permitted to assist in the management of the hospital. She was not, however, now prepared to move an amendment to the proposed names inasmuch as the work of the committee for the next 12 months would be chiefly connected with buildings and matters in which ladies could not be of any particular assistance. She wished to give notice that on the occurrence of a vacancy on the committee later a lady would be proposed. The lady members of the select vestry have performed their duties as guardians of the poor in an unobtrusive and exemplary manner and it would appear that Miss Thorburn's request is a reasonable one to which no valid objection can be offered.

The Adulteration of Margarine and Cream with Boric Acid: Prosecutions at the Police Court.

The Liverpool stipendiary magistrate imposed a fine of £20 and £5 5*s*. costs upon a local tradesman for adulterating margarine with boric acid. On behalf of the prosecution Professor Boyce of University College said that the only interpretation he could put upon the quantity of boric acid used in the present case, which amounted to 0·73 per cent., or 51 grains to the pound, was that it was used to mask rancidity. Three medical gentlemen, together with Mr. Davies, an analyst, gave evidence for the defence to the effect that boric acid was not injurious to health, a theory which was strongly controverted by Professor Boyce, who had found from experiments upon kittens that boric acid when added to milk had produced in the animals violent diarrhœa and had caused emaciation. Mr. Stewart, in giving his decision, said it was sufficient for him that the introduction of boric acid was contrary to law. It was to the interest of the public to obtain a pure article, and it should not be possible to put on the market an article which otherwise could not be sold. Two other tradesmen were fined 20*s*. and costs each for adding boric acid to cream. In all three cases notices of appeal were given.

The Foul Atmosphere of the City Police-court.

The vitiated atmosphere of the Dale-street Police-court has been a constant source of complaint by magistrates and solicitors whose duties compel them to remain in the court for hours. Last week Mr. S. Quilliam, a solicitor practising in the court, addressed the bench on the subject and described the atmosphere as simply poisonous. The late Mr. T. Stamford Raffles, who had filled the post of stipendiary magistrate for a considerable number of years, bitterly complained of the foul air which he was compelled to breathe. The construction of the court must be seriously at fault so far as its ventilating properties are concerned, as the officials have done everything possible to keep the place ventilated with the means at their disposal.

A Liverpool Surgeon Wounded in South Africa.

Intelligence has reached Liverpool that Dr. R. Craig Dun, the honorary surgeon of the Children's Infirmary, who volunteered for the front and accompanied the 2nd Battalion of the Imperial Yeomanry as one of their medical officers, had been wounded at Draghoender, near Prieska. Happily, the wound received in the leg by Dr. Dun is not serious. His friends in Liverpool will be pleased to hear that the latest intelligence reports him to be progressing satisfactorily.

June 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Legacy to the Edinburgh Royal Infirmary.

THE late Mr. David Tinslie of Costerton, Mid Lothian, has by his will left the residue of his estate, after paying a few personal legacies, to his trustees to accumulate for 15 years, and thereafter to build, endow, and maintain with the

money a convalescent home in connexion with the Edinburgh Royal Infirmary. The residue of the estate, it is expected, will be worth between £200,000 and £300,000. He directs that the home should be named the "Astley-Ainslie Institution" in memory of his late nephew Mr. John Astley-Ainslie, son of the late Mr. John Ainslie of Huntington, East Lothian. The trustees are empowered to buy ground to an extent suitable for the hospital, with garden, policies, and recreation ground around it. It is also stipulated that the deeds necessary for the carrying out of this purpose shall be prepared by, or in the sight of, such person or persons as the judges of the Court of Session in either of its divisions shall appoint, and the deed has also to be submitted to, and approved of by, the Court.

Health and Sanitary Condition of Aberdeenshire.

The report for the year 1899, which has just been issued by Dr. James P. Watt, medical officer of the county of Aberdeen, shows that the total number of births registered in the eight districts of the county was 3431, or 28·3 of the estimated population (excluding burghs) of 121,260, while the total number of deaths reported was 1653, or 13·6 per 1000. The death-rate in the different districts, when calculated out, varied as follows:—Deer district, 15·1 per 1000; Ellon, 9·8; Garioch, 15·3; Deeside, 12·4; Turriff, 17·3; Aberdeen, 13·9; Alford, 12·8; and Huntly, 10·2. The mean temperature at the different meteorological stations, it may be mentioned, ranged from 43·5° to 47·0° F., and the rainfall for the year from 20·87 inches to 35·56 inches. During the year 814 cases were intimated under the Infectious Diseases (Notification) Act, 1889, as against 1019 for the previous year—viz: diphtheria, 122; erysipelas, 166; scarlet fever, 412; and enteric fever, 114. Of the 814 cases 300 were removed to hospital, there being now accommodation in all the districts. Of the 412 cases of scarlet fever reported (229 fewer than in the previous year) only three died, and there was no extensive outbreak of enteric fever, the cases happening either singly or in small groups. The drainage and water-works of all the villages are reported to be "good" or "fair," and scavenging has improved in all the districts except Aboyne, Torphins, and Braemar, where "nothing has as yet been done."

University of Aberdeen.

The Senatus having inquired into certain riotous proceedings by medical and other students at Marischal College on May 21st, during which Herr Hein, lecturer on German, was assaulted on account of supposed pro-Boer opinions, have reprimanded 16 students altogether, two of whom have also been fined 5 guineas each and three others 3 guineas each. The committee of the Senatus report that they strongly condemn the conduct of the students in their attack on a teacher of the University as being disgraceful and incapable of justification, and that such conduct should not be passed over without due punishment. At the same time the committee record their "desire to bear in mind that the students were actuated by a strong feeling of loyalty which made them resent in their own way what they regarded as an insult to Her Majesty, and that this feeling had been much intensified by recent events." Further, the Senatus, "having regard to the disorderly conduct of certain students at the recent graduation ceremony, has imposed modified fines of two guineas and one guinea on two students who were convicted of such conduct and of giving false names." The Senatus, it should be mentioned, disapproved of Herr Hein's conduct in the exhibition to his class of a cartoon disrespectful to the Queen. The general body of students have subscribed the fines imposed.

June 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

OWING to recent circumstances in connexion with the election of President the annual meeting for the choice of the new officers of the Royal College of Surgeons which took place on June 4th was viewed with more than usual interest. Mr T. Myles was elected President without opposition. Mr. L. H. Ormsby, surgeon to the Meath Hospital, and Mr. F. T. Heuston contested the vice-presidency, for which the former was elected by a considerable majority. The following is a list of the other officers of the College:—Honorary Secretary: Sir Charles Cameron, C.B. Council: Dr. A. H. Jacob, Sir Philip Smyly, Sir William Stokes, Mr. H. R. Swanzy, Mr. E. H. Bennett, Sir Charles Cameron, C.B., Dr. A. Meldon, D.L., Mr. C. B. Ball, Mr. R. L. Swan, Sir William Thomson, Mr. J. B. Story, Mr. J. Lentaigne, Mr. A. Chance, Mr. J. J. Cranny, Mr. R. D. Purefoy, Mr. H. G. Sherlock, Mr. R. B. McCausland, Mr. G. Stoker, and Mr. F. Conway Dwyer. It will be noted that some changes have taken place in the *personnel* of the Council. Mr. Graves Stoker is a new member of Council. Mr. William Stoker, who was a member of Council last year, recently accepted the post of Examiner in Surgery, while Mr. Conway Dwyer, who filled that examinership last session, has now become a member of Council.

Royal Medical Benevolent Fund Society of Ireland.

The annual meeting of the Royal Medical Benevolent Fund Society of Ireland was held on June 4th at the Royal College of Physicians, Kildare-street. The chair was occupied by the President of the College, Sir John W. Moore, and there was a representative attendance to whom the report was submitted.

The Able-bodied Pauper.

One of the great blemishes of the Irish Poor-law system is the number of paupers all quite able to earn their own livelihood who crowd the workhouses. Some time ago it was decided to have a parade of able-bodied paupers residing in the Belfast workhouse, when it was found 600 were on the roll; now these have been reduced to 75, through the influence of the guardians getting them remunerative employment, and in part owing to the war. The number now are not sufficient to do the duties about the place, and it is proposed to give each man volunteering to work two ounces of tobacco weekly.

The Ulster (Benn) Eye, Ear, and Throat Hospital.

The twenty-ninth annual meeting of the supporters of this hospital was held in the board-room of that institution in Belfast on May 30th. In the report submitted it was stated that in 1899 there were 1704 patients treated in the hospital, and of these 286 were intern cases. The total receipts of the hospital from all sources amounted to £729 15*s.* 2*d.*, and the expenditure to £791 17*s.* 1*d.*, so that there is a loss on the working of the hospital for the year of £62 1*s.* 11*d.* The committee have decided to increase the charge per week for intern patients from 10*s.* to 15*s.* Were it not for the Benn endowment and building funds, which amounted to £8000, it would be impossible to keep the hospital going under an additional expense of £300 or £400 a year, so that the greatest care is taken to keep down expenditure in every department of the hospital.

The Typhoid Fever Epidemic in Belfast.

I regret to report the continued prevalence of typhoid fever in Belfast. It may for convenience be called an epidemic, but it is really simply an exaggerated condition of what unfortunately is now a normal condition in Belfast. Between April 22nd and May 19th 177 cases of typhoid fever were notified. As to the cause of the present outbreak it is most difficult to say. It would appear that the largest number of cases occurred in the neighbourhood of the Crumlin and Shankhill-roads (No. 3 and No. 10 districts), though the houses are comparatively recently built, generally in good sanitary condition on an elevated site, and the streets are wide and airy. The districts in Belfast which are most free from the disease are No. 1 and No. 5 (the Dock and Brown-square districts), and in these are some of the worst alleys and oldest houses in the city. This would seem to show that absence of fresh air and the presence of old and badly constructed houses have nothing to do with the present epidemic. Then, again, on the theory that the disease is water-borne it does seem strange why certain parts of the city are affected and not others supplied from the same source. Thus 19 out of the 57 cases notified last week occurred in Shankhill Ward. No wonder it was stated in the city corporation that the Public Health Department "was at its wit's end to find the cause of the outbreak of typhoid." Further, the state of the rivers and dams in the district is blamed by some as the cause of the outbreak and steps are being taken to make them clean. For the four weeks ending May 19th there were 64 deaths from zymotic disease, while in the corresponding period of last year there were 52. The death-rate from zymotic diseases was 2·3,

while the mortality from the same cause was for the corresponding period of 1899 only 1 9 per 1000. Scarlet fever is still prevalent, but as showing the mildness of this zymotic there have been no deaths. One of the Belfast papers calls special attention to the fact that the public officer of health reports that for the four weeks ending May 19th six cases of puerperal fever were notified. At the last weekly meeting of the Belfast Board of Guardians Dr. E. Coey Bigger, physician to the Fever Hospital, applied for additional temporary nurses, to cope with the increased number of typhoid fever patients who have recently been admitted. The present staff are overworked.

The Milk-Supply of the City of Belfast.

At a meeting of the City Council of Belfast on June 1st, Sir Otto Jaffe (ex-Lord Mayor) moved that it be an instruction to the Public Health Committee to collect information as to the supervision of the milk-supply in municipalities in the United Kingdom, America, and on the continent, particularly in regard to pasteurisation, &c., and that this information when collected be printed and furnished to the members of the council. There can be no question that in reference to the supervision of the milk-supplies of cities in the United Kingdom we are, with few exceptions, very much behind the municipalities on the continent and in America. There is here really no adequate supervision of the production of milk by boards of health such as prevails now in the majority of the States of North America, where authority is exercised in stamping out infectious disease prevalent among cows and in inducing a better management of cowhouses and dairies. In very few cities in the United Kingdom can certified milk be procured —that is, milk obtained from dairies where a committee consisting of physicians, pathologists, veterinary surgeons, and chemists certify after careful examination as to the general condition of the dairies. We are also far behind American cities in being able to obtain a supply of milk suited in its proportions to the different ages and digestive condition of infancy. Sir Otto Jaffe is moving in the right direction.

Irish Boards of Guardians and their Medical Officers.

The friction between the boards of guardians in Ireland and their officers—the dispensary doctors—still continues. Here are two recent cases:—Mr. J. J. Todd applied to the Omagh Board of Guardians for £3 3*s.* for acting as locumtenens for Mr. C. Hunter of Carrickmore who was subpœnaed to Dublin as a Crown witness. The board had refused to pay on the grounds that their medical officer should pay his own substitute, and the matter is now left to the Local Government Board to settle. At the meeting of the Omagh Guardians on June 2nd the chairman said he thought Mr. Todd was entitled to his money, but he alleged that an irregularity was committed by Mr. Hunter going off without any permission from the board of guardians or sanction of the Local Government Board. Mr. Hunter, however, replied that he acted strictly in accordance with the rules of the Local Government Board because in the face of a summons which said, "Fail not on your peril," it was not necessary to apply to the guardians. He had simply to apply to the relieving officer and he it was who appointed a substitute to do the work. It was decided to call the attention of the Local Government Board to the action of Mr. Hunter in leaving the district without the permission of the guardians. Again, in Ballymena, Mr. R. Currie, medical officer of health, applied to the guardians on June 2nd for leave of absence for seven days, nominating as his substitute Dr. W. R. Davison. Mr. Currie stated that he intended to apply for holidays later in the season. The guardians unanimously agreed that their board do not allow more than seven days as holidays to their dispensary medical officers in the year. Further, they decided to let Mr. Currie have the seven days on the understanding that these were all the holidays which they would give him this year unless he provided a substitute at his own expense, and they would only pay Dr. Davison at the rate of 2 guineas per week. All this unfortunate friction has arisen through the Local Government Board making a rule so ambiguous that its interpretation was doubtful. It is rumoured that in the course of the next ten days they will issue a new set of rules and in doing so they might remember a dictum laid down by the hero of Mafeking in his book "Aids to Scouting," which is as follows: "The secret of getting successful work out of your trained men lies in one nutshell—in the clearness of the instructions they receive." If the Local Government Board will simply state what is the length of the holidays for dispensary medical officers and what is the payment for their substitutes all this wrangle will cease. It is incumbent on them to make their rules clear and devoid of all ambiguity alike in the interests of the guardians and of their medical officers.

Charitable Bequests.

By the will of Mr. G. Washington Charters, who for a long time resided in Belfast, £5000 have been left to the endowment fund of the Royal Victoria Hospital and £1000 have been bequeathed to the Belfast Hospital for Sick Children.

June 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Solidarité Universitaire.

THERE has recently been founded, under the name of "Solidarité Universitaire Société d'Assistance Mutuelle des Étudiants Français et Étrangers," an association the aim of which is to assist students both past and present who have studied at higher educational establishments both in France and abroad but who are resident in Paris. The society proposes to find for its clients work suited to their particular form of study, such as translations, analyses of various works, bibliographical researches, *précis*, and similar work. The society comprises four classes of members—active members, givers of donations, founders, and honorary members. It is an interesting association and deserves encouragement.

Opening of the Pasteur Hospital.

A new hospital has just been opened in Paris under conditions which make a real landmark in the medical world. The actual official opening of the hospital has not taken place, for at present only one of the two blocks is in working order, but it is hoped that the other block will be ready by the month of July and that the foreign medical men attending the various Medical Congresses will be able to admire the hospital as a whole. The hospital is devised upon an altogether new plan and apparently is a realisation of the most perfect type of this kind of building at present existing. The funds necessary for its erection were offered to Pasteur some days before his death by an anonymous benefactor, and one of the last joys of that great man was to learn that a dream of his life was about to be fulfilled. The hospital stands in the rue Vaugirard, No. 213, upon a large plot of land facing the Pasteur Institute. That portion of the site which looks on to the rue Dutot is occupied by the great Institute of Biological Chemistry which was built out of a legacy left by the Baroness Hirsch and which is presided over by Professor Duclaux. The buildings of the new hospital are characterised by a feature all too uncommon in France—namely, a special fitness for the purpose for which they are intended. The architect is M. Florent Martin, a brother of Dr. Martin, assistant director of the Pasteur Institute, who, together with Dr. Roux, has given the minutest attention to all the details. The buildings consist of a number of isolated blocks connected by underground corridors. In the part looking on the rue de Vaugirard there is to the right a consultation block containing also quarters for the staff; to the right again is a small block destined for the lodging of the medical superintendent. In the middle of the site are two large blocks, identical in aspect, connected by a winter garden and a garden for the use of the patients. On the left the whole length of the site is occupied by a large block given over to general wards and disinfection rooms, while to the right at the back of the wards is an anatomical theatre. When a patient applies for entry to the hospital he goes through the consulting room into one of the six isolation rooms on the ground floor where he is examined by the medical officer who decides as to whether the malady is infectious or not. If it is the patient is shown into a special room called the *chambre d'entrée* and the isolation room out of which he goes is promptly disinfected. In the *chambre d'entrée* he strips completely and has a bath or a douche if there be no indication to the contrary. He then puts on hospital clothing and is put to bed in a bed which is wheeled or taken in a lift to another isolation room

in the block allotted to contagious cases. The *chambre d'entrée* is then disinfected and the patient's clothes are stoved. Each block contains 24 rooms with one bed, two wards for convalescents with 12 beds, and five wards with two beds each for such cases as where, for instance, the mother of a diphtheritic patient is unable to leave her child. In all, therefore, there are 53 beds. The floor of each ward is paved with stoneware tiles (*gré ceram*) and the walls also are covered to a height of 10 feet with tiles. The upper portions are glazed except on one side where the wall is double and contains all the pipes necessary for the supply of hot and cold water, hot air, ventilating tubes, gas pipes, and those in which the wires for the electric light run. By this means all the pipes can be easily got at while they do not show within the room. To each room there are two doors, one of which opens on to a central corridor and the other on to a balcony. By the latter the patient's wants are supplied when he is isolated completely. The furniture is very simple and comprises an iron bedstead and an iron table with a marble top. The air space of each room is 39 cubic metres instead of the regulation 30. If the patient is not considered infectious on his admission he goes to the usual consulting-rooms which comprise a medical officer's room, a room for surgical dressings, a bathroom, and three rooms with one bed each. There is also a little laboratory for clinical, chemical, and bacteriological examinations of urine, false membranes, and the like. As a whole the new hospital unites the isolation of the patient in its greatest degree with the greatest simplicity of procedure. The staff consists of one medical superintendent, one resident medical officer (*interne*), 17 sisters, a steward, and a manciple who looks after the catering. The medical superintendent, Dr. Martin, is, for the first time in a French hospital, supreme, except that he has once a year to send a report to the committee. Owing to this fact it is hoped that the usual differences of opinion between the medical officer and the director will no longer exist. The hospital will treat patients whether rich or poor gratuitously, they being admitted in the order of their applications as soon as there is a vacant bed. No serum therapy will be employed except with such sera as have already been established as of use. At present in the one block which is open only diphtheritic patients will be treated and persons bitten by mad animals who cannot be treated outside either because they are too poor or because they have developed hydrophobia during treatment. The opening ceremony was private, there being only present Madame Pasteur, the medical officers of the institute, the architects, and the workmen. After a luncheon the representatives of the press were conducted through the buildings and an oration was delivered by M. Duclaux.

Anti-alcoholic Measures in the Navy.

The Naval Minister has just decided to follow the example set by the Minister of War who, as I said in a previous letter, has absolutely forbidden the sale of drinks in barracks. M. Lanessan, however, has not been bold enough to go so far and instead of forbidding the sale of drink has contented himself with issuing edicts for its regulation. He recommends that all commanding officers should get rid of all drinks which are known to be harmful, such as absinthe and liquor known to be of inferior brands. The daily consumption is not to be above a certain maximum which will depend upon the number of the men on board and especially upon the number of time-expired men who have re-enlisted. These regulations are simply a farce and will produce no effect. The Minister has merely shirked his responsibility in face of the outcry of the Academy of Medicine and of those whom the enormous development of alcoholism in France rightly makes uneasy. Commanding officers cannot possibly brand any particular kind of drink as inferior without laying themselves open to an action for damages by the manufacturers. Finally, the recognition of the right of an old hand to toleration in this matter because he has contracted drinking habits abroad is ludicrous.

Treatment of Pneumonia by Brewers' Yeast.

Brewers' yeast which has given such good results in the treatment of furunculosis is undergoing the lot of all valuable drugs and is being gradually recommended for every disease. It is now many years ago that in France Dr. Backer, putting into practice the theories of Pasteur as regards infection by fermentation, brought forward what he called the medicine of ferments, and treated a great number of diseases by injecting under the skin pure cultures of brewers' yeast. According to him diabetes, cancer, and even tuberculosis were all amenable to this remedy. The researches of M. Brocq, which confirm those of many of the older physicians in the north of France, have shown that in brewers' yeast there exists a substance which exerts a specific influence upon tuberculosis, while M. Thiercelin has met with great success by its employment in the "green diarrhœa" of infants. Other trials have been made with this substance in the treatment of diabetes. At the meeting of the Hospitals Medical Society held on May 18th M. Marie related many successful instances of the employment of yeast in cases of ordinary pneumonia. He was led to try it owing to no preconceived theory, but purely empirically. M. Marie had under his care an old man, aged 68 years, who was not only suffering from a severe attack of pneumonia, but also from very grievous boils. To cure these last M. Marie prescribed yeast and was surprised to see that the pneumonia which he had thought would prove fatal immediately began to resolve. Thinking that this was a simple coincidence M. Marie treated seven other cases of pneumonia with yeast, and they all terminated favourably, the same result being obtained whether the pneumonia was lobar or lobular. M. Marie, however, considers that eight cases are not enough to form an opinion as to the value of the method since the disease in which it was tried often gets well of itself, and in any case the mortality is under 10 per cent. He considers, however, that the results are worthy of attention, for in four of the cases the prognosis was most grave, and there certainly seems to be something more than a simple coincidence.

June 5th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Trachoma in Switzerland.

DR. C. BAUER, Professor Haab's clinical assistant at Zürich, has written a report upon this disease, which is very rare in Switzerland. Out of 65,000 ophthalmic cases registered from 1862 to 1899 he could only find 153 cases. As 137 of these were foreigners, and those mostly Italians, there were only 16 cases of Swiss patients, some of whom had imported the illness. Owing to the influx of Italian workmen in the last few years to Zürich there were annually some 20 cases under treatment, as the 9000 Italian workmen formed a good percentage of the inhabitants of the town of Zürich, the population of which town was 165,000. The fact that these men congregate together and mix very little with the German-Swiss population explains why the cases of trachoma among the inhabitants have not increased. Prophylactic measures are, however, to be put into action to prevent any possible spread of this dangerous affection.

Iodine Preparations.

Professor Goll, lecturer on Pharmaceutics at the Zürich University, has published a *résumé* on this subject. He mentions the discovery of iodine by Courtois in 1811 and the publication of Cointet in 1820 on the treatment of goitre. Lugol in 1831 and Wallace in 1836 specially promoted the use of iodine in syphilitic affections. Acute iodism which occurs in 10 per cent. of all cases can sometimes be averted or the attack shortened by a daily dose of up to half an ounce of bicarbonate of soda. Professor Goll mentions the newest iodine preparations which can be employed with the slightest risk of iodism—the "eigons" containing from 14 to 20 per cent. of iodine in an albuminous form, the "iod-albacid" of Dr. Gans of Frankfort (10 per cent.), and the "iodipin" of Dr. Winternitz (Prague), an oily solution of execrable taste but of prompt action and therefore recommended for gluteal injections which are reported to be painless. In cases of tapeworm he advises a solution of three grains of iodine in 50 grains of iodide of potassium and four ounces of water in doses of from four to five tablespoonfuls a day.

School Hygiene.

The first meeting of the newly founded society for school hygiene, which counts many medical men among its members, will be held at Zürich on June 9th and 10th in connexion with a hygienic exhibition. There will be some

interesting lectures by competent medical men, sociologists, and hygienists on Destitution from a Medical Point of View, the Construction of Floors, Walls, and Ceilings in Schoolhouses, and the Results of Holiday Outings in the Mountains for Weakly School-children.

Zürich, May 30th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Mosquitoes and Malaria in Arabia.

Dr. Armand Ruffer and Dr. Innes have just returned from an excursion to Mount Sinai and in passing Wady Ferran to the north of Sinai the latter found the larvæ of an undetermined kind of anopheles which strictly resembles some previously found in malarial parts of Egypt. He heard from the Bedouin that many of the inhabitants of this Wady suffered from fever and he saw some of them with enlarged spleens. Moreover, the Bedouin told him that the mortality of the neighbourhood had only become great since 20 years ago, when the Wady was transformed into a marsh. This statement was borne out by the recent growth of the cemetery. Malaria and anopheles larvæ were also observed at Tor which is now full of pilgrims returning from the Hedjaz, some with small-pox and dysentery, but being on the whole singularly free from plague. The object of the expedition was achieved, which was to collect insects, snakes, lizards, birds, and small mammals for the British Museum.

Plague in 1853 and in 1900.

It has always been a wonder how it was that plague suddenly died out of Egypt in 1844 after being present every spring for 20 years. A thesis dated 1853 which has just fallen into my hands shows that the subsidence was much more gradual. The writer was a Frenchman, Dr. Cuny, who had lately served the Egyptian Government as chief sanitary inspector of Middle and Upper Egypt. He says that plague had never ceased to be endemic in Egypt, and that every year many sporadic cases were seen both in the Delta and on the Upper Nile. He cites one case out of many seen in Cairo in April, 1853. The disease is described as a fever occurring every spring always with swollen glands and rarely with abscesses, sometimes endangering life but more often so mild that patients could go back to their work after a few days' rest. In 1850 he saw plague in several villages and counted 10 cases in one village alone, but one of the Government vaccinators was nearly dismissed for putting his chief upon their track. The native doctor of Samalout excused himself for not reporting the existence of plague in a rich townsman by saying that he would certainly be assassinated if the dreaded land quarantine were imposed. Another native doctor under Dr. Cuny was dismissed from his post by the central authority because he had announced some cases of sporadic plague. The people buried their dead secretly in their houses, mosques, or churches, and feared more than the plague itself the quarantine measures and the insatiable avarice of the sanitary officials. It appears that Dr. Rossi at this time was dismissed from the Viceroy's service because he had reported a sporadic case of plague near Cairo, and this was by no means a unique case. Whether the disease existed in Egypt after 1853 I do not know, but there is at present no evidence of even sporadic cases between 1853 and 1898. Customs have now happily changed and the sanitary department of to-day is always reminding its officials that in the springtime plague must never be forgotten. At Port Said the total number of cases to date has been 30, of which 13 have been fatal, while at Alexandria there have so far been six cases including four deaths. The consular authorities in both towns are working well with the sanitary officials and there is now practically no obstruction among Europeans and natives, both of whom go willingly to hospital. Another satisfactory sign is that for some days there have been no deaths occurring outside the hospital and everything tends to show that the Port Said outbreak is being cleverly kept in check. The rubbish of all of the dirty houses in Port Said is being carted away in sacks to be burnt with petroleum, and an interesting proof of the value of this precaution has just occurred. One of the men in charge of the destructor, in spite of warnings, insisted on working with naked feet and legs. In a few days he was admitted to the plague hospital with typical inguinal buboes, apparently contracted directly from the rubbish. There have been some suspected patients in other parts of Egypt, but none have borne the test of examination. The three bacteriologists, Bitter, Symmers, and Gottschlich, are all busily employed in testing doubtful cases.

"Bulletin Quarantenaire de la Semaine."

Under this heading the quarantine department in Alexandria publishes every week all news relating to plague, cholera, yellow fever, cattle-plague, and foot-and-mouth disease. The information extends to many distant countries. Plague is reported from Jeddah, Lahidj in Arabia, Bombay, Calcutta, Karachi, Hong-Kong, Australia, Japan, Rio de Janeiro, and Buenos Ayres. Bombay and Calcutta alone are responsible for cholera, while yellow fever is known at Panama, Havana, Santos, Mexico, and Brazil. Of the returning pilgrims from the Hedjaz, 291 have now been treated at the Tor Hospital, of whom 107 died from *maladies ordinaires* and 184 were cured. The chief disease is dysentery.

Vaccination Institute.

The experiment tried for the first time this spring of re-vaccinating the adult population has succeeded well and crowds of natives have swarmed to the various sanitary officers to be protected from a disease which they all know and fear. More than 200,000 people have been operated on, mostly in Cairo. The institute continues to improve and to supply excellent lymph. The latter is now mixed in the following proportions—lymph, one part; glycerine, two parts; and water two parts. Better results have been attained since the pulp is passed twice through the crushing machine and since the tubes are regularly kept at a temperature of 60° F. Each buffalo calf provides sufficient lymph with economical management for vaccinations varying in number from 12,000 to 22,000.

Cairo, May 21st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

IN Sydney the plague has become firmly established and the number of persons attacked continues daily to increase in spite of vigorous measures on the part of the health authorities. The total number of cases of plague reported up to April 27th was 151, and 53 patients have died. Of those who succumbed 13 died at their own homes, nine in the metropolitan hospitals, and the remainder in the quarantine hospital. All were interred in the quarantine grounds with due precautions. At the quarantine station are also isolated 262 persons who have been "in contact" with plague cases. Professor Anderson Stuart in a lecture delivered recently estimated that the plague would continue in Sydney for the next four months at least. It is stated that the expenditure incurred by the Government in dealing with the plague amounts to approximately £30,000 a month. The work of prevention and extermination consists in quarantining areas in the city wherever cases occur, chiefly round Darling Harbour, and then employing the quarantined labourers in clearing out the filth that has been accumulating in them for years. The dwellings of "contacts" are thoroughly disinfected, mostly by the "formalin" process, and all persons in any way associated with plague cases are detained in quarantine for five days. The Government distributes free a special rat poison to all householders and sends round men to remove dead rats from premises free of charge. Many houses have been condemned and pulled down. A special hospital has been equipped at the quarantine station and placed under the charge of Dr. A. E. Salter, formerly health officer at Thursday Island. The Government has also appointed Dr. Harvey, formerly a medical officer of the Peninsular and Oriental service, as an expert on the bubonic plague, he having had experience of the disease in India and the East. A capitation reward is given for rats and an immense number have been destroyed. In connexion with the mode of transmission of the disease Dr. Tidswell, the bacteriologist of the New South Wales Health Department, has confirmed the observations of Simond as to the part played by fleas, and has demonstrated the existence of plague bacilli in the alimentary canal of fleas taken from plague-affected rats. In all the colonies extermination of rats is being carried

on most vigorously. In Victoria steps are also taken to prevent the introduction of rats from other ports in vessels. Every vessel must be kept four feet away from the wharf and all pipes, ports, and scuttles closed. All gangways and ropes, &c., by which rats might get ashore are to be kept in a sticky condition with tar and a constant supervision maintained by special watchmen. A special staff is employed in inspecting and seeing that regulations are carried out, consisting of Dr. Elkington, two inspectors, and three assistant inspectors. Inoculations with Haffkine's serum are being freely employed. In Victoria two cases of plague have occurred, both on a vessel arriving from Sydney. The vessel was quarantined for 12 days and the patients were placed in tents at the station, under the charge of Dr. Bull, of the Public Health Department. Plans have been prepared for hospital buildings to be erected at Coode Island for the reception of possible plague patients, consisting of two wards for ten patients each and the necessary administrative buildings, a bacteriological laboratory, &c., and accommodation for "contacts" and "suspects," all isolated. The estimated cost is £19,000, and the Government is not prepared at present to sanction so large an outlay for buildings that may never be required. Dr. D. A. Gresswell, however, the President of the Victorian Board of Health, is of opinion that the plague is sure to break out in Victoria and that the buildings are wanted. Several cases have occurred at Fremantle in West Australia, and there has been one case at Rockhampton in Queensland. The precautions taken in all the colonies are practically the same. The Premier of Victoria convened a conference of health officials to draw up regulations for the prevention of the spread of the plague. The following were appointed members of the conference:—Dr. Gresswell (chairman); Dr. Ramsay Smith, President of the Central Board of Health, South Australia; Dr. Black, Government medical officer, Western Australia; Mr. Mault, secretary of the Central Board of Health, Tasmania, advised by Dr. G. Sprott and Dr. Holmes; and Dr. W. W. R. Love, secretary of the Board of Health, and Mr. C. J. H. Wray, Government quarantine medical officer for Queensland. The sittings commenced in Melbourne and extended over three days there, and then, as New South Wales was concerned in any decision which might be arrived at, the conference adjourned to Sydney.

The Sydney and Prince Alfred Hospitals.

A deputation representing the committees of management of the Sydney and Prince Alfred Hospitals waited on the New South Wales Treasurer recently to ask for further financial assistance. Both institutions were in debt. The public subscriptions were stationary, but the expenditure had increased, chiefly owing to increased cost of provisions. Each bed cost the hospitals 28*s*. per week, and the Government only allowed £1 per bed for Government patients. The Minister said he would lay the matter before his colleagues in such a way that he felt sure provision for the hospitals' requirements would be made in the estimates.

Victorian Branch of the British Medical Association.

A special meeting of the Victorian Branch of the British Medical Association has been held for the purpose of filling the vacancies on the council caused by the resignation of that body as previously reported. The attendance was very small. The following office-bearers were elected:—President: Dr. Neild. Vice-President: Mr. F. M. Harricks. Honorary treasurer: Dr. Mullen. Honorary secretary: Dr. W. B. Vance. Local editor: Dr. L. Henry. Council: Mr. F. G. Hamilton, Mr. G. Cuscaden, Mr. J. Cox, Dr. W. Macansh, Dr. T. R. H. Willis, Dr. C. P. W. Dyring, and Dr. R. E. Weigall.

Memorial Portrait of the late Sir Anthony Brownless, M.D.

On April 25th His Excellency the Lieutenant-Governor performed the ceremony of unveiling a memorial portrait of the late Sir Anthony Brownless at the Wilson Hall, Melbourne University. Few men have devoted themselves so unselfishly to the University as did Sir A. Brownless, who was connected with it for 42 years, first as Vice-Chancellor and afterwards as Chancellor, and was practically the founder of its medical school, and, as the governorsaid: "If any school in the University had done greater and more important service than another it was the medical school." The portrait represents Sir Anthony Brownless in his Chancellor's robes and is an admirable likeness.

April 28th.

Obituary.

CORRADO TOMMASI-CRUDELI.

(FROM AN ITALIAN CORRESPONDENT.)

AN eminent patriot and man of science has just been lost to Italy. The Senator Tommasi-Crudeli died on May 30th at his residence in Rome in his sixty-seventh year. Born at Pieve Santo Stefano, in the province of Arezzo, he devoted himself to the study of medicine first at Pisa, then at Florence, and finally at Paris, where he attended the cliniques of the great Parisian consultants, Trousseau and Léon Colin, till the outbreak of hostilities with Austria in 1859. He saw a good deal of active service with the "Cacciatori delle Alpi," a corps in which he was surgeon-lieutenant, and on the conclusion of peace returned to Florence, where he was appointed assistant lecturer in pathological anatomy at the Istituto di Studi Superiori. Next year (1860) witnessed Garibaldi's descent on Sicily and young Tommasi-Crudeli joined the expedition that followed it at the head of 800 Tuscan volunteers whom he had helped to organise. At Palermo he was nominated "capitano medico"; at Milazzo he was wounded, and at Faro di Messina, where he was by this time promoted major, he was again wounded at the head of his battalion. On the annexation of the Two Sicilies he resumed his professional work at Florence, retaining the rank of honorary major in the 77th Infantry and holding the medal for military valour. Three years thereafter (1863) he was nominated Extraordinary Professor of Pathological Anatomy at Florence (the chair to which he had acted as assistant) and in 1865, as the result of a competitive examination, he was appointed professor of the same subject in the University of Palermo. In the following year, memorable in Sicily for the cholera visitation and the popular tumults that accompanied it, he commanded a select corps of the National Guard of Palermo and helped to restore order while working fearlessly and effectively in combating the epidemic. On this he compiled a report embodying acute and independent views on the etiology and the favouring conditions of cholera—a document which was reprinted 18 years afterwards on the return of the epidemic in 1884. By this time his fame as a pathologist was well established and at the instance of the great mathematician, then Minister of Public Instruction, Francesco Brioschi, he was in 1870 called to Rome to start the Istituto Fisiologico e Patologico in connexion with the new university. This he shortly after converted into the Istituto Anatomico e Fisiologico, with its seat on the Viminal Hill, and brought it up to the high standard of efficiency it has since maintained. His skill as a demonstrator in the laboratory and a lecturer in the theatre drew crowds to his classes and led to his nomination as extraordinary member of the "Consiglio Superiore della Pubblica Istruzione." In 1874 he was returned to Parliament for the constituency of Cortona; was re-elected during successive legislative periods; and in the fifteenth of these he carried a Bill for the diminution of the salt tax in a speech which is still remembered as one of the most powerful vindications yet attempted in Italy of State Hygiene as a factor in the nation's well-being. His duties in Parliament, however, never interfered with his work in the Anatomico-Physiological Institute. Well known and appreciated in Germany, where he had many friends, he followed up his researches on diphtheria, conjointly with Huster of Greifswald, by further and yet more elaborate studies on malaria, this time in conjunction with Klebs of Prague. These, which were published at the expense of the Royal Academy of the Lincei at Rome, carried the solution of the problem a considerable step beyond Léon Colin and the French Commission of 1869, and undoubtedly prepared the yet further advance made in that direction by Laveran in France, by Golgi in Italy, and more recently by Manson and Ross in Great Britain, to say nothing of Grassi, Bignami, Dionisi, and others of his compatriots. His work on the Climate of Rome, which was reviewed in THE LANCET of Oct. 9th, 1886, p. 674, though requiring supplement as to its views on the etiology and propagation of malaria, is still consulted for its admirable account of the distributi on of subsoil water in the Campagna and for its demonstration of how malaria was practically non-existent in the second

century A.D. owing to the enlightened system of drainage and cultivation under the Antonines.

Other works still in repute among his compatriots are his "Istituzioni di Anatomia Patologica" and his "Preservazione dell' Uomo nei Paesi di Malaria colla Cura Arsenicale." In 1892 he was nominated Senator of the Kingdom of Italy, in which capacity he continued in the Upper Chamber the enlightened advocacy of State hygiene that won him so much respect and authority in the Lower. Of late years, though (comparatively speaking) by no means an old man, his work, scientific and legislative, sensibly slackened, the cause being a steady, if slow, failure of physical power due to the intense and often imprudent energy of his early manhood and middle age. For some months past he was seen by few except his intimate friends and medical colleagues till the end came on the evening of May 30th.

JAMES GROSVENOR MACKINLAY, F.R.C.S. EDIN.

MR. J. G. MACKINLAY, who died on May 24th at his residence, 15, Stratford-place, W., was born in 1844 at Isleworth. He was the eldest son of Dr. John Mackinlay, a surgeon in the Honourable East India Company's service from 1824 to 1834, and afterwards in practice at Isleworth for many years. He was educated at Epsom College and studied at Charing-cross Hospital, subsequently becoming house surgeon and for a few months holding the post of resident medical officer. On the somewhat sudden death of his father, in July, 1866, young Mackinlay was hastily called to give up his hospital appointment and take up the work thus vacated. His thoroughness in work and in the knowledge of his profession, combined with great kindliness of heart and absolute straightforwardness, enabled him to build up a capital practice and greatly endeared him to his patients. To the poorer classes he was a warm friend as well as a skilled adviser, and when a very serious attack of acute lung mischief compelled him hastily to throw up his practice in 1874 and (under the advice of the late Sir Andrew Clark and other medical friends) seek a doubtful restoration in the Antipodes his loss was greatly and truly mourned. Two years later, in much restored health, he re-commenced practice, but exchanged the wear-and-tear of general work for the study of the eye, which had had great attractions for him in his student days (he had been house surgeon to the Royal Westminster Ophthalmic Hospital in 1865). After filling the offices of registrar and clinical assistant to the last-named hospital he was appointed surgeon to the Western Ophthalmic Hospital, which post he held for five years. In 1879 he was elected ophthalmic surgeon to the Royal Eye Hospital and in 1881 to the Royal Free Hospital, both which appointments he held at the time of his decease. He was an Original Fellow and early a Member of Council of the Ophthalmological Society, to the Transactions of which he made numerous contributions, and for many years he was a member of the British Medical Association. His health had failed considerably during the past three or four years and for the last 12 months he had only on rare occasions been able to attend to any public or private work. By those who knew him intimately his memory will always be greatly cherished and his premature death sincerely mourned. He leaves a widow to deplore her loss.

AYLMER ELLIS HAYES, D.S.O., M.R.C.S. ENG., L.R.C.P. EDIN.

LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL AYLMER HAYES was the son of the late Captain Hayes of the 83rd Regiment. He entered St. Mary's Hospital as a student in 1865 and took the diploma of M.R.C.S. Eng. in 1871. After a short experience of general practice he joined the Army Medical Staff, becoming surgeon in 1877, surgeon-major in 1889, and lieutenant-colonel in 1897. He saw much hard service in India and in Egypt, going through the whole of the Afghan war in 1878–80 for which he was granted the medal. In the Soudan war of 1888–89 he was principal medical officer on the staff of the then Sirdar, Sir Francis Grenfell. He was twice mentioned in despatches for his gallant conduct in this campaign and in August, 1890, was invested by Her Majesty at Osborne with the D.S.O. for distinguished service before the enemy. He also gained the Egyptian medal with two clasps, the Khedive's star, and the 3rd Class of the Medjidie. He was afterwards registrar and secretary to the Surgeon-General at Netley Hospital, and from 1893 to 1895 was in command of the 2nd Station Hospital at Aldershot. His next term of service was at Hong-Kong, and in September, 1897, he retired from the active list. He was a distinguished student of Oriental languages, passing the higher standard of Persian and gaining the prize in Arabic open to officers of the army. When the present war broke out he rejoined the army in command of the Connaught Hospital, Aldershot, where he had the care of some hundreds of invalids from South Africa.

About February in this year he began to fail in health and in March there was no concealing from him that he was suffering from malignant disease of the œsophagus and that his end was near. He elected to continue his work, which became the more arduous as the number of invalids from South Africa increased and as day by day his powers of taking nourishment diminished. On May 14th, after discharging his duties for the last time, he came to London in too serious a condition to return and he died six days later. He was buried at Aldershot on May 24th with full military honours. Among those present were Surgeon-General T. F. O'Dwyer, principal medical officer, Brigade-Surgeon Wilson, Lieutenant-Colonel Knox, A.M.S., commanding the Cambridge Hospital, Colonel Leyden, Major James, Major G. Hale, D.S.O., Mr. Ernest Lane, and Dr. Sidney Phillips, who with Mr. Edmund Owen had attended him in his last illness. Lieutenant-Colonel Hayes was a born soldier and was devoted to the army and to his profession. He was an able surgeon, as already mentioned, an accomplished musician and an Oriental scholar. He had a fine physique and a handsome presence, and there were few men more full of wit, gaiety, and vivacity. His courage on the field of battle met with public acknowledgment, but it was not greater than the fortitude with which he concealed from those around him the nature of his last illness and with gradually failing strength struggled to the last to discharge the duties of his post.

JAMES FENTON STAMPER, M.D. ST. AND., M.R.C.S. ENG., L.S.A., J.P.

DR. JAMES FENTON STAMPER died at his residence at Pembroke Dock on May 22nd. The deceased, who had been for many years in practice at Pembroke Dock, received his medical education at Guy's Hospital. He took the qualifications of M.R.C.S. Eng. and L.S.A. in 1861 and graduated as M.D. at the University of St. Andrews in 1862. Dr. Stamper was consulting physician to the Pembrokeshire and Haverfordwest Infirmary and surgeon to the Pembroke Dispensary. He held several other appointments, being also Admiralty surgeon and agent. He was a justice of the peace for the borough of Pembroke. The funeral, which took place on May 26th, was attended by the mayor and corporation of Pembroke, the magistrates, ministers of religion, the members of the medical profession, and representatives of several public bodies.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—The annual general meeting of this society was held on May 30th, at 5 P.M., Mr. Christopher Heath was elected President, and he took the chair. Mr. W. H. Bennett and Mr. Manley Sims were elected Vice-presidents, and Mr. Borlase Hicks, Mr. Simmonds, Mr. L. Read, Mr. Julian Willis, Mr. Milburn, Dr. Buzzard, and Dr. Morison, to fill the vacancies in the Court of Directors; the other officers were re-elected. From the report read by the secretary it was shown that the grants during the year had amounted to £3007 10*s.*, while the expenses were £243 3*s.* 1*d.* The receipts available for payment had been £3353 7*s.* 7*d.*, and the grants and expenses £3250 13*s.* 1*d.*, leaving a balance of £102 14*s.* 6*d.* No legacy had been received during the year. 14 new members had been elected, 10 had died, and one had resigned. Three widows had been placed on the funds and two orphans, four widows had died and one orphan had become ineligible for further grants, leaving 49 widows and 11 orphans in receipt of grants. The death of Sir James Paget, President, was reported and of Mr. Mould, Vice-president. A grant of £26 under By-law 78 was made to a widow. A vote of thanks to the editors of the medical journals for their kind advocacy of the interests of the society was passed. Mr. Christopher Heath returned thanks for his election as President and the meeting closed.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, MAY 30TH.

THE Council met again to-day, Sir WILLIAM TURNER presiding.

Advertising by Medical Aid Associations.

Mr. BROWN moved:—

That the Registrar be instructed to send a copy of the resolution of the Council *re* medical aid associations of June 6th, 1899, to every registered medical practitioner residing in the United Kingdom.

This resolution, he said, had been come to in consequence of strong representations as to the injury being done to medical practice by the institution of medical aid associations which habitually employed canvassers to tout for patients. The terms of the resolution were "that the Council strongly disapproves of medical practitioners associating themselves with medical aid associations which systematically practise canvassing and advertising for the purpose of procuring patients." He was not aware that the passing of the resolution had had any great effect in checking the practices condemned by the Council, and, as members knew, when practitioners were brought before the Council to answer charges they very often pleaded ignorance of the regulations of the Council. He was very unwilling that any practitioner should be in ignorance as to the opinion of the Council with regard to this system of touting and canvassing.

Mr. HORSLEY seconded the motion.

Dr. HERON WATSON: Has Mr. Brown made any calculation as to what the cost of this will be?

The PRESIDENT: Have you looked into that matter, Mr. Brown?

Mr. BROWN: Perhaps the Registrar can give us some information.

The REGISTRAR (Mr. Allen) said that a circular in ordinary circumstances would cost £112, but as the Council would be sending out circulars next year to between 7000 and 8000 persons, the extra cost would be about £84.

The PRESIDENT explained to the Council that on more than one occasion this resolution had been sent out to individuals as a warning and information.

Dr. MCVAIL did not think the issue of this resolution would do much good. If the resolution had been stronger, if the Council had made up its mind to say that such conduct was infamous in a professional respect, then the case would have been different, but this was simply beating the air.

Mr. BRYANT said he did not think the Council would be prepared to go the length of saying that all such conduct was infamous conduct in a professional respect, though they might so regard particular cases.

Mr. BROWN insisted that this was a very pressing and important matter. He had just received a letter from the General Medical Practitioners' Union of Birmingham enclosing a copy of a pamphlet now in circulation, not touting for general practitioners, but touting for consulting practitioners. In this pamplet it was said that the ordinary medical man was only capable of dealing with the lesser ills of humanity.

The PRESIDENT said that the documents connected with this matter had reached the office of the Council and would be considered officially in due course; Mr. Brown might rest assured upon that point.

Mr. BROWN said he was glad to hear the statement of the President because he felt that the case was one which demanded consideration.

Sir JOHN BATTY TUKE suggested that Mr. Brown would gain his object by withdrawing his motion now and bringing up another one next session declaring these practices to be infamous conduct in a professional respect.

This suggestion was adopted by Mr. Brown and the motion consequently was withdrawn.

The Examinations of the Apothecaries' Hall of Dublin.

Sir DYCE DUCKWORTH presented reports from the Examination Committee on the examinations of the Apothecaries' Hall of Dublin held in October, 1899, January, 1900, and April, 1900. In the first report the committee said that the inspector reported that the examinations were in every way sufficient and he expressed his conviction that the body was doing its utmost to render them worthy of the confidence of the General Medical Council. In the second report the committee said the inspector reported that the examinations were in all respects sufficient. Speaking of the reports generally Sir Dyce Duckworth said they went to show that the examinations of the Hall were excellent. The inspector was satisfied with the conduct of them in all respects and made no adverse comments upon them. In the third report the Examination Committee said they desired to direct the attention of the Council to the fact that most of the candidates coming up for examination to this board had already passed the whole or parts of their previous examinations even in single subjects before other boards, sometimes in other divisions of the kingdom, and appeared either to choose or to seek by this piecemeal system admission to the Medical Register. This, of course, could not be regarded as satisfactory.

Mr. TICHBORNE took exception to this statement and asked Sir Dyce Duckworth as chairman of the committee to delete part of it.

Sir JOHN BATTY TUKE thought the whole statement should be deleted. The only point this Council had to consider was the statement that the examinations were in every respect sufficient.

Sir DYCE DUCKWORTH reminded members that this examination was the particular child of the Council and said the committee had been anxious to give the Council as much information as possible about it.

The Council by a majority decided to strike out the whole statement.

On the motion of Sir DYCE DUCKWORTH, seconded by Sir JOHN BATTY TUKE, it was agreed:—

That the Registrar be instructed to inquire of the various examining boards what evidence they require to be produced by candidates who claim to be exempted from examination in particular subjects on the ground that they had already passed in these subjects before other licensing bodies.

The Inspection of the Final Examinations.

Sir DYCE DUCKWORTH brought up the following recommendation from the Examination Committee, viz.:—

The Examination Committee desires to express its opinion to the General Medical Council that another cycle of inspections of the final examinations of the several universities and examining boards should be begun during the present year.

No inspection, he said, had been held for some seven years and it was thought by the committee that the time had come when they should begin another cycle of inspection. The committee had no proposal to make as to the division of the kingdom in which the inspection should begin. On the last occasion the arrangements were left in the hands of the Executive Committee. They would have to appoint an inspector and probably it would not be possible to get to work during the present year.

The PRESIDENT said it would take the Executive Committee some time to work out the details of the scheme.

Sir DYCE DUCKWORTH moved that the recommendation be received and entered on the minutes.

Dr. MCVAIL, seconding this motion, said it was about seven years since the last cycle of inspection ended. It began about 1887 or 1888 and it took five or six years for its completion. Under the Act they were supposed to be constantly inspecting the examinations and he quite thought the time had come when they should begin a new cycle of the final examinations.

Mr. HORSLEY: What is the probable cost

Sir DYCE DUCKWORTH: The average cost is about £360 a year.

Dr. GLOVER said he was disappointed with Sir Dyce Duckworth's way of putting this subject before the Council. The Council was not very flush of money just now and there was every reason why they should not spend money unnecessarily. If Sir Dyce Duckworth had shown any reason for believing that the effects of the last inspection had failed, or that there was anything seriously wrong in the way the examinations were conducted, or that a sufficient number of men were not being arrested by the examinations, he should not have offered any opposition; but in the absence of any such proof, or even an attempt to prove that the effect of the last supervision had passed away and that they were drifting into a loose or careless system of examination for admission to the Register, he could not think that any harm would be done by the postponement of this measure for

another year at least. He moved that there be a postponement for a year.

Dr. BRUCE seconded the proposal.

Dr. MACALISTER said that one reason for starting now was that it would be some time before the scheme could be got into working order. They could hardly get the first reports until 1901, which would be ten years after the last cycle was instituted. Another reason was that he regarded this not as a detective operation but rather as a stock-taking. It was right that the Council should from time to time discover what was going on. He had no doubt that this cycle of inspection, like the last, would disclose a great improvement in the examinations.

The motion for the receipt of the recommendation and its entry in the minutes was then put to the Council and agreed to.

Sir DYCE DUCKWORTH, seconded by Mr. BRYANT, moved:—

That, on the recommendation of the Examination Committee, arrangements be forthwith made by the Executive Committee under Chapter 23 of the Standing Orders for a systematic inspection and visitation of the final examinations of the several licensing bodies.

The proposal of Dr. Glover was put as an amendment and rejected by the Council by a large majority. Thereafter the motion of Sir DYCE DUCKWORTH was agreed to.

The Admission of Foreign Students to Examinations.

Sir JOHN BATTY TUKE presented the following report by the Education Committee on a motion seconded by Mr. HORSLEY, viz.:—

On Dec. 5th, 1899, it was moved by Mr. Horsley, seconded by Mr. Tomes, and agreed to:—

That the Education Committee be requested to consider the circumstances under which at present foreigners obtain exemption from some of the conditions of education and study required by certain of the qualifying medical corporations under the curriculum determined by the General Medical Council.

In the opinion of the committee this reference is covered by the "communication from the Education Committee in regard to the admission of foreigners to examination for registrable British qualifications," received by the Council on Dec. 4th, 1899. This communication stands as Appendix xvii. of vol. xxxvi. of the minutes.

This document sets forth clearly the conditions of education and study required of foreign students by the various qualifying bodies in Great Britain and Ireland and the committee deem it unnecessary to reproduce the statements therein made.

The Council has always held each licensing body as primarily responsible for the conditions under which it admits to examination candidates for its qualifications, and whenever reasons have existed for believing that the regulations were not in accord with the Council's resolutions the attention of the body has been directed to them. So far as the conditions of the various bodies regulating the admission of foreign students are concerned no specific case of inequality of conditions as between foreigners and British subjects has been brought under the notice of the Education Committee. Should any such representation on specific points be referred to the committee they are prepared to follow the usual course of sending the complaint to the body concerned, considering its reply, and reporting on the question to the Council.

The report was received, entered in the minutes, and adopted.

Diplomas in Public Health.

Mr. TEALE read the following interim report from the Public Health Committee dated May 28th:—

The committee cannot meet without expressing their sense of the great loss sustained by the Council, but above all by the Public Health Committee, in the death of their most able and indefatigable chairman, Sir Richard Thorne.

The committee have considered the replies of the bodies which confer diplomas in public health, with observations on the recommendations of the Public Health Committee contained in their report of Dec. 5th, 1899. Many of these replies contain carefully reasoned criticisms or suggestions demanding serious consideration, for which the Council is greatly indebted to those bodies. These criticisms and suggestions and the question whether the recommendations in the report of the Public Health Committee should need modification require more time than it has been possible to devote to their discussion during the present session.

The committee therefore recommend that the question should again be remitted to the committee for a final report at the November session of the Council. T. PRIDGIN TEALE, Chairman.

On the motion of Mr. TEALE, seconded by Dr. MCVAIL, this report was received and entered on the minutes, and the recommendation contained in it was approved of.

Registration of Students.

Sir DYCE DUCKWORTH presented a report from the Students' Registration Committee and moved that it be received and entered on the minutes and adopted. He remarked that the various cases mentioned in it had been very carefully considered. The decisions arrived at had been in most cases based on precedent and special consideration had been given to such cases as presented any special difficulty.

Dr. BENNETT seconded and the motion was agreed to.

Companies Act Amendment Bill.

Mr. TOMES gave in a report from the Committee on the Companies Act Amendment Bill. This informed the Council that Clause 3 of the measure now before Parliament dealt with the practice of medicine and dentistry by companies. The Bill had repeatedly stood on the order paper for second reading, but no further progress had been made with it, and it now seemed doubtful whether the Government intended to proceed with it during the present session.

The report was received and entered on the minutes, the motion acted upon being made by Mr. TOMES and seconded by Mr. HORSLEY.

An Application for Registration.

On the motion of Sir DYCE DUCKWORTH, seconded by Dr. MACALISTER, it was resolved to adopt a recommendation by the English Branch Council to enter on the Medical Register the name of Mr. William Raitt Scroggie, who holds the qualifications of Mem. R. Coll. Surg. Eng. 1882, Lic. R. Coll. Phys. Edin. 1882, Lic. Midwif. K. Q. Coll. Phys. Irel. 1882, a practitioner entitled to be registered under the Medical Act 1858, but who neglected to effect such registration until after the coming into operation of the Medical Act 1886.

Penal Clauses of Medical and Dentists Acts.

Dr. GLOVER asked leave to withdraw the following notice of motion which he had put upon the programme of business:—

That the Executive Committee, under the remit of resolution 13 in the minutes of May 24th, 1900, be requested to procure the written opinion of Mr. Muir Mackenzie as to the difference between Clause xxix. of the Medical Act (1858) and Clause xiii. of the Dentists Act (1878), with special reference to the obligation of the Council, under the respective Acts, to order the erasure of the name and qualifications of a practitioner, evidence of whose conviction for some offence has been supplied, or who has been found, after due inquiry, guilty of infamous conduct by the General Medical Council.

He (Dr. Glover) said that the necessity for this motion had ceased because it had been anticipated by the action of the Executive Committee.

Dr. PAYNE, who had agreed to second the motion, assented, and leave was given to withdraw the notice.

Advertising by Dentists.

Sir DYCE DUCKWORTH moved that a copy of the following resolution in respect of advertising adopted by the General Medical Council on May 20th, 1894, be issued from the Council's office to every dentist whose name is on the Dentists Register:—

That the attention of the Council having been called to the practice of advertising by certain dentists it is hereby resolved: "That the issue of advertisements of an objectionable character, and especially of such as contain either claims of superiority over other practitioners or depreciation of them, may easily be carried so far as to constitute infamous or disgraceful conduct in a professional respect."

In support of his proposal Sir Dyce Duckworth said that he had been moved to recommend this course to the Council because during the present session they had been told by persons who had been before the Council that they were really not aware of what the Council had done and therefore it seemed absolutely necessary to send their resolution of 1894 to every practitioner on the Dentists Register so that there might be no mistake in the future.

Mr. TOMES seconded the motion.

Dr. LOMBE ATTHILL said that the resolution seemed to sanction advertising generally and the Council disapproved of that. The four words "of an objectionable character" ought to be left out.

Dr. MACALISTER: That is the resolution.

Dr. LOMBE ATTHILL: Well, it will be brought up as a clear proof that advertising is sanctioned by this Council because it is only advertising of an objectionable character that we seem to disapprove of. I understood that we were to put down all advertising.

Dr. MACALISTER: I do not think that unobjectionable advertising could be called infamous conduct.

Mr. HORSLEY: That is not the point. Can we not amend the resolution as suggested by Dr. Lombe Atthill?

Mr. BROWN: That could scarcely be done without rescinding the resolution of 1894 and passing a new resolution.

The PRESIDENT reminded the Council that it was six years since the resolution was passed. He remembered very well the discussion which took place in connexion with it. The general opinion at the time was that the Council could not pass a resolution forbidding all forms of advertising and so the words "of an objectionable character" were inserted so as to show that there was a certain class of advertising

that the Council were not prepared to say was objectionable. Of course, if the Council's mind had changed during these six years, and they were now prepared to make their views more definite and more distinct, what he suggested was that they should not refer to the resolution of 1894 but pass another resolution. That really was the question that the Council had now to determine. If they passed Sir Dyce Duckworth's motion they practically adopted the old resolution of 1894, which they apparently did not think strict enough.

Dr. MACALISTER: We could not immediately proceed to act upon a new crime of this sort. We would have to give four or five years' notice.

Mr. TOMES: We have just acted for the first time on this resolution during the present session, and however desirable it might be to amend it the present is not an opportune moment for doing so.

Mr. HORSLEY: Would it not be better to withdraw this motion for the present and wait until times have changed a little more?

The PRESIDENT: It is for the Council to decide what is or is not objectionable.

Mr. TOMES: In medical cases it is the same—the Council have to decide.

Dr. MCVAIL: I think we should not proceed with this matter at all. It is tantamount to saying that advertising is objectionable. We should deal with cases as they come up, just as has been done this session.

The PRESIDENT: I think the ground for bringing forward the motion is that when we went into a case of objectionable advertising the other day it came out that this resolution of 1894 had never been communicated to persons on the Dentists Register, that it had been communicated only to some individuals, and not sent by post to every registered dentist. Sir Dyce Duckworth wants every dentist to have this put into his hands so that he might not have the opportunity of saying that he did not know of the resolution.

The motion was carried by 13 votes to 8.

Sir DYCE DUCKWORTH stated that the cost of giving effect to it would be about £17.

The Standard of Preliminary Examinations.

On the motion of Sir JOHN BATTY TUKE, seconded by Dr. MACALISTER, a further report of the Education Committee on the question of raising the standard of preliminary examinations in general education was received and entered on the minutes. This report was as follows:—

The Education Committee, in pursuance of the Council's resolution of Dec. 5th, 1899, have obtained from Mr. Sharpe, Dr. McGrath, and Professor McCormick a joint report "setting out in full their reasons for the conclusion they have arrived at with regard to the adoption of the senior and higher grade standard of preliminary education," together with a separate report from each of these experts on special points connected with the examinations of his division of the United Kingdom.

These four documents show that ample grounds are given for the conclusion that it is impracticable in the existing conditions to require of all intending medical and dental students the standard of general attainments represented by the so-called senior and higher grade examinations.

A substantial advance on the present requirements can, however, be made by insisting on improvements in the character and stringency of those "junior" examinations which can be directly influenced by the Council, and in the case of the others by requiring that candidates offering the corresponding certificates have obtained a higher standard than that of a simple pass.

Detailed suggestions are offered which, if adopted, would have the effect of bringing about the desired advance; and the committee, having considered these suggestions and discussed them with Professor McCormick, beg leave to commend them to the favourable consideration of the Council.

During the discussion a question, which has an important bearing on the problem in hand, was raised, and it appears to demand a definite answer on the part of the Council. The question is whether the time has not come for fixing a limit of age below which an applicant shall not be allowed to be registered as a medical or dental student. The committee are of opinion that such a limit should be fixed and propose that for the present an applicant for registration should be required to have attained the age of 16. At a future time, when a sufficient advance has been made in the standard of preliminary education, it may be advisable to raise the limit of age to 17. This would have the effect of inducing those who intend to enter on the study of medicine to spend a longer time over ordinary school subjects and so to fit themselves for the more stringent leaving and other preliminary examinations it is proposed to require. The committee accordingly recommend:—

1. That from and after Jan. 1st, 1902, no person shall be registered as a medical or dental student who has not attained the age of 16 years; and that for the purpose of ensuring the observance of this regulation every applicant for registration in the *Students Registers* shall be required to produce satisfactory evidence that this age has been attained.

2. That the Education Committee be authorised to take all needful steps to give effect to the recommendations and suggestions for the improvement of preliminary examinations contained in the appended joint-report of the expert advisers and to report from time to time to the Council thereupon.

The joint-report of Mr. Sharpe, Dr. McGrath, and Professor McCormick concludes with the following recommendations, submitted for the consideration of the General Medical Council:—

I.—THE CHARACTER OF THE EXAMINATION.

(*a*) In languages each examination should be of not less than two hours' duration, and if it includes questions on prescribed books (except in the case of prescribed masterpieces in English literature) of not less than three hours' duration.

In mathematics (which should include arithmetic, algebra, and geometry) the examination should be of not less than three hours' duration.

(*b*) In each examination the questions should be such as to test not merely knowledge but a power of intelligent application of knowledge.

In English the paper should include an essay and a paraphrase (see p. 14 (4)), also questions testing a knowledge of grammar, English history, and geography.

In classics and modern languages each paper should include at least one passage of some length from an unprescribed book for translation into English, an English passage of some length (except in Greek) and a few short idiomatic English sentences for translation, and questions on grammar.

In arithmetic and algebra most of the questions and problems should involve some thought and intelligent knowledge of the principles underlying the rules. In geometry most, if not all, questions should include a simple rider as an essential part.

(*c*) In languages questions on prescribed books should form not more than a third of the paper.

II.—THE DISTRIBUTION OF MARKS.

In English not less than a third of the marks should be allotted to the essay and paraphrase.

In classics and modern languages not more than a third of the marks should be allotted to questions on prescribed books, and at least a half of the marks should be allotted to "unseen" translation and prose composition.

In arithmetic and algebra the allotment of the marks among the questions should be, as far as possible, proportional to their difficulty. In geometry at least about half marks should be assigned to the simple rider attached to each book-question.

III.—THE STANDARD OF MARKING.

All examinations should satisfy the General Medical Council, by such supervision and organisation as may seem to them practicable, that the marking of examiners is conducted with due stringency and accuracy and is adjusted to the standard at which the examination aims.

IV.—THE MINIMUM PERCENTAGE OF PASS.

The *minimum* percentage demanded by the General Medical Council should be 40 per cent. in each subject (see IX.).

V.—THE MINIMUM STANDARD AT WHICH THE EXAMINATION SHOULD AIM.

In each subject the minimum standard and range of questions should approximate as nearly as possible to the standard and range of questions in the papers of the Lower Grade Leaving Certificate Examination of the Scotch Education Department.

It is suggested that the above proposals (I.–V.) should be regarded as instructions for all examining bodies and examinations at present recognised by the General Medical Council, except those of Government and University bodies, and that they should come into force, so far as these examining bodies and examinations are concerned, on Jan. 1st, 1902.

It is further suggested that the above proposals be sent to the above-mentioned Government and University examining bodies, together with the present report, if approved by the General Medical Council, and such portions of the confidential reports as the Education Committee may deem necessary in each case; and that these bodies be requested to state how far in their opinion their respective examinations meet the requirements of the above proposals, and how far it would be desirable or possible for them to make modifications in their examinations to that end.

VI.—Subject to the proviso of Recommendation IX., in the undermentioned examinations the pass-mark in each subject for the purposes of medical preliminary examination should, on and after Jan. 1st, 1902, be fixed as follows:—

University of Oxford Junior Local Examinations (honours standard in one or more subjects).
University of Cambridge Junior Local Examinations (honours standard in one or more subjects).
Oxford and Cambridge Schools Examination Board Lower Certificate Examinations, 40 per cent.
Central Welsh Board Senior Certificate Examinations, 40 per cent.
Scotch Education Department Lower Grade Leaving Certificate Examinations, 40 per cent.
Intermediate Education Board of Ireland Middle Grade Examinations, 30 per cent.

VII.—In the following examinations each of the four subjects may be passed separately:—

University of Oxford Senior Local Examinations (with distinction).
University of Cambridge Senior Local Examinations (with distinction).
Oxford and Cambridge Schools Examination Board Higher Certificate Examinations (with distinction).
Scotch Education Department Higher Grade, or Honours, Leaving Certificate Examinations.
Intermediate Education Board of Ireland Senior Grade Examinations (with distinction).

VIII.—In all examinations recognised by the General Medical Council other than those mentioned under Section VII. the examination in all four subjects must be passed at one examination or at not more than two examinations, provided that the candidate may offer himself for re-examination as often as may be necessary to satisfy this condition.

IX.—In the case of examinations which satisfy the requirements in Sections I.-V., when the four subjects are taken at one time the four parts may be regarded as one examination and a pass may be granted if the candidate reach the necessary percentage in the aggregate marks of his papers as a whole, provided that the required pass-mark must be reached in the English paper.

Sir JOHN BATTY TUKE, as chairman of the Education Committee, thought that before moving the recommendations of the committee he should run over the history of the movement for the benefit especially of those members who had but recently joined the Council. He said that almost immediately after its inception the Council directed attention to the subject of the preliminary examinations in general education, and the records of the Council bore testimony to the great interest which had been taken in it throughout. The first important result obtained was an improvement in the character of the examinations by the withdrawal from licensing bodies of their examinations in general education, and by their placing them in the hands of strictly educational bodies. The next important step was the laying down of requirements in the various subjects of examination. The Education Committee watched most carefully how their recommendations were observed and the effect was a gradual raising of the general standard. Subsequently the Council insisted upon greater stringency by directing that most of the preliminary examinations should be taken at one time. This was an important step forward as it got rid of two classes of candidates—the undesirable and the doubtful. The effect was very seriously felt by both schoolmasters and examining bodies, but perhaps the very success of the Council's action induced certain members to propose the very bold step of cutting out all junior examinations whatsoever. At the first blush this seemed an effective method of dealing with the subject, but on careful investigation by the committee it was found that it could not be adopted because it was surrounded by difficulties that were insuperable, the chief difficulty being the defective condition of intermediate education throughout the kingdom. There was a great gap between "lower junior" and "higher senior," and the very highest authorities, men who had the best knowledge of the subject, advised the committee that the difficulties were not such as could be overcome, and if it were attempted to adopt the scheme the most serious consequences would result to the profession and to the public. The Council, however, were not convinced and a *referendum* was ordered. The committee consulted heads of schools and colleges, various medical bodies, and a number of private individuals, and the result was that there was an overwhelming consensus of opinion that the committee's view was the correct one, and the main reason assigned was that the state of intermediate education would not permit of the adoption of the scheme. Therefore, the committee had suggested the appointments of three educational experts, whom it was hoped and believed were thoroughly representative of the different parts of the United Kingdom and thoroughly well acquainted with the condition of education within them. These gentlemen began their work about a year ago and it was necessarily very arduous work, and notwithstanding the time and attention they gave to it they were unable to produce more than a provisional report for consideration in November last. The Council naturally wanted more information on the subject and these experts were re-appointed and asked to prepare a full detailed report. They had done so, and he thought no one could say that it failed in presenting the position in a thorough and full manner, for it was a very carefully prepared document, a valuable treatise on the whole subject. The leading fact these experts presented was again the imperfect state of intermediate education. It might be said to be very sad that it should be so, but he might ask if they were very much worse off than any other country? He thought that the answer to the question was furnished in the experts' report. They said:—

We found that a preliminary examination which would demand the Scottish higher grade leaving certificates in the four subjects required by the General Medical Council would be of a standard much higher than that of preliminary or matriculation examinations in any faculty of any university with which we are acquainted.

Further, he thought experience showed that they were not in any worse plight than any foreign country, for it was found that the ordinary practitioners of, say, France and Germany were not of higher culture than their own men. He for one failed to meet a want of culture in their own men. Perhaps they were not scholars, but scholarship was not their business, and he thought that those who had impressed upon the Council the raising of the standard of general education higher had overlooked the fact that medical education was a liberal education in itself. It must be borne in mind that the medical student was brought into contact with subjects that required a large amount of collateral education and that his general education did not cease when he commenced the medical curriculum. His scientific course was as productive of culture as the literary training of the arts school. The experts concurred in the view of the Education Committee. They had adopted in their report the general principles that the Council should insist upon a gradual improvement of general education examinations. In point of fact, they recommended a standard of examination which might be roughly taken to represent the meeting-place of the higher juniors and the lower seniors, a grade which also represented the standard applied by the great examining bodies and conformed to the test of 16 to 17 years as being the suitable age for youths to enter upon scientific work. Certain people had held that uniformity could be best obtained by the Council instituting examinations of its own. But it would be *ultra vires* to do that and it would not, if it could be done competently, be advisable to proceed with such examinations because of the serious complications such a system would cause in relation to school examinations. But as a matter of fact the committee and the experts were content to work with the machinery which at present existed, and the experts had suggested a scheme by which the standard of present examinations might be raised and equalised, whether by higher pass marks or otherwise, and that these examinations should be allowed to be passed at not more than two times. The committee proposed that the suggestions of the experts should be sent to all university bodies with a request to know how far the general recommendations meet with their approval in theory and practice. They proposed also to send the opinions of the experts to a number of outside bodies who were not Government bodies or universities, in order that they might adapt themselves to the lines of the standard selected. The committee would have every opportunity of judging how far these bodies might conform, for they could see the set papers and examine the students' answers. With regard to the experts' conclusions, these had been arrived at to a very great extent from information contained in confidential communications. They said in their joint report:—

Much of the information upon which we base our classification is of a confidential character and has been obtained from the various authorities on this strict understanding. The points we have had to take into consideration are many and various, and merely to give a classification without our reasons for such classification would be of little or no service and might in many cases be misleading. In the case of a few examinations we have been unable, owing to insufficient information, to give more than a tentative estimate. Apart from these considerations public criticism of particular examinations might alienate some of those examining bodies upon whose cordial coöperation the General Medical Council must depend in bringing about a genuine reform. And, lastly, the scheme of reform which we have to suggest does not, at least for the present, necessitate such public criticism.

Accordingly he (Sir John Tuke) hoped that no demand would be made for the production of these confidential documents. He believed that if the Council agreed to the two recommendations which the committee proposed they would find that they had got a good and solid ground on which to build up future reforms. The committee asked the Council to have confidence in them and commission them to carry out the scheme as detailed in the experts' report. If the Council gave this commission the committee would keep in mind the strong desire on the part of the Council as well as of themselves to raise the whole character of these preliminary examinations, keeping in view the necessities of the public and the interests of the profession. He begged to move that the committee's first recommendation be adopted.

Dr. MACALISTER seconded the motion, because the experts told the Council that unless they decided that the age should be 16 years or below 16 their advice would be ambiguous. If it were 16 they gave clear directions as to what to do. The Council should therefore first settle the age and do that now.

Sir DYCE DUCKWORTH said that the feeling that prevailed in the Council was that they must take things as they found them and accept small mercies when they were offered, but he hoped that the Council would give expression to the view that the age might very soon be raised to 17 years.

Dr. LOMBE ATTHILL pointed out that if the age was raised higher than 16 that would not be convenient, for the Act provided for the registration of medical practitioners at the age of 21.

The motion was agreed to.

Accordingly, from and after Jan. 1st, 1902, no person shall

be registered as a medical or dental student who has not attained the age of 16 years; and for the purpose of ensuring the observance of this regulation every applicant for registration in the Students Registers shall be required to produce satisfactory evidence that this age has been attained.

Sir JOHN BATTY TUKE, seconded by Dr. MACALISTER, moved the adoption of the second recommendation.

Mr. HORSLEY wished to know if the existing list of examinations was to be absolutely abrogated if the committee were authorised to carry the new scheme into effect. He could not see how the scheme was to be carried out without considerable expense, for after two years' time he took it that the Council would have to employ the experts as inspectors. He took it that the Council had full confidence in the committee to carry out the scheme. The recommendations of the experts fell short, he thought, of what they might expect. They were governed by serious limitations in the narrative which went to show that the experts themselves felt that there were great difficulties in making the recommendations and that there would be difficulties in carrying them out. He was sent to the Council to speak in favour of a much higher examination and he should always do so. But if the Education Committee said, "Have confidence in us and let us try this scheme for two years or so," he could not very well see how the Council could refuse.

Dr. PAYNE pointed out that, broadly speaking, the higher class school life of this country did not end till the pupils were 18 years and he wished their intending medical students could remain at school until that age. In Germany and France the age for intending medical students leaving school was from 18 to 19, and in his view the standard of general education for the medical profession was consequently higher than in this country. If, however, they made the "senior" examination the necessary standard they would not be fixing an educational standard but a social and financial standard. They would be laying down the opinion that intending medical students should be able to afford school till the age of 18 years. He really doubted if that would be possible generally. There was an average of quite two years' difference between the "junior" and the "senior" examinations. With a five years' medical curriculum it would be difficult to go beyond 16 years as the minimum age limit, and that was another difficulty in the way of making pupils looking forward to enter upon medical studies stay at school until 18 years of age. If the scheme now put forward were adopted he was sure that Oxford and Cambridge would do what they could to meet the views of the Council. But the Council would hardly expect them to alter their whole scheme of examination to do that. At one time he was of the opinion that all the Council needed to do to secure the raising of the standard was to pass a resolution abolishing all the junior examinations, but he had come to the conclusion that the amount of reform now offered was the utmost which at the present moment could be satisfactorily carried out.

Dr. MACALISTER believed that he was expressing the feeling of the Education Committee when he said they were gratified that their labours, which had not been light, had been so well received by the Council. With regard to the expense in giving effect to the scheme the Council at the last meeting had made a grant of £100 in connexion with the work of the experts, and the committee hoped that a great deal more could be done without more money. What remained of the £100 was practically sufficient for at any rate the preliminary work. There was nothing secret or mysterious about the confidential documents or anything to be ashamed of. Those who furnished them desired that the details of their examinations should not be made public in any way simply because they would get to the ears of students and teachers who would prepare up to a certain standard and no higher. The committee and experts would be breaking faith if they made the documents public.

Dr. MCVAIL called attention to the fact that in one part of their joint report the experts expressed this conclusion: "Such examinations are comparatively worthless as tests or a good preliminary education." He asked if there were many and recognised examinations to which that could be applied.

Dr. MACALISTER explained that there were only one or two, and even in connexion with these the conclusion was explainable. It referred to languages only; that books should not be prescribed. It was solely with reference to the question of set books or not set books. It did not speak of examinations as a whole. As to the experts' series of recommendations it would be of no use considering these one by one. They must be taken as a whole or left altogether alone. It would not do to take some and leave others.

Sir CHRISTOPHER NIXON had no doubt that quite a number of bodies would not accept the experts' recommendations, but if the Council could secure the fixing of a minimun standard of examination below which they would not allow a youth to be registered as a medical student, and do that without any revolutionary measures, it would be a decided gain, and for that reason he strongly urged the Council to pass these recommendations.

Dr. MCVAIL had hoped they would have got more than the committee and the experts offered, and he thought that the Council, while agreeing to what was presented, might indicate that the time would come very shortly when they would demand a much higher standard. The committee should at once set to work to furnish a list of the bodies with whose examinations the Council could be entirely satisfied. The present list was not quite reliable because it took men from anywhere and everywhere.

The motion proposed by Sir JOHN BATTY TUKE was agreed to. Accordingly, the Education Committee were authorised by the Council to take all needful steps to give effect to the recommendations and suggestions for the improvement of preliminary examinations contained in the joint report of the expert advisers and to report from time to time to the Council thereupon.

Sir JOHN BATTY TUKE moved a vote of thanks to Mr. Sharpe, Dr. McGrath, and Professor McCormick for the valuable assistance which they had given to the Council in relation to the question of preliminary examinations.

Dr. MACALISTER seconded the motion.

The PRESIDENT said that having had the opportunity of knowing perfectly the great labours that these gentlemen had given to the consideration of the matter in question, and also knowing what fee was placed at the disposal of the Education Committee, he should like to say that these gentlemen had done a great deal more work than they had been paid for in money, therefore he thought the Council should record their thanks for the work they had done.

Dr. LITTLE asked if it was becoming on the General Medical Council to employ three experts and not pay them properly. He would rather propose that they should receive an addition to their honorarium. He did not know them at all.

The PRESIDENT said that these gentlemen undertook the duty, not in view of a money payment, but rather from a desire to help the Council in this branch of their work.

The motion was agreed to.

The Pharmacopœia.

Dr. MACALISTER, deputy chairman, in the absence of Dr. Leech owing to illness, presented the following report by the Pharmacopœia Committee:—

The Pharmacopœia Committee desire to record their regret at the enforced absence through illness of their chairman, Dr. Leech, and their grateful acknowledgments of the manner in which he has carried on the work of the committee since their last meeting.

The committee have now to report that 31,500 copies of the British Pharmacopœia of 1898 have been printed, and 28,783 of these have passed into circulation, leaving in hand 2717 copies.

A communication from the Privy Council, forwarding a copy of a note addressed to the Secretary of State for Foreign Affairs by the Belgian Minister, on the subject of a proposed International Pharmacopœia limited to drugs of a drastic nature, has been referred to this committee by the Executive Committee. The committee recommend the Council to reply that, should an international conference on the subject in question be arranged, the Council would be prepared to appoint representatives to participate in it and to authorise the President to appoint one or more members to act as delegates.

Another meeting of the conference of members of the Pharmacopœia Committee with representatives of the Pharmaceutical Society of Great Britain and the Pharmaceutical Society of Ireland has been held, and on its recommendation certain questions of a pharmacological and pharmaceutical nature have been referred to experts for further investigation and report.

Communications have been opened with the United States authorities with a view to bringing about greater uniformity in the official preparations contained in the British Pharmacopœia and the United States Pharmacopœia respectively, and it is hoped that, by mutual concessions, important approximations and assimilations in the contents of the two works may be ultimately secured.

Further communications have been received with reference to the Indian and Colonial addendum and important suggestions from Canada have been considered by the committee in detail. A report on progress has been prepared by the editor and is hereto annexed. It is hoped that a final draft of the addendum may be presented to the Council at the November meeting and that the addendum itself may be authorised for issue by the end of the year.

By the assiduous efforts of Dr. Leech a valuable collection of British

and foreign works bearing on the history and development of the pharmacopœia has been got together and deposited in the Council's office. Thanks are due to Dr. Leech, Mr. Bryant, Mr. Ekin, and Mr. Walter Hills for important contributions to this collection, and the committee hope that from time to time further additions may be made to it by members of the Council and others. A hand list of the works already deposited has been printed and will be sent to members of the Council, and a card catalogue prepared under Dr. Leech's direction is placed with the collection in the committee room.

On the motion of Dr. MACALISTER, seconded by Dr. LOMBE ATTHILL, this report was received, entered on the minutes, and adopted, and the Council recorded cordial thanks to Dr. Leech, Mr. Bryant, Mr. Ekin, and Mr. Walter Hills for the important contributions they had secured for the Pharmacopœia Library.

The Council adjourned.

THURSDAY, MAY 31ST.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

The Council and the English Royal Colleges.

On the motion of Dr. MACALISTER the following report was received and entered on the minutes, viz.:—

REPORT BY THE EDUCATION COMMITTEE ON CERTAIN COMMUNICATIONS FROM THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Education Committee have given careful and prolonged consideration to the communications forwarded by the Royal College of Physicians of London and the Royal College of Surgeons of England with reference to the new regulation for the registration of medical students, which communications have been laid before the Committee by direction of the President.

This regulation was adopted by the Council on June 7th, 1899, on the recommendation of the Education Committee, who reported as follows (Minutes, vol. xxxvi., p. 562):—

"The licensing bodies should be informed that schools for boys and girls were not intended by the Council to be regarded as institutions at which the first of the five years of medical study may be spent, and the Council should require that before registration is effected a student should have commenced medical study at a university or school of medicine or at a scientific institution recognised by one of the licensing bodies and approved by the Council. If this were done the recognised institutions would not merely as now be reported to the Registrar but would come in a regular and formal way before the Council for its approval. Attention could thus be drawn to any institution regarding which objection might be taken and approval withheld if the evidence as to its status and efficiency were unsatisfactory. As registration is a matter over which the Council alone has control this manner of dealing with the difficulty appears to be the least open to objection."

The regulation, which came into force on Jan. 1st, 1900, read as follows:—

"No medical student shall be registered until he has passed a preliminary examination as required by the General Medical Council and has commenced medical study at a university or school of medicine or at a scientific institution recognised by one of the licensing bodies and approved by the Council."

The Royal College of Physicians of London and the Royal College of Surgeons of England, alone of all the licensing bodies, have taken objection to this regulation, and on Oct. 26th and Nov. 2nd, 1899, they adopted a resolution affirming that they "fail to recognise any authority under the Medical Acts in virtue of which the General Medical Council may impose the conditions formulated in the regulation in regard to the registration of medical students," and that "they decline to recognise the requirement that scientific institutions where medical study is commenced should be approved by the General Medical Council."

This intimation was conveyed to the Council on Dec. 4th, 1899, when the President was requested to inform the Royal Colleges that the Council adhered to its regulation and to invite the Colleges to take the matter into fresh consideration in view of its important bearing on the maintenance of the standard of study and examinations in the country at large.

The President informs the committee that he has had an opportunity of conferring with representatives of the Royal Colleges on the subject and that the Committee of Management of their Examining Board submitted a report upon it to the two Colleges. The Committee of Management stated that "after a full consideration of the question in all its details they are unable to discover any grounds for altering the decision of the Royal Colleges" as stated in the resolution above referred to. They also appended a memorandum, copies of which have been courteously furnished to the Education Committee, setting forth the legal and other grounds for the view they had taken. The report of the Committee of Management has now been adopted by the Royal Colleges and constitutes their answer to the Council.

Three questions appear to arise for the consideration of the Council:—

1. Whether it is in the interest of medical education generally that the first year of medical study should be taken at ordinary schools of higher elementary or of secondary education, even when these give good elementary instruction in science in addition to the other subjects of school study?

2. Whether it is contrary to law or beyond the powers of the Council to impose the conditions formulated in the regulations under which a student may be registered as having passed a suitable preliminary examination and as having entered on a course of medical study?

3. Whether any one of the licensing bodies can legally require the General Medical Council to enter on the register of medical students the name of a student who has not fulfilled the conditions prescribed by the Council itself?

I.—On the first question the committee maintain the opinion they have repeatedly expressed that ordinary school education should be completed before the five years' medical curriculum is entered upon, and they believe that the regulation in question is the simplest practical method of insuring this. They therefore recommend that the Council should continue to adhere to it.

II.—On the second and third questions the committee recommend that the opinion of the Council's legal adviser be obtained before the next session of the Council.

III.—With regard to the individual applications for registration which have been received by the Registrar since Jan. 1st, and which cannot be dealt with by him without further instruction, the committee recommend that they be referred to the Students' Registration Committee as exceptional cases to be dealt with on their individual merits.

Dr. MACALISTER, in moving the adoption of the first recommendation of the committee, said that 12 copies of a memorandum prepared by the Royal Colleges had been received. They were marked "Confidential" and they would be circulated among the members of the Council so far as they would go. He understood that the memorandum had been prepared for the information of the Colleges. Reference was made to a legal opinion obtained by the Colleges, but the legal opinion was not given, and therefore as a member of this Council he could not state what line it took.

Mr. HORSLEY asked whether it would not be well to defer this motion until next session in order that members might have an opportunity of studying the memorandum.

The PRESIDENT said there was no reason why Mr. Horsley should not have a copy of the memorandum given to him now.

Mr. HORSLEY declined to vote upon the question before he had had an adequate opportunity of studying the memorandum.

Dr. MACALISTER, after explaining that it was only yesterday he obtained permission to circulate the memorandum, said that practically the memorandum decided the question which had to be discussed by the Council. The Royal Colleges had taken up the position apparently that the Council had no legal right to lay down such conditions as they had laid down for the registration of medical students. By doing so they confused the issue. The registration of students was a matter for this Council. With regard to the actual course of study which a student must have gone through for the diploma of the licensing bodies, that was a matter under their supervision, but they had no legal power to define beforehand or to control in the sense in which the word was used by the Royal Colleges. If they (the Council) were dissatisfied with the actual course of study which the licensing bodies had prescribed and required they could represent the matter to the Privy Council, and that was the limit of their control over the actual course of study pursued by any of the licensing bodies. He asked the Council to distinguish clearly between the two things—the registration of students and the course of study. The whole argument of the Royal Colleges was addressed to the second of these, and the Council had to address itself to the first. The Council asked of students that they should have passed a preliminary examination which they thought was sufficient and that they should have *bonâ-fide* commenced the five years' course of medical study. The Royal Colleges practically failed to recognise the right or authority of the Council to require either of these things. The Students Register had been established by the Council for their information, that they might have a means of testing first of all how long the curriculum of students was and secondly of ensuring that they had had a sufficient preliminary training before they began their medical studies. The question was what was five years of medical study from the point of view of this Council. They had pointed out that if students were allowed to pass six months of their period of medical study in higher elementary schools they were to this extent diminishing the medical curriculum; the Council had long protested against what might be called half-timers in respect of medical study. The Students Register was the creation of this Council, and he for one held that they had a right to state what were the conditions for entering a man's name upon it. If the Council still took the view that medical half-timers were not to be admitted to the Students Register then they must adhere to the conditions they had laid down—it was the only way to stop the growth of the practice. The Council did not dictate what conditions the Colleges should accept, but they said what conditions they (the Council) should accept. All the bodies except the two Royal Colleges in England had accepted the

regulations of the Council as they stood. Many of them declined to recognise this elementary or public school medical education at all. They protested very strongly against it being recognised by this Council and he thought they had a right so to protest. Yet if the Council accepted the suggestion of the Royal Colleges and put everyone on the Register whom they desired to be put on the other bodies would be so far coerced and controlled. The Royal Colleges therefore asked not only to control the Council but also to control all the other licensing authorities. That was a position which he thought the Council ought strenuously to resist. The Students Register was not a statutory obligation upon the Council. It was a creation of the Council—a piece of mechanism for carrying out the purposes of the Act. It was not statutory but it was not *ultra vires* and it was not illegal.

Dr. PAYNE, seconding the first recommendation, defended the regulations of the Council and spoke of the system of the Royal Colleges as bad in its immediate results and bad in its tendencies.

Sir HUGH BEEVOR expressed the opinion that an incentive to a boy to occupy his last school year with medical study would be a bad thing for education.

Sir PHILIP SMYLY said that this subject was first brought to the notice of the Council by the Irish College of Surgeons who complained that the period of professional study was being cut down from five to four years. The question here was a question of competition downwards. It was also a pecuniary question, because parents were anxious to know where they could get the cheapest education for their sons. Mr. Bryant had told them that they had required the preliminary subjects to be taken before the five years began and they had stopped it because the Royal Colleges found it would not pay.

Dr. PETTIGREW said he regretted exceedingly that the Royal Colleges had put themselves in this position, which he considered an entirely false one. The effect of the action of the Council had been to screw up the schools to give better education, and it would, in his opinion, be unfair to those schools if this Council recognised secondary education.

Sir CHRISTOPHER NIXON expressed his concurrence in the recommendation of the committee. The Royal Colleges maintained, he said, that the Council were alone an administrative body, that they had no constructive or legislative powers, and that they had no right to make rules or regulations or any form of requirement. In other words, they held that the Council had all along been acting upon a false assumption of authority. In such circumstances he saw nothing for it but to follow the recommendations of the committee and take the opinion of their legal advisers. As for the representatives of the two Colleges he did not think their action was perfectly consistent. While they denied the right of the Council to interfere in this matter they claimed for the Council the right to inspect, not only the final examinations of the Apothecaries' Hall of Dublin, but also the earlier examinations of that body.

Mr. BRYANT said he did not propose now to discuss the report of the committee. No doubt it was a most interesting document and drawn up with a view to support a certain resolution of the Council. He felt that the Council could not be in the right position to come to a proper decision on the matter until they had had an opportunity of studying the memorandum of the Royal Colleges. In this memorandum the case of the Royal Colleges was stated. He was sorry the document had not been printed as an appendix to the report. The committee were supplied with copies and more copies could easily have been furnished for the other members of the Council. In the peculiar circumstances of the situation he moved the adjournment of the debate until the November session.

Dr. MCVAIL objected to this. This question affected all the bodies throughout the country and adjournment only meant that the two Royal Colleges in England were to go on for another six months in the way they had been doing. If the Council were going to play with this question he saw no reason why the other bodies should not follow the example of the English Colleges.

Mr. BROWN thought the Council should have both sides clearly before them before they decided this important question.

Mr. HORSLEY said that adjournment of the debate would not impair the position which the Council almost unanimously took up last session.

Sir WILLIAM GAIRDNER said he had no objection to these preliminary subjects being taught in schools so long as there was no interference with the medical curriculum.

The motion for the adjournment of the debate was then put and agreed to.

Mr. BRYANT explained that he had got up several times during the debate to move the adjournment, but had not had an opportunity of speaking.

Mr. HORSLEY asked whether the Royal College of Physicians of London would furnish the Council with the opinion of their standing counsel.

Sir DYCE DUCKWORTH said he would consult the College upon that point. For himself he thought the memorandum gave all the information that was necessary.

The PRESIDENT said that if the Council would give him leave he would ask Mr. Muir Mackenzie to state his opinion on the whole question. He thought that it would be a good thing for Mr. Muir Mackenzie to see the legal opinion which had been given to the Royal Colleges and such of the other documents as might be necessary.

Dr. MCVAIL: Very good.

Dr. MACALISTER moved that the memorandum of the two Colleges be entered in the minutes as an appendix to the report of the Education Committee.

Mr. BRYANT said he had no objection to this being done.

The motion was agreed to by the Council.

On the suggestion of Dr. MACALISTER the third recommendation of the committee was agreed to. In this connexion Dr. MACALISTER gave the assurance that no disputed questions would be raised.

The University of Birmingham.

On the recommendation of the Education Committee the proposed Matriculation Examination of the University of Birmingham was added to the list of recognised Preliminary Examinations.

Medical Act for Jersey.

The Education Committee presented a report with comments on an Act passed this year by the states of Jersey dealing with the practice of medicine and surgery in that island. The President was requested to forward the comments to the Lord President of the Privy Council.

Restorations to the Dentists Register.

The Executive Committee reported that the prescribed conditions in each case having been duly fulfilled the names of the under-mentioned persons had been restored to the Dentists Register, from which they had been erased in conformity with the provisions of Section 12 of the Dentists Act:—Herbert George Blackmore, Hamersley Campbell, Victor Massey-Crosse, William James O'Hara, and William Henry Smith.

The Society of Apothecaries Title.

Mr. BRYANT presented a report from the special committee appointed to consider letters from Mr. James R. Upton, clerk to the Society of Apothecaries of London, on the subject of the use of the titles physician and surgeon. The committee reported that—

> They are not prepared to recommend that the funds of the General Council should be employed to guarantee, in conjunction with the Society of Apothecaries, the expenses of the plaintiff and defendant respectively in a test case to determine, by the Court of Appeal or the House of Lords, whether a Licentiate of the Society of Apothecaries is entitled to describe himself as physician or surgeon.

Seconded by Mr. HORSLEY, Mr. BRYANT moved that the report be received and entered on the minutes and that the recommendation contained in it be adopted.

Sir HUGH BEEVOR remarked that the Society of Apothecaries would have been pleased if this question could have been taken on the higher plane of the General Medical Council assisting in obtaining a decision, but in this instance they would be content to take their own course.

The motion was passed.

The Pharmacopœia.

The Council ordered strangers to withdraw so that they might receive *in camerâ* an opinion by the Council's legal adviser on the question of the copyright of the British Pharmacopœia.

Appointment of Solicitor.

The Council also sat *in camerâ* to receive a report from the Executive Committee in regard to the appointment of a standing solicitor to the Council in the room of Mr. F. W. Farrer, resigned. They appointed Mr. W. H. Winterbotham, official solicitor to the Supreme Court.

Acknowledgment of Mr. Farrer's Services.

On the motion of Sir DYCE DUCKWORTH, seconded by Mr. BRYANT, the following resolution was agreed to:—

The Council desires to record its warm appreciation of the services rendered to it for so many years by Mr. F. W. Farrer in his capacity as standing solicitor and to express its regret that the state of his health no longer permits him to assist the Council.

Appointment of Registrar.

Dr. MACALISTER, reminding the Council that under the Standing Order the appointment of general registrar was an annual one, moved the appointment of Mr. H. W. Allen till the closing day of the May session of 1901.

The motion was unanimously passed.

Appointment of Committees.

The Council's committees were re-arranged as follows:—

Executive Committee.—Sir Dyce Duckworth, Mr. Bryant, Dr. MacAlister, Dr. Glover, Dr. Heron Watson, Sir William Gairdner, Dr. Lombe Atthill, and Sir Philip Smyly, with Sir William Turner, the President of the Council, as an *ex-officio* member.

Penal Cases Committee.—Mr. Bryant, Mr. Tomes, Dr. Glover, Mr. Horsley, Dr. Heron Watson, Dr. Bruce, Sir C. Nixon, and Sir William Thomson.

Examination Committee.—Members nominated by the English Branch Council: Sir Dyce Duckworth, Mr. Bryant, and Mr. Teale; nominated by the Scottish Branch Council: Dr. Heron Watson, Dr. Pettigrew, and Dr. McVail; nominated by the Irish Branch Council: Sir Philip Smyly, Sir William Thomson, and Dr. Little.

Education Committee.—Members nominated by the English Branch Council: Dr. MacAlister, Dr. Glover, and Dr. Payne; nominated by the Scottish Branch Council: Sir John Batty Tuke, Sir William Gairdner, and Dr. Reid; nominated by the Irish Branch Council: Sir Christopher Nixon, Sir William Thomson, and Dr. Bennett.

Public Health Committee.—Members nominated by the English Branch Council: Mr. Power, Mr. Teale, and Dr. Pye-Smith; nominated by the Scottish Branch Council: Dr. Bruce, Dr. McVail, and Dr. Hector Cameron; nominated by the Irish Branch Council: Sir Philip Smyly, Dr. Bennett, and Mr. Tichborne.

Pharmacopœia Committee.—Dr. Leech, Sir Dyce Duckworth, Dr. Lombe Atthill, Dr. MacAlister, Sir John Batty Tuke, Mr. Tichborne, Dr. Payne, and Dr. McVail.

Dental Committee.—Sir William Turner, Sir Dyce Duckworth, Dr. Heron Watson, Mr. Tomes, and Sir Philip Smyly.

Dental Education and Examination Committee.—Mr. Bryant, Dr. Reid, Mr. Brown, Sir Philip Smyly, Dr. Hector Cameron, and Mr. Tomes.

Students Registration Committee.—Sir Dyce Duckworth, Dr. Cameron, Dr. MacAlister, Sir Batty Tuke, and Sir William Thomson.

Finance Committee.—Sir Dyce Duckworth, Mr. Bryant, Dr. Heron Watson, and Dr. Bennett.

Dr. Pye-Smith and Sir Hugh Beevor acted as scrutineers of the ballot taken in the case of the Executive and the Penal Cases Committees respectively.

The Finances of the Council.

Mr. BRYANT submitted the report of the Finance Committee on income and expenditure for the year 1899 and comparison with former years. This report was as follows:—

The Finance Committee report that the income of the General and Branch Councils for the year ending Dec. 31st, 1899, was £10,405 11*s.* 6*d.*, and the expenditure for the same period having been £10,677 10*s.* there is a deficit of £261 18*s.* 6*d.* This is due to the fact that for the first time the solicitor's account for law expenses has been included as a liability for the year in which it was incurred, and therefore two years' law expenses are included in one year, which will not occur again. Had it not been for this there would have been a surplus of £350 4*s.* From Table A it will be seen that the fees received by the Branch Councils show a considerable increase, for £449 17*s.* 6*d.* more was received from that source by England, £133 9*s.* 6*d.* more by Scotland, and £120 5*s.* more by Ireland, making a total increase of £703 12*s.* In 1897 there was a decrease from the previous year of £779 12*s.* 6*d.*, and in 1898 a decrease of £114 5*s.* The net proceeds of the sale of the Pharmacopœia for the year were £1365 10*s.* 1*d.*, but there will probably be found to be a very considerable drop in this item at the close of the current year.

The items of increased expenditure will be found on Table B, and amongst these may be specified the following:—

(*a*) An increase of £113 6*s.* 6*d.* for various committees' fees and expenses, chiefly caused by the fees, £94 10*s.*, paid to the experts who assisted the Education Committee. Omitting this item, which, however, will appear again this year, the increase would have been only £18*s.* 16*s.* 6*d.*

(*b*) An increase of £103 13*s.* 7*d.* in miscellaneous printing, which is more than balanced by the decrease in General Council and Executive Committee Printing.

(*c*) An increase of £752 16*s.* for law expenses, which is explained above. Had the liability for 1899 been, as usual, omitted, the increase would have been £140 13*s.* 6*d.*

(*d*) An increase of £43 10*s.* for interest on the mortgage, due to the amount spent on the recent alterations.

(*e*) An increase of £215 12*s.* 6*d.* for the sinking fund, an item which will occur for 49 more years.

On the other hand a decrease may be noted:—

(*a*) In the fees to Members of the Council and Executive Committee, amounting together to £698 7*s.*

(*b*) In the Pharmacopœia.

(*c*) In the printing of Registers, the great expense of setting up caused by the new contract being now met.

(*d*) In miscellaneous expenses, those for 1898 having included the circular as to the employment of unqualified assistants.

Table C shows that the average yearly expenditure of the General and Branch Councils for the past seven years has exceeded the average yearly income by £677 16*s.* 9*d.*

On June 8th, 1899, a resolution was passed by the General Council, on the recommendation of this committee, that money spent in the preparation of the British Pharmacopœia should not be charged as part of the expenditure of the year, but that a separate Pharmacopœia account should be kept. In order to show what would have been the effect of this resolution had it been in force during the past seven years a new Table D has been compiled, which shows that what may be called the normal expenditure of the Council has exceeded its income on an average by £912 13*s.* 6*d.* There seems no probability of the Council's income being largely increased in the near future, but this year the receipts from the Pharmacopœia will probably show a very considerable decrease; the money for the sinking fund, £215, which should come out of income, will have to be found, and if the recommendations of the Special Finance Committee be adopted the sum of £500 will have to be paid over to the Irish Branch Council; moreover, next year the election expenses, which in 1896 amounted to £488, will have to be met and in due course the inspection of examinations will re-commence, so that the Council ought seriously to consider whether it is not possible to reduce its expenditure to a very large extent. At present the Council is spending capital to the amount of over £600 a year.

In order to show how it is that of recent years the Council's expenditure has so largely exceeded its income a special Table E has been drawn out, from which may be seen the amount received for registration fees, which is the chief source of income, and the amounts paid for fees to members, printing, legal expenses, and interest on mortgage during the two septennial periods 1886–1892 and 1893–1899. It will be noticed that whereas the receipts are practically stationary the expenditure has largely increased, and this is due to the greater amount of work which now devolves upon the Council; its sessions are perforce longer, its committees are more numerous, and most of them have programmes and reports which all tend to increase the cost of printing, in addition to which there are the numerous reports on the inspection of the examinations of the Apothecaries' Hall of Dublin; the legal business is also greater and the premises have had to be enlarged to meet the increased demands for committee rooms.

The percentage rate has risen from 71·69 to 85·61.

Of the sum of £3000 authorised for the additions to the buildings, £2150 3*s.* 11*d.* was expended last year, since the close of which £779 18*s.* 11*d.* has been paid out, and there is still a balance of £49 due to the builders on the contract, which will make a total of £2979 2*s.* 10*d.*

A new Table J shows the total amount spent on the purchase of the freehold and on the alteration and furnishing of the premises of the Council up to March 31st, 1900. It may be pointed out that the interest on mortgage, £696 4*s.*, together with the sinking fund, £215 12*s.* 6*d.*, the total of the two being £911 16*s.* 6*d.*, are practically the rent which the Council pays for its premises, from which may be deducted £250, the rent received for No. 16, Hanover-square, making the net total £661 16*s.* 6*d.* In 49 years from now the Council will be living rent free.

With regard to the Pharmacopœia, 1898, a special Table H has been drawn up, showing the receipts and expenditure since it was taken in hand. The net profits to the end of 1899 amount to £924 13*s.* 6*d.*, and as in future the account is to be kept separate the committee suggest that as the Council has now reaped a substantial profit the proceeds shall no longer be treated as income, but placed to the credit of the Pharmacopœia account, in order, as far as possible, to avoid drawing on the funds of the Branch Councils when a new Pharmacopœia is in preparation.

Table G shows the assets of the three Branch Councils and the dental fund at the close of the last three years respectively, but owing to Consols being taken at the market value on Dec. 31st in each year it is very difficult to draw any conclusions as to increase or decrease and it might be well to follow the practice of many banks and in future value the stock at a fixed price, say £90, for the purpose of comparison.

Dental finance.—Table F shows that the receipts of the Dental Registration Fund for the year ending Dec. 31st, 1899, were £769 16*s.* 10*d.*, and the expenditure being £1101 10*s.* 7*d.* exceeds the income by £331 13*s.* 9*d.*, but in this account also the legal expenses for the two years are included and had it not been for this the excess of expenditure would have been £217 7*s.* 8*d.* The fund has latterly contributed more largely in paying its proportion to the fees paid to the General Council and this year the fees paid to the Dental Committee form a large item which is likely to be an annual one in future.

Mr. BRYANT moved that this report be received, entered on the minutes, and adopted.

Sir DYCE DUCKWORTH seconded the motion.

Mr. HORSLEY said that as the Council's resolution to grant £500 to the Irish Branch Council had been published in the minutes he begged to repeat to the Council what he had said in the committee—namely, that he entered his public protest against this expenditure. With regard to the report of the Finance Committee he did not propose any amendment, but it was scarcely possible to read a more awful report—a more terrifying report—because it showed that the Council's finances were in a hopeless state of confusion. At the present moment the Council did not know what their exact financial position was. That financial position

seemed to him to be without legal basis, for the Council were spending capital to the amount of over £600 a year. One of the tables accompanying the report showed that while the income in late years had remained stationary the expenditure had increased, the law expenditure as much as 108 per cent. during last year. With such expenditure before them how could this be called finance? He proposed to conclude by moving in accordance with a notice standing in his name on the paper.

The PRESIDENT pointed out that as the proposed motion was not in the nature of an amendment to the motion for the adoption of the report he thought the latter should be put to the Council before any new proposal was made.

The motion was then unanimously passed.

Mr. HORSLEY moved:—

That the whole question of the medical and dental funds of the General Medical Council and of the Branch Councils is again referred to the Finance Committee, together with the Trustees, whether members of the Council or not, and to report to the next session of the Council.

He said that the Council last session received alarming intelligence in regard to the finances and appointed a committee, such as he had mentioned in his motion, in order that the whole finance of the Council and Branches should be considered and a report given to the Council this session. He did not know why that committee had not carried out the instructions given to it, but had contented itself by granting £500 to the Irish Branch Council as a provisional measure. All he now asked was the re-appointment of the committee and that it should carry out its instructions. They could not discuss the matter unless they had a full detailed report from the committee and he hoped that would be forthcoming in November.

The PRESIDENT thought the Council should have a little more guidance. The motion was of the very widest kind. The whole medical and dental funds—their investments, capital, and income, and the various sources from which the income was derived—were brought within its scope, and he should like the treasurers to speak on the matter. If he had to carry out this proposal he should be slightly puzzled as to how to proceed.

Dr. BRUCE, who seconded the motion, said that the Council ought to know whether their financial position was improving or the opposite.

Mr. BRYANT, chairman of the Finance Committee, reminded the Council that their accounts were of necessity drawn up in a certain definite way because they were told by the Acts of Parliament how to divide their expenditure and show the different portions which were put out to the different Branches. Accordingly they had not a free hand. It was not a question of trouble at all, but he could not quite see how the Finance Committee could present more lucid statements than they did in present circumstances. However they might try to do better and make the accounts more clear, he was afraid that they should never succeed. They were certainly spending more than they received, but happily they had something to fall back upon, and the extra expenditure they had recently been incurring would, he thought, very shortly cease.

Dr. MACALISTER said that it was very difficult to know what particular questions had to be answered. He, also, should like a little more light thrown upon the meaning of the proposal and the matters that it was desired should be investigated. He thought that inquiry into the question what should be done with the Irish Branch Council was all that the committee had been asked to do. Whatever was wanted should be expressed.

Sir DYCE DUCKWORTH said it was quite clear that members of the Council did not study the tables of accounts. Some of the points which had been referred to in the discussion were set out on one of these tables, that giving a comparative statement of income and expenditure for the last three years. He thought it was forgotten that all the expenditure which had been incurred was expenditure which the Council had sanctioned. Of course, they had been spending a great deal more than in the former years when they sat in confined and insanitary premises. Then they were spending more on prosecutions, and legal expenses must and did mount up; but, after all, these sums of money represented very great activity, and if the Council were to do their duty their expenditure was hardly likely to decrease. No doubt that for fitting up the Council's extended premises would come to an end, and they were not likely to have any such outlay for a while again. The accounts of course were extremely complicated, but he did not see what was to be done under the terms of the motion. If specific questions were put the committee would do their best to make things plain to the intelligence of those who wished to be informed.

Mr. HORSLEY said that he could not conceal his astonishment at the speeches which he had just heard. There had been no attempt whatever on the part of the treasurers to dissipate the idea that the Council were in a financially unsound state. They could not dissipate that, for it came out in their own report. As to making the position better, there was no suggestion whatever, while there was not a particle of information afforded as to the exact position. What was wanted was a full statement of that position.

After some further discussion,

Dr. GLOVER hoped that the Financial Committee would accept the motion and accompany it with some suggestion for the adjustment of the income and expenditure. There was no harm in the motion, and if a suggestion was furnished by the committee it would form a basis for such a discussion as Mr. Horsley wanted. No member of the Finance Committee would argue that the present position was a satisfactory one, and therefore he supported the motion.

The PRESIDENT, while not objecting to the motion, remarked that he considered it was too general and he would like to have it so definite that the committee would know what they had to report upon. He was very anxious to arrive at something which they could unanimously agree upon.

With the approval of his seconder Mr. HORSLEY consented to his motion being unanimously passed in the following terms:—

That the special Finance Committee be requested to consider and report on (1) the financial position of the General Council and its branches as regards assets and liabilities; (2) the relation of the income and expenditure of the Council and its branches for the last ten years; and (3) the measures that appear to be desirable to place the finances on a satisfactory basis.

The session terminated with a vote of thanks to Sir William Turner, which was moved by Dr. GLOVER, seconded by Mr. BRYANT, and acknowledged.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations have been admitted Members of the College and have received their Diplomas:—

Rudolph George Abercrombie, Cambridge University and St. George's Hospital; Henry Cyril Adams, St. Bartholomew's Hospital; Bertram Cecil Robert Aldren, Edinburgh University; Thomas Shaw Arbuthnot, New York, Edinburgh, and St. Bartholomew's Hospital; William Arthur Bailey, University College and Royal Infirmary, Liverpool; Eric George Battiscombe, London Hospital; Charles Thomas Baxter, Middlesex Hospital; John Cunningham Bell, University College Hospital; Guy Black, St. Thomas's Hospital; Herbert Blackmore and Charles Henry Bradbury, Owens College and Royal Infirmary, Manchester; Arthur Hastings Bostock, St. Bartholomew's Hospital; John Bradford and Arthur Edmund Carver, Cambridge University and St. George's Hospital; Charles Henry Bullen, Mason University College and Queen's and General Hospitals, Birmingham; Hewlett Breton, John Beresford Christian, and Sidney d'Alton Corbett, St. George's Hospital; John Brocas Chambers Brockwell and Edward Cohen, Guy's Hospital; Thomas Burfield, Cambridge University and St. Thomas's Hospital; Edward Revely Clarke, Cambridge University and St. Mary's Hospital; Arthur Cubley, General Infirmary, Sheffield, and University College Hospital; David Leighton Davies and Charles Maxwell Ekins, University College Hospital; Henry Bertram Dismore and Charles Edwards, Guy's Hospital; Meredith Sedgwick Doubble and John Maltby Edwards, Charing-cross Hospital; William Claughton Douglass, St. Bartholomew's Hospital; John Scarborough Dudding and Samuel Jonathan David Esser, London Hospital; Harold St. Clair Elliott, Cambridge University and St. Bartholomew's Hospital; Charles Hy. Fennell, Oxford University and Charing-cross Hospital; Charles York Flewitt and Horace Wilberforce Freer, Mason College and Queen's and General Hospitals, Birmingham; Matthias Frederick Foulds, Owens College and Royal Infirmary, Manchester; Hugh Watson Fox and Edwin Wallace Goble, Guy's Hospital; Walter Burgess Fry, St. Thomas's Hospital; Shridhar Bheekaji Gadgil, Universities of Bombay and Calcutta and University College Hospital; Joseph Marcus Garman, London Hospital; Francisco José Gomez, King's College Hospital; William Ernest Gribbell, St. Mary's Hospitll; Leslie Haden Guest, Owens College and Royal Infirmary, Manchester, and London Hospital; Ernest Cutliffe Hadley, Mason University College and Queen's and General Hospitals, Birmingham; Donald George Hall, Cambridge and Edinburgh Universities; James Eder Harper, Durham, Birmingham, Guy's, London, and Westminster Hospitals; Sydney George Harrison, Charing-cross Hospital; Arthur Charles Haslam, St. Thomas's Hospital; Colin Sadler Hawes, Francis

Musgrave Howell, and Hy. Warwick Illius, St. Bartholomew's Hospital; Samuel Hey and William Morgan James, Cambridge University and St. Bartholomew's Hospital; Alfred Hewetson, St. Mary's Hospital; Thomas Higson and John Hoyle, Owens College and Royal Infirmary, Manchester; John Lupton Holt and Norman Alexander Aylmer Hughes, Yorkshire College and General Infirmary, Leeds; Archibald Douglas Jameson, St. Thomas's Hospital; Iain Mackinnon Jefferiss, King's College Hospital; Frederick Arthur Johns and Alfred Jones, London Hospital; George Joseph Alexis Leclezio, St. Bartholomew's Hospital; Frederick Samuel Leech, University College Hospital; John Lewis Lock, Cambridge University and St. Thomas's Hospital; Frederick William Longhurst, St. George's Hospital; John Augustus Noel Longley, Mason University College and Queen's and General Hospital, Birmingham; Charles John Nepean Longridge, Owens College and Royal Infirmary, Manchester, and St. George's Hospital; William James Lord, University College and Royal Infirmary, Bristol; William Henville Lowman, King's College Hospital; Frederick John McCann, Edinburgh University and King's College Hospital; Louis Charles Martin and Ernest Alfred Miller, Guy's Hospital; Charles Cecil Wildman Mayo, University College and General Infirmary, Sheffield; Richard Milnthorpe, Yorkshire College and General Infirmary, Leeds; Arthur Hy. McNeill Mitchell, St. Mary's Hospital; Adolph Andreas Christian Möllar, College of Medicine and Royal Infirmary, Newcastle-on-Tyne; Richard John Morris, Queen's College, Cork, and St. Barthelomew's Hospital; James Robert Morton, London Hospital; Reginald Cuthbert Mullins, Oxford University and Guy's Hospital; Sheffield Hy. Morier Neave, St. Bartholomew's Hospital; Cyril Alfred Rankin Nitch, St. Thomas's Hospital; Thomas Christian Orford, Owens College and Royal Infirmary, Manchester; Lionel Edward Orton, and Edward Albert Bodenham Poole, Mason University College and Queen's and General Hospitals, Birmingham; William Pancknidge Pancknidge, Middlesex Hospital; Edward Melville Bruce Payne, Charles Roberton Porter, and Michael Foster Reaney, London Hospital; Sydney John Peake, King's College, Hospital; Thomas Massey Pearce, St. Bartholomew's Hospital; [Harold Cooper Pretty and Arthur Izod Sheldon, University College Hospital; Frederick Schofield Rhodes, Owens College and Royal Infirmary, Manchester, and Middlesex Hospital; Charles Haldane Denny Robbs, St. Bartholomew's Hospital; Frederick James Faulkland Rooke and John Salmon Smith, Middlesex Hospital; Cuthbert Fennessy Selous, St. Thomas's Hospital; Hugh Frederick Sheldon, Owens College and Royal Infirmary, Manchester; George Herbert Simpson, St. Mungo's College, Glasgow, and University College Hospital; Stephen Francis Smith and Alfred Bertram Soltau, London Hospital; Hy. Edmund Symes-Thompson, Cambridge University and St. George's Hospital; Percy Tatchell and Albert John Walton Wells, St. Bartholomew's Hospital; William Irwin Taylor, Trinity University, Toronto; Basil Hubert Howard Tripp and Hardy Vesey Wells, St. Mary's Hospital; Harold Arthur Upward, Cambridge University and London Hospital; Francis Peter Vieyra, Madras University; Cyril Charles Coleby Kirke White, St. Bartholomew's Hospital; Edward White, University College and Royal Infirmary, Bristol; Thomas Wood, Cambridge University and Middlesex Hospital; and William John Young, University College and Royal Infirmary, Liverpool.

UNIVERSITY OF LONDON.—At the M.B. Examination held in May the following candidates were successful:—

First Division.—Herbert Cecil Barlow, Westminster Hospital; John Thomas Dunston, Guy's Hospital; Alfred Gordon Ede, and Arthur Tregelles Pridham, St. Bartholomew's Hospital.

Second Division.—Cornelia Bonté Sheldon Amos, London School of Medicine and Royal Free Hospital; Thomas Anstey-Chave, St. Bartholomew's Hospital; Alfred John Vernon Betts, Westminster Hospital; Isobel Sarah Bryson, Royal Free Hospital; Lewis Cook, Westminster Hospital; David Leighton Davies, University College; Alexander Fraser, Guy's Hospital; Cecil Scarlett Frost, St. Bartholomew's Hospital; George Robert Harcourt, St. Thomas's Hospital; Francis Joseph Hasslacher, King's College; Ernest William Holyoak and John William Hunt, St. Mary's Hospital; William Sam Inman, University College, Sheffield; David Thomas Cadvan Jones, University College; Charles Voughton Knight, St. Bartholomew's Hospital; Charles James Izzard Krumbholz, University College; William Henville Lowman, King's College; Maurice Taylor Male, University College; Ernest Alfred Miller, B.Sc., Guy's Hospital; Frank Mayo Morris, London Hospital; Richard Rothwell Mowll, King's College; Harold Rothery Nutt, St. Mary's Hospital; George Chetwode Owsley, Guy's Hospital; William Pancknidge Pancknidge, Middlesex Hospital; Thomas Perrin, St. Thomas's Hospital; George Edward James Antoine Robinson, University of Dublin and Royal College of Surgeons, Ireland; Henry Harold Scott, St. Thomas's Hospital; Nigel Frampton Stallart, University College; William Stuart Vernon Stock, University College, Bristol; Rhys Tudor Thomas, University College; Robert Lewis Thornley, St. Bartholomew's Hospital; Sydney Gordon Tippett, Westminster Hospital; Frank Douglas Turner, Guy's Hospital; and Lewis Augustus Walker, St. Bartholomew's Hospital.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At a meeting of the Fellows held on June 4th the following were elected for the ensuing year:—President: Mr. T. Myles. Vice-President: Mr. L. H. Ormsby. Honorary Secretary: Sir Charles Cameron, C.B. Council: Mr. A. H. Jacob, Sir Philip Smyly, Sir William Stokes, Mr. H. R. Swanzy, Mr. E. H. Bennett, Sir Charles Cameron, C.B., Dr. A. Meldon, D.L., Mr. C. B. Ball, Mr. R. L. Swan, Sir William Thomson, Mr. J. B. Story, Mr. J. Lentaigne, Mr. A. Chance, Mr. J. J. Cranny, Mr. R. D. Purefoy, Mr. H. G. Sherlock, Mr. R. B. McCausland, Mr. Graves Stoker, and Mr. F. Conway Dwyer.

UNIVERSITY COLLEGE, BRISTOL.—A laboratory has been established in connexion with the bacteriological department in which the examination of all kinds of morbid material is undertaken for medical men. Arrangements have also been made for medical men and others personally to undertake experiments in the laboratory.

DEATH FROM THE STING OF A BEE.—Mr. Greenaway, "bee expert" to the Monmouthshire County Council, and his niece were visiting the stock of bees belonging to a clergyman near Chepstow on May 21st, when the young lady was stung by a bee and she expired within half an hour afterwards. Medical evidence showed that death resulted from cardiac syncope produced by the sting, and at the inquest a verdict to that effect was returned.

PRESENTATION TO A MEDICAL MAN.—Mr. David Thomas, F.R.C.S. Eng., L.R.C.P. Lond., of Manly, Sydney, New South Wales, prior to his leaving in January last for some months on account of ill-health, was presented with a testimonial and a purse containing 195 sovereigns to be expended in London on the purchase of a suitable gift from the "people of Manly." He was also the recipient of a smoker's companion from his club patients.

THE CHARING-CROSS HOSPITAL EXHIBITS AT EARL'S COURT.—In connexion with the article on the Charing-cross Hospital Exhibits at Earl's Court which appeared in THE LANCET of June 2nd (p. 1607), we think it right to add a few words of acknowledgment of the valuable assistance rendered by Mr. Marcus E. Collins, architect, of 61, Old Broad-street, E.C., one of the vice-presidents of the hospital, who undertook the organisation and architectural arrangements of the exhibits.

A QUESTION OF VACCINATION.—At the Taunton police-court on May 26th a medical practitioner of the town was charged with having signed a certificate stating that a child was successfully vaccinated, such certificate being false. The board of guardians prosecuted and two of the district medical officers proved that the child was not successfully vaccinated. The defendant pleaded guilty and was fined £3 10*s*. He said that he had vaccinated the child but owing to illness could not see if the operation was successful and so he gave the certificate on the statement of the mother.

THE PROPOSED MEMORIAL TO THE LATE MR. G. J. SYMONS, F.R.S.—At the invitation of the president of the Royal Meteorological Society a meeting was held at the rooms of the society on Thursday afternoon, May 31st, to consider the question of a memorial of the late Mr. G. J. Symons, F.R.S., the distinguished meteorologist and founder of the British Rainfall Organisation. It was resolved unanimously that the memorial should take the form of a gold medal, to be awarded from time to time by the Council of the Royal Meteorological Society for distinguished work in connexion with meteorological science. The meeting appointed an executive committee representing many of the societies with which Mr. Symons was associated to take the necessary steps to raise a fund for that purpose. Contributions will be received by the assistant-secretary, Mr. W. Marriott, 70, Victoria-street, Westminster.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, A. J. B., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

ASH, THOMAS LINNINGTON, L.R.C.P. Edin., M.R.C.S., L.S.A., J.P., has been appointed a Member of the Examining Staff of the St. John Ambulance Association.

ATKINS, SYDNEY ERNEST, L.R.C.S. Irel., L.S.A. Lond., has been appointed Medical Officer of Health and Public Vaccinator for the North Lew District by the Okehampton (Devon) Board of Guardians.

BEALE, H. R., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

BENNETT, F. T., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Ham and Coombe Sanitary Districts of the Kingston Union.

BERRY, T. P., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Second Assistant Medical Officer of the St. Saviour's Infirmary, East Dulwich-grove, vice J. W. Pridmore, resigned.

BEVAN, A., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

BLACK, G., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

BOURDAS, E. C., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

CAVENAGH-MAINWARING, W. R., M.B., Ch.B. Adel., has been appointed Honorary Assistant Surgeon, also Honorary Joint Pathologist, of the Adelaide Hospital, South Australia.

COSTELLO, M. J. B., M.B., B.Ch. Irel., has been appointed Medical Officer for the Workhouse and Dispensary District of Glenamaddy.

COURT, E. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Sanitary District of Hambledon, Droxford Union, vice J. W. Jeram, resigned.

CUNNINGHAM, J. F., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

DALLEY, W. C., M.R.C.S., has been re-appointed Medical Officer and Public Vaccinator for the Syston Sanitary District of the Barrow-upon-Soar Union.

DUDGEON, L. S., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

EVE, F. C., B.A., M.B., B.C. Cantab., has been appointed House Physician to St. Thomas's Hospital.

GATES, E. A., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

GILES, W. A., M.B., Ch.M. Edin., has been appointed Honorary Surgeon of the Adelaide Hospital, South Australia.

GIMSON, K. C., M.B., B.C. Camb., has been appointed Medical Officer *pro tem.* by the Witham Urban District Council.

HABBIJUM, E. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Parish of St. George-in-the-East, London, vice E. M. Thuresson, resigned.

HARWOOD, H. M., M.A., M.B., B.C. Cantab., has been appointed Assistant House Physician to St. Thomas's Hospital.

HAMILTON, A. A., M.B., Ch.B. Dubl., has been appointed Honorary Assistant Physician of the Adelaide Hospital, South Australia.

HAMILTON, J. A. G., M.B. Dubl., L.R.C.S. Edin., has been appointed Honorary Assistant Gynæcologist, Adelaide Hospital, South Australia.

HAWKINS, C. L., M.A., M.B., B.C. Cantab., L.R.C.P. M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

HAY, T. W., M.B., C.M. Glasg., has been appointed Medical Officer for the No. 5 Sanitary District of the Newcastle Union, vice T. Scotland.

HAYWARD, W. F., L.K.Q.C.P. Irel., M.R.C.S., has been appointed Honorary Physician of the Adelaide Hospital, South Australia.

HEDLEY, E. W., M.A., M.B., B.C. Cantab., has been appointed House Physician to St. Thomas's Hospital.

HOWLETT, B. F., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

JAY, M. R. H., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Surgeon of the Adelaide Hospital, South Australia.

JONES, A. WEBB, L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

KELSON, W. H., M.D., B.S. Lond., F.R.C.S., has been appointed Honorary Surgeon in Charge of the Throat, Nose, and Ear Department, City Dispensary, London.

KING, J., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health by the Bude and Stratton Urban District Council.

KINLOCH, R. B., L.R.C.P., M.R.C.S., has been appointed Assistant House Physician to St. Thomas's Hospital.

KNOWLES, BEATRICE, M.B., B.S. Lond., has been appointed Second Assistant Medical Officer for the new Infirmary by the Bethnal Green Guardians.

MARTIN, A. E., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

NITCH, C. A. R., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

POMFRET, H. W., M.D. Vict., F.R.C.S. Eng., has been appointed Medical Officer for the Eighth Sanitary District of the Ashton-under-Lyne Union.

POULTON, B., M.D. Melb., M.R.C.S., has been appointed Honorary Surgeon of the Adelaide Hospital, South Australia.

PRIESTLEY, C. E., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Workhouse of the Thingoe Union, vice C. S. Kilner, resigned.

ROBERTS, J. LLOYD, M.D., B.S., B.A., B.Sc. Lond., F.R.C.S., has been appointed Honorary Physician to the Liverpool Stanley Hospital, vice R. J. Richardson.

SELOUS, C. F., L.R.C.P., M.R.C.S., has been appointed a Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

SMITH, ALFRED CHARLES FESTING, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Civil Surgeon, has been appointed *pro tem.* to the Medical Charge of Troops at Bull Point, Plymouth.

STACK, M. T., M.B., C.M. Glasg., has been appointed Medical Officer for the Wavertree Sanitary District of the West Derby Union, vice R. Wearing, deceased.

STREET, A. F., M.D. Camb., M.R.C.S., D.P.H., has been appointed Medical Officer for the Children's Home at Westgate-on-Sea.

SWIFT, H., M.D. Cantab., M.R.C.S., has been appointed Honorary Assistant Physician of the Adelaide Hospital, South Australia.

SYMONS, M. J., M.D., Ch.M. Edin., has been appointed Honorary Ophthalmologist of the Adelaide Hospital, South Australia.

TAKAKI, Y., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

TOMLINSON, W. R., L.K.Q.C.P. Irel., L.R.C.S., has been re-appointed Medical Officer of the Moree Hospital, New South Wales.

UNSWORTH, N., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

VERCO, J. C., M.D. Lond., F.R.C.S. Eng., has been appointed Honorary Physician of the Adelaide Hospital, South Australia.

WAY, E. W., M.B. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Gynæcologist to the Adelaide Hospital, South Australia.

WYCHE, E. M., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer for the Haddenham Sanitary District of the Ely Union, vice B. H. Andrew, resigned.

Vacancies.

For further Information regarding each vacancy reference should made to the advertisement (see Index).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon for twelve months. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM CITY ASYLUM, Rubery-hill, Barnt-green, S.O., Worcestershire.—Senior Assistant Medical Officer.

BEDFORD COUNTY HOSPITAL.—Senior House Surgeon for one year. Salary £100, with apartments, board, and washing.

BOROUGH OF BOOTLE, HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Superintendent, unmarried. Salary £120 per annum, with board, washing, and apartments in the hospital. Applications to be addressed to the Chairman of the Hospital Sub-committee, Town-hall, Bootle.

BOROUGH HOSPITAL, Birkenhead.—Resident Junior House Surgeon. Salary £75 a year, with certain fees usually obtained.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board).

CARLISLE DISPENSARY (not Provident).—Resident Surgeon, unmarried. Salary £150 per annum, with apartments (not board).

CARMARTHEN UNION.—Medical Officer and Public Vaccinator, to reside at Conwil, for the Conwil (a Welsh) District. Salary £60, with certain extra medical fees. Applications to the Clerk, 7, Hall-street, Carmarthen.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist. Tenable, subject to annual re-appointment, for not more than three years.

COUNTY ASYLUM, Whittingham, Lancashire.—Junior Assistant Medical Officer, unmarried. Salary commencing at £125 per annum, increasing conditionally to £250, with furnished apartments, board, attendance, and washing.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COTSWOLD SANATORIUM FOR THE OPEN-AIR TREATMENT OF TUBERCULOSIS.—Assistant Medical Officer. Salary to commence at £120 per annum and all found. Apply to Dr. S. T. Pruen, Sherborne Lodge, Cheltenham.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125 per annum, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

CRAIGLEITH POORHOUSE AND HOSPITAL, Edinburgh.—Medical Officer, resident. Salary £100 per annum, with board and apartments. Apply to the Clerk, Parish Council Chambers, Castle-terrace, Edinburgh.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

GENERAL HOSPITAL, Birmingham.—Pathologist, subject to annual re-election for five years. Salary £100 per annum, with board and residence.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—House Physician for six months. Salary at the rate of £60 per annum, and board, lodging, and washing in the hospital. Also Junior House Physician, for six months. Salary at the rate of £30 per annum, and board, lodging, and washing in the hospital.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months, unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

KENSINGTON DISPENSARY.—Resident Medical Officer, unmarried, Salary £125 per annum, with furnished apartments, coals, gas, and attendance. Applications to the Honorary Secretary, 56, Bedford-gardens, Campden-hill, Kensington, W.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70, with board, lodging, and washing.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary £60 per annum, with board, attendance, and washing.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant House Surgeon for six months. Honorarium £20, and board, lodging, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £125 per annum, with furnished apartments, board, attendance, and washing. Also Assistant to the House Surgeon for six months. Board, lodging, and washing provided, and an honorarium of £25 given.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, London.—House Surgeon for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also House Physician for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH RIDING ASYLUM, Clifton, York.—Senior Assistant Medical Officer, unmarried. Salary £125 rising £10 annually to £175, with board, furnished apartments, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon for one year. Salary £85 per annum, with board, washing, and residence.

PARISH OF FULHAM.—Second Assistant Medical Officer at the Infirmary, Fulham Palace-road, W., for six months. Salary £60 per annum, with board, furnished apartments, and washing.

QUEEN'S HOSPITAL, Birmingham.—House Physician and House Surgeon for twelve months. Salary £50 per annum, with board, lodging, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £60 a year, with board, lodging, and washing.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both appointments for one year.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road.—Assistant Surgeon.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board and washing.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Honorary Anæsthetist for twelve months.

SOMERSET HOSPITAL, CAPE TOWN.—Assistant Resident Surgeon. Apply to the Medical Agency, 112, Victoria-street, S.W.

ST. OLAVE'S UNION.—Medical Officer for the Children's Home, "The Poplars," Peckham Rye, S.E. Salary £75 per annum, subject to statutory deductions. Apply to the Clerk to the Guardians, Union Offices, Tooley-street, S.E.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £50 a year, with board, lodging, and washing. £6 per annum, given in lieu of stimulants.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BURROWS.—On June 2nd, at The Haven, Harrow, the wife of Harold Burrows, M.B., of a son who only survived his birth a short time.

GREY.—On June 3rd, at Strathtay, Perthshire, N.B., the wife of Harry Grey, M.B., C.M., San Remo, Italy, of a son.

PURVIS.—On May 30th, at Montague-villas, Coleraine-road, Westcombe-park, the wife of Alfred Purvis, M.R.C.S., L.R.C.P., of a daughter.

SMITH.—On June 3rd, at Lynton House, Warrington, the wife of Reginald Smith, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BAKER—HANCE.—On May 25th, at Holy Trinity, Bath, Albert Baker M.D., to Caroline, youngest daughter of the late Henry Hance, of Old Brompton, London.

LIVESAY—LEYDE.—On June 1st, at St. Giles's Cathedral, Edinburgh, Arthur W. B. Livesay, Surgeon, Royal Navy, Chatham Dockyard, to Sharlie E. Leyde, daughter of the late Otto T. Leyde, R.S.A., St. Bernard's-crescent, Edinburgh.

LOGAN—CHAMBERLAIN.—On June 6th, at the parish church, Solihull, Warwickshire, Roderic Robert Walter Logan, M.R.C.S., of Ashby-de-la-Zouch, to Frances Ethel, youngest daughter of George K. Chamberlain, of Leamington House, Malvern Wells.

SESSIONS—COLLINSON.—On June 6th, at the Friends' Meeting House, Halifax, Frederick Leonard Sessions, M.R.C.S. Eng., L.R.C.P. Lond., of Evesham, Wors., to Ethel Mary, only daughter of Joseph Collinson, of Halifax, Yorks.

SWAYNE—LYON.—On June 2nd, at All Saints', Upper Norwood, Francis Griffiths Swayne, M.A., M.B., of Church-road, Upper Norwood, to Etta Ellen, widow of G. K. Lyon, H.M.I.C.S., and third daughter of Warren Hastings D'Oyly, of Southsea and London.

WADE—GREGORY.—On June 2nd, at St. John's Church, Upper St. Leonards-on-Sea, Charles H. Wade, M.A. Oxon, M.R.C.S., F.L.S., of Royal-terrace, Southend-on-Sea, to Eva, only surviving child of the late Rev. A. T. Gregory, formerly rector of Trusham.

DEATHS.

FITZ-PATRICK.—On May 31st, at Sussex-gardens, Hyde Park, Thomas Fitz-Patrick, M.D., M.R.C.P.

MOGER.—About May 30th, suddenly, Frederick Slade Moger, M.R.C.S., L.R.C.P., of Finchley, aged 63 years.

STAMPER.—On May 22nd, at Pembroke-street, Pembroke Dock, South Wales, James Fenton Stamper, M.D., J.P., aged 62 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHERE MEDICAL ETIQUETTE IS IGNORED.

THE Bridgend and Cowbridge Board of Guardians have evidently no great passion for medical etiquette. The union covers a large area with two distinct classes of population. On the eastern side is the agricultural section, whilst the other district is maintained chiefly by collieries. They have a number of medical officers at various places, each having a prescribed district. At Maesteg Dr. John Davies is the medical officer for the union and his district adjoins that of the Tondu and Aberkenfig, where Dr. Jones acts as the medical officer. Dr. Jones is also the "works doctor" for the neighbouring collieries under Messrs. North's Navigation Company and Dr. Davies until recently filled a similar position at Maesteg. Thus in these dual offices both medical gentlemen were on the best of terms and in constant communication with each other. Some time ago a man employed at North's Collieries, Tondu, was injured. He was attended upon by Dr. Jones as the works medical officer. He resided at the extreme end of Dr. Davies's parish district. A protracted illness necessitated the injured man applying for the pittance doled out by the administrators of relief. He had a daughter at home whom the guardians in their wisdom thought should be in service, and as the case, so far as the guardians were concerned, was in Dr. Davies's district they instructed him to inquire whether she was not fit to earn her own living. Dr. Davies, knowing that Dr. Jones was attending, sent the inquiry on to him and he replied that she was not fit for service. When this report was read out at the meeting of the guardians a few weeks ago Dr. Davies was asked to explain why he had not made his own report on the case and was also told that he must attend a meeting of the guardians. Dr. Davies gave his reason for not attending personally on the case to the effect that as Dr. Jones was then attending at the house such a visit was hardly necessary. It was explained by one of the guardians that there was an arrangement between the two medical officers. Dr. Davies was also unable to be present at the meeting. This, however, did not appease the more precise members of the guardians and by a resolution of the members Dr. Davies was informed that if he had no better explanation to give the matter would be reported to the Local Government Board, and the chairman added to this that Dr. Davies must attend the first possible meeting of the board. This interview took place recently and the medical officer explained that he could not examine the girl himself knowing she was under treatment by Dr. Jones. Such a course would be highly improper for any medical man to do. The chairman of the board (Archdeacon Edmondes), however, did not agree with this and pointed out that whenever an order was sent to an officer of the board they expected him to comply with that order and not take the version of another medical man. Dr. Davies pointed out the difficulty which would arise and the friction which must ensue by the board's medical officer attending a case which was under treatment by the works doctor and that it would be a grave breach of the etiquette of the profession. This, however, was not regarded in the same light by the board and although they accepted the medical officer's explanation in this case they gave him clearly to understand that the orders of the board were inexorable and they neither regarded the etiquette nor friction of the profession, but that their instructions must be rigidly observed.

"WORD BLINDNESS."

To the Editors of THE LANCET.

SIRS,—Could not raised type, or that used by the blind, be employed by sufferers from this deficiency? Might not experiments on these lines prove instructive? Possibly by these means the patients might be so much assisted as ultimately to learn to read in the ordinary way. For information as to whether this has ever been attempted I should be much obliged. I am, Sirs, yours faithfully,

Upper Bedford-place, W.C., June 2nd, 1900. C. G. S. MENTEATH.

THE CONCILIATION BOARD.

To the Editors of THE LANCET.

SIRS,—For the last few years letters have constantly appeared in the medical journals touching upon the question of club doctors and their pay. It is now, I believe, proposed that a conciliation board shall be constituted for the purpose of discussing the matter in conjunction with delegates from various friendly societies. What good will it do? Indeed, I would ask if there are not gentlemen upon the Council of the British Medical Association who themselves take club patients on the lowest possible terms of remuneration. If this be the case (and it certainly is so in one instance) how can one wonder that men who do not hold such an exalted (?) position in the medical world should do the same? No, Sirs, the remedy is with the club doctor himself. Let him refuse to accept club patients on the terms dictated by the clubs and things, I am inclined to think, would soon be altered, but so long as club doctors take office in clubs as treasurers, committeemen, &c., and attend their annual dinners and

make speeches in which they express their pleasure at being allowed to hold the position of surgeon and generally lead the club members to think what a blessing such a position is, so long will the clubs pay what they do and at the same time be under the impression that such a payment is adequate. Last Christmas, owing to the amount of work done in the previous year, and also owing to the fact that farmers and their sons were members, I resigned two clubs with the result that most of the members, if not all, are now my private patients, and I have received from them in cash this year more than I should have received for the whole year had I still continued to doctor for the two clubs.

I am, Sirs, yours faithfully,

May 29th, 1900. X. Y. Z.

"THE CASE OF THE LATE MR. ALFRED BOURNE."

To the Editors of THE LANCET.

SIRS,—I am requested to thank you for the insertion in THE LANCET of May 26th (p. 1566) of the list of subscriptions to the above fund. I enclose a second list, and we shall be very grateful if we may again trespass on your valuable space and kindness.

We are, Sirs, yours faithfully,

G. YEOMAN,

pp. J. A. Hutchinson, M.D. Durh., and others.

Northallerton, May 30th, 1900.

	£.	s.	d.
Dr. P. Frank, London ...	3	3	0
Mr. Boville, Osmotherley	2	2	0
Mr. T. Yeoman, Osmotherley	2	2	0
Mr. T. Horsfall, Bedale ...	1	1	0
Mr. Walker Stead, Northallerton	1	1	0
Mr. R. E. Unthank, Appleton-Wiske	1	1	0
Dr. W. M. Yeoman, Stokesley...	1	1	0
Mrs. J. Yeoman, Northallerton	1	1	0
Mr. W. Brown, Northallerton	1	0	0
Mr. J. Vasey, Northallerton	1	0	0
Mr. C. Alexander, Northallerton	10	6	
Mr. J. W. Roberts, Knayton	10	0	
Miss A. Yeoman, Northallerton	10	0	
Mr. N. R. Wilson, Northallerton	5	0	
"Dat"	5	0	
"Anon."	5	0	
Mr. S. Jackson, Northallerton	5	0	
Mr. C Peacock, Northallerton	5	0	
Mr. H. Fairburn, Northallerton	5	0	
Mr. H. Ayre, Northallerton	5	0	

INTOLERANCE.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you will give me your opinion and advice on the following case and if you will kindly insert my letter in your correspondence columns. A is the only qualified man residing in a certain village where there are a number of works, collieries, &c. He is in attendance for a considerable time on all of the employés. A section of the population belongs to a certain religious denomination of which A is not a member. They determine to have a man of their own creed and with this object introduce a qualified man B. Some of the leading officials are co-religionists of B's and they use all their influence to substitute B in place of A as medical attendant to the men employed in the collieries, &c., to which they (the officials) belong. Many of the men object to employ the newcomer as they have every confidence in A, and, also, they naturally argue that every man should be at liberty to employ the professional services of whomsoever he chooses. The adherents of A hold several meetings and requests are forwarded to the different works that A shall continue to receive the money periodically paid in for medical attendance on the men. The officials, friends of B, offer the men an ultimatum—that they shall transfer their subscriptions to B or else take a month's notice to leave their employment. Most of the men submit to the wishes of the officials, but many privately engage the services of A, refusing to be attended by B, to whom, nevertheless, they are still compelled to pay their subscriptions. Those who refuse to pay him are discharged from their employment. Having placed all the circumstances of the case before you I will now ask you, Sirs, firstly, is not such coercive action on the officials' part contrary to English law; is it not, in fact, a violation of the terms of the Truck Act? and, secondly, if such conduct is illegal to whom should complaint be made—the Board of Trade or the General Medical Council?

I am, Sirs, yours faithfully,

June 5th, 1900. VIGILANS.

* * The Truck Act prevents the practice of paying the wages of workmen in goods instead of money. We doubt if the action of the official is a violation of this Act, but only a lawyer can express an opinion. If legal confirmation of the view that the Truck Act has been violated is forthcoming the plaintiffs would have to be the workmen.—ED. L.

"DRUG HABITS."

To the Editors of THE LANCET.

SIRS,—A correspondent in THE LANCET of June 2nd, p. 1634, writes on the above subject: "Now the proper and humane treatment is to give the drug in gradually diminishing doses and not to totally withdraw it"; and, again, "The medical man should think of the suffering and perhaps death that may follow its sudden withdrawal." This teaching seems to be a continuation of the old teaching of the late Dr. Watson who, writing of alcohol, says: "Give him a hair of the dog that bit him." The late Sir Andrew Clark used to teach that "alcohol and all drugs when they were taken in excess were all alike—poisons," and that they should be entirely and immediately withdrawn. I have acted on this advice for over 20 years and have never yet had reason to regret my action. Still, the sad fact remains that many still follow the old routine and, what is more, they believe in it, and certainly in alcoholic cases frequently take away the only chance of curing their patients. The view of your experienced readers would be very interesting.

I am, Sirs, yours faithfully,

Putney, S.W., June 5th, 1900. A. S. MORTON, M.D. Durh.

WE have a paper marked for insertion detailing a fatality to a woman in a laundry. Will the author kindly send his name and address, which have not been affixed to his manuscript?

Reformer.—The person is not a medical man, but in the present state of the Medical Acts no penalty attaches to his giving medical aid unless he pretends to be a medical man, and even then a prosecution might not result in a conviction. As he is not a member of the medical profession he of course cannot be prevented by the General Medical Council from advertising.

W. M.—The assistant should clearly not make such statements.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 7th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 1	30·14	N.	...	64	55	49	49	50	Raining
" 2	30·03	N.E.	0·10	102	64	49	52	53	Overcast
" 3	29·95	N.E.	...	107	68	52	57	60	Fine
" 4	29·88	N.E.	...	124	79	53	57	63	Hazy
" 5	29·95	N.E.	...	110	64	49	50	54	Cloudy
" 6	29·96	N.W.	...	111	77	50	51	56	Hazy
" 7	29·85	W.	0·04	107	67	55	55	57	Showery

During the week marked copies of the following newspapers have been received: *Redditch Indicator, Sussex Daily News, Newcastle Daily Chronicle, Alliance News (Manchester), Westminster Budget, Lancashire Daily Post, South Wales News, Sydney Daily Telegraph, Leeds Mercury, Glasgow Herald, Bolton Journal, Manchester Guardian, Birmingham Daily Post, West Morning News, Times of India, Pioneer Mail, Architect, Scotsman, Builder, Citizen, Liverpool Daily Post, Brighton Gazette, Grimsby News, Bristo Mercury, Madras Times, Yorkshire Post, South Eastern Gazette, Norfolk Daily Standard, Local Government Chronicle, Mining Journal, Hertfordshire Mercury, City Press, Reading Mercury, Drogheda Advertiser, Royal Cornwall Gazette, Horse Guards Gazette, Leicester Daily Post, Coventry Daily Telegraph, Builders' Journal, Warrington Observer, Surrey Advertiser, Walsall Observer, Local Government Journal, Essex Weekly News (Chelmsford), Australasian Medical Gazette, Ayrshire Post, Barking Advertiser, Buckingham Express, Sleaford Journal.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt.

Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (11th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square, W.C.).—7 P.M. Council Meeting. 8 P.M. Annual General Meeting. Mr. F. Eve will show a Patient with an unusually large Dental Cyst. Communication:—Mr. W. R. Read: A Case of Alveolar Abscess terminating Fatally. Casual Communication:—Mr. W. R. Humby. President: Valedictory Address.

TUESDAY (12th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. Rickman Godlee: On some of the Medical and Surgical Complications of Pyorrhœa Alveolaris.

THURSDAY (14th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases and Card Specimens. 8.30 P.M. Papers:—Mr. W. H. Jessop: Embolism of both Central Arteries of the Retina.—Mr. C. Wray: The Development of Myopia.—Mr. S. Snell: (1) Congenital Papilloma of the Conjunctiva; (2) Periarteritis of the Central Artery of the Retina; (3) Work of Forest Scenery, illustrated from paintings by an amateur artist who had previously undergone cataract extraction.—Mr. S. Stephenson: A Case of Ophthalmitis associated with Basal Meningitis.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—Specimens will be shown by Dr. Elder and Mr. Furneaux Jordan. Discussion on Indications for the Removal of the Uterine Appendages.

FRIDAY (15th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—Mr. R. M. Gunn: On Visual Sensations. (Bowman Lecture).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Cathcart: Impaired Movements of Vocal Cords. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Beddard: Food and Diet in Disease.

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Goodhart: Consultation. (Medical.)

WEDNESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Berry: Consultation. (Surgical.)

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. D. Pedley: Practical Hints on the Treatment of Carious Teeth. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Perkins: Mediastinal Growths.

THURSDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Beddard: Food and Diet in Disease.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Wallis: Surgical Cases. (Post-graduate Course.)

FRIDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2-3.30 P.M. Dr. H. Campbell: Class. Clinical Consultation of the Nervous System. Demonstration V. 4 P.M. Mr. H. Spicer: Consultation. (Eye.)

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An Address

ON

THE VALUE OF TUBERCULIN IN DIAGNOSIS AND TREATMENT.

Delivered at the Medical Graduates' College and Polyclinic on Feb. 9th, 1900,

BY T. McCALL ANDERSON, M.D. GLASG,
PROFESSOR OF CLINICAL MEDICINE AND DEAN OF THE MEDICAL FACULTY IN THE UNIVERSITY OF GLASGOW.

GENTLEMEN,—When the council of this institution did me the honour of inviting me to give a clinical lecture I had some difficulty in complying with their request because the clinical material at my disposal in Glasgow was not available and I had neither time nor opportunity in the midst of my work as examiner for the Army Medical Service to select on the spot cases suitable for my purpose. But it occurred to me that, instead of complying with the letter of their request, I might deal with some subject of practical interest, and with their consent I now propose to refer shortly to the value of tuberculin in diagnosis and treatment—a therapeutic measure in which from the first I have taken a deep interest and of which I have had considerable experience.

Most of us remember the intense enthusiasm with which Koch's great discovery was greeted and it was then the confident expectation of the public—if not of the profession—that the days of tuberculous disease were numbered. The consequence of such anticipations, as might have been expected, was that this powerful agent was too often employed in a reckless and indiscriminate manner. Patients were dosed with it on wholesale principles, often without due reference to the suitability of their cases, and the amount administered was generally unduly high, or too frequently repeated, thus leading to inevitable disaster. It is not surprising, therefore, that the extravagant laudation with which the discovery of Koch was hailed soon gave place to an equally absurd depreciation of its merits. Indeed, I am probably within the mark when I say that there are very few medical men in this country at the present time who are in the habit of using tuberculin. At all events, I can say that amongst the 40 medical officers attached to my own hospital it is not used by any of them. After a pretty wide experience I see no reason to resile from the opinion which I ventured to express in 1890—that the discovery of tuberculin "marked the commencement of a new era both in diagnosis and therapeutics."

In the recent discussions which have taken place throughout this country on the means to be adopted for the prevention of tuberculosis, one of the points most insisted on was the necessity of preventing the sale of tuberculous meat, and, above all, of the milk of tuberculous cows, and with practical unanimity it was conceded that the injection of tuberculin was a very certain test of the presence or absence of tuberculous disease in animals. How is it, then, that the tuberculin test is confidently relied upon by veterinary surgeons for the diagnosis of tuberculosis in animals, while medical men who applaud the use of it in animals with rare exceptions fail to take advantage of it in human beings when a doubt exists as to the diagnosis? Possibly it may be owing to the belief that though useful in the case of animals it is not to be relied on in the case of man, or that it would be an unsafe procedure in the latter. But I can say that if used with reasonable care it is both efficient and safe in the human subject. I could give many illustrations of its value in diagnosis but two will suffice, the first of which at the same time illustrates its curative power, though not quoted for that purpose.

CASE 1. *Tuberculin as a diagnostic test.*—A servant girl, aged 19 years, was admitted into the Western Infirmary of Glasgow on Jan. 15th, 1898. Her family history was excellent except that one brother, aged four years, was said to have died from tuberculous peritonitis. With regard to the patient's history, two years before admission a small, dark red, almost livid spot appeared on the outside of the left thigh which gradually healed in the centre and spread at the edges; the surface was dry and scaly and there was neither pain nor itching. Shortly afterwards a similar patch appeared below the knee which ran a like course, but it had healed up before admission, a cicatrix, which was brown at the edges, being left. Nine months before I saw her pustules formed in the centre and at the upper part of the first patch, which ended in ulceration. The ulcerated surface continued to discharge a thick yellow pus and undermined the skin, which had a livid tint. The diagnosis lay between hereditary syphilis and tuberculous disease. As I was inclined to think that it was probably tuberculous I determined to test the point with tuberculin. The first injection of the old tuberculin was given on Jan. 15th, but there was no decided reaction till the third dose of three cubic centimetres of a strength of 1 in 1000 was given on the 20th, which sent up the temperature to 100·4°F., while the fourth (same dose) on the 23rd sent it up nearly to 103°, thus leaving no doubt of the tuberculous character of the ulceration. This treatment was therefore continued till the end of February, there having been 21 injections in all (the initial injection being 0·001 cubic centimetre and the largest 0·175 cubic centimetre), the total quantity used being nearly one cubic centimetre of the undiluted tuberculin. The only other treatment was three ounces of cod-liver oil daily and she was dismissed quite well on March 24th, the whole duration of the treatment being about two months (chart shown).

CASE 2.—On June 2nd, 1899, a lad, aged 11 years, came under my care in the Western Infirmary of Glasgow complaining of weakness and of a swelling of two months' duration on the left side of the neck. His father and mother and nine of a family of 14 were alive, but one of these was suffering from "consumption of the bowels" and one from "decline." The five who died succumbed to chest complications in connexion with whooping-cough. Two months before admission the patient, who had always been pale and delicate, fell off a wall, and immediately thereafter began to complain of pain in the left side of the neck where a distinct swelling made its appearance. He was sick for a time after the fall, but in a few days the pain in the neck disappeared; the swelling, however, remained, although, according to the mother, it varied in size from day to day, and a week before he came to me it rapidly increased in size. The patient, on admission, was emaciated, pale, and anæmic, the hæmoglobin was 45 per cent., and the corpuscles numbered 4,000,000, there being no excess of white corpuscles. There was no fever, no œdema, and the urine was normal, but he complained of shortness of breath, palpitation, and pain across the abdomen on exertion, with occasional vertigo. The spleen was slightly enlarged, though its lower edge could not be felt, and the liver extended for an inch below the costal margin in the nipple line. There was slight enlargement of the inguinal, axillary, and submaxillary glands. The left submaxillary glands were greatly enlarged, forming a prominent mass in the left side of the neck, but the individual glands could not be distinguished. This mass was painful, freely moveable, and firm. He was sent to me as a case of lymphadenoma, but I suspected that the disease might be tuberculous and therefore tried tuberculin. The first four injections of ½ cubic centimetre, 1 in 1000, old tuberculin sent the temperature up to 102·2°F., 102·8°, 102·6°, and 102·4°, while a subsequent injection of one cubic centimetre, 1 in 1000, produced a temperature of 104·8°. There being, therefore, no doubt as to the nature of the case he was transferred to the wards of one of my surgical colleagues. (Chart shown).

It is a well-known fact that while physical signs often indicate with precision the seat of disease there is frequently tuberculous deposit elsewhere unaccompanied by symptoms of any kind and therefore overlooked. But here, again, with the aid of tuberculin we are able to ferret out and to localise unsuspected foci of disease, as in the following case.

CASE 3.—A man, aged 28 years, was admitted in the second week of January, 1891. He had had five attacks of hæmoptysis within 13 months, occurring at intervals of two or three months, and he had two anal fistulæ of nine months' duration. An examination of the chest showed entire absence of physical signs with the exception of *weakened respiratory murmur at the right base.* He was treated with the old tuberculin; 13 injections were given in all, the first of 2 cubic centimetres of 1 in 1000 on Jan. 16th and the last, 50 times stronger, on Feb. 17th. Before dismissal on March 13th the following report was made: "He

has had no hæmoptysis for six months and *râles which appeared along with much pain at the right base* after second injection gradually disappeared within a fortnight and there are now no physical signs. Both fistulæ have completely healed. There has been great improvement in the general health with an increase in weight of nine and a quarter pounds."

Many other cases of a similar nature might be mentioned. For example, in a case of lupus of the face the injection of tuberculin not only inflamed the face but also lighted up pain, tenderness, and swelling of the right elbow-joint, which, however, disappeared after a few injections, and in a case of phthisis, soon to be referred to, there were no evidences of disease in the right lung, and yet when the treatment was commenced moist râles appeared over an area of the size of a crown-piece near the right nipple, which, however, disappeared when the injections were given a few times. The curative power of tuberculin is well illustrated by the two cases already mentioned, but further proof of its beneficial influence is afforded by the cases which follow, the first two being cases of phthisis which benefited greatly from the treatment.

CASE 4.—A man, aged 34 years, was admitted into the Western Infirmary of Glasgow on Dec. 1st, 1897, on the recommendation of Dr. Service of Mossend. The only flaw in the family history was that one brother died from hæmoptysis at the age of 30 years. He had never been well since an attack of influenza three years before, and two years ago a short hacking cough set in, accompanied by a muco-purulent expectoration, in which he sometimes noticed blood. About this time also he began to lose flesh and during the last two years had lost two stones. For 18 months he had suffered from night sweats and during the last six had two attacks of hæmoptysis. For a few months, too, his strength had failed very much, and lately he had been almost unfit for work. Shortly before admission he was seen after a long interval by Dr. Service who wrote: "When I saw him I was greatly shocked at his appearance; he had the appearance of a dying man and came, as he said, that I might tell him the worst and how long he had to live." On admission he was found to be pale and emaciated, with no appetite, troubled with night-sweats and with much expectoration, in which tubercle bacilli were found in great abundance by Dr. A. R. Ferguson, but there was no fever. There were no physical signs in the right lung. Over the upper lobe of the left lung in front there were moderate flattening and defective movement, decided dulness, marked increase of vocal fremitus, and slighter of vocal resonance, whilst moist râles with tubular breathing were heard on deep inspiration. Tubular breathing was also detected in the supra-spinous region and moist râles between the scapula and the spine. At the base there were slight dulness and feeble breathing; indeed, there was no part of the lung which was altogether free from signs of disease. Dr. Service sent the patient to me with the view of having a course of tuberculin treatment, and although I did not consider the case a very hopeful one I decided to give him a chance with the new tuberculin, the only other treatment being cod-liver oil, up to three ounces per day. The first injection of $\frac{1}{10\,000}$th milligramme was given on Dec. 12th, 1897; the largest, two and a half milligrammes, on Feb. 26th, 1898; and the last of one milligramme on April 14th, the total amount used being about 31 milligrammes in 47 injections. From the time the treatment was commenced he improved steadily, more particularly as regards his general condition, and was dismissed at his own request on April 28th when the following report was taken; "The patient feels in good health; he can now read with comfort for hours whereas formerly his eyes soon got tired with reading; his appetite is completely restored; the night sweats have long disappeared; his cough and expectoration are almost gone; and he has gained about 1 st. 6 lb. in weight."

The after-history of the case is as follows. The last time I saw him was on July 14th when he visited me at my request. I found that he had not fallen off in any respect and that he had gained 7 lb. since dismissal, making a total gain of 2 st., his weight now being 12 st. 3 lb., which was his normal weight. He also stated that he could now do an ordinary day's work without fatigue. The improvement in the general was more marked than in the local condition. The expectoration showed that bacilli were still present, but in small numbers, and mostly found lying separately. The right lung remained healthy, while the condition of the left was as follows. The flattening, defective movement and dulness in front were not nearly so pronounced and the râles, though still present, were scanty; while between the scapula and spine they had entirely disappeared, only puerile breathing being heard. The dulness and feeble breathing at the base were hardly perceptible. In a letter which I received lately from Dr. Service he said: "When I saw him last at the beginning of this week he looked better than I have ever known him; he eats and sleeps well and has hardly any cough. I feel satisfied that, whatever his ultimate fate, he would now have been in his grave had it not been for the treatment which was followed. On my advice he is looking out for a situation abroad."

It will be observed that the tuberculin treatment was not steadily increased, owing partly to a change of assistant during its course and partly to the stock of tuberculin having temporarily run out. The full dose, too, was not reached, two and a half milligrammes being the largest injection instead of the maximum of 20 milligrammes, because the patient felt so well as to desire to return home. The improvement, however, was so marked as to show undoubtedly the beneficial effect of the new tuberculin treatment even in pretty advanced cases. (Chart shown.)

The following case may also be referred to, although it is still under observation.

CASE 5.—A young man, aged 17 years, was admitted on August 5th, 1899. The family history was satisfactory, although a maternal aunt died from consumption. He was never very robust, but enjoyed fair health until 14 months before I saw him, when he caught cold, and he has had a cough at intervals ever since. In the spring of last year his cough became aggravated, and was accompanied for the first time by expectoration, which was "tough and yellow," and on one occasion blood-stained; and about two months before admission he suffered for a few days from a stabbing pain over the left breast, aggravated on coughing or taking a deep breath. He had lost flesh and strength and colour, was easily tired, and had complained occasionally of night sweats and of palpitation and breathlessness on exertion. In the right infra-clavicular region there was some flattening, defective movement, dulness and crackling râles, which were also present over the upper two-thirds of the back. The expectoration was abundant, muco-purulent, and contained tubercle bacilli in great abundance. There was no fever. He was put upon generous diet with three pints of milk and three ounces of cod-liver oil per day. He also had a subcutaneous injection of 10 minims of a saturated solution of picrotoxin at bedtime and was kept as much as possible in the open air. The night sweats soon disappeared, he felt stronger, and increased in weight, and by Nov. 11th all trace of râles had disappeared in front, but they were still very decided behind. On Nov. 12th, therefore, a course of the old tuberculin was commenced and is being still continued. The last report was taken on Jan. 12th and is as follows: "There is still slight mucous expectoration, about one-eighth of what he had at first, containing tubercle bacilli, though in decreased numbers, but all trace of râles has disappeared and the physical examination of the chest reveals no definite physical signs. Since admission he has gained 1 st. 4½ lb., weighing 8 st. 12½ lb., being 9½ lb. above his normal weight before the commencement of his illness."

But the best class of cases for studying the effects of the tuberculin treatment is that of external tuberculosis, because we can see the results which ensue. One of my resident medical officers (Dr. John Aitken) has kindly at my request tabulated the particulars of 45 consecutive cases admitted into the Western Infirmary of Glasgow from April, 1889, to April, 1899, and without any preconceived opinions. The following is a summary of the results. Of these, 35 were illustrations of lupus vulgaris, seven of scrofuloderma, and three of lupus erythematodes. All were treated with the old tuberculin with the exception of one in which the new (T.R.) tuberculin was used, and the only other treatment consisted of generous diet and from two to three ounces of cod-liver oil daily.

Of the 35 cases of lupus vulgaris 23 were females and 12 were males. The oldest patient on admission was 59 years of age and the youngest 10 years, the average being 23 years. The age of the youngest patient when the disease commenced was seven years and that of the oldest 28 years, the average age at commencement being 13 years. The duration of the disease when the patient was admitted was in one case as low as five months, while in another it had been present for no less than 46 years, the

average duration being seven and a half years. In 32 of the 35 cases the face was involved, generally the nose prominently or exclusively, and, in several, other parts of the body or limbs were involved as well. In one case the right arm and neck were attacked alone, in one the left thigh and neck only, and in one the left leg was the part implicated. The duration of the tuberculin treatment varied from seven weeks to six months, but one patient, who was much improved when she left the hospital, could only be induced to remain for four weeks. The average duration of the treatment was four months. In 33 of the 35 cases the result is thus tabulated by Dr. Aitken: Improved, two; much improved, eight; very much improved, seven; almost well, four; well, 12; total, 33. It will thus be observed that improvement was invariable, and the number of cases dismissed well would have been much greater had we been able to induce some of the patients to remain longer under treatment.

Of the seven cases of scrofuloderma—five being males and two females—the oldest patient on admission was 60 years of age, the youngest 9 years, the average age being nearly 22 years, or omitting the one aged 60 years, fully 12 years. The age at which the disease commenced varied from one to 49 years, the average age being fully 12 years. Its duration on admission varied from four to 13 years, the average being nearly nine years. The parts affected were: (1) the right leg and thigh, (2) the thigh and buttocks, (3) the right thigh, (4) the left thigh and scrotum, (5) the right ankle, (6) the cheeks and right arm, and (7) the left side of the face and neck. It will thus be observed that while in lupus the face is almost always involved, in scrofuloderma it generally escapes, the lower segment of the body being predominantly implicated. The duration of the tuberculin treatment in the latter varied from three to five and a half months, the average being nearly four months. The results are thus tabulated by Dr. Aitken—improved, one; almost well, one; and well, five.

The three cases of lupus erythematodes all occurred in females. The first of those patients was 31 years of age on admission, the nose and left cheek being involved for a period of 14 years; the second was 18 years old, and the disease had implicated the face, ears, hands, and arms for two years; while the third, aged 23 years, had suffered from it for three years, the cheeks, head, and knuckles being implicated. The duration of the tuberculin treatment was two and three-quarter months, two and a half months, and one and three-quarter months, and they were all dismissed well. In all of them the local and constitutional reactions were well marked. (Temperature charts handed round.) These results will be a surprise to many, and are even to myself, because I have not been equally fortunate in all the other cases of the same disease, but one positive outweighs many negative results.

From an early period of my professional life I have always taught that lupus vulgaris and lupus erythematodes were manifestations of the strumous diathesis, a view which was long opposed by the majority of experts. At the present time, however, the tuberculous nature of lupus vulgaris is generally conceded, while lupus erythematodes is almost universally considered to be independent of the strumous diathesis. The main grounds for this opinion are that the tubercle bacillus has not been found in the latter affection and that tuberculin injections yield no reaction and do no good. The cases, therefore, which I have just referred to are of special interest as supporting my view that lupus erythematodes is a member of the tuberculous family.

Now whether is tuberculin—as far as its therapeutical effect is concerned—to be regarded in the light of a constitutional or a local medication? That it produces constitutional symptoms we know, as witness the fever, the headache, and the sickness which so often follow its administration; but these are injurious rather than otherwise and the less we have of them the better. That it produces marked local symptoms we see in cases of external tuberculosis, for we observe after each injection redness, swelling, serous exudation, and crustation, accompanied by elevation of temperature at the part, and I think it cannot be doubted that it is this inflammatory action which puts the enemy to rout just as an attack of erysipelas of the face often improves, if it does not remove, a tuberculous affection of that part. If this be true then it follows that we must regard tuberculin treatment in the light of a local remedy, but one which does not rectify, but rather intensifies, the constitutional vulnerability. From this it is obvious that, as we aim at permanent results, we must not rest content with injecting tuberculin only but must combine it with general treatment.

Some of my professional brethren who have carried out the tuberculin treatment on a considerable scale—especially in the case of external tuberculosis—agree with me as to the immediately beneficial results of such a course of treatment, but state that after the course is completed there is generally a recrudescence of the malady. Now I freely admit that if patients are treated by means of tuberculin injections alone and then dismissed from hospital to miserable homes, where they are deprived of light, pure air, abundant food, and tonic treatment generally, a recrudescence of the disease is all but certain. For we must never forget that two factors have to be taken into account in dealing with tuberculous disease: (1) the tubercle bacillus; and (2) the soil favourable to its life and development. So that, in order to obtain permanent results, it is obvious that, in addition to the use of tuberculin, means must be taken simultaneously to change the soil upon which the micro-organism flourishes, such as good and abundant nourishment, living as much as possible in the open air, and the use of tonics, cod-liver oil, and other anti-strumous remedies. This combined treatment, if judiciously carried out, has, in my experience, yielded excellent results and I commend it to you with confidence.

In view of economy of material, especially in reference to the more expensive T.R. tuberculin, the process of diluting the remedy so as to meet the requirements of varying doses is somewhat troublesome. The following is the scheme which has been adopted in connexion with my department in the Western Infirmary of Glasgow and which perhaps may prove useful to others.

METHOD OF DILUTING TUBERCULIN ADOPTED IN PROFESSOR McCALL ANDERSON'S WARDS IN THE WESTERN INFIRMARY OF GLASGOW.

(Drawn up by Dr. John Macewen, Resident Medical Officer.)

Doses of Old Tuberculin.

Make up with ½ per cent. carbolic.

(*a*) Make up 5 cm. to 5 c.c = 1·1000

Doses ½ c.c. = $\frac{1}{2000}$ c.c. = $\frac{1}{200}$ c.c.
1 c.c. = $\frac{1}{1000}$ c.c. = $\frac{1}{100}$ c.c.
1½ c.c. = $\frac{3}{2000}$ c.c. = $\frac{3}{200}$ c.c.

(*b*) Make up 10 cm. to 5 c.c. = 1·500

Doses 1 c.c. = $\frac{2}{1000}$ c.c. = $\frac{1}{50}$ c.c.
1½ c.c. = $\frac{3}{1000}$ c.c. = $\frac{3}{100}$ c.c.

(*c*) Make up 20 cm. to 5 c.c = 1·250

Doses 1 c.c. = $\frac{1}{500}$ c.c. = $\frac{1}{125}$ c.c.
1½ c.c. = $\frac{3}{500}$ c.c. = $\frac{3}{250}$ c.c.
2 c.c. = $\frac{4}{500}$ c.c. = $\frac{2}{250}$ c.c.

(*d*) Make up 50 cm. to 5 c.c. = 1·100

Doses 1 c.c. = $\frac{2}{500}$ c.c. = $\frac{1}{100}$ c.c.
1½ c.c. = $\frac{3}{500}$ c.c. = $\frac{3}{200}$ c.c.

(*e*) Make up 100 cm. to 5 c.c. = 1·50
($\frac{1}{10}$ c.c.)

Doses 1 c.c. = $\frac{1}{100}$ c.c. = $\frac{1}{10}$ c.c.
1½ c.c. = $\frac{3}{100}$ c.c. = $\frac{3}{20}$ c.c.

(*f*) Make up 200 cm. to 5 c.c. = 1·25

Doses 1 c.c. = $\frac{2}{500}$ c.c. = $\frac{1}{25}$ c.c.
1½ c.c. = $\frac{3}{500}$ c.c. = $\frac{3}{50}$ c.c.
2 c.c. = $\frac{4}{500}$ c.c. = $\frac{2}{25}$ c.c.

(*g*) Make up ½ c.c. to 5 c.c. = 1·10

Dose 1 c.c. = $\frac{2}{500}$ c.c. = $\frac{1}{10}$ c.c. = maximum.

Doses of New Tuberculin.

Make up with 20 per cent. glycerine solution.

(*a*) Make up 1 cm. to 5 c.c. = 1·5000

Doses 1 c.c. = $\frac{1}{1000}$ c.c. = $\frac{1}{100}$ mg. = $\frac{1}{1000}$ mg. = $\frac{1}{250}$ mg.
1½ c.c. = $\frac{3}{1000}$ c.c. = $\frac{3}{200}$ mg. = $\frac{3}{1000}$ mg. = $\frac{3}{500}$ mg.

(*b*) Make up 2 cm. to 5 c.c. = 1·2500

Doses 1 c.c. = $\frac{2}{1000}$ c.c. = $\frac{1}{250}$ mg. = $\frac{1}{1000}$ mg. = $\frac{1}{250}$ mg.
1½ c.c. = $\frac{3}{1000}$ c.c. = $\frac{3}{250}$ mg. = $\frac{3}{1000}$ mg. = $\frac{3}{250}$ mg.
2 c.c. = $\frac{4}{1000}$ c.c. = $\frac{1}{250}$ mg. = $\frac{1}{1000}$ mg. = $\frac{1}{125}$ mg.

(*c*) Make up 5 cm. to 5 c.c. = 1·1000

Doses 1 c.c. = $\frac{2}{1000}$ c.c. = $\frac{1}{250}$ mg. = $\frac{1}{1000}$ mg. = $\frac{1}{100}$ mg.
1½ c.c. = $\frac{3}{1000}$ c.c. = $\frac{3}{250}$ mg. = $\frac{3}{1000}$ mg. = $\frac{3}{250}$ mg.

(*d*) **Make up 10 cm. to 5 c.c. = 1·500**

Doses 1 c.c. = $\frac{5}{100}$ c.c. = $\frac{5}{10}$ mg. = $\frac{500}{1000}$ mg. = $\frac{1}{2}$ mg.
1½ c.c. = $\frac{7.5}{100}$ c.c. = $\frac{7.5}{10}$ mg. = $\frac{750}{1000}$ mg. = $\frac{3}{4}$ mg.

(*e*) **Make up 20 cm. to 5 c.c. = 1·250**

Doses 1 c.c. = $\frac{5}{100}$ c.c. = $\frac{5}{10}$ mg. = $\frac{500}{1000}$ mg. = $\frac{1}{2}$ mg.
1½ c.c. = $\frac{7.5}{100}$ c.c. = $\frac{7.5}{10}$ mg. = $\frac{750}{1000}$ mg. = $\frac{3}{4}$ mg.
2 c.c. = $\frac{10}{100}$ c.c. = $\frac{10}{10}$ mg. = $\frac{1000}{1000}$ mg. = 1 mg.

(*f*) **Make up 50 cm. to 5 c.c. = 1·100**

Doses 1 c.c. = $\frac{5}{500}$ c.c. = $\frac{5}{10}$ mg. = $\frac{500}{1000}$ mg. = $\frac{1}{2}$ mg.
1½ c.c. = $\frac{7.5}{500}$ c.c. = $\frac{7.5}{10}$ mg. = $\frac{750}{1000}$ mg. = $\frac{3}{4}$ mg.

(*g*) **Make up 100 cm. ($\frac{1}{10}$ c.c.) to 5 c.c = 1·50**

Doses 1 c.c. = $\frac{5}{1000}$ c.c. = $\frac{5}{10}$ mg. = $\frac{500}{1000}$ mg. = $\frac{1}{2}$ mg.
1½ c.c. = $\frac{7.5}{1000}$ c.c. = $\frac{7.5}{10}$ mg. = $\frac{750}{1000}$ mg. = $\frac{3}{4}$ mg.

(*h*) **Make up 200 cm. ($\frac{1}{5}$ c.c.) to 5 c.c. = 1·25**

Doses 1 c.c. = $\frac{5}{2000}$ c.c. = $\frac{5}{10}$ mg. = $\frac{500}{1000}$ mg. = $\frac{1}{2}$ mg.
1½ c.c. = $\frac{7.5}{2000}$ c.c. = $\frac{7.5}{10}$ mg. = $\frac{750}{1000}$ mg. = $\frac{3}{4}$ mg.
2 c.c. = $\frac{10}{2000}$ c.c. = $\frac{10}{10}$ mg. = $\frac{1000}{1000}$ mg. = 1 mg.

(*i*) **Make up ½ c.c. to 5 c.c. = 1·10**

Doses 1 c.c. = $\frac{5}{50}$ c.c. = 1 mg.
1½ c.c. = $\frac{7.5}{50}$ c.c. = 1½ mg.

(*j*) **Make up 1 c.c. to 5 c.c. = 1·5**

Doses 1 c.c. = $\frac{5}{10}$ c.c. = 2 mg.
1½ c.c. = $\frac{7.5}{10}$ c.c. = 3 mg.

Note, in making up larger doses, that $\frac{1}{10}$ c.c. = 1 mg.

With regard to the preparation of tuberculin to be preferred I must speak with some reserve, for while I have had much experience in the use of the old I have necessarily had comparatively little of the new tuberculin. I am inclined to think, however, that the latter is the safer of the two, because, in appropriate doses, it produces much less reaction, but for that very reason it is not so reliable as the former as a diagnostic test; and a serious objection to the new tuberculin is its cost, particularly when the higher doses are reached, which precludes its use amongst the poor except in the case of those received into hospital. The initial dose of the old tuberculin is from half to one cubic centimetre of 1 in 1000, that of the new one cubic centimetre of 1 in 5000; while the final dose of the first is one cubic centimetre of 1 in 10, and of the second two cubic centimetres undiluted. Now the final full dose of the old tuberculin costs less than a penny, while that of the new is 17*s.*, so that it is mainly a luxury for the rich. It is to be hoped, however, that the time is not far distant when it may be obtained at moderate rates.

DIFFERENTIATION IN DIABETES.

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ONE of the most striking features belonging to diabetes is its varied character in different cases, and anything that will assist in distinguishing one variety of the disease from another affords help in throwing light upon the prospect that may be looked for. In connexion with prognosis, therefore, the differentiation of cases is a matter of deep importance.

It has long been known that there is a class of case in which the eliminated sugar is solely derived from the food. It constitutes what has been appropriately named the "*alimentary*" form of diabetes. Without any theoretical consideration being involved it may be simply said that the carbohydrate matter of the food fails to be dealt with in the system in such a way as to be placed in a proper position for utilisation. As a consequence it becomes discoverable as sugar in the circulation and is thence discharged as waste material with the urine. Under normal circumstances it is conceded that neither the blood nor the urine is sensibly influenced by the food looked at in relation to carbohydrate matter. No matter what the nature of the food, there is a certain small amount of sugar uniformly existing in the blood, just as there is in the various solid structures of the body, and, moreover, this, as the result of recent investigation, I have found[1] not to consist exclusively of dextrose, as was formerly supposed, but, as in the case of the other component parts of the body, of a mixture of dextrose with a lower cupric oxide reducing sugar.

In the "*alimentary*" form of diabetes the erroneous state observed in connexion with the urine consists purely and simply of the abnormal presence of dextrose. As a result, when the urine is examined quantitatively by cupric oxide reduction and the polarimeter the figures given by the two methods stand in accord, or sufficiently so for the difference noted to fall within the limits of error of observation. There is nothing present in the urine to make them stand otherwise. It will be easily understood that for the object under consideration great accuracy of examination is required and that expert hands are needed. As a further point in connexion with this kind of urine it is found that when the dextrose has been removed by fermentation with yeast, and Fehling's solution no longer gives any reaction, the polarimeter also fails to afford any evidence of either right-handed or left-handed optical activity. Simply placing the urine aside in a warm situation for 24 hours with some broken-up German yeast ordinarily suffices for the complete removal of the dextrose. Yet another point to be noticed is that the urine belonging to the "*alimentary*" form of diabetes does not possess the abnormality which leads to the production of a colour reaction with ferric chloride.

In contrast to this simple form of diabetes we have the class of affection in which the dextrose in the urine is derived from a twofold source. As in the "*alimentary*" form of the disease, dextrose is present as a result of faulty carbohydrate assimilation. In addition it is present as a consequence of abnormal proteid disintegration. By faulty metabolism a tissue breaking-down occurs, attended with the production of sugar associatedwith other abnormal degradation products. Through this proteid disintegration consequences arise which do not follow the simple faulty assimilation of carbohydrate matter. Pernicious results, it is true, ensue from the sugar that reaches the system from mal-assimilated carbohydrate matter, but further and graver effects arise from the condition attended with the production of sugar from faulty degradation metabolism. It is to the toxicity of one or more of these products of disintegration accompanying the sugar that diabetic coma is attributable. Thus a form of danger is engendered which does not attend the abnormal existence of the sugar alone.

In defining this class of case the term "*grave*" has been made use of. This term, it must be admitted, expresses the truth from its associated point of view; but from the conception it gives rise to it does not felicitously fit in with what is desirable for general medical use. It seems to me that the term "*composite*" strictly meets the circumstances in relation to the condition existing and also stands appropriately in contrast to the "*alimentary*" or simple form of the complaint. I propose, therefore, to use it to distinguish the form of diabetes in which evidence is presented of tissue disintegration constituting a partial source of the dextrose eliminated from that in which the eliminated dextrose is derived solely from the food. It is, then, the presence in the urine, concurrently with the sugar, of the products of faulty tissue breaking-down that characterises the "*composite*" form of the disease.

The normal ultimate products of disintegration resulting from the oxidation going on in the body are ammonia, carbon dioxide, and water. With the faulty disintegration occurring in the "*composite*" form of diabetes a series of products not recognisable in healthy urine become discoverable. The chain in its successive stages of descent runs as follows: β-oxybutyric acid, diacetic, often called aceto-acetic, acid, and acetone. It is true that a traceable amount of the last-named principle is susceptible of being found in normal urine. Such is not the case, however, with the others. From this it would appear that the kind of degradation is not absolutely foreign to the healthy state, but its extent of occurrence must be very insignificant. It should also be mentioned that there are certain other morbid conditions, apart from diabetes, in which the same set of principles are met with in the urine, so that the line of retrograde metamorphosis at the foundation of their production is not, strictly speaking, peculiar to diabetes.

As I have said, traces of acetone are met with in normal urine, but the presence of the other principles may be regarded as pathological. They are indicative of abnormal proteid destruction and their amount may be taken as furnishing a measure of the extent of its occurrence. This is

[1] Journal of Physiology, 1899, vol. xxiv., p. 479.

an important point, as we are thus enabled to read off in a given case the magnitude of the morbid action in play in the direction in question.

I will proceed to show the manner in which the estimation can be effected by methods adapted for clinical application. It may first of all be mentioned that oxybutyric acid is not found except in association with diacetic acid and acetone, but the last two may be present in the absence of the first. The same position exists with regard to diacetic acid and acetone. With diacetic acid there is a co-existence of acetone, but with acetone not necessarily a co-existence of diacetic acid. Indeed, what has been said about the normal state of things affords an exemplification of this. It seems as if the metamorphosis when occurring only to a small extent passes through to acetone without sufficient stoppage on the way to permit of the intermediate products reaching the urine. With an occurrence of the metamorphosis upon a larger scale, first diacetic acid and then both diacetic acid and oxybutyric acid become manifest.

It is the levo-rotatory β-oxybutyric acid that is found, and the effect of its presence is to neutralise, in proportion to its amount, the right-handed rotatory effect of dextrose. In the absence of oxybutyric acid the results given by estimation with cupric oxide reduction and the polarimeter should stand pretty closely in accord. It is to be understood that a certain amount of allowance, which should not exceed about one, or it may be from this to two, per 1000, must be made for a possible discordance occasioned by manipulative error. In the presence, on the other hand, of oxybutyric acid its levo-rotatory action takes away from the dextro-rotatory effect produced by dextrose and thus a reading is given it may be much below that which would have resulted if the dextrose had stood alone, and consequently correspondingly below the figures given by cupric oxide reduction. By the difference noticed an indication is afforded of the extent to which abnormal proteid disintegration is occurring.

Supplementary information is obtainable by fermenting the dextrose away and then examining with the polarimeter. When the urine is thus treated the yeast—German yeast obtainable from a baker is the best to employ—only affects the dextrose, and in a warm situation this principle is usually found to have disappeared in 24 hours. Testing with Fehling's solution should be resorted to to ascertain if complete disappearance has occurred. The optical activity of the oxybutyric acid being now allowed to come into unopposed play a left-handed rotatory effect is shown by the polarimeter standing proportionate to the amount that is present. As I have previously mentioned, the urine belonging to the purely "*alimentary*" form of diabetes is optically inactive after the removal of its dextrose by fermentation.

Diacetic acid is susceptible of recognition by a simple method of chemical testing. Gerhardt of Berlin noticed as far back as 1865 that in some cases of diabetes and not in others a wine-red colouration of varying degree of intensity was produced on treating the urine with ferric chloride. At first it was not known to what principle this result was attributable, but subsequently it was ascertained to be due to diacetic acid and the depth of colour produced serves as a measure of the amount present. From the facility with which the presence of diacetic acid is thus disclosed Gerhardt's reaction affords a ready means of revealing the abnormal proteid disintegration associated with the "*composite*" form of diabetes. The colouration is not absolutely distinctive, being open to production with more or less resemblance by agents reaching the system from an external source, but absence of colouration may be accepted as affording reliable information of a negative nature. The ferric chloride requires to be added till the precipitate of phosphate of iron that is first produced is redissolved or a slight excess may be added and the precipitate removed by filtration. No need exists to test for acetone. The presence of oxybutyric and diacetic acids suffices to render evident the morbid action that is going on.

I have been dealing thus far only with the non-nitrogenous principles derived from the abnormal proteid destruction that gives rise to a portion of the eliminated sugar in the "*composite*" form of diabetes. The matter, however, may also be looked at from the nitrogenous side of the disintegrating molecule by following the nitrogen to its exit with the urine. Under natural circumstances the quantity of ammonia, distinct from urea, eliminated by the kidney is quite small. It exists in combination with an acid and is reckoned to amount to about one gramme per diem on a meat, and to less than 0·5 gramme on a vegetable, diet. According to the view entertained by physiologists the nitrogen of the disintegrating proteid matter passes in the first instance into ammonia. This, as formed, combines with whatever acid is present to take it, and carbonic acid stands as the most notable. If the process of downward metamorphosis stopped here we should be having carbonate of ammonia conveyed in quantity to the kidney for elimination. Instead of so pungent and obnoxious an agent, however, being left by nature to be eliminated a further change ensues. By synthesis and dehydration the carbonate of ammonia becomes metamorphosed into the neutral and inactive principle urea, and the liver is the organ in which there are grounds for believing this synthetic process mainly occurs.

It is possible for some of the ammonia produced to enter into combination with an organic acid and still for the result that has been described to ensue. It happens in this way. Organic acids are susceptible of undergoing oxidation in the system. By this oxidation they give rise to carbonic acid which takes their place in combination with the ammonia and thus, secondarily, carbonate of ammonia is generated, which constitutes the forerunner of urea. In the case of mineral acids, however, the result is different. Should it happen that a mineral acid is present for the ammonia to attach itself to the combination fails to be in a position for the construction from it of urea; and, as a result, the ammonia passes undisturbed in its combined state into the urine instead of appearing there as urea. It is only the carbonate that can be synthesised into urea. The sulphate, phosphate, and chloride cannot be touched by the synthesising power, and such being the case ammonia escapes in proportion to the amount of available mineral acids present to combine with it and carry it off.

The fixed bases take precedence of ammonia in appropriating the mineral acids. Under ordinary circumstances the fixed bases and acids are so nearly balanced as to leave but little of the latter for entering into combination with ammonia, hence the small amount of ammonia finding its way into normal urine. With the active tissue breaking down occurring in the "*composite*" form of diabetes the sulphur and phosphorus of the disintegrating proteid becoming oxidised yield an extra amount of acid without a corresponding fixed base to combine with it. Hereby the conditions are supplied for the formation of an ammonia compound which passes in an unchanged state into the urine. It is in this way that the ammonia existing in the urine stands in relation to tissue disintegration. In fevers and other affections attended with increased tissue disintegration an increased amount of ammonia correspondingly appears in the urine.

It may be considered that the quantity of ammonia eliminated ought to be something under about one gramme per diem. More than this may be taken as meaning undue proteid disintegration, and in proportion to the extent of this disintegration the danger in diabetes increases of the occurrence of the coma belonging to the disease through the toxicity of one or other of the collateral products. Somewhat widely differing records of the amount of ammonia found to have been excreted by diabetics are given. Külz's [2] maximum observed is a little over nine grammes per diem; Rumpf [3] has noticed five, six, and seven grammes per diem; and Naunyn [4] says that the amount rarely exceeds seven grammes per diem and that whenever the quantity reaches four grammes his experience teaches him that coma sooner or later occurs. He refers to Stadelmann's record of 11 grammes as standing in quite an isolated position. Threatening coma, Naunyn asserts, may often be warded off by the free administration of carbonate of soda to counteract the effect of the augmented acidosis by the supply of a fixed alkali to meet the increased production of acid, but it has not been shown that any permanently beneficial result has issued.

No easy method adapted for ordinary clinical use exists, it must be said, for the quantitative determination of ammonia as a constituent of urine. One great obstacle is the facility with which ammonia is generated from urea. Although, therefore, applicable as a measure of tissue disintegration manipulative difficulties stand in the way, except with suitable laboratory provision, of obtaining the information that is wanted. This is no great loss, however, as what is needed

[2] Klinische Erfahrungen über Diabetes Mellitus, Jena, 1899, p. 408.
[3] Quoted from Külz, loc. cit., p. 394.
[4] Der Diabetes Melitus, in Nothnagel's Specielle Pathologie und Therapie, Wien, 1898, p. 297.

is obtainable through the chain of non-nitrogenous products that I have referred to.

Looking, then, at a case that may happen to be before us, means exist, without bringing in the question of ammonia, for diagnosing whether it belongs to the "*alimentary*" or whether it has advanced into the "*composite*" form of diabetes. Upon this point may hinge the view to be taken with regard to the future prospects of the patient, a matter that must be looked upon as of supreme importance. With the foundation I have supplied to work upon I will proceed to consider separately the two forms of the complaint and will, in the first place, speak of the "*alimentary*" class of case.

(To be continued.)

CONTRIBUTION TO OUR KNOWLEDGE OF URIC ACID SALTS.

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IN chemical text-books two classes of uric acid ($\overline{U}$) salts are generally described—viz., the neutral ($(C_5H_2N_4O_3)$ M_2 or shortly $M_2\overline{U}$) and acid or biurates ($(C_5H_2N_4O_3)$ HM or $HM\overline{U}$).[1] We find, in addition to these in physiological and pathological works, a third class of urates mentioned, having the hypothetical composition of one molecule of biurate loosely combined with one molecule of uric acid, of the general formula $(C_5H_2N_4O_3$ HM). $(C_5H_4N_4O_3)$ or shortly $(MH\overline{U})$ $\overline{U}$. It is to this last-mentioned class of salts, the so-called quadriurates,[2] that we have more especially directed our attention. A very important rôle has been ascribed to these salts by Sir William Roberts who regarded them as being in a special sense the physiological salts of uric acid and as "constituting the only form in which uric acid subsists in the living body in the normal state."[3] Upon this assumption theories important both to the physiologist and physician have been built, but upon examining this subject critically it seemed to us that the actual existence of these salts was by no means established.

The quadriurate hypothesis rests upon results derived from the analysis of normal urinary deposits, and as these have further a wider physiological interest it seemed to us to be advisable to give shortly the history of the work previously done in this connexion.

HISTORY.

Berzelius was the first to observe the formation of crystals from amorphous urinary deposit under the influence of water.[4] These crystals he regarded as urate of ammonium. Heintz held the amorphous urinary deposit to consist of a mixture of the urates of ammonium, sodium, calcium, and occasionally potassium and magnesium.[5] He also pointed out that different sediments yielded different amounts of ash, varying from 2·98 to 8·02 per cent. He regarded the simultaneous precipitation of these three urates as the cause of their amorphous character and the calcium salt as an essential factor in the production of the same. Scherer, in criticising Heintz's paper, concludes that the sediment consists of a mixture of acid urates and free uric acid.[6] Lehmann confirmed the observation of Berzelius and identified the crystals set free by water as uric acid.[7] Scherer, in a later paper,[8] analysed four samples of urinary deposit and found that it was a complex mixture and that the amount of each of the bases and the sum of all of them were very variable. The next worker in this field was Bence Jones.[9] He analysed three urinary deposits obtaining different results in each case. He confirmed the important observation of Scherer in that he found in each sample the uric acid present in excess of the quantity required to form biurates with the bases. The excess of this non-combined uric acid was, however, not constant and in no apparent proportion to the amount of combined acid. The proportions were sample No. I. as 1 : 1·72; No. II. as 1 : 0·46; No. III. as 1 : 1·04. Although the proportions between the free and combined uric acids differed largely in the individual analyses it happened, by mere accident, that the average of free to combined in the three was as 1 : 1·1. Bence Jones subsequently proceeded to work out the proportion between the combined and free uric acid in the deposits analysed by Scherer. Viewed from this standpoint Scherer's figures gave discordant numbers, as follows:—Sample I., as 1 : 2·04; II., as 1 : 0·17; III., as 1 : 0·42; and IV., as 1 : 2·08. Bence Jones gives the average of these proportions as 1 : 1·1,[10] and does not seem to have attached any importance to this coincidence, but concludes: "It is very evident from these analyses that a mixture of different amounts of urates and uric acid constitutes the amorphous sediment of the urine." In spite of this, however, he seemed impressed that this proportion so "nearly approximated" (*sic*) to the "proportion hypothetically required by a salt whose molecule consisted of one molecule of uric acid combined with one molecule of acid urate." In pursuance of this idea he attempted to demonstrate the formation of such a salt under artificial conditions and succeeded in preparing compounds which were decomposed under the influence of water into biurate and uric acid. He produced, however, very slender evidence of the existence of a third class of uric acid salts, having the constitution of quadriurates, but in spite of this concludes "that quadriurates exist occasionally under natural conditions in amorphous urinary deposits, and can also be made artificially."

The subject remained in this condition until it was taken up by Sir William Roberts.[11] This observer, while acknowledging the inadequacy of the proof adduced by Bence Jones for the existence of quadriurates, endeavoured to prepare them himself by a modification of Bence Jones's methods. He was unable to demonstrate their presence in the natural amorphous urinary sediment but prepared amorphous urates, using human urine and various saline solutions as solvents for uric acid and to the compounds thus obtained ascribed the constitution of quadriurates. The analyses, however, upon which he relied as proving this composition are from the standpoint of the modern chemist inadequate, as will be shown later. Upon these insufficiently established data he proceeded to enunciate an elaborate hypothesis with regard to the presence and transformation of the so-called quadriurates in the tissues and blood. These views seem to have been more or less accepted and passed into many text-books,[12] although they have received no experimental confirmation.

The only experimental criticism which we have been able to find is by Pfeiffer.[13] This observer points out that the substances upon which Roberts founded his quadriurate theory were either sediments (and as such pathological) or of artificial origin, also that in the pathological sediments the presence of quadriurates could not be demonstrated. He himself further demonstrated the presence of phosphates in some of the so-called quadriurates prepared according to Roberts and pointed out that the quadriurates could only *ex hypothesi* exist in distinctly acid media, which condition does not obtain in the juices and secretions of the body except in the case of the urine and sweat. Minkowski[14] regards the assumption that uric acid exists in the blood in the form of a quadriurate as "unwarranted." In a recent

[1] This nomenclature is misleading in so far as the reactions actually exhibited by the salts in question do not correspond to it. The neutral salts react strongly alkaline and the so-called acid salts, which so far have been accredited with a neutral reaction, have an alkaline one (vide infra).

[2] In an earlier article on Piperidine as a Uric Acid Solvent (THE LANCET, July 23rd, 1898, p. 198) we mentioned that we had not been able to convince ourselves of the existence of the so-called quadriurates. This paper may be regarded as the outcome of further work in this direction.

[3] Croonian Lectures, 1892, p. 38.

[4] Lehrbuch der Chemie, vol. ix., 1840, p. 418.

[5] Annalen der Chemie und Pharmacie, 1845, p. 45. Müller's Archiv, 1845, p. 230.

[6] Cannstatt's Jahresberichte, 1845, p. 156.

[7] Lehrbuch der Physiologischen Chemie, vol. ii., p. 355.

[8] Cannstatt's Jahresberichte, 1849. We were unable to find this paper in the original; our analyses are quoted from Bence Jones (vide infra).

[9] Journal of the Chemical Society, 1862, vol. xv., p. 201.

[10] Upon re-calculation it will be found, however, that this proportion is as 1 : 1·8.

[11] Croonian Lectures, 1892.

[12] Neubauer and Vogel, Analyse des Harns, 1898; Halliburton, Text-book of Chemical Physiology and Pathology, 1891, p. 732; Allen, Chemistry of Urine, 1895, &c.

[13] Berliner Klinische Wochenschrift, 1894, 913, 934.

[14] Leyden's Handbuch der Ernährungstherapie, Band II.,

monograph on uric acid[15] Schreiber questions the explanatory value of the quadriurate theory as far as concerns the phenomena of gout.

For the sake of clearness we purpose dividing this paper as follows: I. Examination of Sir William Roberts's chemical methods and critical repetition of his experiments. II. Natural and artificial urinary sediments. III. Decomposition by water of substances containing uric acid and urates, and new method of preparing them. IV. Physico-chemical observations on uric acid and its salts and the significance of the same. V. Conclusions.

I.

Sir William Roberts for the analysis of his so-called quadriurates relies upon the following method, which he terms "water-analysis."[16] The dry deposit was heated to about the boiling point with about 1000 times its weight of distilled water. The uric acid which crystallised out after 48 hours, was filtered off and weighed, the quantity remaining dissolved in the liquid being taken in regard. The filtrate which contained the biurate was decomposed with hydrochloric acid and the uric acid estimated as above. This procedure is open to the following objections. The estimation of uric acid by means of precipitation with hydrochloric acid (Heintz's method) is now obsolete, its inaccuracy and absolute unreliability for scientific purposes having been shown by many investigators.[17] The quantity of uric acid kept in solution and estimated at 0·0055 gramme per 100 cubic centimetres, although added to the free uric acid—the uric acid separated from the mixture of uric acid and biurate by water—does not seem to have been subtracted from the uric acid kept in solution as biurate. As the weight of substance in 100 cubic centimetres was 0·1 gramme, the error incurred amounts to 5·5 per cent. It is obvious that this error would affect seriously the amount of uric acid calculated as biurate. Further, Sir William Roberts seems to have overlooked the fact that all uric acid salts deposited from solution and dried at 36° C. (this being the case in his experiments) contain varying quantities of water constitutionally bound, amounting in the case of the magnesium salt to 35·9 per cent. The analyses made by the Croonian lecturer refer to substances dried at blood-heat, and therefore containing (*vide infra*) relatively high percentages of water. This fact, together with the errors of method mentioned above, seemed in our opinion to necessitate a repetition of his experiments.

We attempted to prepare so-called quadriurates by working under exactly the same conditions as Sir William Roberts, and obtained what, according to him, should correspond to a quadriurate of the following bases: sodium, potassium, ammonium, magnesium, and calcium. The substances were all dried at 36° C. and subsequently submitted to quantitative analysis, which consisted in estimating the amounts of water, bases, and uric acid. The water was estimated by drying at a temperature of 100° C. (if not otherwise stated) till the weight was constant. The bases were estimated in the usual manner. In order to obviate the errors by loss, &c., attendant upon the ordinary methods of uric acid estimation we determined its amount by nitrogen estimation (no other nitrogenous substances being present) and subsequent calculation. The nitrogen was estimated by Gunning's modification of Kjeldahl's method.[18] Each substance was examined microscopically with regard to the influence of water upon it.

SODIUM URATES.

According to Sir W. Roberts sodium quadriurate is formed from uric acid by the action of the acetates[19] and dimetallic phosphates[20] of this base. We prepared different samples by each method, using 3 per cent. and 5 per cent. solutions of the acetate of sodium, and 2 per cent. and 5 per cent. solutions of the phosphate.

A. Salts formed by the acetate method.—These salts were obtained in the following manner. The 3 per cent. and 5 per cent. solutions, as the case might be, were brought to the boiling point and then shaken up for a minute or so with an excess of uric acid, filtered hot, and the filtrate cooled rapidly on ice. A voluminous precipitate formed at once, the reaction of the liquid being slightly acid. The precipitate was filtered by the aid of a suction pump, washed with dilute and subsequently with absolute alcohol and ether and dried at blood temperature. These various manipulations were performed as quickly as possible. In the case of the 3 per cent. acetate solutions it was found that the water-free substances consisted almost entirely of uric acid. The first sample contained 99·41 per cent. uric acid to 0·59 per cent. sodium, the second sample contained 98·99 per cent. uric acid to 1·01 per cent. sodium. This fact has already been observed by Lipowitz who demonstrated *qualitatively* the nature of the precipitate.[21] In the case of the 5 per cent. acetate solutions the loss of water at 130° C. was estimated in the substance dried previously at 30° C. and found to be 8·08 per cent. (Table I.).

The "calculated composition" of the substance at 130° C. was arrived at by the following method of reasoning. 5·23 per cent. of sodium requires 38·20 per cent. of uric acid to form sodium biurate. If this quantity be subtracted from the total amount of uric acid (90·71 per cent.) the remainder (52·51 per cent.) represents the free uric acid. The amount of water lost at 130° C. (as well as retained at that temperature) is in molecular proportion to the sodium biurate corresponding to the sodium found. The same method of calculating was used in the following tables.

Another salt prepared in the same way with a 5 per cent. solution of acetate of sodium gave the following results (Table II.).

B. Salts formed by the phosphate method.—According to Sir William Roberts, "solutions of the common dimetallic phosphates of soda, &c., ... also take up uric acid very freely at blood heat, and the combination formed in this case in the first instance is likewise a quadriurate."[22] No analytical confirmation of this assumption is to be found. As Sir William Roberts does not give any directions as to the strength of the phosphate solution most suitable for this reaction we made some preliminary experiments on this point, using 1 per cent., 2 per cent., and 5 per cent. solutions. These solutions were treated with an excess of uric acid under constant agitation at blood heat for 20 minutes, filtered and cooled rapidly on ice. In the case of 1 per cent. solutions no immediate precipitation occurred, but took place on slightly acidifying with phosphoric acid, in which case the precipitate consisted of pure uric acid crystals. On another occasion a precipitate formed upon keeping the solution on ice for a considerable time without the addition of phosphoric acid. The precipitate showed under the microscope the characteristic uric acid crystals and was found upon analysis to consist to the extent of 97 per cent. of free uric acid. Similar observations have been made by Lipowitz[23] and especially by Liebig.[24] The latter regarded the phosphates as being the agents by which uric acid was kept in solution in the urine.

That pure uric acid is deposited if a solution of biurate of sodium, saturated at the body temperature, be mixed with a solution of monosodium phosphate and cooled, was shown by Voit and Hofmann[25] and confirmed by Bunge.[26] The conditions in their experiments are practically the same as those obtaining in our own, in which as the first products of interaction between uric acid and dimetallic phosphate, biurate and monometallic phosphate are formed, these latter reacting again as in the experiments of Voit and Hofmann and Bunge.

We next prepared urates of sodium by digesting 2 per cent. and 5 per cent. solutions of dimetallic sodium-phosphate with excess of uric acid at blood heat in the same way as before. The composition of the substances is shown in Table III.

From the above tables it is evident that neither by the acetate nor by the phosphate method could precipitates be obtained corresponding in composition to the hypothetical quadriurates. In the case of the phosphate method a fact of considerable interest is the constant presence of phosphoric acid in the urates formed. We were also able by the qualitative examination of many other similarly produced substances to demonstrate the presence of phosphoric acid whenever the precipitate was not entirely composed of uric acid. This latter fact, although evidently overlooked by Sir

[15] Über die Harnsäure, Stuttgart, 1899, pp. 107, 108.
[16] Loc. cit., p. 18.
[17] For complete literature of this subject see Warneke, Dissertation Göttingen, 1898.
[18] Zeitschrift für Analytische Chemie, 1889, p. 89. The uric acid used in our experiments was absolutely pure, being purified three times by Bensch's methods.
[19] Loc. cit., p. 26.
[20] Ibid., p. 85.
[21] Liebig's Annalen, Band xxxviii., p. 348.
[22] Loc. cit., p. 85.
[23] Loc. cit.
[24] Liebig's Annalen, Band l., p. 161.
[25] Sitzungsberichte der Bayrischen Akademie, 1867, p. 279.
[26] Bunge, Lehrbuch, p. 327.

TABLE I.—SODIUM SALT, ACETATE METHOD (LOT 1).

—	Substance dried at 130° C.			Composition of substance dried at blood temperature 36° C.
	Analytical figures.*	Calculated composition.		
Total uric acid ...	90·71 per cent.	—	—	The loss of water at 130° C. corresponds to 2 mol. of water calculated to the amount of biurate present. Found: 8·08 per cent.; calc.: 8·18. The substance is not a quadriurate, but a mixture of uric acid and sodium biurate, the latter holding 3 mol. of water, retaining 1 mol. H_2O at 130° C.
Free uric acid ...	—	52·51 per cent.	—	
Combined uric acid	—	38·20 per cent.	NaHŪ 43·43 per cent.	
Sodium	5·23 per cent.	5·23 per cent.	require for 1 mol. H_2O.	
Water...	4·06 per cent. (By difference.)	4·06 per cent.	4·09 per cent.	

* In order to obtain complete analytical data we originally intended to estimate the free uric acid directly by titration against a standardised piperidine solution (Comp. Brit. Med. Journ. 5, II. 98). But it was found that owing to the solvent action of piperidine on the biurate present exact results could not be obtained.

TABLE II.—SODIUM SALT, ACETATE METHOD (LOT 2).

—	Substance dried at 100° C.			Composition of substance dried at blood heat (36°).
	Analytical figures.	Calculated composition.		
Total uric acid ...	93·33 per cent.	—	—	The substance lost at 100° C. 2·66 per cent. water corresponding to 1 mol. of water calculated to the amount of sodium biurate present. Found 2·66 per cent.; calculated 2·45 per cent. The substance is therefore not a quadriurate, but a mixture of Ū and biurate, the latter holding 1½ mol. water at 36°, of which ½ mol. is retained at 100°.
Free uric acid ...	—	70·62 per cent.	—	
Combined uric acid	—	22·71 per cent.	NaHŪ 25·82 per cent.	
Sodium	3·11 per cent.	3·11 per cent.	require for 1½ mol. H_2O.	
Water	3·56 per cent.	3·56 per cent.	3·65 per cent.	

TABLE III.—SODIUM SALTS, PHOSPHATE METHOD.

—	Analytical figures.		Calculated composition.				Conclusion concerning the composition of substance dried at 36° C.	
	2 per cent.	5 per cent.	2 per cent.		5 per cent.		2 per cent.	5 per cent.
Total uric acid ...	77·13	73·25	—	—	—	—	The substance is not a quadriurate but a mixture of phosphate of sodium, free uric acid, and biurate of sodium, the latter holding 1½ mol. of water constitutionally bound.	The substance lost at 100°C. 5·52 per cent. of water, corresponding to 1 mol. of water, calculated to the amount of biurate present: Found, 5·52 per cent.; calculated 5·45 per cent. The substance is therefore not a quadriurate, but consists of a mixture of phosphate of sodium, free uric acid, and biurate of sodium, the latter holding 1½ mol. of water, of which 1 mol. is given off at 100° C.
Free uric acid ...	—	—	22·65	—	22·34	—		
Combined uric acid	—	—	54·48	NaHŪ 61·94 require for 1½ mol. of water.	50·91	NaHŪ 57·88 require for 1½ mol. of water.		
Sodium	9·71	10·65	7·46		6·97			
Phosphoric acid ...	3·47	5·98	—		—			
Sodium-phosphate	—	—	6·94	—	11·96	—		
Water	—	—	8·47 (By difference.)	8·79	7·82 (By difference.)	8·17		

TABLE IV.—POTASSIUM SALTS, ACETATE METHOD.

—	Analytical figures.					Calculated composition.									
	3 per cent.			5 per cent.		3 per cent.						5 per cent.			
	I.	II.	III.	I.	II.	I.		II.		III.		I.		II.	
Total uric acid ...	75·91	81·49	—	84·57	75·60	—	—	—	—	—	—	—	—	—	—
Free uric acid ...	—	—	—	—	—	3·85	—	47·42	—	—	—	50·11	—	31·62	—
Combined uric acid	—	—	—	—	—	72·06	88·79 KHŪ required for 1 mol. water.	34·07	41·98 KHŪ required for 3 mol. water.	—	KŪH 1H$_2$O required.	34·46	KHŪ 42·46 required for 2 mol. water.	43·98	KHŪ 54·19 required for 3 mol. water.
Potassium... ...	16·73	7·91	17·60	8·00	10·21	16·73		7·91		17·60	17·41	8·00		10·21	
Water...	7·36	10·60	8·65 Loss at 130°.	7·43	14·19	7·36	7·72	10·60	10·95	8·65	8·04	7·43	7·38	14·19	14·13
	By difference.			By difference.											

Conclusions concerning the composition of substance dried at 36° C.				
3 per cent.			5 per cent.	
I.	II.	III.	I.	II.
The substance is nearly pure biurate of potassium, consisting of 3·85 per cent. uric acid and 96·15 per cent. of biurate, the latter holding 1 mol. H_2O constitutionally bound.	The substance is not a quadriurate, but a mixture of uric acid and biurate, the latter holding 3 mol. of water constitutionally bound.	The substance is pure potassium biurate, holding 1 mol. of water constitutionally bound.	The substance lost at 100° C. 3·36 per cent. of water, corresponding to 1 mol. of water calculated to the amount of KHŪ present. Found, 3·36 per cent.; calculated, 3·69 per cent. The substance is therefore a mixture of Ū and KHŪ, the latter holding 2 mol. of water.	The substance is not a quadriurate but a mixture of uric acid and biurate, the latter holding 3 mol. of water constitutionally bound.

William Roberts, was observed as early as 1844 by Golding-Bird[27] and independently by Pfeiffer,[28] who made some quantitative estimations.

POTASSIUM URATES.

The potassium salts were prepared in a manner analogous to the sodium compounds, potassium acetate being used. Two strengths of potassium acetate solutions were taken—namely, 3 per cent. and 5 per cent. The precipitates were filtered, washed, and dried in the usual way. The analytical results are expressed in Table IV.

From this table it is evident that in no case was a precipitate formed to which the constitution of potassium quadriurate could be ascribed.

AMMONIUM URATE.

According to Sir William Roberts a quadriurate of ammonia is obtained by the method described below.[29] The product, however, was not submitted to analysis nor was any further proof of its existence mentioned. Following the directions we prepared the hypothetical quadriurate as follows: 5 grammes of uric acid were boiled in a litre of a 1 per cent. solution of liquor ammoniæ. The solution was filtered hot and rapidly cooled on ice. An abundant stream of carbonic acid was then passed through it and the precipitate obtained was washed and dried in the usual way. All these manipulations were carried out as rapidly as possible. Table V. gives the result of the analysis.

TABLE V.—*Ammonium Salt.*

—	Analytical figures.	Calculated for ammonium biurate + 2 mol. H_2O.	Calculated for ammonium quadriurate.
Total uric acid ...	76·00 per cent.	76·02 per cent.	95·18 per cent.
Ammonia	8·27 ,,	7·69 ,,	4·82 ,,
Water	15·73 ,, (By difference.)	16·29 ,,	—

As will be seen from this table the salt dried at 36° C. is not a quadriurate, but ammonium biurate + $2H_2O$.

CALCIUM AND MAGNESIUM URATES.

According to Sir William Roberts the quadriurates of calcium and magnesium are prepared in the following manner.[30] The calcium salt is obtained by dissolving 0·5 gramme of uric acid in 100 cubic centimetres of cold lime water. To the filtered solution acetic acid was added, drop by drop, until neutralisation was approached. An abundant precipitate was then thrown down, which was caught on a filter, washed with rectified spirit, and dried. Magnesium quadriurate was prepared by digesting uric acid and calcined magnesia both in excess and distilled water at blood heat with frequent agitation for about ten minutes, the mixture was filtered warm, and the filtrate was rapidly cooled under a running tap of cold water. The precipitate was filtered, washed, and dried in the usual manner. In neither case is any analysis given in support of the supposed quadriurate composition of the respective product. We followed exactly Sir William Roberts's directions and prepared two samples of the magnesium and one of the calcium salt. Tables VI. and VII. express the results of the analyses.

TABLE VI.—*Magnesium Urates.*

—	Analytical results. I.	Analytical results. II.	Calculated for magnesium biurate + $12H_2O$.	Calculated for magnesium quadriurate.
	Per cent.	Per cent.	Per cent.	
Total uric acid ...	61·68	60·10	60·01	96·54
Magnesium ...	4·45	4·38	4·05	3·46
Water	33·87	35·52	35·94	—
	By difference.			

It will be seen from the above table that neither of these salts is a quadriurate and that whereas No. II. corresponds

$$\overline{U}$$

almost exactly to the formula $\overline{Mg}$ + $12H_2O$, No. I.

$$\overline{U}$$

approaches the required figures very nearly, containing only a slight excess of uric acid.

TABLE VII.—*Calcium Urate.*

—	Analytical results.	Calculated composition.		—
	Per cent.	Per cent.		
Total uric acid	76·51	—	—	The analysis of this salt shows that it consists of a mixture of uric acid and calcium biurate, the latter holding 14 mol. of water constitutionally bound. At 100° C. it lost 12·00 per cent. of water corresponding to 8 mol. of water calculated on the amount of biurate present. Calculated, 11·84 per cent.; found, 12·00 per cent.
Free uric acid	—	49·04	—	
Combined uric acid	—	27·47	30·47 per cent. calcium biurate require for 14 mol. H_2O	
Calcium ...	3·29	3·29		
Water ...	20·20	20·20	20·72.	

II.

NATURAL AND ARTIFICIAL URINARY SEDIMENTS.

So far as we are aware the only analyses approaching to completeness of naturally occurring urinary sediments are those made by Scherer and Bence Jones.[31] Since the number of these is somewhat scanty and the most recent was made in 1862 we thought it would be advisable to add to their number, especially as we had the opportunity of getting a constant supply of naturally-occurring deposit from the same person. The quantity necessary for analysis was collected in the following way. The urine directly upon being voided was rapidly cooled and the deposit allowed to settle. It was then filtered off by the aid of a suction pump, washed with alcohol and ether, and dried at 36°C. The fractions thus collected were mixed[32] together and kept in a stoppered bottle until sufficient for the purposes of analysis was obtained. The analysis gave the following results:—

Natural Urinary Sediment.

	Analytical numbers.		Calculated to water, &c., free substance.
Uric acid	73·40	.....	95·69
Ammonia	0·46	.....	0·59
Potassium	1·74	.....	2·26
Sodium	0·23	.....	0·29
Magnesium	0·06	.....	0·08
Calcium	0·34	.....	0·44
P_2O_5	0·48	.....	0·63
Water, colouring matter, and loss	23·29	.....	—

The amount of phosphoric acid present almost exactly corresponds to the amount required to satisfy the calcium (required for 0·63 per cent. phosphoric acid 0·53 per cent. calcium; found 0·44 per cent.). If the amount of uric acid be calculated which is required to form biurates with the remaining bases it will be found to be 19·33 per cent., this subtracted from the total uric acid leaves 76 36 per cent. free uric acid. It is therefore evident that the sediment in question consisted to a large extent of free uric acid mixed with the biurates of sodium, potassium, ammonium, and magnesium, and some phosphate of calcium. The proportion of combined to free uric acid is about : : 1 : 4.

With regard to the relative proportion of the different

[27] London Medical Gazette, 1844, p. 685.
[28] Loc. cit.
[29] Loc. cit., p. 27.
[30] Loc. cit., p. 27.
[31] Vide supra. These analyses seem to be unknown to Dr. Luff, who recently (Pathology and Treatment of Gout, London, 1898, p. 85) gives a partial analysis of a urinary sediment derived from febrile patients, which we shall consider later.
[32] Before adding each fraction, however, to the common stock it was examined microscopically with regard to its uniformity, absence of uric acid, or other crystals, and behaviour with water. If it showed any crystalline constituents (oxalates or phospates, &c.) or failed to give the formation of uric acid crystals upon the addition of water, it was rejected. It is interesting to note that each fraction weighed not more than 0·03 gramme, although originally it had a bulky appearance.

metals Table VIII. will be of interest as giving the result of all the analyses so far published in this connexion[33]:—

TABLE VIII.—*Relative Percentage Proportion of Metals in Natural Urinary Sediments.*

—	Authors'.	Scherer.				Bence Jones.			Luff.
		I.	II.	III.	IV.	I.	II.	III.	
Ammonium ...	18·33	42·26	70·73	70·47	42·26	24·20	37·29	20·45	46·0
Potassium ...	70·19	42·32	11·78	27·54	42·32	56·05	41·96	64·29	14·0
Sodium	9·00	11·41	17·49	1·69	11·41	19·75	20·75	15·26	40·0
Magnesium ...	2·48	—	—	—	—	—	—	—	—

It will be seen from the above table that the proportion of the metals varies in each case. Generally the amount of ammonium is very high. The two exceptions to this are our own analysis and Bence Jones's No. III., which latter also in the proportion of the other bases approaches most nearly to our own. The high ammonium percentage is probably to be explained by decomposition. The same irregularity as in the proportion of the different metals is also evident in the case of the free and combined uric acid (*vide supra*). Sir William Roberts[34] admits that his analysis, which was not published, of naturally occurring amorphous urinary sediments, gave results discordant with the quadriurate theory. This he explains by decomposition having taken place during the process of collection and to the fact that the sediments were derived from different urines. (In the case of the sediments collected and analysed by us these objections do not apply.) Nevertheless, he assumes that in perfectly natural urine and sediment uric acid exists in the form of a quadriurate. As proof of this he brings forward only *one* analysis of an *artificially prepared* sediment which he regards as the counterpart of the natural one. The process by which he obtained the sediment is essentially the same as the methods described above for the preparation of potassium and sodium quadriurate, except that urine was taken as a solvent instead of water. These experiments we repeated, following exactly Sir William Roberts's directions[35] (potassium acetate process). Two samples were prepared, different urine being used. Table IX. gives the results of the analysis:—

TABLE IX.—*Artificial Urinary Deposits.*

—	Analytical numbers.				Actual composition.		
	Lot I.		Lot II.		Lot I.		Lot II.
	—	Water-free.	—	Water-free.	—	—	—
Total uric acid	84·66	86·78	87·26	89·14	Free $\bar{U}$	17·47	10·17
Ammonium ...	0·33	0·34	3·98	4·53	$NH_4\bar{U}$	3·70	49·30
Potassium ...	9·33	9·56	3·48	3·96	$KH\bar{U}$	50·36	20·85
Sodium	3·24	3·39	2·07	2·34	$NaH\bar{U}$	28·00	19·41
Water, colouring matter, &c.	2·44	—	12·21	—	—	—	—

From this table it will be seen that the precipitate formed under the above conditions is not of constant composition (as is also the case in the normal sediments). The total quantity of the bases as well as their individual amounts vary within wide limits. Further, the quantity of free uric acid is also variable and in neither instance satisfies the quadriurate hypothesis. The relative percentage of the bases and the amounts of free and combined uric acid are given in Table X. The high proportion of potassium in the first analysis is explained by the fact that the urine, derived from the same subject as the urinary sediment analysed above, was originally rich in potassium, which was further increased by the method used (addition of potassium acetate). In the second analysis the urine originally was rich in ammonium.

[33] These figures are calculated from the analysis of the respective authors, with the exception of the last, which is simply copied.

[34] Loc. cit., p. 16.

[35] Loc. cit., p. 18.

TABLE X.—*Relative Percentage Proportion of Metals in Artificial Urinary Sediments.*

—	I.	II.
Ammonium	2·56	41·79
Potassium	71·93	36·53 parts per 100.
Sodium	25·51	21·68
Combined uric acid	69·31	78·97
Free uric acid	17·47	10·17

Luff, with the idea of supplementing Sir W. Roberts's analysis of artificial urinary sediment, estimated the metals in a mixed specimen of urinary sediment derived from fever patients. From his results (given above) he draws two definite conclusions. First, that generally the proportion of bases in urinary sediments is that found in his one analysis. This appears to us unjustified in the light of the analytical figures of other observers and our own results given above. Secondly, that the bases are present in the form of quadriurates. This conclusion is still more unjustified in that no estimation of the uric acid was made and thus no ground for his subsequent theoretical calculations exists.

III.

DECOMPOSITION BY WATER OF SUBSTANCES CONTAINING URIC ACID AND URATES AND NEW METHOD FOR PREPARING THEM.

We have mentioned the characteristic decomposition under the action of water of natural amorphous urinary sediment and the explanation given to this phenomenon by Bence Jones, and subsequently Sir W. Roberts upon the assumption of the existence of a true and definite chemical compound of biurate and uric acid (one molecule of each). Our own experiments have demonstrated that in naturally occurring and artificially prepared urinary sediments and urates the uric acid does not occur in this form, and hence that there is no ground for the quadriurate hypothesis. These substances, consisting of mixtures of uric acid and biurates, show under the influence of water the formation of uric acid crystals.[36] We shall in the future refer to them as decomposable urates.

The decomposition of these substances by water may best be seen under the microscope. For this purpose it is always advisable to have a relatively large quantity of water. If a very small quantity of the substance be intimately mixed with water on a slide and observed under the microscope, in a very short time the formation of transparent crystals will be seen. These crystals assume either ovoid or rectangular plate form, sometimes intermediate forms are observed, and occasionally the ovoid-shaped crystals pass completely into rectangular plates, probably owing to the influence of the dissolved biurate.

Since the substances showing this decomposition are mixtures of uric acid and biurate as shown by our preceding analyses, this reaction cannot be regarded as characteristic (and as such proving the presence) of quadriurates.[37] This being the case it should follow that any mixture consisting of biurate and uric acid should show this reaction which must be regarded as the dissolving out by water of the more soluble constituent, biurate, and the leaving behind of the less soluble one, uric acid.

That, however, another factor comes into play is evident from the following experiment. If a mixture in any proportion of finely powdered crystalline uric acid and crystalline biurate of sodium be treated with water under the microscope, the dissolving out of the biurate certainly takes place, but the uric acid remaining behind does not assume the characteristic crystalline form, shown by it when liberated from amorphous decomposable urates. It seems therefore that a necessary factor for this reaction is the presence of uric acid in an amorphous form. This obviously happens in the formation of the decomposable urates by the described methods in which an intimate mixture of uric acid and biurates, both in the amorphous

[36] Some of the naturally occurring amorphous urinary sediment examined by us, however, did not show this decomposition with water. This has been observed by Bence Jones and Pfeiffer. Some of the artificially prepared urates consisting as the analysis showed of nearly pure uric acid were also, from obvious reasons, not decomposed in this manner.

[37] Sir William Roberts frequently observed that substances not quadriurates showed nevertheless this reaction with water.

form, is precipitated from solutions by rapid cooling. If we examine more closely the *modus operandi* of this process we find that the first stage consists in the establishment of a state of equilibrium between the uric acid and the salt in question which gives rise to the formation of biurate in an amount proportional to the original contents of the solution in the salt; the second stage consists in the saturation of the liquid with uric acid. The amount of this substance taken up (apart from the ordinary physical conditions) depends on the quantity of the salt originally present in the solution. By varying the percentage of the salt corresponding amounts of biurate and uric acid are precipitated on cooling. The precipitate may thus range in composition from pure uric acid to pure biurate. From this it follows that it is possible to hit [38] by accident conditions which will produce a precipitate consisting of uric acid and biurate in equimolecular proportions—i.e., a so-called quadriurate. We succeeded in bringing further proof of the correctness of the above view by preparing decomposable urates by an original method. This consisted in taking solutions saturated at boiling point with biurate and treating the clear filtered solution with an excess of uric acid also at boiling point. Assuming the quadriurates to have the characteristics ascribed to them by Sir William Roberts this method of preparation necessarily excludes their formation in that they are, according to him, decomposed by boiling water. Upon cooling on ice the solution obtained above, an amorphous precipitate was formed which, after filtering, washing, drying, &c., in the usual way, showed under the microscope the characteristic decomposition. Two samples of the potassium compound prepared in this manner were submitted to analysis. The percentage results are shown in Table XI. :—

TABLE XI.—*Artificial Decomposable Potassium Urates.*

—	Analytical figures.		Calculated composition.			
	I.	II.	I.		II.	
	Dried at 130° C.	Dried in vac.				
Total uric acid	82·53	78·96	—	—	—	—
Free uric acid	—	—	30·53	—	31·40	—
Combined uric acid	—	—	52·00	KHU̅ 63·82 require for 1 mol. H_2O	47·56	KHU̅ 57·60 require for 2 mol. H_2O
Potassium ...	11·82	10·04	11·82		10·04	
Water	5·65	10·00	5·65	5·57	10·00	10·15
	By difference.					

Sample I. was dried at 130° C. and lost at that temperature 11·00 per cent. of water. This amount corresponds to two molecules of water calculated to the biurate present (calculated 11·16 per cent.) The substance consists of a mixture of uric acid and potassium biurate, the latter holding three molecules of water. Sample II. was dried in vacuo and lost 5·20 per cent. of water corresponding to one molecule of water calculated to the amount of biurate present (calculated 5·12 per cent.). The substance therefore, as in the former case, was a mixture of uric acid and potassium biurate, the latter holding three molecules of water. It will be seen that the potassium biurate moiety of this mixture contains three molecules of water, loses one in vacuo, and one at 130° C. The last molecule is strongly bound, but appears to be slowly driven off at 150° C., at which temperature, however, the substance itself is partly decomposed, assuming a brownish tint. We also prepared the corresponding decomposable sodium urate,[39] the analysis of which is shown in Table XII.

[38] We presume this is what Sir William Roberts means by "a somewhat nice adjustment," p. 17, loc. cit.

[39] The exact procedure was as follows. Five grammes of crystallised sodium biurate were boiled with 600 cubic centimetres of water, filtered hot; the filtrate was boiled again with five grammes of uric acid. On cooling rapidly on ice a very small quantity of crystalline uric acid at first appeared, which was rapidly filtered off. The filtrate gave upon prolonged cooling an amorphous precipitate, which after being filtered and washed in the usual manner, gave the decomposition with water.

TABLE XII.—*Artificial Decomposable Sodium Urate.*

—	Analytical figures.	Calculated composition.	
Total uric acid	75·31 per cent.	—	—
Free uric acid	—	13·96 per cent.	—
Combined uric acid	—	61·35 ,,	69·75 per cent. require for 2½ mol. of water.
Sodium	8·40 per cent.	8·40 ,,	
Water	16·29 ,,	16·29 ,,	16·44 per cent.

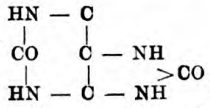
The substance lost at 130° C., 9·80 per cent. of water, corresponding to one and a half molecules calculated to the amount of biurate present. The substance, therefore, is a mixture of uric acid and biurate of sodium, the latter holding two and a half molecules of water, of which one molecule is retained at 130° C.

From the preparation and analysis of the above substances it is obvious that artificial mixtures of uric acid and biurate may be obtained which are decomposable by water with the formation of uric acid crystals, and that therefore this behaviour does not prove the presence of a quadriurate.

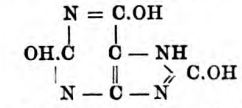
IV.

PHYSICO-CHEMICAL OBSERVATIONS ON URIC ACID AND ITS SALTS AND THE SIGNIFICANCE OF THE SAME.

The now generally accepted constitutional formula of uric acid (first suggested by Medicus [40] and subsequently definitely established by the researches of E. Fischer [41]) is the following:—



Although this formula is in accordance with most of the reactions exhibited by this substance it does not provide an explanation of the existence of the now known six monomethyl-uric acids,[42] nor of its acid nature. A formula, however, fulfilling these requirements (as well as some others into which it is beside our purpose to enter here) is the following:—



which represents a tautomeric form of the acid. These two may be conveniently distinguished as the lactam and lactim formula respectively. According to Fischer the two substances corresponding to the above formulæ actually exist, the amorphous uric acid, as liberated from its salts in cold solution by acids, corresponding to the lactim form. This latter is distinguished from the crystalline form by its property of holding molecularly bound water. The crystals formed gradually from the amorphous acid, through the influence of water on standing, still contain two molecules of water according to the observations of Fritzche [43] and Matignon.[44] These transparent crystals probably represent an intermediary stage between the lactim and lactam forms, still containing two or one NC(OH) groups. By gentle heat, or on standing over sulphuric acid, they loose these two molecules of water and at the same time their transparency, being completely transformed into the lactam form.[45] It is the lactim form, however, which explains the salt-forming capacity of the acid.

The uric acids salts also occur in two distinct physical states, namely the amorphous and crystalline. We should explain this by assuming that these two forms are due to the presence of the tautomeric groups, the amorphous (iactim form) containing still two or one NC(OH) group, the crystalline (lactam form) containing only NH.CO groups.

[40] Liebig's Annalen die Chemie, 175, 243.

[41] Bericht der Deutschen Chemischen Gesellschaft, vol. xvii., 1776, &c.

[42] Ibid., vol. xxxii., 2721.

[43] Journal für Praktischer Chemie, 17/56, 1839.

[44] Bulletin de la Société Chimique (3), 11, 571, 1894.

[45] A proof for the lactam formula of the crystalline uric acid might be seen in the behaviour of the dry substance with dry ammonia, under which conditions, owing to the absence of OH groups (according to this hypothesis), no salt is formed. Compare Bensch, Liebig's Annalen, 54, 201.

This assumption would explain the results of Baumgarten [46] who observed the transformation of the amorphous sodium biurate (precipitated from saturated solutions of sodium biurate by sodium phosphate or other salts) into the crystalline without any change of chemical composition, except the loss of half a molecule of water. We can confirm Baumgarten's observations in that we prepared sodium biurate in a different way, namely, by dissolving uric acid in weak (from ½ to 1 per cent.) solutions of sodium bicarbonate at boiling point. If such a solution be rapidly cooled amorphous sodium biurate is deposited (spheroids), on slowly cooling, however, the salt comes down in the crystalline form (needles). The former changes into the latter on standing or under the influence of water. Analysis of these two modifications showed that they were both pure biurate of sodium, the amorphous containing (air dry) two molecules the crystalline one and a half molecules of water. The existence of these two forms of urates, the transformation of the one into the other, and the above view with regard to their constitution may have an important chemico-pathological bearing. The extent to which the one must be regarded as physiological and the other as pathological, as well as the study of the conditions under which their transformation takes place in the liquids of the body, may obviously be of interest in gout so far as concerns the physico-chemical basis of this disease.

With regard to the state of uric acid and its salts in solution the following observations and remarks may be of interest. That uric acid is a very weak acid is known. Crystalline uric acid has no influence on moistened litmus paper in the cold. Hot saturated solutions of absolutely pure uric acid, however, show a distinct acid reaction with sensitive litmus and lacmoid. This is explained by the fact that in solutions the acid has the tautomeric form as described above. Uric acid being such a weak acid it is to be expected, according to modern physical chemistry, that its salts would be dissociated in solution. A qualitative proof of this would be that the solution showed an alkaline reaction. The neutral salts actually show a strongly alkaline reaction and are probably therefore dissociated in solution. Heretofore the so-called acid urates have been regarded as possessing a neutral reaction, probably upon the authority of Bentsch,[47] who first described and analysed them. We found, however, by carefully testing the reaction of solutions of these salts in an absolutely pure state with sensitive indicators that they reacted alkaline. The indicators we made use of were purified sensitive litmus, lacmoid, methyl-orange, Congo red, and rosolic acid. It was possible to show that for instance a solution of sodium biurate containing 1 in 100,000 reacted still distinctly with lacmoid, methyl-orange, and Congo red.[48] A further proof of the dissociation of these urates in dilute solution is the fact that the actual appearance of characteristic uric acid crystals can be observed under the microscope if pure acid urates of potassium or sodium, be treated with a large excess of water. This phenomenon is different from that exhibited by decomposable urates in so far as it requires a longer time—from half an hour to an hour. These observations require quantitative proof which would probably be afforded by the application of physico-chemical methods (molecular weight estimation in solution, &c.).

From what we have said above it follows that it is by no means necessary to assume that uric acid circulates in the fluids of the body as a urate, the small quantity present being probably hydrolytically dissociated. Other considerations have led O. Minkowski to hold a similar view.[49] This he expresses as follows: "After all we have no reason to assume that uric acid circulates in the blood as an alkaline compound."

V. CONCLUSIONS.

I. There is no evidence of the existence of a third order of uric acid salts—i.e., quadriurates—either in the artificial or natural amorphous urinary deposits or in the fluids of the body. Under these circumstances we regard it advisable to discontinue the use of the term "quadriurate."

II. The substances obtained artificially under the conditions supposed to produce quadriurates consist of mixtures in varying proportions of uric acid and biurates, or of pure uric acid or pure biurates alone.

III. Natural amorphous urinary deposits consist of a mixture of uric acid with urates of sodium, ammonium, potassium, calcium, and magnesium (containing in most cases in addition phosphoric acid).

IV. The property of some natural and artificial amorphous urates of showing the formation of uric acid crystals under the influence of water is due to the dissolving out of the more soluble biurate moiety and a change in physical state of the remaining uric acid.

V. Any theory concerning the pathology or treatment of gout or the uric acid diathesis built upon the assumption of the existence of quadriurates requires reconsideration.

VI. The existence of two forms of uric acid (the tautomeric lactam and lactim form) may explain the variation in the physical and physiological behaviour of this acid and its salts.

[46] Liebig's Annalen, 117, 109.
[47] Loc. cit.
[48] In all these tests the reaction exhibited by the salt solution was compared with that shown by an equal volume of pure distilled water and the same indicator.
[49] Ernährungstherapie bei Harnsäure-Diathese. V. Leyden's Handbuch der Ernährungstherapie, vol. ii., p. 507.

THE MANAGEMENT OF THE ANÆSTHETIC IN CASES IN WHICH RESPIRATORY IMPEDIMENT EXISTS.[1]

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IN bringing before this society a communication dealing with certain incidents in surgical anæsthesia I propose to group my remarks about certain cases taken from note-books. The cases which I have selected are those in which from various reasons either anatomical, pathological, or other, interference with respiration occurs. It is clear that if the obstruction exists at the time of giving the anæsthetic and gives evidence of its presence the anæsthetist is placed upon his guard. However, it often happens, as the sequel will show, that although such obstruction exists it does not reveal itself until the progress of anæsthesia introduces a new factor in the problem, while in other cases no obstruction exists as such until the anæsthetic itself leads to its production. All agree that do what we may sooner or later some of us are bound to meet with cases which present symptoms or phenomena in the progress of narcosis which confound our hard-and-fast rules while they jeopardise the lives of our patients. I have arranged some such cases and hope to reason out the causation of the difficulties which they present and to suggest how to obviate serious embarrassments.

As it is important to make my meaning clear it may be well to explain what should be understood by certain phrases. "Primary circulatory failure" may be taken to connote a depression of the circulation which is preceded by no interference with respiration. It is no doubt impossible, speaking physiologically, for any foreign gases or vapour to enter the blood through the epithelium of the lung cells without producing some influence—probably local—upon respiration. It is, I submit, quite possible for marked circulatory depression to arise without there being any apparent anterior respiratory changes of an injurious character. "Secondary circulatory failure" may be taken to mean a circulatory depression consequent upon and causally related to interference with the functions of respiration. It is the respiratory embarrassments which culminate in this secondary circulatory failure with which I propose, to-night, to deal.

There is, I take it, no doubt that the pulmonary circulation is materially assisted or hindered according as (1) the thoracic movements are maintained and are competent; and as (2) the gaseous composition of the blood passing along the veins and arteries of the pulmonary circulation is maintained at its physiological standard. The undue deprivation of oxygen and the excessive venosity of the blood do undoubtedly tell in the direction of impeding the pulmonary circulation and of hampering the efficient and effectual emptying of the heart. Obstruction to respiration may occur at various points and be due to various causes. Let us first consider those arising in the upper air passages. In some the cause is evident, it is well recognised and

[1] A paper read before the Harveian Society of London on May 17th, 1900.

easily detected and requires very little to be done in order to remedy it. In other cases this is not so.

Obstructed breathing due to blocking in the upper air passages commonly arises from enlarged tonsils with a partially occluded naso-pharynx, or from pharyngeal abscess, enlarged tongue, or old adhesions between the posterior wall of the pharynx and the tissues about the faucial arches. These cases may, in many instances, however, be extremely difficult to manage. Two cases I will mention as extreme examples of the condition. In both the patients were very young children and both presented extreme degrees of difficulty and danger.

CASE 1.—The patient was under three years of age and the tonsils were so large as to meet; they were inflamed and their surfaces were covered with glutinous mucus through which the air passed with difficulty. The child was being asphyxiated and tonsillotomy was determined upon as being necessary to give relief. As the little patient was very weakly and had to be in the sitting posture I gave him ether, keeping the mouth open throughout the inhalation. The choice of the anæsthetic was further made with the view of producing a very transient narcosis in case the protective effect of the reflexes was required. The operation was entirely successful and the ether did not add to the respiratory difficulties.

CASE 2.—In this case the child was aged two years and had had very frequent convulsions. The naso-pharynx was badly blocked by tonsils and growths and the little patient was liable to severe convulsive seizures at any moment. I gave the A.C.E. mixture at first until the child was dazed and subsequently ether and oxygen, with an excellent result. The removal of the obstruction had the most salutary effect upon the general condition of the patient.

There is a large group of cases in which difficulties arise through some mechanical interference with respiration. In these the use of anæsthetics may not be the actual cause, but it has the direct effect of intensifying the obstruction. Of these I have notes of many cases and I propose to read a few. The obstruction in some instances is not noticeable before the anæsthetic is commenced; of this class we have goitres without noticeable stridor and more especially in those cases in which the neck of the patient is short and thick and the tissues are hard and resistant. One sees the acme of this condition in the disease called angina Ludovici when the throat is surrounded by brawny hard structures which fix the jaw and practically render the trachea and larynx a rigid inelastic tube. In bad cases of lymphadenoma and lymphadenitis a similar necklet of dense tissues is met with. But it is by no means these obvious conditions themselves warning the anæsthetist of rocks ahead which alone are met with. It is frequently in thick-set plethoric persons whose chests are rendered more or less immobile by emphysema or fat that the greatest dangers arise. A typical instance of this occurred in my practice not long ago.

CASE 3.—The patient, a stout woman of between 40 and 50 years of age, was operated upon for mammary cancer. Beyond the fact that the patient had a short neck, high shoulders, and a slightly rigid chest there was no obvious reason for fearing difficulty. She had nitrous oxide gas followed by ether and she passed into the third degree of narcosis without much difficulty, although there was more duskiness than I liked. She was given air frequently and the head was kept high. The blueness increased without interference with chest movements or pulse. It was then found that owing to the rigidness of the muscles of her neck and jaws the chin could not be advanced nor could the mouth at first be opened. However, after some seconds the teeth were separated and the mouth was opened. The face was now purple and the signs of asphyxia were well marked. Rhythmic traction on the tongue was done and the surgeon was warned that laryngotomy might be required. He remarked that the operation would under the circumstances be well-nigh impossible. The tongue was swollen and all the faucial tissues were engorged. I passed my finger over the tongue and by hooking up its base with the epiglottis succeeded in starting respiration. As soon as air began to enter the chest the spasm passed slowly off in a few moments and the operation was continued and brought to a successful termination. The ether was replaced by chloroform which was not well taken. I kept a gag separating the jaws during the rest of the administration.

Two cases have been reported recently in which ether was given to patients with goitres and in both cases death from asphyxia resulted. I think when obvious impediment to respiration exists in the upper air passages, as in the case of goitrous persons, chloroform given from Junker's inhaler is far safer than ether, because when the patient under ether coughs or is salivated the cyanosed state is much aggravated. I cannot, however, disguise from myself that chloroform has its dangers in such cases and that if difficulties arise under its use the patient is placed in great jeopardy as the highly venous blood will certainly render him more receptive to a lethal dose. I have notes of cases belonging to this category in which the condition of obstruction occurred in the puffy venously congested tissues of chronic alcoholics. In such persons the respiratory difficulty is associated with two conditions equally difficult to relieve. In the first place most alcoholics have a badly acting heart; one believes the muscle to be degenerated and one knows that its rhythm is irregular and often chaotic. It is certainly, in most instances, extremely ill-equipped to do its work in the face of increased resistance, such increased resistance as arises when the pulmonary circulation is disorganised. But in the second place these patients are usually extremely restless and prone to muscular rigidity and clonus. I remember one instance which at the time caused me great anxiety and chagrin.

CASE 4.—The patient, an old man, had to undergo a rectal operation. He was sodden with drink, with puffy, swollen face and an extremely irregular, feeble heart, and all his tissues were engorged with blood. Under chloroform he struggled furiously and his condition was alarming while with ether the restlessness and the cyanosis were so excessive that it was with the greatest difficulty that he could be kept sufficiently still for the surgeon's purposes, and this in spite of the anæsthetic being given freely and care being taken to avoid asphyxial complications.

Of course, such cases are exceptional, but many occur which differ only in degree from those described. The practical lessons which these experiences have taught me may be summed up as follows. Every person must be treated as a problem, it may be put thus: Given the patient, find the best anæsthesia and the most suitable way of administering it. I am sure only experience can solve the problem. In cases of goitre I should in most cases regard chloroform as the safest anæsthetic. As the patient passes under its influence stridor usually becomes marked. This I believe arises from the fact that the trachea has lost much of its rigidity as a result of the pressure to which it has been subjected, and as soon as the muscles and intermuscular fasciæ become lax owing to the chloroform the support they usually give to the trachea is lost and so it collapses. Certainly in exophthalmic goitre, and to a less degree in other forms of thyroid disease, there is a great tendency to salivation and secretion of mucus, which under ether becomes so accentuated as to cause danger from blocking the bronchi and pulmonary alveoli. The importance of giving a minimal dose of an anæsthetic in these cases cannot be overestimated. When the patient has passed into the anæsthetic degree and the skin incision is made the chloroform should be given less freely although continuously. The method of giving chloroform intermittently is never advisable. It nearly always brings on vomiting and often dangerous faintness. The patient is for ever hovering between a condition of over-narcotisation and one of resumption of consciousness. It is one great advantage of inhalers such as Junker's over the open method that you can give chloroform in great dilution but maintain the continuity of the inhalation. With skill and judgment the drop-bottle method with a Schimmelbusch's mask will give a good result, but it is inferior to a regulating inhaler.

Posture, again, is one of our difficulties in surgical anæsthesia. It often happens in many operations that the position of election—namely, when the patient is lying on his back with his head turned to one side and slightly extended—cannot be adopted. In cases of laminectomy, in operations undertaken for the relief of empyema, in Estlander's operation, and in Kraske's operation for high removal of gut the patient is placed more or less on his face. Also in some gynæcological procedures when the semi-prone posture is adopted. I have found that when chloroform is given for these cases the hampered chest movements, especially when the patients are heavy and loosely knit, produce some cyanosis. In prolonged operations this may become very marked unless the precaution is taken to adapt the dose of the anæsthetic to the changed condition of the respiration. Nor can one, I think, wish for a

better guide than the rhythm and force of respiration in these cases. Provided the patient is completely anæsthetised before the change of posture is made it will be found that as the breathing becomes less deep and the rhythm is altered so will the patients require less and less anæsthetic to maintain them in a state of workable anæsthesia. Thus if one judges that the respiration is, say, of half the normal force half the normal dose of anæsthetic must be given, and so on. I have notes of several cases in which the thoracic movements were extremely slight owing to pathological pressure on the spinal cord high up.

CASE 5.—In this case it was found that even the most dilute vapour of chloroform produced such alarming respiratory symptoms that eventually I was obliged to desist. I tried several times giving a breath or two of the anæsthetic, working with an extremely low percentage vapour of chloroform, but on each occasion the same procession of events occurred and the respiration stopped. There was in this case a high lesion of the spinal cord, and no thoracic movements were made as the intercostal muscles were paralysed, and the diaphragm being also unable to act the breathing, such as it was, was maintained solely by abdominal movements. As soon as the chloroform began to act even these movements were checked with the above result. I tried in this case a method which I have subsequently always adopted. Oxygen is given freely coincidently with chloroform, and the chloroform vapour or the oxygen is pushed according to the requirements of the case.

CASE 6.—In a case similar to the last a man, about 30 years of age, suffering from a growth pressing upon the cord with almost complete respiratory paralysis, was seen by me in consultation to determine whether in his case an anæsthetic could be given without seriously endangering his life. I decided that it could, and accordingly I gave him oxygen with chloroform with the best result. I administered oxygen continuously and exhibited chloroform from my modified form of Junker's inhaler.

In operations on the thorax the obstruction to respiration is of another kind than those mentioned above. In these cases it often happens that there is "one lung" respiration, a condition which renders the patient more liable to danger from obstructive causes, either pre-existing or developed during operation. When the lung or lungs contain large quantities of pus and when this is associated with severe spasmodic cough the most alarming dyspnœa will often develop as soon as the patient becomes anæsthetic. The cause of this dyspnœa is probably the accumulation of thick muco-pus in the larger bronchial tubes which instead of being expectorated is aspirated back into the pulmonary alveoli. It is essential in all cases of thoracic operations when the abscess or source of the pus communicates with a bronchus that the patient should be anæsthetised to the second degree of narcosis only. This ensures analgesia without establishing abeyance of the protective reflex of coughing. A deeper narcosis is fraught with the gravest danger. The dyspnœa in these cases is further due to irritation of the over-sensitive mucous membrane of the air passages and this makes it extremely important that a judicious choice of the anæsthetic should be made. In cases of empyema, bronchiectasis, and pulmonary abscess with free expectoration I have found that even the purest ether given with the utmost care will provoke much cough and distressing dyspnœa. Chloroform usually is well tolerated if it is given with extreme dilution and slowly. The irritation and danger of giving ether in some lung cases are evidenced in the following case.

CASE 7.—A boy, aged about 10 years, suffering from empyema and copious expectoration, was given ether by the rectum by me. He went under quietly, but as soon as the absorption from the bowel became rapid he grew very dyspnœic and cyanosed. He was at once inverted, the anæsthetic was stopped, and the sound lung was compressed. A considerable quantity of pus escaped from his mouth and the danger was passed.

The case just given occurred some years ago when I had not realised the necessity in using rectal etherisation in thoracic cases to limit the narcosis far short of surgical anæsthesia. The main danger of these cases after that just described is undoubtedly connected with the change of position of the patient resorted to by the surgeon to enable him to complete his manipulations. It must always be remembered that during consciousness the patient's experience prompts him to adopt the position of maximum ease of respiration and this posture should as far as possible be maintained throughout the anæsthesia. If the body is suddenly turned towards the side of the healthy lung there is danger that the pus accumulated in the diseased lung during the anæsthesia will flow across and seriously interfere with respiration. Even when this does not take place I have repeatedly seen faintness and threatened syncope occur when the patient is rolled over towards the sound side. These dangers are increased where there is any extreme degree of cardiac displacement.

The violent cough and suffocative state which in my experience nearly always accompany any extensive opening into the pleura constitute a further danger and one which may prove fatal if the anæsthesia has been allowed to become at all profound. While speaking of perils occurring during anæsthetising in thoracic operations I would mention the danger in these cases of performing Silvester's method of artificial respiration should breathing fail. In a number of instances published in the journals in which this restorative measure was recorded as having been adopted a fatal conclusion to the case occurred. A moment's consideration will show that the effect of this method must be to pump the pus and mucus into the trachea and the mouth and then to aspirate it back again into both lungs alike, leading to the effectual crippling of the sound lung. It is safe to compress antero-posteriorly the sound lung, but it is safer to perform forced respiration of oxygen by a pair of bellows or Fell's apparatus.

In summing up the teaching which the cases cited afford I think that the following propositions are worth tabulation. 1. The individual patient possesses a certain respiratory power. Individuals differ enormously in this respect, and it is the business of the anæsthetist to make himself acquainted with what I may perhaps be permitted to term the "personal respiratory equation of the patient." 2. This individual power of respiration is interfered with by every form of anæsthetic, more by some than by others, but under any anæsthetic the power of inspiration and expiration is lessened and in some cases to a very marked degree. 3. This lessened respiratory power may be of little or no consequence under normal conditions, but it becomes a factor of grave danger should any intercurrent cause of respiratory obstruction occur. For example, a delicate child breathing with difficulty through a blocked naso-pharynx is placed profoundly under chloroform. The mouth is opened and the jaw is depressed while the tongue is forced back. The respiratory power would under these circumstances be wholly inadequate to overcome the increased difficulties of respiration. The child would die and the death would be put down to heart failure, and the same occurs in cases of goitre, of malposition of the patient's body, of thoracic operation, &c. Thus it appears that all the cases cited fall into line and reveal to us not only the evident, but also the insidious, dangers associated with them. The object which I had in view in bringing this group of cases before you was to point out these dangers and to suggest the remedies and precautions appropriate to them.

Mortimer-street, W.

BILATERAL DISLOCATION OF THE HIP, PRESUMABLY CONGENITAL.

BY THOMAS PHILIP COWEN, M.D., B.S. LOND.,
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THE patient, a man, aged 30 years, suffering from mania with incoherence, was found on admission to the Lancashire County Asylum, Prestwich, to have an old dorsal dislocation of both hip-joints. His friends said that they were positive that the deformity was caused by injury at about the age of seven years and they asserted that there was not the slightest deformity, limp, or difficulty in walking before this. The injury referred to was a most severe thrashing inflicted by a drunken man over the back and hips accompanied with other violence. There was a marked deformity of both hips, but especially of the right. The figures (from photographs) show the condition well. The

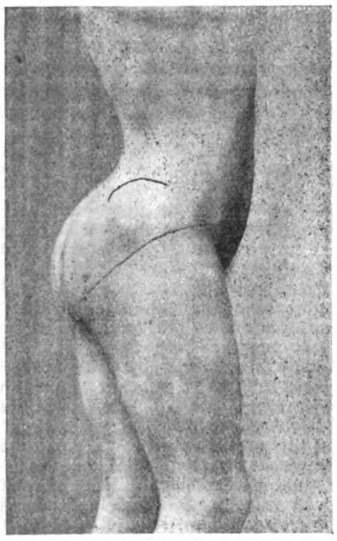
head of the femur on each side was displaced upwards on to the dorsum and was fixed on the dorsum ilii by apparently a newly formed capsule in a position above and behind the acetabulum. When the patient stood easily there were some flexion and slight internal rotation of the thighs on the pelvis. There was considerable shortening of both thighs especially marked on the right side. An extreme degree of lordosis was apparent when an attempt to extend fully the legs was made. The apparent width of the hips was great so as to simulate a pelvis of the female type. The trochanters were displaced upwards and forwards so as to be nearer to the anterior superior spines than normally. The top of the great trochanter on the left side was two inches above Nélaton's line. The top of the right great trochanter was fully three and a quarter inches above Nélaton's line (Fig. 2). There was a slight downward tilting of the pelvis on the right side. Although there was some interference with the mobility of the thighs in all directions yet within a slight range of amplitude all movements were remarkably free, eversion and rotation out being especially so. Extension of the legs by forcible traction caused no alteration of the position of the trochanters so that the heads of the femora must have been fixed by newly formed ligamentous bands in their new positions. The patient could walk easily for fairly long distances even for several miles without great fatigue; he could run at a very good pace and could jump to a height of 18 inches with great facility. Progression was accompanied by a marked rolling waddling gait. He presented no other congenital deformities nor was there any history of similar affections in the other members of his family.

FIG. 1.



Congenital dislocation of the hip.

FIG. 2.



Congenital dislocation of the hip showing position of trochanter as regards Nélaton's line.

The illustrations show the condition very well. Nélaton's line was carefully marked in ink on the skin and also the line showing the position of the top of the great trochanter before the photograph was taken. There were no scars of injury or disease about the hips. Whether the deformity was due to a congenital malposition or to a traumatic dislocation is doubtful, but I am inclined to consider the case one of congenital dislocation of the hip in spite of the positive statements of the friends as to the history of causative injury. I think that the rolling shambling gait was probably thought little of until the immediate results of the injury drew special attention to it and the parts concerned. Yet, on the other hand, it is just possible that the cause may be a traumatic one as insisted upon, and it is rather on this account that I have ventured to regard the case as one of sufficient interest to be recorded.

Manchester.

THREE CASES OF PUERPERAL ECLAMPSIA.

BY FREDERICK SPURR, L.S.A. LOND.,
HONORARY DISTRICT SURGEON TO THE ROYAL MATERNITY CHARITY.

PUERPERAL eclampsia is described by Playfair as "one of the most formidable diseases with which the obstetrician has to cope," and he adds: "The attack is often so sudden and unexpected, so terrible in its nature, and attended with such serious danger both to the mother and the child, that the disease has attracted much attention." Those practitioners who have been called upon to treat this disease—fortunately a rare complication of pregnancy and parturition—will quite agree as to its formidable nature. The repeated attacks of convulsions are most distressing to witness and the patient's condition rapidly becomes so serious as to cause the gravest anxiety on the part of her medical attendant and friends.

The three cases now recorded occurred in my own practice in the course of a single year, and it may be noted as one of those coincidences so frequently occurring in medical work that they should follow one another at such short intervals, especially as in my previous midwifery practice, extending to some hundreds of cases, I had only met with one case previously and that nearly 10 years ago.

CASE 1.—On July 12th, 1898, I was called to a woman, 19 years of age, who had been attended by a midwife and had been delivered of a full-time female child at about 6.30 A.M. Upon my arrival I found the patient, a slightly built, dark-complexioned, and anæmic-looking woman, suffering from well-marked eclamptic convulsions. From her friends I learnt that it was her first confinement. Her previous health had been good, she had never suffered from fits of any kind, and she had kept about and at work uncomplainingly up to the commencement of labour, which had been easy and rapid. The midwife told me that during the labour she had noticed the patient's hands and face twitching and that she had at times appeared to be in a half-dazed condition. The first

actual fit came on at about 7.30 A.M., an hour after the completion of labour, and she had had seven or eight attacks before I saw her. On examination I found her in a condition of deep coma. The temperature was 101·5° F. and the pulse was 140. The pupils were widely dilated and equal, and they reacted but slightly to light. The urine on subsequent examination was found to contain a large quantity—about one-third—of albumin. The convulsions were typical eclamptic seizures and were recurring with alarming frequency. The clonic stage was protracted and the movements were general and violent, though invariably commencing in the left hand and arm. There was marked opisthotonos. The intervals between the attacks were of short duration, and in the words of her friends, "she only came out of one fit to go into another." Even during the moments of immunity there were spasmodic movements of the limbs, twitchings of the mouth, and rolling of the eyes. I gave the patient a five-grain dose of calomel, followed by a draught containing 40 grains each of chloral hydrate and bromide of sodium with digitalis. This had a marked beneficial effect, as the patient became much quieter, and from 9 A M. (when the draught was given) till 11 A.M. she had only four fits. At 11 A.M. I gave a hypodermic injection of one-fifth of a grain of pilocarpine nitrate. On visiting the patient again at 12.15 P.M. I was informed that the convulsions had again become more frequent and of longer duration. There had been five attacks in less than an hour, each one lasting four or five minutes, and as the patient had three severe attacks in quick succession shortly after my arrival I decided to give chloroform immediately. At first the attacks appeared to be rather excited than otherwise, and I found it necessary to "push" the administration of the drug almost to the full surgical extent in order to obtain any effective control of the paroxysms. For over an hour I kept the patient deeply under the anæsthetic, as I found that there was almost immediate recurrence of the convulsions on diminishing the strength of the vapour. Very gradually, however, after the first hour I was able to decrease the dose of chloroform and finally found it sufficient to give it intermittently, merely increasing the strength on any indication of commencing convulsions. The intervals of immunity became longer and longer and I discontinued the anæsthetic altogether three and a half hours after commencing its administration and when, with the smallest effective amount of chloroform, the patient had been half an hour without any signs of convulsive movements. After discontinuing the chloroform I remained for about an hour and a half by the bedside and noticed that as the effect of the anæsthetic passed off there was a return of the muscular twitchings, but they did not develop into an actual fit until just before I left, when there were three or four attacks of convulsions in quick succession, limited, however, to the left half of the body. I prescribed a mixture containing in each dose 20 grains each of chloral hydrate and bromide of sodium to be given every four hours so long as there was any continuance of the convulsions. The patient had the first dose about 6.30 P.M., and from this time till 9.30 P.M., when I saw her again, she had three fits. I gave her a second dose of the medicine before leaving and at midnight the nurse wrote to me a note to say that there had been no return of the convulsions and that the patient appeared to be sleeping quietly. During the early morning of the 13th there was some recurrence of the eclampsia, but as there were considerable intervals between the attacks, which were moreover of short duration, the nurse did not repeat the chloral draught. The patient remained unconscious during the whole day. She passed fæces and urine involuntarily seven or eight times. The pulse varied from 108 to 120, and the temperature, taken every four hours, fluctuated between 101° and 101·8° which was the highest point reached. There was no return of the convulsions and there were no muscular twitchings. On the 14th I found that the patient had had a good night, but she remained in the same unconscious condition as on the day before. The bowels were still loose and several involuntary motions were passed. The temperature during the day remained about 100°, the highest point reached being 100·4°. In the early evening the patient opened her eyes several times and looked about her, but did not take any notice when spoken to until near midnight when she gave several monosyllabic replies to questions. On the 15th the patient was able to converse freely. She remembered nothing of her confinement or subsequent illness, but complained of feeling stiff and sore all over "as if she had been beaten." The temperature and pulse were normal. The urine still contained a trace of albumin. From this time she made an uninterrupted recovery, but she had no memory for any events later than noon of the 11th, the day previous to her confinement, and she could recollect nothing of her labour or of the birth of her child, so that she was practically in a state of unconsciousness for three and a half days, during which time she gave birth to her child and had from 45 to 50 attacks of eclamptic convulsions with no subsequent recollection of pain or suffering.

CASE 2.—I was called to this case on Feb. 9th, 1899, at about 5 P.M., but owing to a mistake in the address which was sent to me there was some delay in my seeing the patient who had been attended by a midwife and had been delivered of a full-time child at about 4 P.M. On my arrival, at about 6 o'clock, I found the patient, a robust-looking, muscular primipara, 22 years of age, suffering from severe eclampsia, the fits occurring with such frequency as to seem almost continuous. Her temperature rose to 102 4° F. and the pulse was 130. The urine was normal in every respect and repeated examinations subsequently failed to show the presence of even the least trace of albumin. The midwife told me that the patient had a "slight fit" about a quarter of an hour before the birth of the child, but she noticed nothing else abnormal until about an hour after the completion of labour, when the fits came on in alarming frequency and severity and I was sent for immediately. The friends informed me that the woman had always been healthy and had never suffered previously from convulsions or fits of any kind. I gave her a two-minim dose of croton oil, followed by a draught of chloral hydrate and bromide of sodium (40 grains each) as in the previous case and saw her again at 7.30 P.M., when I found that the bowels had acted freely several times, but the convulsions were not diminishing either in frequency or severity. Under these circumstances I decided to resort again to the administration of chloroform which had been of such material service in my previous case. The attacks were more rapidly controlled by the anæsthetic in this case than in Case 1, but I again found that at first they appeared to be aggravated, and that it was necessary to "push" the drug in order to obtain efficient control of the paroxysms. In the present case I was able to discontinue the chloroform after a little over an hour and a half—i.e., at about 9.30 P.M. Between 9.30 P M. and midnight the patient had several fits, but they were not so severe or so prolonged as before giving the chloroform. I prescribed 15 grains each of chloral and bromide, to be given every three hours, if there was a recurrence of the convulsions. During the following day the patient remained unconscious. The temperature was never higher than 100·8°, and her pulse remained at 120. On the 11th I found her able to converse freely, but she remembered nothing of her illness or of the actual birth of the child, though she had a clear recollection of the earlier stages of the labour. She made an uninterrupted recovery except for a slight attack of bronchitis which came on towards the end of the week.

CASE 3.—This case was much less severe than either of the two cases above described—a circumstance which I attribute in great measure to the fact that the presence of albumin in the urine was detected and the morbid condition treated for some weeks before the actual confinement took place. The patient, a primipara, aged 23 years, came to me on April 1st, 1899, being then eight months pregnant, complaining of severe headaches, giddiness, and swelling of the feet and legs. She was suffering from great œdema of the legs and there was marked puffiness of the face. On examining the urine I found it loaded with albumin to the extent of nearly one half, and it also contained epithelial cells and tube casts. The patient had noticed the swelling of the feet and legs for quite a month before coming to me, but she did not seek advice until she was almost unable to walk and until the headache and other symptoms became severe. I strongly urged the advisability of inducing premature labour, but as neither the patient nor her husband would consent to this I was obliged to rely upon medicinal and dietetic treatment. I prescribed a mixture containing tincture of perchloride of iron, tincture of digitalis, and tincture of jaborandi, to be taken three times a day, and also 40 grains of compound powder of jalap to be taken every night for a week and after that every other night. At the same time I restricted her diet chiefly to milk and white fish. Under this treatment there was a

slight improvement. The albumin diminished in quantity, the headaches and giddiness were less severe, but the œdema increased until it extended to the vulva and the loins. On the 28th I advised copious daily enemata of soap-and-water and discontinued the jalap. Labour commenced on May 1st and the first stage lasted about 24 hours, the vertex presenting. About noon on the 2nd I ruptured the membranes and the head quickly descended on to the perineum, when the patient complained of great giddiness and shortly afterwards without any further warning became convulsed, the fit lasting several minutes. The child was born almost immediately afterwards and the placenta was expressed without difficulty. I gave her a draught containing liquid extract of ergot with 20 grains each of chloral hydrate and bromide of potassium. Half an hour after the birth of the child she had another attack of convulsions lasting for four or five minutes and followed by a short period of semi-consciousness and great exhaustion, the pulse going up to 140. When I left the house an hour later she had quite recovered consciousness and speech and had had no return of the convulsions, from which she did not subsequently suffer. A week afterwards the urine still contained a trace of albumin (about one-twelfth), and by the end of a fortnight it was normal. The œdema gradually disappeared concurrently with the disappearance of the albumin and the patient made an uneventful recovery, though she remained anæmic for some weeks.

With the exception of rupture of the uterus and concealed accidental hæmorrhage there is probably no more fatal complication met with in the practice of midwifery than eclampsia. Its serious nature, as well as its comparative rarity and its obscure pathology, have combined to invest this disease with such interest and importance that every case seems worthy of record. Many theories have been advanced from time to time as to the cause of the convulsions, but the etiology of the disease is still much disputed. There is general agreement amongst pathologists and obstetricians that it is due to a toxæmia, but while according to some authorities the origin of the toxin is to be found in some pathological condition of the placenta or the fœtus giving rise to bio-chemical changes, others deny the influence of either placental or fœtal conditions and maintain that it always arises from some morbid maternal state. Probably the most generally accepted view is that the disease "is due to a toxæmia of a urinary nature, toxic substances being retained in the blood which should have been excreted by the kidneys,"[1] and the frequent association of albuminuria with eclampsia certainly supports this theory. It has been stated[2] that one pregnant woman in 40 is albuminuric, and that of these one out of every four develops eclampsia; that eclampsia without albuminuria is of rare occurrence—one case in 10 cases. From these facts the practical conclusion is drawn that albuminuria should always be looked for in pregnant women, and actively treated during pregnancy when detected.

As regards treatment there can be no doubt that the chief indication is to eliminate the toxic matter from the circulation, or, failing this, to dilute it as much as possible. With this object in view purgatives, diuretics, and diaphoretics are given, and Dr. R. Jardine has recently strongly advocated the use of saline injections. In the two first cases above recorded I relied on calomel and croton oil respectively as purgatives, in each instance with very satisfactory results; but in any future case I should feel more inclined to resort to the more rapid and certain method of emptying the lower bowel with copious and repeated enemata. The second indication must be to counteract or modify the effects of the poison in the system, and for this purpose numerous drugs have been recommended—morphia, chloral hydrate, bromides, chloroform, veratrum viride, &c. After the experience gained in the three cases now described I should never hesitate to place entire reliance on the mixture of chloral hydrate and bromide, supplemented if need be by the prolonged administration of chloroform; but in a disease of such gravity, arising from a toxin, whatever its nature, of such virulence, it is absolutely necessary to give these counteracting drugs in full doses, and above all to persevere in the line of treatment adopted and that even in cases apparently hopeless.

Commercial-road East, E.

[1] Dr. R. Jardine: THE LANCET, July 1st, 1899, p. 28.
[2] Charles: Journal d'Accouchements, April 3rd, 1898.

A FEW CASES OF BRAIN INJURY CLINICALLY EXAMINED.

BY EDMUND E. DYER, M.B.EDIN.,
SURGEON TO CLACKMANNAN COUNTY HOSPITAL.

As the clinical study of head affections and injuries, when verified by post-mortem examination, is always interesting, the following cases may be of more than ordinary interest, more particularly as each of the following cases shows the enormous amount of brain tissue which may be destroyed without causing at least immediate death.

CASE 1.—The first case was that of a man, aged 20 years, who was admitted into the Clackmannan County Hospital suffering from a compound fracture of the skull which he sustained by being knocked down by the revolving handle of a steam winch. On admission his breathing was laboured and stertorous, there was considerable muscular twitching, and just after the accident he had had several violent convulsions. There was considerable hæmorrhage from the wound, which was about three inches above the left ear. He was insensible except to strong stimuli. There was a considerable scalp wound, with extreme shattering of bone which was also much depressed. I decided to trephine at once and having had the patient put under chloroform I removed entirely a triangular piece of bone measuring two inches by one and three-quarter inches by one and a quarter inches, and also two other pieces of small bone which had been crushed down from the inner table. The dura mater was to the naked eye apparently uninjured. As there was still a great deal of depression I inserted my finger between the dura mater and the frontal bone and lifted up the whole, when it went back into place with a snap. Immediately afterwards the breathing became regular and quite natural. The external wound, which was originally two and three-quarter inches in length, running upwards and backwards, and which was extended for operation to five inches, was closed, and a drainage tube was put in, which was taken out on the third day, the wound having practically healed without suppuration. The patient gradually recovered consciousness and on about the fifth day he was able to ask for anything. Curiously enough, from the day after the injury he insisted on getting out of bed for the purpose of passing urine, and this in spite of all attempts to prevent him. On the ninth day a reddish swelling and general puffiness developed over the nose and forehead which at first looked almost erysipelatous in character, and on the next day the temperature rose to 102·4° F. This, however, went down on the fourteenth day, when he gradually improved and spoke a little, and could answer questions if time was given to him, although cerebration was very slow. The improvement continued and on the seventeenth day he sat up in bed and ate a small piece of meat and complained that it was not enough. On the twenty-first day a swelling similar to that which developed on the forehead came on the posterior occipital parietal region. On the twenty-fourth day the patient developed extreme photophobia. He lay on his left side and curled himself up. He became comatose on the twenty-sixth day and died two days after, or 28 days after the injury. As the case fell under the scope of the Fatal Accidents Inquiry Act (Scotland), 1895, I made a post-mortem examination with a brother practitioner and we found the following conditions. The external wound was quite healed and the dura mater had thickened slightly at the point of injury. On reflecting the scalp the fracture was found to extend down to the left ear, right down to the left orbital plate, then right across the head posterior to the fronto-parietal suture to near the right ear. On lifting the skull-cap the dura mater was found to be adherent to it at the seat of injury. Below the dura mater the brain was found to be more or less covered with pus and immediately below the seat of injury was an abscess. The brain was removed and on making sections the abscess was found to extend from the point of injury, which was on the middle frontal convolution backwards and inwards, to the lateral ventricle. In the right cerebral hemisphere another abscess was found just below the surface of the brain at the angular convolution extending to a point close to the lateral ventricle

on that side. Pus was also found over the base of the brain and around the spinal cord.

In reviewing this case I can only suppose that the œdema over the frontal region was due to the abscess on the left side and that it went down with the contemporaneous fall of temperature when the tension was relieved by the pus bursting into the lateral ventricle. The second abscess did not find such exit. The other points to consider clinically in the case are the absence of paralysis, the extraordinary destruction of brain tissue, the extreme photophobia, and, finally, the length of time under the circumstances that the patient lived after the injury.

CASE 2.—The patient was an old soldier, aged 56 years, whom I admitted into the hospital suffering from right hemiplegia. The man had been ill for several days before his admission. No very definite history could be got. He was able to speak a few words, but cerebration was very slow, and on the left eye there were signs of an old keratitis. On the eighth day after his admission he became worse generally and he suddenly developed most violent convulsions which lasted for several hours, but which gradually subsided after treatment with heroic doses of chloral and morphia. From this date the convulsions never recurred, but there were slight twitchings from time to time. The patient died on the twenty-fourth day after his admission into the hospital and about the thirtieth day after the first seizure. Death occurred in the way so common with many of these cases except that the man took his nourishment well up to the day of his death. The temperature never rose above 99·8° F. There was no affection of the breathing.

The interest of this case lies chiefly in the post-mortem examination which, happily, I was able to make. On opening the head the dura mater was found to be adherent to the bone in patches all over the calvarium and was detached only with great difficulty in some places. The veins of the dura mater were enormously dilated. The whole brain tissue was extremely soft. On making sections of the brain horizontally the first thing which was discovered was a large round clot flattened from above downwards, measuring one and three-quarter inches in diameter, placed high up just inside the fissure of Rolando. On making further sections a well-organised smaller clot was found a little lower down just inside the middle frontal convolution, and again at a lower level a clot, of much the same size and character as the last, situate in the occipital region. These three clots were all found on the left side of the brain, but on making similar sections on the right side three other clots were found in almost exactly corresponding positions. The only difference was that the oldest clot of all—viz., the one in the frontal region—was here and the most recent clot of all was on this side in the occipital region. The last clot found was on the left side of the cerebellum and was three-quarters of an inch in diameter.

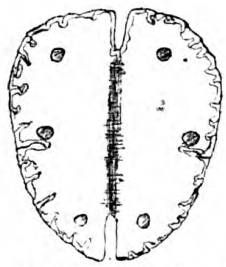


Diagram representing the relative position of clots in the brain in Case 2. Six clots are shown. The seventh clot was in the body of the cerebellum. The clots were not upon the same level, although diagrammatically they are so represented.

Now, which clot or clots, if any, caused the convulsions? From the date of the first symptoms and comparing the oldest clot with the more recent ones and considering the time which elapsed between the convulsions and the date of death I am inclined on these grounds alone to think it was the clot in the cerebellum. Although the age of the clot below the fissure of Rolando was much the same as that in the cerebellum, yet, on the other hand, the age of the corresponding clot below the fissure on the other side was distinctly different, and had this been the cause then it is reasonable to infer that instead of one set of general convulsions there would have been another at a later period, and this was not the case. The chief point of interest about this case is the number of separate hæmorrhages, no less than seven, each one being of a different age, and as far as affected the cerebrum almost exactly symmetrical; further, that so far as could be seen only one of these hæmorrhages caused the convulsions. The internal capsule was not affected and in no case apparently did the clot affect the grey matter of the brain. The man was an alcoholic and from the signs which were found I have little doubt that he had suffered from syphilis. In this case also there was no affection of the breathing.

CASE 3.—The third case is perhaps as interesting as the foregoing in showing an extensive destruction of brain tissue without a fatal ending. A lad was admitted into the hospital suffering from an injury to his head. It had been crushed from side to side between a fixed upright beam and the arm of a machine working horizontally, the point of which was as nearly as possible three-quarters of an inch square. On admission he was bleeding freely from a small cut over the right temple and a quarter of an inch behind the temporal artery. The injury to the bone was slightly to one side of the cut and to the front. I introduced a probe very gently and found a small fracture at the point indicated and with so much destruction of brain-tissue that the probe by its own weight entered exactly two and a half inches straight into the brain. Considering the condition of the patient and the absence of any urgent symptoms I did not think it a case for operation. The bleeding was stopped, an antiseptic pad put on, and the boy was sent to bed. The external wound, which was not sewn, healed without trouble and the patient was discharged in about three weeks. The boy after receiving the injury walked about 200 yards from the works to a medical man. But for a little faintness and pain for a few days the patient suffered no inconvenience. There was no rise of temperature or bad symptom.

Each of these cases shows the enormous amount of brain-tissue which may be destroyed and, further, the extraordinary efforts the brain is capable of exerting to repair the damage, both effort and power being quite beyond what is often supposed it is capable of exerting.

Alloa, N.B.

SURGICAL ASPECTS OF CONSTIPATION.

BY S. L. WOOLMER, M.R.C.S. ENG.

THE following two cases are recorded in order to demonstrate what is believed to be a rare sequel to the most common morbid condition known to exist. I can find in no works on modern surgery any reference to a case of "aneurysmal" dilatation of the colon as the result of chronic constipation, and yet that it must exist in no small degree is very obvious. Due to this dilatation and the consequent accumulation of fæcal matter therein the condition of both patients was reduced to one of great gravity, as witnessed by the repeated attacks of intestinal obstruction, the degree of anæmia produced by insufficient alimentation, and stercorræmia. No enema could have possibly cleared the intestine nor could any procedure short of operation have relieved the patients.

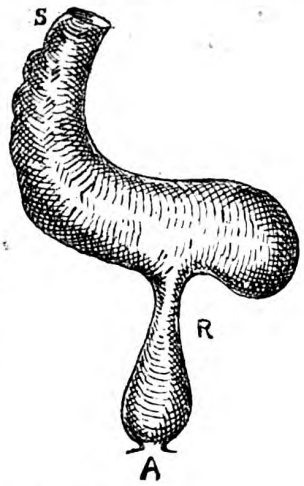
CASE 1.—A man, aged 28 years, was under the care of Dr. Masi in the Military Hospital of Buenos Ayres. He had been constipated for four years. On Dec. 23rd, 1892, during a long march, and after a meal which consisted principally of cheese, he could obtain no movement of his bowels, and in this state he continued till March 12th, 1893, having only been able to expel by the rectum gases and a little blood. He then entered the Hospital San Roque in Buenos Ayres, where he was eventually relieved. From this period till November, 1896, he continued always constipated, relieving himself only by enemas and purges, and then with great difficulty. In November, 1896, he entered the military hospital under the care of Dr. Masi, where he recovered somewhat his functions by the application of abdominal massage and enemas of half a litre of olive oil administered daily. The presence now of blood in the motions and their ribbon-like character persuaded Dr. Masi that he had to deal with a malignant disease of the colon and he considered, therefore, the advisability of performing laparotomy.

Examination by the rectum revealed a very indistinct sensation of fulness behind the bladder, and by abdominal palpation nothing abnormal could be discovered. Laparotomy was performed on Feb. 2nd, 1897. The large intestine was found to be healthy from the cæcum to the sigmoid flexure, but on introducing the hand into the pelvis and behind the bladder a coil of intestine was felt dilated to the extent and form of a stomach. The bottom of this dilatation was occupied by soft fæcal matter. On lifting that part of the sigmoid flexure out of the abdomen which was adjacent to the tumour the latter was seen to accompany it, and on elevating its base it became immediately emptied, its contents falling into the rectum. The tumour was then easily brought out of the abdomen and was found to be the last part of the sigmoid flexure enormously dilated. Its surface presented striæ very like to those of the abdomen of a multiparous woman, and proof that it had been still even more dilated than at the time of the operation. On further examination it was found that movement of the bowels could only be produced when this cyst was completely full, and then only by regurgitation, as will be easily understood from the accompanying diagram (Fig. 1).

FIG. 1.



FIG. 2.



S, Sigmoid flexure. R, Rectum. A Anus.

An examination of this diagram will also explain the small calibre of the motions. The weight of the cyst full of fæcal matter must have produced such traction upon the sigmoid flexure that the orifice of communication with the rectum must have been obstructed almost completely and could only allow the passage of small flattened particles. The veins of the meso-sigmoid were immensely dilated, indicating the difficulty of the circulation and perfectly explaining the hæmorrhages which occurred before operation. The cyst once emptied was sutured to the abdominal wall in an elevated position by seven sutures with No. 0 silk, and the abdomen was closed. A dose of castor oil administered 36 hours after the operation relieved the patient of some tympanites and colic, and subsequently the bowels were moved once or twice a day abundantly, the motions being of normal calibre. On July 31st, 1897, the patient had no constipation.

CASE 2.—A man, 42 years of age, was admitted under my care to the sanatorium of Buenos Ayres on July 15th, 1897. He had suffered from constipation for some eight or 10 years, having become worse during the last 12 months. During this latter period his only food consisted of thin soup and light cocoa, due to a not unnatural desire to diminish as far as he was able the quantity of fæcal matter. In March, 1897, he had an attack of acute intestinal obstruction, but without vomiting; his tongue was dry and was covered with a brown fur and his countenance was anxious. On abdominal palpation a tumour was found in the hypogastrium, at the level of the insertion of the right rectus muscle; it was globular, smooth, and painless, and presented considerable resistance. By the rectum a tumour was also felt descending from above and reaching to the middle portion thereof, and by bi-palpation it was found to be identical with that felt through the abdomen. The finger could with firm and continued pressure be indented in the tumour, the indentation persisting afterwards. The tumour could not be dislocated from the pelvis.

Treatment by large enemas was adopted, the patient placing himself in the genu-pectoral position. Cascara sagrada was administered and periodically Hunyadi Janos water, and later an enema of olive oil was employed, with the effect only of enabling the patient to live in comfort, acute symptoms recurring if these measures were not adopted. But as a result of this treatment the tumour seemed to acquire greater mobility, at times abandoning completely the pelvis, as proved by rectal examination, and appearing high up in the hypogastrium and with marked and evident relief to the symptoms. Still the patient never had a comfortable movement of the bowels and never voided any fæcal matter, only what he termed "washings." Every week he had symptoms of acute obstruction and the diagnosis of pedunculated stercoraceous tumour of the sigmoid flexure appearing certain he was admitted to the sanatorium for operation, which was performed on July 19th.

On opening the abdomen the sigmoid flexure at once presented itself in the wound, enormously dilated, having lost completely its sacculated character. The small intestine was seen only once, and it appeared somewhat atrophied. On passing the hand into the pelvis it was found to be totally occupied by a large tumour which completely impeded the passage of the hand. The tumour was eventually lifted out of the pelvis by traction on the dilated colon, and it could then be "eased" out of its position. It was found to be a large "sessile" dilatation of the last portion of the sigmoid flexure (Fig. 2). Its peritoneal covering was quite normal, but it seemed to be somewhat thickened. No adhesions existed. The consistence of the tumour was solid, but by dint of force it could be indented by the finger. An effort was then made to reduce its contents into the rectum, but although moderate pressure was employed it was found impossible. One of two procedures was then left open—either to suture the elevated intestine to the abdominal wall or to incise it, liberate its contents, and return it again to the abdominal cavity. The former course was decided upon for the following reasons. The tendency of the tumour, due to its weight, was always to fall into the pelvic cavity, and I decided to marsupialise the tumour in the abdominal wound in the hope that the contained mass would tend to free itself gradually by reason of its own weight. In case this did not happen after adhesions had formed circumscribing the piece of gut left exposed in the wound it could always be incised later and the resulting fistula could be subsequently treated. Accordingly it was united to the central part of the abdominal incision by an uninterrupted suture, there remaining at the base of the wound a piece of the tumour of the size of a florin. The rest of the wound was then sutured in three places.

Recovery was uninterrupted after the operation and the patient expressed himself as being much relieved from the first. The bowels still only acted with enemas which brought away débris. On the eighth day it was noticed by rectal examination that the fæcal mass had fallen so as to be nearly within reach of the finger, and with a little trouble and by the aid of copious enemas and a long scoop it was completely removed. Its volume would be approximately three-quarters of a litre and it had lost entirely its fæcal odour. Up to August 10th the patient still only defecated by the aid of an enema, the motions being ill-formed but of distinct recent formation, and he could pass flatus with all facility. The tongue had completely cleaned by August 1st. The abdominal wound was therefore closed on the 3rd, local anæsthesia being produced by Schleich's infiltration process. During the following night the patient was much troubled by retention of flatus, which was relieved by the passage of a long tube up to the sigmoid flexure, and more completely later by the administration of an ounce of castor oil. On the 10th the wound had practically healed, and on this date the first natural and spontaneous movement of the bowels was produced. On the 31st the patient was discharged cured, having gained enormously in weight.

As I have before mentioned, although constipation is one of the commonest morbid conditions known, yet I can find no reference made by any author to the formation of a tumour such as that met with in the foregoing cases. Cahier in his monograph on Acute Intestinal Obstruction makes no mention of this condition, but Treves in his work on Intestinal Obstruction refers to tumours formed by the mass of

retained fæces, and observes that when they occur in the descending colon or sigmoid flexure they are divided into scybala, thus showing that in his vast experience he had probably never met with a case similar to those here recorded. He later mentions a very important sign in the differential diagnosis of these tumours—that is, that they are affected by pressure, yielding to the finger the sensation of a mass of dough or putty. In Case 2 this sign placed the diagnosis beyond a doubt, but it was inapplicable to Case 1 because no tumour could in this instance be felt.

It is noteworthy that in both cases the site of the tumour was the same—in the last portion of the sigmoid flexure, in a position where the external agency of the abdominal muscles is of little avail in the act of defecation. The impaction of fæcal masses in this region tends to produce dilatation behind it, and this distension may be localised or general. General dilatations are relatively common.

While the condition of the first case could only be accurately diagnosed at the time of the operation the great mobility of the tumour which subsequently developed itself in the second case gave rise to the belief that in this instance also would a "pedunculated" tumour be met with, for on various occasions it could be demonstrated bimanually that the lesser cavity of the pelvis was absolutely free, the tumour itself being felt well above the pelvis.

The second case illustrates also the inadvisability of the employment of Schleich's infiltration anæsthesia in any case where it is of prime importance that the eliminative functions of the bowels should be in a state of activity. The meteorism produced by the morphine in the injection caused great distress to the patient until it was relieved by the enemas and I shall certainly never employ it again in any laparotomy, where as a rule the master-key to success in after-treatment is so often found in a thorough movement and disinfection of the bowels.

My best thanks are due to Dr. Masi of Buenos Ayres for permission to report his case and for much valuable advice. At the present date (Nov. 10th, 1897) both patients are enjoying good health and are free from constipation.

Buenos Ayres.

FRACTURES OF THE INFERIOR MAXILLÆ TREATED BY A MODIFIED METHOD OF WIRE SUTURE AIDED BY THE ELECTRO-MOTOR.[1]

BY T. S. CARTER, L.D.S. R.C.S. ENG.,
HONORARY DENTAL SURGEON TO THE GENERAL INFIRMARY, LEEDS.

BEFORE describing wire-suturing it will be better for me to review briefly the whole subject of fractures of the inferior maxillæ and the treatment which has hitherto been usually adopted, in order that you may draw a comparison between what I trust I may call the old method and the new.

[Mr. Carter here referred to the frequency of fractures of the inferior maxilla and gave an account of their general features.]

Diagnosis.—The symptoms attending a fracture are, as a rule, clearly indicated. There are mobility, crepitus, and very often displacement, the teeth showing differences in level. Those adjacent to the fracture may have been loosened or knocked out and there will be pain and a good deal of salivation. Also the position of the patient is generally indicative as he will be found carefully nursing his jaw with one or both hands. If, however, there be any doubt it is well to grasp the jaw with both hands with the forefingers introduced into the mouth and crepitus between the fragments will be found and movement observable. Where the diagnosis is difficult, as in cases of fracture of the coronoid or condyloid process, it is well to push the index finger of the right hand well back into the mouth and by feeling at the same time externally with the left hand the fracture, if there be one, will be felt. A displaced fragment can often be pushed into its normal position in this way and retained by forcing the jaw upwards against the superior maxilla.

Treatment.—With reference to treatment of fractures, we may note that in early times if the patient got off with a united fracture and his life, no matter if the articulation was good, bad, or indifferent, he was thankful—a quiet thankfulness like that of the old woman who had only one tooth in each jaw and they were fortunately both on the same side. She said she had not had many blessings in this life, but she did thank God these two teeth touched each other. If in bygone days it was found that teeth by being out of position made the displacement more noticeable, the surgeon by means of forceps soon altered that state of things. The conditions which most favour a satisfactory result in these cases are as follows. The fractured ends of the bone should be firmly maintained in correct apposition after reduction of the displacement. The splint should not interfere with speech or movement of the jaw, or with a proper cleansing of the mouth. Also it is of all things important that we should be able to note throughout the treatment that the grinding surfaces of the teeth of one or both fragments oppose those of the other jaw. This should be the chief aim of the operator, as by its neglect a patient's future health may be imperilled owing to the loss of half his masticating power, and also his personal appearance may be considerably damaged.

It is not necessary for me more than to name some of the forms of splints most frequently used as they are all well described in surgical and dental works. They consist of the four-tailed bandage, and, amongst others, those called after the originators—viz., Kingsley's, Hern's, Gunning's, and Hammond's. Of all interdental splints I think, in cases where there are plenty of firm teeth standing, the latter is most useful on account of its simplicity. It has the advantage of allowing the mouth to be thoroughly cleansed and does not interfere with a full view of the fracture being obtained, nor does it interfere with free movement of the jaw. Samples of the splints I have named are before you, but they are but few of the many which have been devised. This shows the necessity for some simple universal method free from the one great objection—namely, that of having to make a special splint for each case. This is a tedious business, and when carried out you have in most cases filled the patient's mouth with a bulky mass interfering with speech, with proper cleansing of the oral cavity, have difficulty in observing the relative position of parts, and have succeeded in producing salivation and general discomfort to the patient. I therefore took up wire-suturing of the jaws, somewhat on the lines suggested by Dr. Buck of New York in 1847 and later, in 1863, by Mr. Hugh Thomas of Liverpool. The method adopted by the latter was to drill holes, one on either side of the fracture, and having passed his wire to coil it by twisting on a steel rod. I noted, however, in the record of his cases that he stated that the coils made had to be tightened every two or three days. This I take to be due to the coils rather untwisting. Instead of this method I bring the ends of the wire together and twist them and this brings and firmly binds the fractured ends of the bone equally in contact on both buccal and lingual surfaces. The twisted ends of the wire when bent flat, take up less room than the coils, which is an advantage. I notice in two of the cases recorded by Mr. Thomas and one by Mr. Rushton Parker of Liverpool that in order to get at the jaw beyond the angle of the mouth they drilled through the cheek and drew the wire into the mouth. If, however, a retractor be used, this plan is quite unnecessary.

When I first read the notes of these cases I was struck by the fact that to bore the holes by means of a gimlet or Archimedean drill was primitive. When therefore Mr. T. R. Jessop gave me my first jaw case, which was one of Syme's operation for removal of the tongue, followed by non-union at the symphysis, I determined to use the dental engine. With this object I had several long drills made with different-shaped cutting edges, and I found the bayonet shape the best. This was made to fit a dental engine and I had a thicker driving cord added and blocks of lead fixed to the fly-wheel to add to its power. Armed with this I approached the patient and drilled two holes through his jaw as readily as boring through chalk. I was pleased with the result at the time and with the success which followed in many cases afterwards. As, however, the use of the foot for treadle work is a trained movement not practised by surgeons I consulted Mr. S. W. Cuttriss, electrician, and induced him to bring out an electro-surgical motor primarily for the object of drilling any bone in the body, the removal of exostoses, and general aural work, and by degrees to develop it until it could be used for trephining and any form of bone-work. The motor is before you and is on the lines of

[1] A paper read before the British Dental Association at their annual meeting held at Leeds on June 2nd, 1900.

those made by Messrs. Cuttriss and Wallis for dental purposes, only more powerful. It may be constructed to work with either continuous or alternating current as required.

[Mr. Carter here gave an account of various points in the mechanism.]

To facilitate wire suturing I have devised a case containing in small compass all my instruments for suturing fractures, whether of maxillæ, patellæ, or long bones. It was described and illustrated in THE LANCET of August 27th, 1898, p. 558. My method of procedure in a jaw case is as follows. Having taken the necessary antiseptic precautions I take a piece of silver-plated copper wire No. 19 B. W. G. and for the distance of nearly an inch from the end file away half its thickness. To make it more ductile I then pass the wire slowly through the flame of a spirit lamp, making it a dull red for a length of about six inches. With the patient under ether I draw down the lip and with a sterilised bayonet-shaped drill in the motor bore a hole slowly through the jaw posterior to the fracture and between the fangs of the teeth. In this position the inferior dental nerve is avoided, and the opening should be made not less than a quarter of an inch from the fracture. While drilling with the right hand the spoon is held on the lingual side so as to guard the tongue from the point of the drill as it emerges from the foramen. Having withdrawn the drill the plated wire is pushed through from without and by means of forceps drawn well into the mouth. The difficulty has been in returning the silver wire, as it is not easy to find the return passage by simply probing for it. Having, however, drilled the hole on the other side of the fracture a pliable copper needle may be pushed through from without and bent at a suitable angle to allow of being readily threaded with the p'ated suture wire. Where the point of the wire has been filed it may be bent so as to form a hook, and if the needle is then withdrawn the wire will follow. It is well to drill the hole in the depressed portion of bone on a lower level than the other one, so that there may be a lifting tendency and greater resistance to a relapse in position. I make sure that there is no foreign body, such as a loose fang, between the broken ends of the bone and then lift the displaced portion into position, apply the key, and then twist the wires until the ends of the bone are drawn tightly together. To prevent the key from cutting the wire it is necessary not to push it nearer the bone than, say, half or three-quarters of an inch before the first turn is given. Having severed the twisted wire with side-cutters an end is left projecting about half an inch long. To prevent this from cutting the cheek I cover it with a short piece of indiarubber tubing of the calibre of a crow's quill and turn it down flat. It is well not to drill quickly, as I think the interesting little sequestrum which I will pass round will prove. I found it slung like a bead on the suture wire on the tongue side, as shown in the model of the mouth taken at the time. The hole through the centre was made by the drill and the necrosis was probably due to heat produced by the speed of the revolving engine-point; it is well, therefore, to observe caution in this respect, and also not to advance the drill too rapidly through the bone tissue.

Fractures of the ramus are uncommon, and when they do occur there is little displacement. For cases at the angle, however, where there may be some difficulty I am going to have a right-angle piece made to carry a drill of only just sufficient length to go through the thickness of the ramus and its coverings from the lingual side. In using it so far back it will be necessary to avoid the inferior dental nerve and to have the tongue drawn forward to prevent it from being pushed backwards over the glottis by the angle-piece. Where it is necessary to divide the lower maxilla, as in Syme's operation for removal of the tongue, it is advisable that the surgeon should make, not simply a vertical incision, but two oblique ones from above and below, meeting at an angle, so that the fragments may lock into each other and facilitate retention by wire suture in normal position. Until quite recently I used the dental engine for drilling purposes and I will briefly record four cases out of the many I have done. The models taken before and after treatment are before you.

CASE 1.—A powerful man, aged 19 years, was admitted to the Leeds Infirmary on May 11th, 1892, suffering from compound fracture of the lower jaw, and on May 19th I was asked to see the case. I found the lower maxilla fractured transversely across the ramus on the patient's left side, also perpendicularly between the two fangs of the first molar on the same side and likewise perpendicularly through the socket of the second bicuspid on the patient's right. The front portion was much displaced, being deeply depressed and exposing the second fang of the molar in its full length. The front portion was also considerably overlapping the posterior part, carrying the median line of the maxilla considerably over to the patient's left side. On May 20th I drilled holes through the jaw and wired in the manner described. There were no complications and on June 11th the teeth were all well opposed to each other and on July 7th I removed the suture and found all firm.[2]

[Details of two other cases were then given.]

CASE 4.—The patient was a canal boatman who during the early morning of Dec. 28th, 1896, was winding a lock windlass when his foot slipped on a piece of ice and the revolving handle struck him across the jaw, causing a double fracture of the inferior maxilla and more or less concussion of the brain. I found the jaw fractured through its body between the second bicuspid and first molar teeth on the left side, and between the first and second bicuspids on the right side. The anterior portion was much depressed, and although there was no external wound there was considerable swelling. On the 30th he was anæsthetised and I wire-sutured the parts together. On March 15th, 1897, I tightened the sutures and on May 7th I removed them. The fractured portions of the jaw were perfectly united and there was complete antagonism between the upper and lower dentures.

For suturing purposes I have always used annealed silver-plated copper wire, and that it is preferable to solid silver will be best illustrated by the following two cases and by the expert evidence which Professor John Goodman, M.I.C.E., of the Yorkshire College, has so kindly given.

I was asked to see two cases of fractured maxillæ admitted to the Leeds Infirmary on Feb. 9th and Feb. 20th last. The messages arrived, however, after I had left Leeds, and my method of wiring was adopted in both cases, the drilling being done by the electro-motor. Solid silver wire was used, however, and it broke on twisting. In the other case it broke three times during the twisting stage. Thinking it important for surgical work generally that it should be determined which kind of wire was the stronger and more ductile I brought the matter before Professor Goodman, whose tests proved as follows—that the number of twists per inch in length which annealed silver-plated copper wire would bear before fracture, was 22·8, as compared with 18 only in solid silver wire. When not annealed the difference was 13·7 as compared with 12·8. This proves that annealing greatly increases the ductility of wire. Testing the wires in pure tension it was found that the breaking load of copper as compared with silver was 47 pounds as compared with 42. The detailed results are as follows. Silver-plated copper wire: diameter, 0·041 inch; sectional area, 0·00132 square inch; breaking load, 47 pounds; breaking stress in pounds per square inch, 35,600; extension per cent. on three inches before fracture, 41·0 per cent. Silver wire: diameter, 0·040 inch; sectional area, 0·00126 square inch; breaking load, 42 pounds; breaking stress in pounds per square inch, 33,300; extension per cent. on three inches before fracture, 33·0 per cent.

From all this you will note that copper wire is both stronger and more ductile than silver. Also Professor Goodman states that if annealed copper wire be used it should, in his opinion, be annealed before plating, as a very slight amount of overheating causes the silver to scale off. For this reason, therefore, and in order to simplify matters, I have arranged with Messrs. S. Maw, Son, and Thompson to supply wire already annealed. Having wired the bones there are just two or three matters to see to. As nearly all cases of fractured jaws are compound, there is liability to sepsis and to obviate this the wound should be well irrigated and various forms of antiseptics used. It is also well to dust the wound with equal parts of iodoform and boric acid. Perfect rest must for a time be given by not allowing conversation which, as a muscular effort, disturbs the part in the early stages, and mastication must not be allowed for some weeks. Nourishment should be given in liquid form and this may well be done by fixing an indiarubber tube to the spout of a feeding-cup and then passing the tube into the mouth through the space left by the loss of a tooth. In these days of tooth degeneration we rarely find a set complete, but in

[2] THE LANCET, Dec. 3rd, 1892, p. 1256.

the improbable event of there being no such space the tube may be passed round the back of the last molar.

In concluding my paper I cannot do better than finish by stating that, judging from the long experience which I have had in the treatment of fractured maxillæ where there is displacement, the opinion I have come to is that for neatness, cleanliness, simplicity, and good results there is no better method than by wire suture. There is a claim on it, also, from a hospital point of view, as after, say, the second day, except in case of other injuries received, the patient is discharged as an in-patient. Also I believe that for surgical purposes there is a great future for the electro-motor, and that it will ultimately become an essential and invaluable aid in all complicated forms of bone-work.

It has often struck me in watching operations daily performed at the Leeds Infirmary that to open the mastoid cells by means of chisel and hammer, remove exostoses by aid of a gouge, trephine the skull by hand, drill holes through bone with gimlet or Archimedean drill, that the muscular effort required lessens the delicacy of touch so conducive to advanced work. Also in aural cases may not some cerebral irritation be induced? At present the use of the motor is limited, but there will be no difficulty in making it work perfectly an ordinary saw, drill, trephine, automatic chisel, and do any form of bone-work. In cases where electric power is not to be had either accumulated or otherwise, a spring motor might be made which would be of great service to our army surgeons in time of war. For it is important that advances made which benefit the patients in hospital should also be arranged to enable others not so situated to receive the same measure of benefit. I would suggest that the instrument be arranged to shut down into smaller space so as to be more portable. There should also be disconnecting gear in the handpiece so that if the operator lessens his grip the cutting instrument should immediately cease working, in the same way that you can by releasing a spring in the receiver of a telephone place it out of use. Of course, we must not expect that for philanthropic reasons alone electricians will bring about these changes. It will be a question of demand and supply, so that the producer may reap benefit from his efforts. We may rest assured, however, that in these days of scientific advancement our surgeons will not fail to take up anything which will better enable them to benefit their patients. In this way the demand will rise, and I fully believe that the time is not far distant when the surroundings of every surgeon will not be considered complete without an electro-motor.

Leeds.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

PYO-PNEUMOTHORAX DUE TO EMPYEMA PERFORATING THE LUNG; RECOVERY.

BY F. PERCY ELLIOTT, M.B., C.M. ABERD.

THE following case deserves to be recorded. The patient, who was a monthly nurse, aged 44 years, had up to this period of her life always enjoyed good health, having had nothing wrong with her beyond the usual ailments of childhood. She had never had bronchitis nor had she ever suffered from any chest affection previously. On her side of the family there had been no tendency to lung trouble. Her husband died from phthisis about three years before her illness and she carried out the duties of nurse, not only occupying the same room, but constantly sleeping with him down to nearly the end of his life. She had four children, all of whom exhibited a strumous taint. On Nov. 12th, 1894, while following her occupation, she suddenly experienced a sharp pain in the right breast which "caught" her on breathing. This was the first thing that led her to believe that something was wrong with her. She had neither any rigors nor any sensation of chilliness. In consequence of increasing pain she was forced to take to her bed. She at that time complained of pain in, and just below, the right breast, aggravated by deep breathing, dyspnœa, and slight cough. On palpation tactile fremitus was found diminished on the right side and percussion elicited a dull note at the base of the chest on the same side; auscultation revealed deficient breath-sounds, diminished vocal resonance, and a slight friction sound. Her temperature was 101° F. and her pulse was 100. These signs were taken to mean pleurisy with effusion. A couple of days later the effusion became very marked, respiration being much more distressing. Towards the end of the first week of the illness the fluid occupied about two-thirds of the pleural cavity and the temperature took on a hectic character. There was much sweating and the face assumed a very sallow colour, all the symptoms now pointing to empyema. At this stage the patient complained of an unpleasant taste, especially after coughing. It was decided to aspirate the chest, but before this could be done there occurred a violent fit of coughing and she expectorated about three pints of purulent material of a greenish-yellow colour, this being freely mixed with blood towards the end of the attack of coughing. The next examination of the chest showed the presence of air and fluid. The expectoration continued of the same character but gradually diminished in quantity till at the end of seven weeks from the commencement of the illness it had completely stopped, together with the cough. Pain was only felt on deep breathing. In less than three months from the date of her first symptom the patient was able to resume and carry on her duties satisfactorily. Two and a half years after this illness I took an opportunity of making a physical examination. There was no deformity resulting from her illness to be seen; the right shoulder drooped slightly, but not more than is usually met with in the majority of individuals. The breath-sounds were strong and movement on the right side of the chest was as good as on the opposite side. The only remaining trace of this illness was a slight friction sound on very deep inspiration. The woman expressed herself as feeling in excellent health and looked it.

Two points in connexion with this case seemed especially interesting—viz., the short time in which the effusion became purulent, there having been no antecedent illness, and also the quick recovery from the immediate as well as from the remote effects of a pyo-pneumothorax. With regard to treatment the measures employed were nothing out of the common. While expectoration lasted the patient frequently inhaled the vapour from a mixture of eucalyptus and thymol, the rest of the treatment consisting of a liberal diet with tonics.

Walthamstow.

NOTE ON A CASE OF COCCYGODYNIA; REMOVAL OF THE COCCYX; RECOVERY.

BY MONTAGUE D. MAKUNA, M.R.C.S. ENG., L.R.C.P. LOND.

AS cases of coccygodynia are infrequent and the pathology and treatment of that disease are still *sub judice*, I might be permitted to record a case of complete recovery by the removal of the coccyx.

A lad, aged eight years, came under observation during the first week in March, 1900, suffering from severe pain over the sacral region which deprived him of sleep and from inability to assume a sitting posture. This was associated with loss of body-weight and anorexia. On examination it was found that the coccyx was pointing backwards and downwards, its end touching a seat, so as to render a sitting position painful by the pressure of the soft parts and the skin between its point and the seat. On rectal examination it was discovered that the two lower segments of the sacrum were tilted inwards and that the continuity of the sacral curve was lost. This projection on the anterior surface of the sacrum could not be reduced under pressure, as what might be called the fractured surfaces were firmly but irregularly united. There was no clear history of injury and it is questionable whether this deformity in the sacrum was due to malformation or malnutrition. No operative procedure could be undertaken to reduce the deformity without doing considerable injury to the sacral nerves. While it was necessary that the coccyx should be removed to allow the lad to sit comfortably, I was in considerable doubt whether it would relieve him of his sufferings. He was kept in a recumbent

position and lactophosphates and anodynes were administered for nine weeks without any improvement. Under the circumstances I determined to remove the coccyx and, should this fail to relieve acute pain, to follow up the operation with treatment by osmic acid. On May 10th he was put under chloroform, the coccyx was pushed out through a straight incision in the median line, severed from the sacrum with a bone forceps, and, in order to prevent any damage being done to the diaphragm of the pelvis, dissected out from above downwards. There was no bleeding and the wound healed up rapidly under dry dressings. The patient is now able to sit comfortably, is free from pain, and is gaining flesh and vivacity.

Treherbert.

HYPERPYREXIA IN ACUTE RHEUMATISM.

BY HERBERT R. C. NEWMAN, M.B. DURH., M.R.C.S. ENG., M.R.C.P. LOND.

THE following case may be of interest as showing the efficacy of the early application of cold water to the body in the above condition. On April 30th I was called to a patient, a woman, aged 30 years, and found her suffering from acute rheumatism; she had pains in the limbs with profuse sweating and a temperature of 104° F.; a mixture of 20 grains of salicylate of sodium and 10 grains of bicarbonate of potassium was prescribed and taken every three hours. On May 1st her temperature was 102° and there was synovitis in the left knee- and ankle-joints. The salicylate was reduced to 15 grains every three hours. The case followed the usual course, both knees, the left elbow, the shoulder and finger joints being successively implicated until May 13th when the patient was free from pain and her temperature was normal. On May 16th the joint pains returned and the temperature rose to 101°. On May 20th the temperature was not elevated and there was no pain or sweating. On May 21st at 6 A.M. an attack of epistaxis occurred, at 7.30 A.M. there was a severe rigor, and the temperature at 11 A.M. was 107·8°. By this time the patient was drowsy and semi-comatose, with flushed face and dry skin; the pulse was 174, very weak and irregular. She was immediately wrapped in a sheet which had been placed in water at about 90° and suspended over a tub, being rapidly sponged with water which was cooled down gradually to 48°; this sponging was continued for five minutes at the latter temperature. The thermometer in the rectum then registering 102° she was dried and placed in bed again, being now quite conscious with the pulse 140 and fuller. At 3.30 P.M. the temperature was 104° and the pulse was 160; a 30-grain powder of salicylate was taken. At 10 P.M. her temperature was 106·5° and her pulse was 170; she was very restless and was again sponged until the rectal temperature was 101°. During the night she continued very restless and another 30-grain powder of salicylate was administered. On May 22nd when seen at 10 A.M. she was much better; her temperature was 102° and her pulse was 140 and full. At 8 P.M. her temperature was normal and her pulse was 124. From May 22nd to the 27th the temperature varied from normal to 102°, there was no return of articular pains, and she has made an uninterrupted recovery. A soft mitral systolic bruit was first heard on May 28th.

Chalford, Gloucestershire.

ST. GEORGE'S HOSPITAL HUNTERIAN SOCIETY.—The annual dinner of the St. George's Hospital Hunterian Society was held on June 8th at the Trocadéro Restaurant, Dr. H. D. Rolleston, the President of the society, being in the chair. In proposing the toast of "The Queen" Dr. Rolleston alluded to the comparatively large number of St. George's men now at the front in South Africa, not only as army and civil surgeons, but in the ranks of the Yeomanry and Volunteers. The health of the "Hunterian Society" was proposed by Mr. E. B. Turner, F.R.C.S. Eng., one of its oldest members, and that of the "Officers of the Society," proposed by Dr. J. Blumfeld, was responded to by Dr. A. C. Latham and Mr. Percival. Dr. G. A. Buckmaster (next year's president), Mr. George R. Turner, Mr. Herbert Allingham, and Mr. F. Jaffrey were representatives of the staff of St. George's Hospital who with a fair gathering of members of the Hunterian Society were present at the dinner.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF LYMPHATIC LEUKÆMIA OR LYMPHOCYTHÆMA TREATED SURGICALLY BY THE ESTABLISHMENT OF A COLLATERAL CIRCULATION.

(Under the care of Dr. W. MURRELL and Mr. WALTER SPENCER.)

THE establishment of a collateral circulation for the treatment of cases of ascites was first proposed by Drummond and Rutherford Morison in 1896,[1] and Morison has operated in three cases, the first of these operations being performed in 1894.[2] It has also been suggested by Talma,[3] who apparently did not know of the previous employment of this method.

A girl, aged 19 years, was admitted to Westminster Hospital on Nov. 7th, 1899, suffering from anæmia and amenorrhœa. She stated that she had been very anæmic for two years and for the last 18 months had been at home doing nothing. She had never been quite regular and for seven months the catamenia had been absent. There was considerable œdema of the lower extremities, but there was no ascites, she was not pregnant, there was no albumin in the urine, and there was no leucorrhœa. She was suffering from oligocythæmia with considerable oligochromæmia. The blood was of fair colour but appeared to be thinner than normal. The red blood corpuscles numbered 3,830,000 per cubic millimetre. The colourless blood corpuscles were 3000 per cubic millimetre, chiefly lymphocytes and finely granular oxyphile polynuclear leucocytes. She was ordered five grains of dried sulphate of iron in pill three times a day with a drachm of sulphate of sodium in hot water every morning. This was continued for a fortnight, but although she improved in strength and colour the menstrual function was not restored. On Nov. 28th she was ordered five grains of citrate of manganese three times a day, the dose being gradually increased until Dec. 8th, when she was given 15 grains four times a day. On Dec. 13th she menstruated, the period lasting two days. Four days later she left the hospital at her own request.

A few days after leaving the hospital the patient had a bad sore-throat and a cough unaccompanied by expectoration which kept her in bed for a fortnight. During this time her legs were swollen and her abdomen was greatly distended. She was re-admitted on Jan. 9th, 1900, when her temperature was 104° F. and the urine contained much blood and albumin. She had a soft apical systolic murmur conducted outwards to the axilla and round to the angle of the scapula. Her abdomen at the level of the umbilicus measured 34½ inches. It was resonant in front and on the right side, but on the left there was dulness extending from the groin to the lower margin of the ribs, and laterally from the flanks to within two inches of the umbilicus. Nothing was discovered on rectal examination and there was no indication of an ovarian cyst. There was a large quantity of fluid in the abdomen, probably confined by adhesions. The temperature during the first week always reached 101° in the evening, but there was no indication of tuberculous disease either in the lungs or in the larynx. The following report on the condition of the blood was received from the Westminster Hospital Clinical Laboratory under the direction of Dr. Lazarus-Barlow: "Blood taken from finger, 2 P.M. Drop pale and watery in appearance. Hæmoglobin, 65 per cent. Erythrocytes, 3,450,000 per cubic millimetre, of good size and shape. Leucocytes, 7000 per cubic millimetre, of which 54 per cent. are finely granular oxyphile cells and 3 per cent. are coarsely granular oxyphile cells. The remaining

[1] Brit. Med. Jour., Sept. 19th, 1896, p. 728.
[2] THE LANCET, May 27th, 1899, p. 1426.
[3] Berliner Klinische Wochenschrift, Sept. 19th, 1898, p. 833.

43 per cent. is made up of small cells having a single pale nucleus, which in most cases nearly fills the cell and is surrounded by a narrow zone of fine granules staining very deeply with methylene blue and when stained of a deep blue colour without purple tinge. For the most part, the cells are of about the size of lymphocytes, although they are totally different in other respects. A few cells have a larger amount of protoplasm, and these might as far as appearances go be hyaline leucocytes; against this is the presence in them of fine granules staining with a basic dye such as methylene blue. Upon the whole it is probable that these appearances are not artefacts and that the cells are basophile cells with fine granules." The patient passed daily about 30 ounces of urine, of specific gravity 1028, containing nearly one-half albumin and much blood. Urea, 2·5 per cent. No casts were found. The abdomen increased in size and at last became so distended as to cause the patient considerable discomfort. She was very feeble and her general condition was unsatisfactory.

On Jan. 27th Mr. Walter Spencer made an incision one and a half inches in length midway between the umbilicus and the pubes, from which about eight pints of slightly blood-stained fluid were drawn off. On exploration with the hand no disease of the abdominal viscera could be detected. A large glass drainage-tube was left in the abdomen and from this there exuded on the 28th, 34 ounces; on the 29th, 25 ounces; on the 30th, 45 ounces; and on the 31st, 30 ounces of blood-stained serous fluid. The tube was withdrawn on Feb. 5th and the wound was allowed to heal. On Feb. 12th the spleen was found to be enlarged, its lower edge being felt two inches below the ribs. The fluid in the abdomen gradually re-accumulated; the urine still contained large quantities of albumin, and the patient's general condition once more assumed a very unsatisfactory aspect. It was now determined to endeavour to establish a collateral circulation, and on Feb. 20th Mr. Spencer attached a piece of the omentum about two inches square to the anterior abdominal wall by kangaroo stitches. The vessels within the abdomen were congested and the veins were widely distended. On March 14th the superficial abdominal veins were noted to be larger. The wound was practically healed and there was no return of the distension of the abdomen. The mitral regurgitant murmur was more marked and in addition there was a loud systolic murmur heard most distinctly over the left second intercostal space and adjacent portion of the sternum. The albumin had disappeared from the urine. On April 19th the following report of the patient's blood condition was received: "Blood taken from finger 3.30 P.M. Hæmoglobin, 65 per cent.; erythrocytes, 3,000,000 per cubic millimetre; leucocytes, 4640 per cubic millimetre; finely granular oxyphile cells, 56 per cent.; coarsely granular oxyphile cells, 6 per cent.; hyaline cells, 20 per cent.; and lymphocytes, 18 per cent. The hæmoglobin value of each corpuscle is about 100 per cent. The erythrocytes are irregular in size and shape. Many of the hyaline cells and lymphocytes possess a granular cytoplasm, the granules staining with methylene blue. It is doubtful whether these are basophile cells or whether the appearance is artificial." The patient gradually improved in health and strength and was discharged on April 19th. The aortic murmur had disappeared and the mitral murmur was soft and very faint. On June 1st she was reported to be in good health.

Remarks by Dr. MURRELL.—There may be some difference of opinion respecting the nature of this case, but the diagnosis presents no difficulty. The patient when originally admitted was suffering from oligocythæmia and oligochromæmia, but the condition became one of lymphatic leukæmia or lymphocythæmia. It will be noted that when first admitted her leucocytes numbered only 3000 per cubic millimetre, but on the second examination they had risen to 7000 per cubic millimetre. The normal ratio of white to red corpuscles is 1 in 700, but in this case it is 1 in 493. The presence of finely granular basophile cells with the absence of non-granular cells is indicative of some pathological condition of the hæmatopoietic tissues. We find a diminution in the number of the red blood corpuscles and in some cases of leukæmia the condition is carried to an extreme degree so that they fall to 1,000,000 per cubic millimetre. The number of leucocytes varies in different cases, but the abnormal elements always persist. The essential change is the presence throughout the body of large numbers of small non-nucleated cells due to excessive proliferation. The infiltration of the hæmatopoietic tissue of the bone-marrow, with a gradual diminution of the blood-forming area, has resulted in anæmia. The muscular substance of the heart had probably undergone a form of degeneration from the deposition of fine granules within the fibres. The alteration in the composition of the blood played an important part in the production of the œdema by increasing the permeability of the vessel walls. The ascites was also due to the condition of the hæmatopoietic system, for as a result of venous stasis transudation from the peritoneum was taking place. The albumin in the urine may have been due to renal cirrhosis consequent on the long-continued interference with nutrition processes. The attempt in this disease to establish a collateral circulation is a new departure in surgery. The immediate result has been extremely satisfactory, but how far it will prove permanent remains to be seen. It must be remembered that the prognosis in cases of leukæmia treated by ordinary methods is extremely unfavourable. The administration in the early part of the case of a new soluble salt of manganese resulting in the re-appearance of the catamenia is worth mentioning.

Remarks by Mr. WALTER SPENCER.—Some cases, after repeated tappings for ascites, have been known to recover, no further peritoneal exudation occurring. Such recoveries have been attributed to the vascular anastomosis set up by the formation of adhesions between the viscera and parietes. Indeed, one has heard of the tapping immediately preceding the recovery having been followed by some septic peritonitis, and the existence of such adhesions has been frequently noted post-mortem. The clinical signs of the establishment of a vascular anastomosis through adhesions is the appearance of dilated veins over the epigastrium and wall of the thorax in which the current of blood is upwards. In marked cases of dilatation of the veins a fanciful comparison has been made with the Gorgon's head and its crown of snakes, "caput Medusæ." Hence have arisen attempts by surgeons to establish artificially such a vascular anastomosis in order to prevent the recurrence of peritoneal exudations. For this purpose adjacent peritoneal surfaces over the liver have been scratched or the spleen or omentum has been fixed in the abdominal wound. There appears to be no special danger connected with such operations. The adhesions are well above the umbilicus, so that there is no probability of a coil of intestine becoming strangulated beneath the band; for the same reason the gap in the abdominal wall is not likely to lead to a ventral hernia. The operation is at present an empirical, in other words an experimental, one. The pathological explanation of the production of the peritoneal exudation and of its prevention by establishing a visceroparietal vascular anastomosis is not yet sufficiently clear.

LEEDS GENERAL INFIRMARY.

A CASE OF STRANGULATED FEMORAL HERNIA IN WHICH GANGRENE WAS PRECIPITATED BY AN INTRA-ABDOMINAL VOLVULUS.

(Under the care of Mr. R. LAWFORD KNAGGS.)

THE following case is an example of a condition to which until recently very little attention has been devoted. In all cases of volvulus some condition must be present which will fix the bowel in the abnormal position, otherwise the intestine will spontaneously untwist. In many cases of volvulus the weight of included fæcal matter is sufficient to effect the fixation; in the case recorded below the entrance of the loop of bowel into the hernial sac prevented the spontaneous reduction of the volvulus. An interesting case is related by Mr. R. W. Parker[1] in which a volvulus complicated a strangulated femoral hernia but in which there was apparently no causal connexion between the two conditions.

A woman, aged 61 years, who had worn a truss for a left femoral hernia for many years, was admitted into the Leeds General Infirmary on Jan. 6th, 1900. Six days previously the rupture had come down and could not be put back and severe pain and vomiting immediately followed. The bowels had not been opened since. Three days before admission she had been urged by a medical man to go into the infirmary to undergo an operation, but she had resolutely declined. When at last she consented the tumour was of the size of an orange, ill defined, and very tender, and the overlying tissues were red and œdematous. The pulse was 100 and the tongue was moist.

Without delay herniotomy was performed. The sac was found to be gangrenous and infiltrated with pus and adherent

[1] Transactions of the Clinical Society of London, vol. xxvii., p. 189.

to a knuckle of small intestine which was quite dead and did not bleed when incised. There was no fluid in the sac. On opening the bowel no escape of contents occurred, and on attempting to pass a director along the lumen of the gut it could not be introduced beyond the ring. All pus was now carefully wiped away and the parts about the sac were made as clean as possible, and the incision was extended upwards through Poupart's ligament so as to expose the bowel at the entrance to the ring. An interesting disposition of parts was at once revealed, fully accounting for the failure to pass the probe upwards and for the absence of relief. The loop contained in the hernial sac constituted the chief portion of a small volvulus, the neck of which lay just within the abdominal cavity close up against the femoral ring. The twist was one of 180 degrees from right to left and the distended bowel above the twist hung down into the pelvis, whilst the empty bowel coursed directly upwards upon the psoas and iliacus muscles. At the neck of the volvulus the upper end of the loop lay superficial to the lower end. The twist, which constituted a very effective obstruction, was undone and the gangrenous loop was removed, the two extremities being united over a Robson's bobbin. The gangrenous sac was also removed and the wound was closed except for a gauze drain which was inserted down to the seat of union. The patient was completely relieved of vomiting and pain and was able to pass flatus, but death took place 26 hours after the operation from gradual cardiac failure.

Necropsy.—At the post-mortem examination the united bowel was found to be in a satisfactory condition and no unhealthy peritonitis was present. The kidneys were granular and in an advanced stage of disease.

Remarks by Mr. LAWFORD KNAGGS.—Probably most surgeons who have had a considerable hospital experience can call to mind cases of gangrenous herniæ in which after the bowel has been laid open with intent to produce an artificial anus no relief has taken place. Such a case fell to my lot a year or more ago, and after 24 hours I had to open the abdomen above Poupart's ligament and make an opening in the distended coil above the hernia to obtain a relief which unfortunately came too late. At the time of the second operation the cause of the continuance of the obstruction was not made out, and no satisfactory explanation was forthcoming after the post-mortem examination, at which, unfortunately, I was unable to be present. The case recorded above, therefore, from this point of view alone is of considerable interest.

There can be little doubt that in this case the volvulus exerted a determining influence in the production of gangrene of the herniated intestine. For years probably bowel had entered the sac at intervals and had been replaced without harm. On this occasion a small loop chanced to enter in a reversed position and the traction exerted upon the intra-abdominal ends of the loop led to them becoming tightly crossed as in a figure 8 close up to the femoral ring. Immediately an obstruction was formed, not only to the passage of the intestinal contents but to some extent, no doubt, to the circulation. Rapid distension of the loop and engorgement of its coats ensued, and a further and more rigid interference with the circulation resulted as the femoral ring began to restrain the expanding and swelling gut. The onset of these changes must have been rapid, for one is justified in assuming that gangrene quickly supervened from the fact that fluid, with the exception of a slight smearing of pus, was entirely absent from the sac.

Elsewhere [2] I have attempted to study the subject of volvulus as it is met with in connexion with herniæ and I have been able to recognise four well-marked groups of cases. The present case, which was met with after my first paper had been accepted for publication, is an excellent example of the first group. That group includes those cases of volvulus in which the neck lies within the sac, or outside it but close to the ring. Now, though when dealing with the subject generally both these sets of cases were classed together for pathological reasons, yet it is clear that from the clinical standpoint the relation which the neck of the volvulus bears to the neck of the sac is a matter of no small importance. When the neck lies within the sac the exact nature of the condition is at once apparent when that is opened, and the twist can be undone and the bowel returned, if fit, as in the ordinary operation for strangulated hernia. But if the neck of the twist lies close to the ring within the abdomen, its existence may not even be suspected, and if the gut is gangrenous, as is most likely where the rupture is of the femoral variety, and the case is dealt with by the formation of an artificial anus, an abiding obstruction will be left and no relief will take place. Such a condition is, however, now less liable to be overlooked because resection of the gangrenous loop is becoming more and more the rule. But should it be decided for any reason to form an artificial anus, if no relief takes place when the bowel is opened and if the director cannot be readily introduced within the bowel well beyond the ring, then the incision should certainly be extended to investigate the condition of parts within the abdomen, and with the intention of removing the damaged gut.

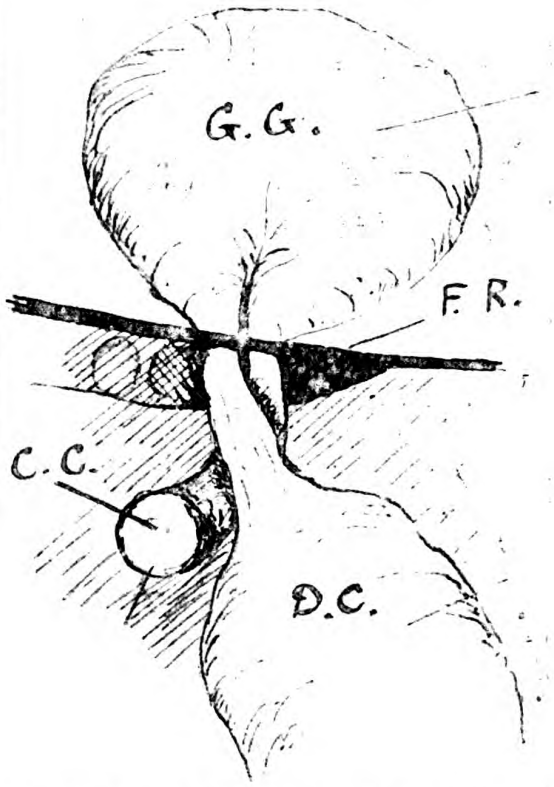


Diagram showing the position of the parts found at the operation. G.G., Gangrenous gut. F.R., Femoral ring. D.C., Distended coil of gut hanging into the pelvis. C.C., Contracted coil of gut directed upwards over the psoas muscle.

It is a simple thing for a loop of bowel to enter the hernial sac in the reversed state, but when once it is engaged the twist may easily become effective. In femoral herniæ under such circumstances the danger of gangrene is greatly increased. It is probable that such a disposition of parts as is shown in the diagram is not infrequent. Its importance is obvious, and it is certainly one that might easily be overlooked or disarranged in making a post-mortem examination.

The want of success in this instance was due entirely to the co-existence of advanced renal disease which would almost certainly have prevented recovery after any operation of importance, but which, even if detected in time, could not have been held to justify non-interference in strangulated hernia.

[2] Annals of Surgery, vol. i., 1900, p. 405.

THE INFIRMARY AT BRECHIN.—The Chairman, at a meeting of the directors of this infirmary, held on June 4th, announced the receipt of a donation of £1000 from Mr. Duke, Bearchill, which is to be applied in helping to pay the cost of maintaining two beds in the name of Mr. Duke and his wife.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Alterations in the By-laws.—The Medical and Surgical Complications of Pyorrhœa Alveolaris.

A MEETING of this society was held on June 12th, Dr. F. W. PAVY, the President, being in the chair.

On the recommendation of the council several important alterations in the by-laws were put to the meeting and carried. The effect of these was threefold—viz.: (1) that the publication of the "Proceedings" would in future cease; (2) that the restrictions which had hitherto prevented Fellows from publishing communications made before the society in any other medical journal or periodical would be removed; and (3) arrangements would in future be made for the publication in the Transactions of the society of reports of the debates on papers read at the meetings.

Mr. RICKMAN J. GODLEE read a paper on some of the Medical and Surgical Complications of Pyorrhœa Alveolaris. He commenced by remarking that although the complaint was a very common one it did not apparently very often give rise to serious symptoms. Pyorrhœa alveolaris or Riggs's disease consisted of a spongy condition and recession of the gums, accompanied, and perhaps caused, by the deposit of tartar around the teeth. The inflammation extended to the peridental membrane or periosteum of the fang with the result that suppurating pockets were formed between the peridental membrane and the tooth. Some held that it depended upon the presence of some special micro-organisms; but the accuracy of this statement had not been established. The disease was one of adult life; it was often apparently hereditary, chronic, and very difficult of cure. Though not usually the source of serious trouble it might give rise to symptoms that simulated those of more grave disorders. Of these, three examples were given from Mr. Godlee's own experience and one from that of Dr. Sidney Martin. The first case was that of a woman, about 40 years of age, in whom a copious offensive red expectoration occurred. She had been the subject of pleurisy and some renal trouble. A few physical signs were present on the right side of the chest, giving rise to the suspicion of a basic cavity. The symptoms disappeared on the effectual treatment of the gums and the digestion and general health improved remarkably. The second case was that of a married woman, aged 25 years, which resembled the first case in many respects. Examination of the expectoration showed that it contained, like the first case, a large quantity of squamous epithelium and separated into two layers. After adequate treatment directed to the gums she lost all her troublesome symptoms. The third case was that of a man, aged 66 years, who presented the disease in a very advanced condition and was attacked by acute glossitis and stomatitis with diarrhœa and pyrexia. These were apparently caused by the state of the gums, for they disappeared when the condition of pyorrhœa alveolaris was remedied. In the fourth case, that of a woman, aged 43 years, the symptoms of cancer of the stomach were apparently caused by pyorrhœa alveolaris; but all the symptoms disappeared when the gums had been effectually treated. In the course of the paper the question of treatment was briefly discussed.

Dr. JAMES DONELAN remarked that the subject was one of considerable interest. Referring to the supposed presence of uric acid in the gums he believed the condition of pyorrhœa alveolaris often had a constitutional origin. He mentioned the case of a man, aged 64 years, a great sufferer from gout, who for some years presented a marked condition of pyorrhœa alveolaris. Whenever this was neglected the symptoms recurred again, but when this was attended to he remained well. In another case, that of a man between 26 and 30 years old, pyorrhœa alveolaris was attended by enlargement of the cervical glands; when the gums were neglected the glands enlarged, but they subsided when these were treated. He believed that sufficient attention was not paid to the teeth in these cases of glandular enlargement.

Dr. GEORGE E. HERMAN referred to the case of a woman from whom he had removed a pyosalpinx in April. During the following week the temperature was raised every day to between 100° and 101·8° F. This could not be attributed to the operation in any way. The patient was found to be suffering from pyorrhœa, and nine days after the operation a dentist was called in who prescribed an antiseptic mouth-wash when the temperature (of which a chart was shown) immediately subsided to normal.

Mr. W. G. SPENCER asked for a more precise definition of the disease and what degree of pyorrhœa was necessary to produce these symptoms. Patients had sometimes come to him for throat affections in which the teeth might have been the source. He had seen cases of muco-purulent pharyngitis set up by a bad state of the teeth and gums. He desired to emphasise the necessity of constant treatment. A persistent dressing of the teeth by the patient should be insisted on. He had recently had a case of pyosalpinx under his care with pyorrhœa alveolaris which had produced anæmia, and he had seen septic conditions set up entirely by bad teeth.

Dr. T. D. SAVILL remarked that he could not agree with Mr. Godlee in thinking that pyorrhœa alveolaris did not give rise to serious symptoms. Very serious nerve symptoms of the class called functional might be produced by the condition. A woman, aged 32 years, consulted him recently with all the symptoms of aggravated hysteria on which the usual remedies had no effect until some stumps concealed beneath her artificial plate had been removed, when she made a rapid recovery. Another case was that of a professional man who gradually drifted into melancholy and committed suicide. A third case was that of a woman suffering from trifacial neuralgia of four years' duration which remained wholly unrelieved until the suppurating sockets of her teeth were properly attended to. In quite a large proportion among his out-patients at the West-end Hospital for Diseases of the Nervous System the cause could be traced to pyorrhœa alveolaris, and among the symptoms they presented were listlessness, restlessness, a sense of fatigue, tingling of the extremities and actual œdema which differed from ordinary anasarca in requiring more prolonged pressure to produce the pitting, headache, shivering attacks, nervousness, irritability, depression, dyspepsia, and a number of others.

Mr. C. S. TOMES remarked that the prominent place assigned to the expectoration as a symptom by Mr. Godlee was not in accordance with his experience. The expectoration and discharge from the gums were usually swallowed and were therefore not prominent features in an average case. It was only at night that any bloody fluid ran out and stained the pillow. In answer to the questions, What degree of pyorrhœa was necessary to produce symptoms? and how did the condition differ from senile conditions of the gums? if without obvious cause pressure along the margin of the gums caused purulent fluid to come out of the sockets of the teeth pyorrhœa alveolaris was present; and this was sufficient to produce symptoms. Referring to the question of treatment, antiseptics applied between the tooth and the gum greatly improved matters at once, but this did not always last. Another form of treatment was that originally practised by Riggs which consisted of scraping away the margin of the alveolus. It was a very tedious and painful operation. This for a time also relieved, but here also relapses occurred. The disease occurred in animals as well as in mankind. Persons suffering from the disease presented a very characteristic sallowness. If a tooth were extracted from an affected socket it was extremely rare for the wound to go wrong, strange as this might seem. As to the presence of urates in the tartar there was no reliable evidence in this matter and fallacies were numerous, especially in the murexide test, which was the one that had been employed.

Dr. W. EWART remarked that this debate demonstrated the value of having a jointly medical and surgical discussion. Many men were very familar with the far-reaching effects of this disease, though the symptoms were not described in books. Some of the symptoms belonged to the so-called functional neuroses and the effects so produced might be sufficient to ruin the life of the individual as a wage-earner or useful member of society. The symptoms, however, were eminently curable. He wished particularly to take exception to the statement that the disease did not lead to serious consequences. He wished to refer to one or two in particular. The fœtor of bronchiectasis was largely dependent, he believed, in some cases at any rate, on infection from the mouth. He believed that pyorrhœa alveolaris was also capable of generating malignant endocarditis. He considered that many cases of so-called primary malignant

endocarditis might be explained in this way—viz., the source of infection being in the mouth. He thought that three cases he had recently seen were probably instances of this mode of causation.

Mr. WILLIAM HERN discussed the question whether the pyorrhœa was of constitutional or local origin. Patients were often suffering from gout or rheumatism or some other constitutional condition, but in his belief it more often had a local origin. The malady frequently started from one or two teeth. It rapidly improved under local treatment, especially antiseptic measures, and if the affected tooth were extracted the disease came at once to an end. He had seen cases of acne rosacea improve after effectual treatment of the concurrent pyorrhœa.

Mr. W. B. PATERSON referred to the case of a married woman, aged 35 years, who for two years had been under medical treatment for a purulent discharge which she said she coughed up. She was treated by many different specialists for disease of the nose, the pharynx, the ear, and finally the mastoid cells were trephined; but at the end of two years, after spending a fortune in medical advice, the pyorrhœa was treated daily for a week and she improved at once.

Mr. GODLEE, in reply, said the discussion had brought out a large number of interesting facts. A desideratum was, however, still wanting in a satisfactory method of treatment which the patient could employ himself. He had seen tuberculous glands in the neck develop as a result of pyorrhœa. As to the presence of squamous epithelium in the sputum this could always be obtained in large quantity from the saliva, especially when the patient sucked his gums.

OBSTETRICAL SOCIETY OF LONDON.

Extra-Uterine Gestation.—Exhibition of Specimens.

A MEETING of this society was held on June 6th, Mr. ALBAN DORAN, the President, being in the chair.

The PRESIDENT read a paper on a case of Extra-Uterine Gestation in which Fœtal Death occurred at the eighth month after Spurious Labour; Abdominal Section two months Later. The patient, aged 34 years, became pregnant for the fifth time, after an interval of four years, in February, 1899. Abdominal pains occurred early; diarrhœa caused trouble from July to the end of October, when labour pains and hæmorrhage set in, followed by septic symptoms. The outline of a fœtus could plainly be felt through the parietes. On Dec. 12th it was removed by abdominal section. It was very fœtid and had developed in the posterior layer of the right broad ligament. The sac was packed with gauze for a few days and then drained; the placenta came away in fragments. A fæcal fistula developed and discharged for a few weeks. For six weeks the patient did very well, then symptoms of chronic obstruction with great emaciation set in, and she died in the ninth week after operation, flatus passing to the last. Several coils of small intestine had been dragged upon by the contraction of the sac; the adhesions involved several surfaces of mesentery, which seemed to account for the emaciation, strongly marked in this case, where there was but little vomiting or distension. The President dwelt on the infection of the sac, especially common in posterior tubo-ligamentary pregnancy (Taylor), on the diarrhœa observed when placenta was attached to intestine (Freund), and on the inanition caused by the changes noted in this case. As there was no true sac-wall inferiorly in this form of ectopic gestation complete extirpation of the sac seemed hardly possible. He dwelt on Dunning's case and on those collected by Jayle and Delherm, and expressed doubts as to the precise anatomical character of the sac in some of these cases. Finally, the President agreed with Taylor in preferring to pack and drain the sac, but did not know of any method of dressing which could obviate the dangers which followed the contraction of the sac-wall.

Mr. BUTLER-SMYTHE said that in this particular case the fœtid contents of the sac would alone have prevented any attempt at enucleation. He considered that the patient's life had been prolonged owing to the treatment adopted by the President, who repeatedly washed out the sac with a strong solution of iodine before closing the wound. He (Mr. Butler-Smythe) advocated this method in all similar cases.

Dr. C. J. CULLINGWORTH congratulated the President on his paper and wished to endorse his opinion of the great value of Mr. J. W. Taylor's recent work on extra-uterine gestation. He agreed with him that although the ideal method of dealing with the sac was to remove it there were cases, such as the one under discussion, where such a procedure was impracticable. If the sac were left free drainage was important, but he disapproved of packing the cavity with gauze, especially in the case of a necrotic gestation sac. Gauze-packing was, however, useful for checking hæmorrhage or for the prevention of secondary hæmorrhage. He considered that antiseptic irrigation of a necrotic gestation sac might temporarily deodorise, but could not disinfect, its walls. Moreover, irrigation had its dangers and putrid matter might be carried through lesions in the continuity of the sac-wall to adjacent structures. Irrigation as a routine practice in gynæcological surgery should be less generally adopted. He considered that Freund's view which the President had adopted, that the diarrhœa in these cases was an indication that the placenta was attached to intestine, was not always correct, and that the diarrhœa was partly the result of irritation from pressure and was partly one of the symptoms of septic infection. This case bore out his opinion that spontaneous closure of fæcal fistulæ might always be reasonably hoped for when they were not too low down in the rectum and when the subjects were free from tubercle or malignant disease. He did not believe that this patient's life could have been saved by any treatment.

Mr. J. D. MALCOLM had seen the patient before and during the operation and thought that the President had, if anything, understated her extreme emaciation and debility. The development of fæcal fistulæ within a few days of the operation proved that it would have been impossible to remove the sac. He agreed with Dr. Cullingworth that washing out the abdomen was done too frequently, but in this case with a putrid cavity and much sloughing placental tissue on its walls it was most necessary. As regards the mode of death, judging by the alternate distension and flattening of the abdomen, he thought there must have been an escape of gas from the upper bowel as long as the patient lived. Thus the symptoms were not those of obstruction of the bowels, although an obstruction, with a fistula, actually existed, and death was due to exhaustion and malnutrition.

Dr. ROBERT BOXALL had twice seen a fæcal fistula heal in the same patient when in a serious condition of ill health from a suppurating dermoid tumour. It was an important fact that such fistulæ would sometimes heal even when the patient was seriously ill. He suggested that a rubber bag (like a child's balloon) might with advantage be substituted for gauze packing. By attaching a tube and funnel and filling with solution pressure could be regulated to a nicety. It could be emptied by syphoning out the fluid and easily refilled, thus avoiding the disadvantages of repacking.

The PRESIDENT noted that Tait's "abdominal pregnancy" was a tertiary change, as Taylor had ably demonstrated; a tubal sac burst in the first place between the layers of the broad ligament and afterwards this secondary intra-ligamentary pregnancy burst into the peritoneal cavity. Taylor distinguished a more frequent secondary form of abdominal pregnancy. The President's own case was one of the typical "posterior tubo-ligamentary" varieties of Taylor. He was relieved to find that the society supported him in his opinion that no attempt should have been made to remove the sac. In that case the diarrhœa prevailed before the death of the fœtus, and the placenta was, in fact, attached to the rectum. These facts supported Freund's theory. Pure tincture of iodide, as Mr. Butler-Smythe had observed, was an excellent application for an irremoveable fœtid cyst-wall. He was compelled to wash out the sac freely on account of the fragments of placenta and fæcal matter which it contained. Antiseptic lotions stimulated the exposed tissues and caused granulations to develop, yet ulceration or sloughing might occur in very sickly cases, as Dr. Cullingworth, who objected to lotions, had implied. He had removed the packing within a few days. Dr. Boxall's suggestion that the sac might be prevented from too rapid contraction by means of an inflatable thin rubber bag seemed worth a trial. The fistula was low down in the rectum. In conclusion, the President feared that the operator must still depend more than he cared for on luck, as no certain method for preventing the dangers due to contraction of an irremoveable sac of this kind was at the operator's disposal.

The following specimens were shown:—

Dr. W. S. A. GRIFFITH: (1) Squamous-celled Epithelioma

of the Cervix Uteri in a Very Early Stage; and (2) Squamous-celled Epithelioma Invading Surrounding Tissues like a Columnar-celled Variety.

Dr. H. RUSSELL ANDREWS: Sarcoma of the Uterus.

Dr. HUBERT ROBERTS: (1) Large Cystic Fibro-myoma Adenoma of the Cervix Uteri; and (2) Microscopical Sections Illustrating Various Forms of Uterine Adenoma.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Tubal Pregnancy.—Pan-Hysterectomy.—Delivery of the Placenta.

A MEETING of this section was held on May 25th, Dr. A. V. MACAN, the President, being in the chair.

Dr. ALFRED SMITH showed a specimen of Ruptured Tubal Pregnancy, consisting of the distended tube showing rupture, the fœtus (three centimetres long), with umbilical cord and placenta. It was removed from a patient, aged 33 years, who had given birth to a full-term child six months previously. Menstruation returned one month after confinement and continued regularly up to the time of rupture; no period had been missed. The patient was brought to Dublin from Kilkenny. Convalescence was normal.

Dr. F. W. KIDD read notes of a successful case of Pan-hysterectomy performed on the Pregnant Uterus at Full Term. The patient was a primipara of over 40 years of age. The presenting part could hardly be reached owing to the whole of the true pelvis being blocked with myomatous growths and no definite diagnosis of the presentation could be arrived at. An abdominal incision was made extending from two inches above the pubes to two inches above the umbilicus. The broad ligaments were first ligatured and then cut, then the round ligaments, and then the peritoneum on the outer surface of the uterus was divided transversely and stripped down, taking the bladder with it; the uterine vessels were tied, and when the peritoneum had been stripped down posteriorly the vagina was cut across as close to the presenting head and arm as possible. The vagina was inverted and sutured, turning in the mucous membrane, the broad ligaments were brought together, and in the middle line the peritoneum attached to the anterior surface of the bladder was sutured to the peritoneum on the posterior wall of the vagina, completely covering over the stump of the vagina and leaving the pelvis quite clean and dry; the ligatures on the uterine vessels had been drawn down before the peritoneum was stitched over them. The patient made a good recovery. The specimen, which was exhibited, contained the child in the uterus, only the head and one shoulder having escaped from it. The method of preserving the specimen was as follows:—Fluid No. 1: formalin, 10 parts; acetate of potash, 15 parts; chloride of potash, 0·5 part; water, 100 parts. The specimen was placed in this for 48 hours, changing at the end of 24 hours. Fluid No. 2: methylated spirit, 80 parts; water, 10 parts. The specimen was placed in this for 48 hours, changing at the end of 24 hours. Fluid No. 3: pure methylated spirit. The specimen was placed in this for 48 hours. Fluid No. 4: glycerine, 20 parts; acetate of potash, 10 parts; water, 100 parts. The specimen was preserved permanently in this.

Dr. HENRY JELLETT read a paper entitled, "The Dublin Method of Effecting the Delivery of the Placenta." He commenced by remarking that in 1876 two well-known medical writers called attention to the fact that the method of effecting the delivery of the placenta by external manipulations, as opposed to its manual removal or to its delivery by traction upon the funis, had been first introduced in Dublin, and that it was identical with the method of obtaining the same object which had been introduced at a later date in Germany by Credé of Leipsic. In 1900, all German, and the great majority of British, works on midwifery term this method "Credé's method," while the few works which allude to the fact that the Dublin school of midwifery had some share in introducing this most important improvement in the management of the third stage consider that there is a difference between the Dublin method and Credé's method. He said that his paper was written to prove: (1) that the method of obtaining the delivery of the placenta by external manipulations as opposed to its manual removal or its delivery by traction on the funis was originated in Dublin; (2) that Credé's method was identical in principle with the Dublin method and that it rapidly came to assimilate itself to the Dublin method in its most important details; and (3) that consequently there is no difference between the Dublin method and Credé's method and that inasmuch as the method originated in Dublin many years before the time that Credé discovered it for himself its name is, and ought to be, "the Dublin Method." Dr. Jellett then described the gradual evolution of the Dublin method of effecting the delivery of the after-birth from the time of Fielding Ould up to the time of Sinclair and Johnston. He then described Credé's method in Credé's words as taught by him in 1853, and said that in 1860 Credé brought his method prominently before the German medical world at a meeting of the Association of Physicians and Naturalists held in Königsberg. In Dublin the method had been practised clinically at the Dublin Lying-in Hospital from time immemorial.—Dr. W. J. SMYLY said that they should be thankful to Dr. Jellett for the proofs which he had brought forward. Nevertheless, he thought that there was a distinction between Credé's method and the Dublin method. The fault of Credé's method was that it was too active and if they expelled the placenta too soon they might leave portions behind leading to post-partum hæmorrhage and sub-involution. Another point likely to be lost to the Dublin school was the method of preserving the perineum, generally known as von Ritgen's method, which undoubtedly originated in Dublin.—The PRESIDENT said that the question was whether the Dublin method was the same as Credé's. As far as he could see the Dublin method differed in that in it the hand was applied to the abdomen and pressure begun as soon as the child's head was born, the pressure being used to express the shoulders and then continued to expel the placenta. He wished to emphasise the fact that the Dublin method began before the third stage of labour—namely, the moment the child's head was born. He was convinced that in the great majority of cases the third stage of labour should be left alone as well as the second stage.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 15th, Mr. W. H. Horrocks, jun., being in the chair.—Dr. C. C. Baxter-Tyrie read notes on a case of Thoracic Aneurysm. The patient was a man, aged 51 years, whose illness commenced about two years previously. While engaged in valuing some stock on a farm he jumped about eight feet down into a field and "felt something give way" in the lower sternal region and at once became faint. He was taken home and an hour afterwards he expectorated about a teacupful of pure blood. Physical examination revealed no abnormal signs except rhonchi at the bases of the lungs. There was no return of the bleeding and after a few months the man apparently recovered, although from time to time there was an irritating cough and some oppression at the chest. Five months before he died œdema of the lower extremities was noticed; there was much wasting and the patient complained of a constant irritating cough and of dyspeptic symptoms. There was pain in the epigastrium which passed through to the back and at times extended round the body, following the course of the eighth and ninth dorsal nerves. There was accentuation of the second sound of the heart, otherwise the physical examination of the heart area showed nothing abnormal. There was no alteration in the radial pulses, no pupil change, no dysphagia, and no alteration in the mobility of the trachea. A constant irritating cough was present but there was no peculiarity in its intonation. There was occasional paroxysmal dyspnœa with inspiratory stridor. From time to time small quantities of blood came up into the mouth without effort. The patient died suddenly while in bed from profuse hæmorrhage. There was no necropsy.—Dr. J. Kerr, Dr. H. J. Campbell, and Dr. H. C. Major discussed the case and Dr. Baxter-Tyrie replied.—Dr. R. H. Crowley read a paper on Uræmia. It was concluded that all cases of uræmia were due to the retention of some toxic substance or substances in the blood which should have been excreted by the kidneys. The poison might not be always the same, nor was its non-excretion necessarily due to renal inadequacy alone. In regard to treatment it was urged that preventive treatment was of the first importance in all cases in which it was likely or possible that uræmia might occur. Attention to the free action of the bowels and of the skin together with

regulation of the diet were most important from the point of view of prevention. During a mild uræmic attack where there was much vomiting the use of an enema of magnesium sulphate was advocated as being of great value. In using the hot vapour bath the danger was mentioned of prolonging it in cases where sweating was not soon induced. To promote sweating the careful use of pilocarpine in doses of one-tenth of a grain was advocated, the patient being first put into a hot pack and a copious draught of hot tea having been administered. In some cases of convulsions, in eclampsia, and where there was a high-tension pulse the withdrawal of 20 ounces of blood was often followed by very marked relief. Lavage of the stomach was alluded to as a means of treatment which was neglected somewhat in England, and which was likely to give beneficial results. The injection of saline fluid, either directly into a vein or preferably into the loose subcutaneous tissues, was favourably spoken of.—Mr. W. H. Horrocks, jun., read a paper on the Medical History of Gibbon the Historian.—Specimens were shown by Dr. S. Lodge, jun., and Dr. R. H. Crowley.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on May 18th at the Medical School, Leopold-street, Sheffield, the President, Dr. J. B. Hellier, being in the chair.—Dr. H. Briggs (Liverpool) showed numerous specimens and water-colour drawings illustrating the various types of villous endometritis, and of benign and malignant adenoma of the uterus. He alluded more particularly to the difficulty of deciding upon the microscopic evidence between inflammatory conditions of the endometrium and malignant adenomatous disease of the uterine glands and quoted several illustrative cases.—Remarks were made by Dr. A. Donald (Manchester) and Dr. Martin.—Dr. Donald showed a Uterus with Multiple Fibroids and containing a fœtus of four and a half months' development. The tumours were situated in the pelvis, below the fœtal sac, and would have obstructed labour. The whole mass was successfully removed by abdominal hysterectomy. —The President showed a Large Dermoid Cyst with a twisted pedicle successfully removed by abdominal section.—Dr. A. W. W. Lea (Manchester) read a paper entitled the Influence of Gonorrhœa on the Puerperium, with Notes of 50 Cases. The diagnosis of gonorrhœa at the time of labour was based upon the occurrence of ophthalmia neonatorum in the infant within three days of delivery, combined with the previous clinical history of the case. The puerperium was normal in 60 per cent. of the cases, as judged by the absence of pyrexia. In four of these, however, at the fourteenth day there was some evidence of pelvic inflammation. In two cases there was perimetritis with swelling in the region of the appendages, and in two cases parametritic exudation was present. In 40 per cent. of the cases the puerperium was abnormal, characterised by pyrexia, often severe, together with symptoms of local infection of the genital tract. The rise of temperature usually commenced on the third or fourth day after delivery and was usually associated with purulent discharge from the uterine cavity. In many of the cases the infection remained limited to the uterus, but in five instances (10 per cent. of the total number) acute pelvic peritonitis ensued with a severe illness lasting some weeks. Details were also given of three cases in which a previously existing gonorrhœal infection of the appendages became virulent during or immediately after labour, each case terminating fatally. From a study of these cases and a review of the literature of the subject the following conclusions were drawn:—1. The presence of a purulent vaginal discharge during labour which was capable of causing ophthalmia neonatorum rendered the patient liable to puerperal infection. 2. This infection was in many cases a mixed one, the gonococcus being associated with staphylococci and streptococci. The gonococcus itself was capable of causing severe infection and might be obtained in pure culture from the cavity of the uterus (Kronig Bumm). 3. Lacerations of the perineum, vagina, or cervix, forceps deliveries, and prolonged labour greatly increased the liability to infection. 4. The types of disease met with were—(1) purulent endometritis, (2) acute pelvic peritonitis with metritis, (3) acute parametritis, and (4) septicæmia (rare). 5. In some cases an old infection of the appendages might light up during labour or after delivery leading to acute peritonitis which might be fatal. 6. The prognosis as to life was usually good, though recovery was often imperfect. 7. The treatment by vaginal douches after labour was insufficient in many cases to prevent infection of the endometrium. 8. If infection of the uterus occurred uterine douches should be given daily, the patient maintained at absolute rest, and a careful watch kept for evidence of localised pelvic peritonitis. If douches failed to control the infection the uterus might be explored and curetted if there was evidence of retained products or hypertrophy of the decidua. Cases of localised pelvic peritonitis requiring operation should be treated by vaginal section.

Reviews and Notices of Books.

Heart Disease with Special Reference to Prognosis and Treatment. By Sir WILLIAM H. BROADBENT, Bart., M.D., F.R.S., F.R.C.P. Lond., &c., Physician Extraordinary to H.M. the Queen, Physician in Ordinary to H.R.H. the Prince of Wales, Consulting Physician to St. Mary's Hospital and the London Fever Hospital; and JOHN F. H. BROADBENT, M.A., M.D. Oxon., M.R.C.P. Lond., Medical Registrar to St. Mary's Hospital. Third edition. London: Baillière, Tindall, and Cox. 1900. Pp. 420. Illustrated. Price 12*s.* 6*d.*

ADVANTAGE has been taken of the call for a new edition of this work to bring it fully up to date, and with this view chapters on Acute Affections of the Heart, Endocarditis, Pericarditis and Myocarditis, and on Aneurysm of the Arch of the Aorta have been added. The authors do not profess to give a systematic and complete treatise on each subject or to enter into a discussion regarding the conflicting views which have been entertained on various points of pathology and etiology; their object has been rather to endeavour to place before the reader a clinical picture of each disease and to emphasise the points which are of chief importance in diagnosis and prognosis. Taken from this practical standpoint the work contains a vast amount of information which should prove most useful to the practitioner. Patients are naturally anxious to know what will probably be the result and length of the illness from which they are suffering, and particularly is this the case with any trouble affecting the heart. The sufferer cares but little whether a certain cardiac murmur which the physician hears is congenital or the result of infantile rheumatism, but he has the most supreme interest in trying to ascertain to what the cardiac condition is likely to lead. The chapters on Prognosis are about the best in the book. The style in which they are written is clear and precise and the practitioner having carefully studied them will feel in a position to fully explain to his patients the probable results of the affections of the heart with which they may be unfortunately affected.

The subjects of Hypertrophy and Dilatation of the Heart receive considerable notice and we would especially draw the attention of readers to the chapter which deals with these conditions. The most important indications as to the extent of a valvular lesion are to be gathered from its effects on the walls and cavities of the heart, resulting in hypertrophy of the former and dilatation of the latter. Sir William Broadbent's remarks are the result of careful study and large experience and they will consequently be read with a confidence inspired by their origin.

We are informed in the preface that the chapters on the Inflammatory Affections of the Heart are entirely the work of Dr. John Broadbent. These conditions have been more carefully studied during recent years and are therefore more fully understood than they were formerly, and the author has given a good summary of the advances which have been made. The general style of the work has been maintained and especial attention has been paid to the clinical aspect of the diseases, although their pathology has not been neglected.

The chapter on Angina Pectoris does not seem to have received the careful attention which has been devoted to

other parts of the book. The form of this affection known as "angina vasomotoria" is now generally recognised by most authorities as occurring more frequently than had hitherto been suspected and to be of considerable clinical interest. Only one page, however, is occupied with its consideration in this volume. The differential diagnosis of this variety has been shown to be of great importance and it is a matter of regret that a more lucid description is not given.

The subject of Aneurysm of the Arch of the Aorta, on the other hand, is fully discussed, although the treatment is given rather too briefly and the more modern methods of treatment, such as the injection of substances intended to increase the coagulative power of the blood, are not mentioned.

The Principles and Practice of Modern House Construction. Edited by G. LISTER SUTCLIFFE. In Two Volumes. London and Glasgow: the Gresham Publishing Company. 1899. Vol. I., pp. 503; Vol. II., pp. 512. Price 50*s*.

THIS important work has been issued in two handsome volumes which contain no less than 700 figures in the text as well as a series of separately printed plates. The staff of collaborateurs numbers 17 and includes the names of recognised authorities on sanitary science, medical men, chemists, and architects. "Construction," perhaps, has been dealt with at greater length and in greater detail than any other branch, but the subject is an exceedingly comprehensive one and the whole work opens our eyes to the remarkable number of pure science matters upon which the question of house construction hinges. Most of the contributions are written so as to be understood by the average householder, although it may be said that technicality is more obvious in those sections contributed by architects. There can be little doubt of the value of the volumes as a whole upon the wide field with which they deal. It is not easy to bring a contribution of this kind up to date considering the compilation which it entails. Nevertheless, in it will be found a broad and intelligible exposition of sanitary principles underlying hygienic house construction, and the various contributions are written completely in accordance with modern knowledge.

The general introduction is by Dr. F. W. Andrewes who contributes an interesting historical sketch of the growth of sanitary science. In this task he has been considerably assisted, as he acknowledges, by the writings of Sir John Simon. In these introductory chapters is defined in a clear and interesting manner the position of sanitation at the present time as compared with what it was in the past. Indeed, it is safe to say that attention was only given to this important aspect of public health with the dawn of the Victorian era. When this fact is borne in mind it will be readily understood what enormous and satisfactory progress has been made in the application of the principles of sanitary science. With the growth of knowledge of what constitutes sanitary environment and the application of this knowledge the improvement in the public health has kept corresponding pace. Although sanitary science is not as exact as is desirable in some particulars, especially in regard to the why and wherefore of well-known facts, still sanitarians have been guided correctly by practical experience in the absence of an exact knowledge of the causes of unhealthy conditions. At the present moment, for example, we possess no certain knowledge of the nature of the poisonous action of sewer air, but that sewer air predisposes to an unhealthy condition undermining the natural resistance of the body to unhealthy influences is a clear fact which experience has established. Dr. Andrewes says that it can hardly be supposed that when largely diluted after escaping into a house sewer air can owe its evil properties to its gross chemical composition. "Something more subtle than this must be at work, and it has been suggested that the organic matter present in it may contain an obscure chemical poison, possibly of an alkaloidal nature." We believe that this suggestion had its origin in the editorial columns of THE LANCET and we have seen nothing as yet which is opposed to such a suggestion. While on this subject Dr. Andrewes might with advantage have given a summary of the experiments conducted by the Italian investigator Dr. Alessi who showed that rats when exposed to sewer air were very susceptible to typhoid poisoning, while in the same series of experiments rats that had enjoyed fresh air seemed proof against the invasion of the typhoid bacillus even when it was inoculated subcutaneously. The remarks of Dr. Andrewes on disinfection and the disposal of refuse and other subjects should be of especial interest to those whose work relates to the structural points of houses.

In Section I., which follows the general introduction, Professor Robert Kerr, F.R.I.B.A., discusses the aspects of houses. Here he enters into general considerations, such as site, aspect, light and air, and style of plan. We note with pleasure that the author does not take quite the view of Bacon that "houses are built to live in and not look on," though from the point of view strictly of public health there is no doubt that efficiency of construction is more important than structural beauty. Professor Kerr keeps in view the sanitary requirements as well as the artistic effect. The succeeding article, which is devoted entirely to construction, is contributed by the editor and the information contained therein is of the most valuable kind and is worthy of perusal by all interested in the construction of houses; indeed, we have found that the writer refers to some very recent materials so that some good hints may be derived by architects and builders from this contribution.

The next subject dealt with is that of Water-supply, in Section III., by Mr. Henry Law, M.I.C.E., in which the sources of supply are considered and the best way of tapping them. This involves the important questions of the raising of water and its conveyance. Mr. Law concludes with a chapter on the purification of water in which he gives excellent practical details of the methods employed for the filtration of water and for softening water by well-known processes. Water-supply from the Domestic Point of View is the subject of the next section, by Mr. Henry Clay, and we find here the kind of information that is constantly in requisition and a description of the materials used for the pipes, the nature of joints, cocks, and taps, and the principles underlying the systems of hot-water supply. We are glad to find that Mr. Clay has not omitted to mention the dangers arising from boiler explosions. He fully describes the safety-valves which have been devised to avoid such contingencies and rightly lays stress on the importance of examining these valves from time to time. He concludes this section with a description of a mercury regulator which appears to us to be more convenient and reliable than other devices. The next section (Section V.) relates to household filters and is contributed by Dr. H. Jossé Johnson, who has conducted some excellent original inquiry on the subject. He refers to the Report on Filters and Other Water-purifying Agents by THE LANCET Sanitary Commission of 1867,[1] when of course the methods of testing a filter did not admit of the precision of the present day, bacteriology having now been brought to bear upon the subject. In regard to modern investigation he gives in one instance a wrong reference. The table which he reprints did not appear in THE LANCET, 1894, vol. ii.,

[1] THE LANCET, Jan. 12th (p. 53), March 23rd (p. 371), and July 6th (p. 13), 1867.

p. 1058, but it occurs in the paper communicated by Dr. Sims Woodhead and Dr. Cartwright Wood to the corresponding number of the *British Medical Journal*. We may say that these researches have thrown great light upon the question of domestic filtration. They practically showed that the bulk of domestic filters were worse than useless. Sections VI., VII., and VIII. inclusive relate to sanitary plumbing, sanitary fittings, and drainage. The last section of the volume (Section VIII.) contains an excellent chapter on the flushing, cleansing, and testing of drains.

The second volume opens with a chapter on Sewage Disposal by Mr. Percy Boulnois, in which we find a very fair synopsis of the methods of disposal past and present. The portion on Bacterial Methods might have been written at greater length considering the enormous advances that have recently been made in regard to the bacteriological disposal of sewage. This section is followed by Section X. on Warming, by Mr. E. R. Dolby, which contains a very useful account of proper and improper methods of heating. The author might with advantage have referred to THE LANCET Commission on Gas Heating. Section XI. deals with the same subject except that the warming and cooking methods described are effected by means of the electric current. Following this section is an admirable contribution on ventilation by one of the foremost exponents of the subject, Mr. William Henman, whose name is associated with the plenum system of ventilation introduced at the Birmingham New General Hospital, of which he was the architect. In succeeding sections lighting is dealt with in all its forms, candles, oils, and electricity, by Mr. A. Claremont; while Mr. Henry Clay adds a good account of modern methods of gas-lighting. In this account he refers to the report of THE LANCET Commission in January, 1895, upon the Welsbach burner. His conclusions are correctly based on these results but hardly in grammatical terms, an error which might appear to be due to the original Commission, but this is not the case. Indeed, the word *sic* placed in parenthesis after a verb in the singular which should be in the plural is evidently a query by the editor. Space not permitting even a passing reference to certain other sections connected with house construction we may pass on to chapter iv. of Section XVII. by the editor, on the Improvement of Existing Houses. In this chapter defective plumbing and drainage are dealt with and the editor acknowledges that he has taken advantage "of the valuable report (published in THE LANCET of July 4th, 1896) of THE LANCET Special Commission on the Relative Efficiency and Cost of Plumbers' Work." The permission of the Editors of THE LANCET is also acknowledged in regard to the reproduction of certain plates which are illustrations of three typical houses containing almost as many sanitary defects as possible, with illustrations of the best way of removing these defects. We may state that an addendum to this work of our Commissioners has since appeared in our columns (March 4th, 1899) under the title of "Report of THE LANCET Special Commission on the Water-supply and Disposal of Sewage in Rural Districts," but of course this appeared too recently for useful abstraction in the present edition of the work under notice. The remaining sections refer to Climate and Situation, by Dr. E. F. Willoughby; Stables and Cow-houses, by Mr. F. W. Lockwood; and Sanitary Law, by Mr. A. Wynter Blyth. Mr. Wynter Blyth's contribution appears to be a simple compilation of statutory provisions in regard to the subjects within the province of public health.

This excellent production is one which merits congratulations on all sides. The staff of contributors comprises acknowledged authorities on the many subjects concerned and there are evidences throughout the pages of excellent editing, while the style of the volumes is attractive and very creditable to the publishers. No subject could be of more importance than modern house construction and it is surprising to find on reflection what a number of specific scientific subjects it involves. Hitherto, we believe, no literary work has been devoted exclusively and so comprehensively to the subject as is the one before us, and we are confident that it will be looked upon as the standard of reference.

Practical Gynæcology: a Handbook of the Diseases of Women. By HEYWOOD SMITH, M.A., M.D. Oxon. Second Edition. Revised and Enlarged. London: H. J. Glaisher. 1900. Cr. 8vo. Pp. 230. Price 5*s.* nett.

THIS is the second edition of a book the first edition of which appeared in 1877. After the lapse of so long a period of time as 23 years it may well be questioned whether it is worth while attempting to do anything short of completely re-writing a text-book, and most especially one dealing with a subject such as gynæcology, in which such enormous strides have been made in our knowledge during recent years. Dr. Heywood Smith says in his preface that these great advances have necessitated a thorough supervision of the text. Of this there can be no doubt; it remains to be seen whether or not this has been done to a sufficient extent. The book consists of a summary of the various gynæcological affections based upon the nomenclature of the Royal College of Physicians of London, and under each disease are given its definition, cause, symptoms, signs, diagnosis, prognosis, and treatment. Some of the definitions are good and sufficient, but others suffer from the brevity which is essential in a work of the kind. Thus, the definition of a mole as "a spoilt egg," although qualified by the statement that the life of the ovum is destroyed and that it is expelled as a shapeless mass, hardly conveys a correct idea of the pathology of this condition to the reader. The author lays a good deal of stress upon the results of "attempts at unimpregnated ovum development" as a cause of the formation of ovarian cysts. We are surprised to find that Dr. Heywood Smith apparently still endorses the recommendation of the late Dr. Protheroe Smith to prepare some patients for ovariotomy by a preliminary venesection. Such a practice is hardly likely to benefit a patient before what may be a difficult operation attended with a good deal of hæmorrhage, even if the pulse should be incompressible. There is evidence of want of care in the revision of the book and, upon the whole, the endeavour to bring it up to date cannot be said to have succeeded. No mention is to be found of pyosalpinx in the index, and all that is said about it in the text is "that inflammation of the oviduct may pass into abscess (pyosalpinx)." The term "puerperal fever" has been expunged from the Nomenclature of Diseases of the Royal College of Physicians of London, 1896, and yet both puerperal fever and puerperal septicæmia are described under separate headings as if they were separate and distinct diseases. If more care and trouble had been expended in really bringing the book up to date it might have fulfilled the wish of the author that it should serve as "a refresher for the busy general practitioner," but in its present form we are afraid it will hardly fulfil this function.

UNIVERSITY COLLEGE, BRISTOL.—The Associateship of University College, Bristol, has been conferred on Mr. William Marmaduke Bergin, M.B., L.R.C.P. Lond., M.R.C.S. Eng.

LONDON HOSPITAL MEDICAL COLLEGE. — The prizes and certificates will be distributed to the students and probationers this year on July 19th, at 3.30 P.M., in the library of the college by Mr. Frederick Treves, F.R.C.S. Eng., consulting surgeon to the hospital

THE LANCET.

LONDON: SATURDAY, JUNE 16, 1900.

SUNDAY, June 24th, is the day selected this year for the simultaneous appeal from all the London pulpits on behalf of the medical charities of the great metropolis. For 27 years this annual appeal has been made with results which we have recorded in our special supplements; and to the Supplement for 1900, which we publish to-day, we now refer our readers, begging them one and all to use their utmost influence that the Fund may continue to be the success that it has been; and more, that it may grow with the growing needs of the institutions which it has been designed to assist. We know that the interest of the medical profession in this great Fund is unabated, but we wish that the laymen into whose hands many of the supplements will pass would make some more vigorous attempt to realise that a great responsibility in the matter rests upon them. To us it seems impossible to read, nay, to glance at, the figures relating to the Metropolitan Hospital Sunday Fund, or to consider even superficially the various circumstances which have called that Fund into being, without feeling that every Londoner as a point of honour should tax himself to what point he is able to support the hospitals of London. London grows, but the Metropolitan Hospital Sunday Fund does not grow. The medical profession is hourly engaged in fighting a battle against sickness the burden of which is not properly shared by the citizens on whose behalf it is waged. London is apathetic in face of the needs of her hospitals, and her increase of wealth has not led her in any marked degree to attempt to place the charities to which she owes so much upon a firm financial basis. We do not ask any of our readers to take this for granted. We beg them to listen to the ministers of various denominations who will appeal on Hospital Sunday on behalf of the Fund and who will bear out every word that we say. Be it remembered that the ministers will know whereof they speak. They are fitted to testify to the stress under which the hospitals labour and to the good that they do both from their knowledge of the subject and from their association with the care of the sick that the ministerial office of every religion entails. We are certain that they with one accord will bear us out in saying that the Fund is badly supported and that the subscriptions should realise a much larger total.

Collectors are wanted for the Fund. Many persons only need to have their attention called to the claims of the Metropolitan Hospital Sunday Fund in order to subscribe liberally to it. But many more, for this reason or that, neglect the excellent opportunity of doing good. We beg accordingly to lay upon those who have themselves not forgotten the Fund the task of reminding others, some of whom only require that their duty should be brought before them at the right time and place and perhaps by the right person. A large number of subscribers will be urged to give when they attend Divine worship. The church, chapel, or synagogue with them will be the place, and the minister will be the person, who will persuade them. The Fund is primarily connected with a collection made in Christian places of worship on the first day of the week, but it omits no sect or religious denomination of the Christian or of any other religion from its appeal—just as the hospitals which it benefits exclude no sect or denomination or religion from their wards. There may be some who from the ritual connected with the religion which they profess will not hear the claims of the Fund urged from the pulpit. We ask them nevertheless to give their money and we urge their friends to see that they do not fail to give merely from forgetfulness. Again, there are many of those best qualified to give largely who, for divers reasons satisfactory to themselves, will not be in church, chapel, or other place of worship when the appeal is made. May we urge upon the relatives and friends of the absentees before whom these pages come to constitute themselves collectors for the Fund? It may be that some will not attend public worship or any place where public collection is made because they are ill; let them not therefore forget the hospitals, but let them rather be reminded where the skill was gained which they have called in to their aid. Let them remember the poor and think of the homes in which those poor live, of the risks to which they are exposed. Let them think in the light of their own pain of what the fate of these would be if they had no hospital to turn to in their need. It may be, on the other hand, that healthy exercise claims the absentees on the one day of the week which they can devote to it. Surely these of all others should not be allowed to forget. To the golfer and the cyclist no one grudges less than we do his game or his ride—the medical profession is no enemy to the habit of healthy exercise that is one of the most marked characteristics of our people—but we desire to recall to the memory of the strong and vigorous man as he hurries in pursuit of fresh air and pleasure that it is for the sick and maimed that we appeal on Hospital Sunday, and we ask him to tax himself a small portion of the amount that he annually spends in healthy enjoyment for the sake of those whose chance of health depends on the generosity of their fellow-men. At all events, let him not fail to give because he forgets. He should not forget, and if he does forget he should be reminded. And in expressing a hope that all who might not otherwise remember the Hospital Sunday Fund will be reminded of it by those to whose attention it is brought in the course of their Sunday worship we are appealing largely to women for coöperation and assistance. We do not wish to initiate "snowballs" of behalf of the Hospital Sunday Fund, but we feel sure that if every woman who may read our supplement were to remind all her friends and all whom she can influence how urgent the need is that they should contribute, and were to enlist all in her power to carry on the task of similarly reminding others, the Fund would be materially aided by the work so done.

The people of London, to whom primarily, though not wholly, we look for a response to our appeal, have done their

share nobly in subscribing to the various funds incident upon the South African war, and have also given largely to the Indian famine fund. Those interested in the management of the Metropolitan Hospital Sunday Fund cannot but feel a little apprehensive lest the fount of generosity, so freely drawn upon during the last eight months, should have begun to run dry before the hospitals have received the draught that to no small extent stands between them and starvation. Surely their anxiety is misplaced. We believe that everyone who has followed the events of the South African war—and who has not done his best to understand a matter of such national import?—will admit that the history furnishes forcible arguments for the maintenance of the hospitals of the country in a condition of complete efficiency. The praise which the Royal Army Medical Corps have won for themselves in the campaign, now it is hoped nearing its closing stage, by their skill, by their courage, and by their powers of organisation, is largely due to the training, scientific and disciplinary, received by the officers when studying at the big voluntary hospitals of the United Kingdom, and prominent among these hospitals are the hospitals of the metropolis. We trust that on Sunday, June 24th, congregations of London will listen to the appeal of their ministers on behalf of the Metropolitan Hospital Sunday Fund with a special predisposition to support to the best of their ability these noble charities, and we also trust that all who have an opportunity will press upon their friends the necessity of subscribing.

THE disciplinary action of the General Medical Council in theory is exercised in the November session, but in practice it is called for quite as much in the May session, for it would be unreasonable to keep accused persons in suspense for six months after the first meeting of the Council at which the charges could be investigated. The penal cases which occupied the attention of the Council at its recent meeting were nine in number and resulted in the removal of no less than five practitioners from the Registers—three from the Medical Register and two from the official roll of the dentists. It is always well to consider the offences for which the grave penalty of removal from the Register is inflicted, for they vary from session to session. We have hitherto been accustomed to regard "covering" as the commonest offence warranting suspension from medical practice. But it is noticeable that this was not the offence alleged against any one of the five practitioners whose names have just been erased. The offences were, respectively, (1) drunkenness, disorderly conduct on one occasion and on another assaulting and beating a female; (2) association with an Anglo-Australian institute which advertised publicly systems of medical treatment, the advertisements being in themselves discreditable to a British registered medical practitioner; (3) systematically seeking to attract professional practice by the issue of public advertisements advertising as a graduate in dental surgery in America without having visited America or undergoing any examination; (4) habitually publishing advertisements as R.D.S.E., thus implying connexion with one of the Royal Colleges; and (5) practising a fraud upon a gentleman by making out to him a bill for professional attendance on his wife, the attendance never having been given. We propose to consider some of the circumstances of these cases, though the names of those convicted of unprofessional conduct need not be given.

The offence of drunkenness may not appear to some a professional offence, and they may think it one for which a man is sufficiently punished by the magistrate in a police-court. For a single occasion that view would doubtless generally hold. But it is otherwise when the member of a responsible profession appears more than once in the police-court on such a charge, and especially so if at the end of six months he appears again before the General Medical Council without any obvious improvement in character and without adducing testimony from others to such improvement. It is clear that such a person should be removed from the Register of medical practitioners both for the advantage of the public and the good repute of the profession. Drunkenness is an offence in any man against the rules of society, but in a medical man it is to be severely condemned, because it may lead to terrible disasters in which the sick are the sufferers. We know the temptations offered by the irregular hours and hard work of practice, especially in country districts. But against these temptations every practitioner should be on his guard, and it is sad that even two gentlemen out of 34,000 should have to appear to answer such a charge. In the second case of the sort investigated the Council gave the practitioner time to consider and amend his ways. In the next three cases the offence consisted in advertising in such a manner as to constitute "infamous conduct in a professional respect." Here again the temptations are obvious—as obvious as those to drunkenness and as vulgar. What is and what is not legitimate or unavoidable publicity must often be a matter of doubt, but we do not think that anyone will accuse the General Medical Council of having acted, as a rule, with harshness. So far from straining to bring home to members of the profession the offence of advertising the tendency of the Council has been to be blind to the *lâches* of regular sinners. In the cases which it has now punished with erasure from the Register any other decision would have been ridiculous. It is significant that two of the offenders are dentists. Dentists hitherto have been allowed a licence with regard to advertisement much greater than that permitted to medical practitioners. But after seven years' notice the Council has by two erasures signified that this licence must not be counted upon any longer. Dentists who wish to retain their places in the Register will do well to restrict their advertisements to the mere announcement of their addresses or, better, to abstain from advertising. Then they will certainly be safe. The last case, that of the practitioner whose name was erased for making out a bill to a husband for an imaginary medical attendance on his wife, is unique. The offender's counsel argued that this was not infamous conduct in a professional respect because it was not done towards an actual patient or in the actual pursuit of professional work, but the Council took a different view, and it is not likely that its decision will be called in question.

In some respects the most interesting case brought before

the General Medical Council was that of the medical man who was summoned for employing an unqualified assistant whom, it was alleged, he permitted to attend on, and administer relief to, patients and carry on practice as if he were duly qualified. The complaint was brought by the Gateshead Medical Association and was supported by the Medical Defence Union. The interest in the case was complicated by the fact that differences existed between the accused and the other medical practitioners of his neighbourhood with reference to the rates of payment in certain medical clubs. An attempt was made to raise these rates and the medical man against whom the charge of "covering" was brought took the clubs at the old rate in reply to advertisement for a medical man. For a time he had a qualified assistant, but when the assistant left he could not get another with a qualification But he obtained assistance from an unqualified man, whom he said he regarded as a "pupil." The Council found the charge of "covering" proved, as it could not look on the assistant as a mere "pupil." It did not, however. proceed at once to remove the offender's name from the Register. The very delicate circumstances in which the case against him arose no doubt made the Council more careful in the exercise of its power, and its caution was wise. It would be a most unfortunate thing if the penal powers of the Council were ever suspected of being exercised in response to professional misunderstandings. The Gateshead Medical Association was well-advised in bringing the case before the Council and it is probable that the offence will cease.

One circumstance should be noted before closing this brief commentary upon the disciplinary action of the General Medical Council. In all the cases where the offender's name was removed from the Register the Council acted upon its own initiative. There had been no previous action by any of the medical bodies whose diplomas were held by the accused persons, a circumstance which, considering the glaring nature of some of the offences, is not a little surprising.

IF there is one class of human beings more than another whose infirmity is to be considered with reverence and apart from all considerations of mere gain it is the insane, while those whose condition borders on insanity are almost as much to be commiserated. And in either case where the social position is one of poverty the sadness is much enhanced. It is therefore most humiliating to learn that in one of the great central parishes of London, where we might have expected to find enlightened administration, there has been brought to light a system of dealing with the insane which is discreditable alike to the guardians, to their officers, and, we are sorry to say, to certain members of the medical profession.

On June 7th a report was presented to the St. Pancras Board of Guardians by Mr. F. PURCHASE, chairman of the Relief Committee, which made certain very definite allegations against the relieving officers in connexion with the certification and admission of lunatics to licensed houses. Mr. PURCHASE said that of the guinea fee received by some of the medical men called in by the justices to assist in the examination of persons of unsound mind the relieving officers got 5*s*. and varying sums of 1*s*. and upwards from other medical men. The relieving officers admitted that this was the case, while it appeared that those medical men who had refused to give presents had been boycotted and received no cases. The report also stated that nearly all the pauper lunatics from St. Pancras had been sent to two private asylums to which the Board paid something over £12,000 a year. These two houses, Hoxton House and Bethnal House, had, it would seem, charged the St. Pancras Board of Guardians 2 guineas per patient per week, while other parishes were only charged 19*s*. 3*d*. per patient; so that St. Pancras had been paying more than four times as much as would have been the case had the patients been sent to the county asylum, where the charge was 9*s*. 11*d*. per patient. The relieving officers admitted receiving sums varying from £2 to 10*s*. for each patient from the officials of these two private asylums The report also called attention to the remarkable fact that St. Pancras pauper lunatics numbered 1600, while in Islington, a larger parish, the number was only just over 1000.

It is impossible to comment without indignation on a course of behaviour so wrong in principle, so cruel to the patients, and so unjust to the ratepayers; while it is equally impossible to offer any excuse for the medical men who, by the confession of the relieving officers, have allowed themselves to be involved in it. We can only hope that a flat contradiction may be forthcoming from some at least of them. It is amazing to think of the extent to which bribery has been carried out and the tardy exposure is not creditable to the vigilance of the board of guardians, although it must be admitted that when Mr. PURCHASE'S committee spoke it spoke with no uncertain voice. We are told plainly by Mr. PURCHASE that nearly all the pauper lunatics from St. Pancras were sent to two private lunatic asylums at improperly high prices. The proprietors of these asylums have, we presume, some explanation to offer, and we would urge them to reply to the charges brought against them, and widely circulated by the press, without delay. The hoary nature of the abuses that have just been brought to light cannot be alleged in extenuation. The scandals have confessedly been going on for 30 years and it is conceivable that the present generation of officers have learnt to throw the responsibility on their predecessors. If this is the only excuse we may say at once that it is a totally inadequate one. Things that were culpable 30 years ago are more so now. Otherwise we should be going backward in public and municipal morality instead of forward. That medical men should have been implicated in such grave charges, even though their share is only passive acquiescence, is lamentable, but we withhold censure till it is obvious that the time for explanation has gone by. In the meantime we say that the charges call for reply. The remuneration of professional work among the poorer classes is, we know, inadequate and the system of gratuitous advice is so demoralisingly extensive as to make members of our profession less independent than they should be, but these facts would not constitute excuses for the condition of things that is alleged by the Relief

Committee of the St. Pancras Guardians to prevail in St. Pancras. Guardians everywhere must look into the matter. The scandal calls for a thorough examination into the methods under which pauper lunatics are certified. A very limited experience of pauper lunacy is enough to show that much of it is not grave or organic, so that there is every reason why all cases should be investigated by persons above suspicion and should be intrusted to the treatment of independent and disinterested practitioners.

Annotations.

"Ne quid nimis."

THE ALDERSHOT FIELD DAY.

WHATEVER might have been the opinion entertained of the late military operations at Aldershot from a military or spectacular point of view we think that the results from a humanitarian or medical one must be regarded as lamentable. Monday, June 11th, was, as everybody will recollect, an exceptionally hot and oppressive day. The thermometer, sheltered from the direct rays of the sun, rose to 89° F. and exposed to them to 116°. The troops, numbering nearly 30,000 in all, were under arms for eight hours; they were improperly clad for such hot weather and insufficiently fed before starting for an unusually trying field day which, in point of fact, should not have been undertaken under the circumstances. The men fell out in all directions on the homeward march in consequence of the heat, fatigue, and distress which they had undergone; four of them died from heat-stroke and a considerable number had to be admitted into hospital—all suffering more or less, and some dangerously, from heat-exhaustion. Such are the facts briefly stated, and it seems surprising, with all the past experience which the military authorities have had of field days, marches, and manœuvres in and around Aldershot, that the arrangements for such occasions should not be about as perfect as they can be practically made. No one could, of course, have predicted when the day was fixed upon that it would turn out such an exceptionally hot and unfavourable one for the purpose. It is easy to be wise after the event, and had these untoward occurrences been foreseen the field day would, no doubt, even at the last moment, have been postponed or the time occupied by the military operations would have been curtailed. But there seems to be still a good deal lacking in the system and method adopted on such occasions. Why should our soldiers be exposed to any needless risk of life, distress, and suffering which can be avoided by common-sense and hygienic precautions, such as suitable clothing, protection of the head by light helmets of a suitable kind, the provision of a good meal before starting, with light refreshment at halting-places, and the plentiful supply of watercarts all along the route? It seems to us that there might be some standing regulations specially framed for hot-weather marching and field days such as could be followed on all occasions of this kind. We know, of course, the argument so frequently put forward, that soldiers have to undertake all this and much more in time of war, but it seems to be forgotten that in a campaign they have usually gone through a course of preparatory training beforehand, that they are also properly clad and equipped for the work in hand, and that they are stimulated by military ardour as well as by the fact that they are acting under some paramount or recognised military necessity. A wise commander does not, if he can help it, land his troops or his horses from shipboard in a hot climate and at once start them, whilst still "soft," on a long and trying march.

THE METROPOLITAN HOSPITAL SUNDAY FUND: APPEAL IN THE CITY.

THE Rev. Harry Jones, Rector of St. Vedast, Foster-lane, Cheapside, E.C., who in many practical ways has shown his interest in the Metropolitan Hospital Sunday Fund, has had printed a circular letter for use by himself in place of the circular letter issued by the Metropolitan Hospital Fund for the purpose of reaching those people who are absent from church on Hospital Sunday. The letter is as follows:

DEAR ——,—If you should be absent from town, or be present in no place of worship on or near Sunday, the 24th June, forgive me for reminding you that aid will be then asked throughout the metropolis towards the support of its great hospitals. This appeal has no exclusive connexion with church or chapel, but relies upon the goodwill of those who appreciate hospitals as schools of medicine and centres of cure, especially in case of accidents, when ready help is needed by any sufferer, and most often by those who are poor. Should you then be disposed to join in a corporate effort (all the more encouraging because it is simultaneous) to meet wants supplied by hospitals, will you send me something, however small the sum, which will be acknowledged promptly, and paid into the Lord Mayor's Hospital Sunday Fund at the Mansion House?

In the City, where few influential people attend a church on Sunday, except St. Paul's Cathedral, the letter should prove most useful to ministers. We understand that the letters are printed by Messrs. Collingridge, 148, Aldersgate-street (the office of the *City Press*), who keep the type "standing."

CEREBRAL AND MENTAL DEGENERATIONS ATTRIBUTABLE TO THE USE OF OPIUM IN INFANCY.

DR. T. D. CROTHERS, superintendent of the Walnut Lodge Hospital at Hartford, Connecticut, U.S.A., has an interesting report in the *Journal of the American Medical Association*, May 19th, 1900, of cases illustrating the cerebral and mental degenerations observable in adult life owing to the injudicious use of opium in childhood. The danger of opium as a remedy in infancy has only recently been recognised. The widespread use of proprietary medicines containing opium as soothing syrups for children has resulted in injuries observed later in life which could be distinctly traced to the deleterious effects of the opium. In children, as in adults, the same initial exhilaration (or excitement) followed by depression results from the use of opium, and in children or adults of fine nervous organisation a smaller dose produces the same effect, which in those of coarser organisation can only be produced by a larger dose. The power of resistance to the drug is very small in the child and the frequent use of the drug produces characteristic cerebral and mental degenerations. Opium given in convulsions, intestinal troubles, insomnia, and nervous irritations may often give temporary relief, but if its use be continued it may produce lasting mischief. A lessened vigour of intelligence with a weakness of volitional power amounting even to stupor, may result, together with loss of self-control and a proneness to morbid impulses. Disorders of digestion are also a common result. The following clinical accounts are instructive and teach important lessons which should not be disregarded. In a family of four children of healthy parentage, one, a boy, was dull, passionate, and of low intellectual grade. He would over-eat and drink to excess anything he fancied. He was stupid and obstinate and at times excessively irritable. "No one in the family resembled him in any way, but all were healthy and vigorous in mind and body. When one year old he had a convulsion

and was given opium daily for over a year, then at longer intervals, and finally it was abandoned. The parents noticed it was affecting him at the time, changing his mind and habits, and would not permit its use again." Here was an example of retarded brain growth with perversion of mental function, which in later life would probably tend to some form of mental disease or dementia. In a second healthy family one son became an impulsive inebriate at the age of 18 years. The other children in the same surroundings and conditions of living were temperate and well. During infancy this boy was treated with morphia for intestinal troubles. At one time it was thus taken for nearly a year by advice of a physician. "He was dull and stupid much of the time this was taken, and its use as a medicine was continued for years after." The boy soon after the age of puberty began to drink spirits to excess and was now a periodic inebriate. Another interesting case was that of two children of a family, one a young woman who at the age of 24 years suddenly became addicted to opium and alcoholic excess and showed much mental disturbance. "During infancy she was nursed by a Hindoo woman, and was noted for her stupor and tendency to sleep. In childhood she was extremely nervous and suffered from many hysterical affections. ..... Her brother, born two years later, was nursed by the same woman, and was noted for his somnolence and general stupor during this time. Later it was found that the nurse was an opium taker, and that both children had been under the influence of opium from nursing. The boy grew up exceedingly nervous and irritable. At one time he drank to excess and was a gambler. He was changeable and notional, became a clergyman, then a physician, and finally a speculator. He is now an opium taker and neurasthenic, an invalid not 30 years of age." Two other children of this family, one born before this Hindoo woman was taken as nurse and the other after she was discharged, were strong and healthy and free from any peculiarities, mental or bodily. Other interesting cases are recorded, and Dr. Crothers concludes as follows: "The ignorant mother who uses soothing syrups freely to suppress the irritation of the infant is not the only offender. The routine and often thoughtless physician who uses opium freely in infantile prescriptions is responsible in many cases for the wrecks of later life."

THE TRANSPORTATION OF DEAD BODIES.

AMONG the Acts of the Legislature of New Jersey, U.S.A., passed during its latest session we note one which is a good example of the practical interest in sanitary questions displayed by our cousins across the Atlantic, and which, moreover, suggests a possible useful addition to our own public health legislation. It is "an Act concerning the transportation of dead human bodies across or within" the State of New Jersey, and it deals with dead bodies in two classes. In the first place, it forbids any undertaker or other person to consign, or any railroad or common carrier to convey, across or within the State any human body dead from small-pox, Asiatic cholera, yellow fever, typhus fever, or bubonic plague, except in a hermetically sealed casket and except a license for such transportation be first obtained in writing from the board of health of the State or from one of its officers or inspectors. In the second place it forbids the transportation within the State of New Jersey of bodies dead from other causes than those enumerated, except under conditions which include signed certificates in duplicate from the physician who has attended the deceased in his last illness or from "some other practising physician in good and regular standing." This certificate must fully and minutely identify the body and set out the cause of death and further certificates from the undertaker charged with removing it must state numerous other particulars with regard to its removal. If these formalities are duly complied with a permit for the transportation of the body will be issued. In England the need for such precautions does not arise so often as on a continent where a body may be brought home for interment from a State within or without the Union over thousands of miles of railway, and possibly in tropical heat, while the difficulty thrown by continental legislatures in the way of transporting dead bodies to a great extent prevents their frequent arrival on our shores from abroad. It does not, however, follow that no system should be observed in such cases or that no danger may arise which our Public Health Acts ought to be competent to prevent. Our Acts, as far as they treat of burial, are chiefly concerned with the procedure in cases where the relatives of the deceased will not do their duty. A body dead from an infectious disease may not, for example, be left uninterred for more than 48 hours except in a mortuary or room not used for living or working in, and there are legal penalties for conveying such a body in a public conveyance without notifying the cause of death to the owner of the conveyance. We know of no direct legislative enactment that systematically either prevents or materially hinders the possible transportation of bodies under conditions highly dangerous to the public should relatives capable of paying for their conveyance desire to inter them at a distance from the place of death and should those undertaking the duty of removal and interment be careless or incompetent. We note with interest the recognition in the New Jersey Act of the "practising physician in good and regular standing."

THE MANCHESTER AND SALFORD HOSPITALS INQUIRY ASSOCIATION.

TOWARDS the end of the year 1897 the Manchester Medical Guild through its council issued a circular to medical practitioners in Manchester and the neighbourhood upon the subjects of hospital reform and medical aid. With regard to the first subject the circular pointed out that a joint committee representative of the medical charities and medical societies of Manchester and Salford had been appointed to make inquiries.[1] The committee in question has just issued its report with its findings and recommendations which are as follows:—

The Association find:—I. That a considerable amount of abuse of hospital charity exists—i.e., that persons receive the service of hospitals who are not proper subjects for charitable relief. II. That the following appear to be the principal causes of this abuse:—(*a*) the insufficiency of the means taken to investigate the circumstances of patients applying for relief; (*b*) the necessity under present conditions for hospitals to show a large return of work done, as estimated by the number of patients and consultations; (*c*) the tendency of hospitals during recent years to accept trivial cases as suitable subjects for continuous treatment; (*d*) the custom at some special hospitals of treating cases that do not strictly come within the recognised scope of their work.

The sub-committee therefore strongly recommend:—That with a view to terminating the abuses which undoubtedly exist a conference of representatives from all the hospitals of Manchester and Salford be held, with authority either to create a United Hospitals Board for Manchester and Salford or to deal specially with the causes of hospital abuse, as set out in this Report and to discuss the acceptance of contributions by patients.

The most important of these causes are undoubtedly (*a*) and (*b*). Advertisement is the physical life and the spiritual death of nearly every department of the modern body politic. That is to say, everything is run with an idea of making it pay instead of, as should be the case, giving the best work. The ideal is not always attained, but whether it is building a

1 THE LANCET, Dec. 11th, 1897, p. 1551.

THE LANCET

SPECIAL SUPPLEMENT

IN SUPPORT OF THE

METROPOLITAN HOSPITAL SUNDAY FUND

Published in aid of the Appeal to be made on Sunday, June 24th, 1900.

IF " 'tis hard to lend fresh interest to a twice-told tale " the difficulty is presumably increased more than seven-fold where the tale is told for the fifteenth time, and is not lessened where the subject of it has been before the public for well-nigh twenty years, and has therefore begun to be regarded by the majority of Londoners as an annual event which, during the period covered by their memories, has followed Easter as surely as the recurring London season. This year, however, the claim of the Hospital Sunday Fund upon the benevolence of the public in London and everywhere else in the kingdom needs to be urged by us and by all interested in it with special insistence owing to a special circumstance. This circumstance, which, as we hope to show, strengthens the claim of the hospitals to the support of Englishmen, rich and poor, and which may aid us in pressing home that claim, at the same time may well lead to a call of annual and ordinary recurrence being forgotten or ignored in the year 1900 by some who have recognised its urgency on former occasions. The war is an absorbing topic; no one in these islands can fail to have his or her thoughts and conversation almost constantly occupied by it and its thrilling incidents, to the exclusion of other matters, among which must be counted the Hospital Sunday Fund.

The Hospitals and the War.

We are not only concerned by the fact that our fellow subjects think of the war and talk of the war, greatly to the exclusion of other topics, but it must be remembered that we are pleading the cause of charity as embodied in the Hospital Sunday Fund; and we cannot disguise from ourselves the fact that the war has already during the past eight months evoked in the cause of charity one of the most remarkable outpourings of the resources of rich and poor that the world has ever seen. It is still early to judge what the effect of this may be upon the incomes of institutions for the benefit of a poor that is always with us, and we trust that in a nation so patriotic, so earnest, and so wealthy as ours it may be small; but we cannot ignore the possibility that it may be considerable. Nor can we disregard the fact that in order to meet the expenses of the war taxation has been increased, and may be still further augmented; while in time of war although some trades flourish others suffer heavily, and a large number of our fellow-citizens are poorer than in times of universal peace. The generosity with which money has been contributed on behalf of the sufferers from famine in India and the financial situation which has arisen in consequence mainly of the state of the coal-market, are elements which may well combine to increase the anxiety of those interested in our hospitals, whether generally or in connexion with the special appeal about to be made; but the main feature of the present year, the one which does in the present and will presumably in the future render all other features of the year 1900 blurred and insignificant in comparison with its own prominence, is the war in South Africa, of which the full cost has yet to be reckoned. *And yet the war should be the hospitals' friend and advocate.* Great is the attention it has called to all branches of our military service, great is the improvement which is expected to result some day to many of those branches from the strain to which they have been subjected before the eyes of the nation and the world. The fierce light of the African sun and the glare of the battlefield have shown many weak spots in our armour of offence and defence. The keen eye of the critic at home and abroad has been cast upon those weak spots, and his tongue and pen have not spared them or those responsible for them. But for one portion of our war equipment, for a portion, literally, of vital import, in that it directly concerns men's lives, there has been unqualified praise. Criticism there may have been, of the kind that begets improvement in the future where good work has been done in the past; but taking it all round we challenge the world to affirm that the Royal Army Medical Corps has not brilliantly distinguished itself in South Africa, eclipsing all previous records of its own work, and of work done in the armies of other countries in recent warfare. We do not speak here of the bravery of the medical officer who attends the sufferer on the battlefield or remind our readers of individual names written in the roll of heroes who have died by shot and shell or by disease, struggling to save others' lives or lessen others' pain. They will, we feel sure, be remembered with other right gallant men who have died, by many of those who contribute of their wealth or of their poverty to the Hospital Sunday Fund; but for the moment we are appealing not so much to the enthusiasm as to the reason of our readers. The credit won by members of the Royal Army Medical Corps in South Africa, for themselves as individuals and for the distinguished body of which they are members, by acts of personal heroism and self-sacrifice, has been won by the display of the same qualities that many soldiers have displayed before, and that the Queen's subjects, in whatever capacity they may serve, are ever ready to display. The Corps has made its great success in the South African campaign by splendid attention to duty. In spite of the nature of the country in which our actions have been fought and of the sad fact that those actions have not always been fought successfully, and in spite of the terrible difficulties of transport entailed by infinitely drawn out lines of communication, battlefields have never been so quickly stripped of their wounded in the history of man, nor have the

wounded been so promptly cared for, so suitably sheltered, or restored to health in such high ratios. All this has been due to the completeness of the organisation of the Royal Army Medical Corps for bringing wounded and diseased under curative treatment, and to the recent advances made by surgery and medicine through the unwearying labours of the profession of which the Corps forms a branch.

It may sound like a platitude to say that our medical officers in Africa would not have been so successful in dealing with the wounds caused by Mauser bullet and Pom-Pom shell, or with the ravages of enteric fever or dysentery, if they had not had a good education in medicine at some time previous to their departure to the seat of war. It is, however, a platitude upon which we lay some stress even in the simple form in which we put it forward. We are writing to-day, not for the medical profession alone, but also for laymen possibly with friends at the seat of war, and we add a second platitude for their benefit on a point many who are able, and who should be willing, to subscribe liberally, who do not do their plain duty by hospitals, but who think of them merely as places to which dirty people are taken when they are run over in the streets. They wholly forget their obligation to the hospitals when they pay a fee to their medical adviser, feeling proud to be of those who can afford to recompense him for his attendance. It is to these that we point out with emphasis that the highest skill which money can place at their disposal is precisely the skill which owes its existence to the hospital ward in which it was acquired. Is it a rich woman, who a stranger to the accidents and illnesses of her poorer sisters, is about to become a mother and who must inevitably before long need medical aid? If any unforeseen and unusual complication arises in her case, and if it is treated with the same certainty and readiness as if the condition had been expected, this will be because the physician attending her has in his mind the lessons taught by hundreds of cases

STATISTICS OF HOSPITAL WORK IN LONDON DURING THE YEAR 1899.

TABLE I. — GENERAL HOSPITALS.*

N.B.—The figures referring to out-patients in these Tables represent the number of VISITS *paid by out-patients—*NOT *the* NUMBER *of out-patients.*

Name of hospital.	Hospital Sunday Fund award.	In-patients.	Relieved.	Cured.	Convalescent homes.	Remaining under treatment.	Died.	Out-patients' visits.	Accidents and emergencies
	£								
Charing-cross	1,271	2,326	1,050	1,020	256	156	231	45,000	13,265
French	354	871	188	638	59	55	40	14,974	230
German	625	1,697	336	609	499	115	138	46,488	3,323
Great Northern Central	625	1,923	1,565		129	133	225	69,989	5,581
Guy's	1,563	7,548	—	—	956	433	678	85,198	62,017
Hampstead	208	356	71	251	10	18	16	2,291	71
Italian	63	—	—	—	—	—	—	14,729	—
King's College	1,665	2,408	713	1,050	275	195	180	30,107	7,687
London	5,000	12,603	6,014	5,016	1,372	592	1,297	308,751	17,871
London Homœopathic	625	1,128	276	617	—	84	61	—	1,727
Phillips Memorial Homœopathic	36	80	13	59	8	6	2	2,795	—
London Temperance	802	1,357	469	715	20	—	111	22,043	12,545
Metropolitan	729	867	314	372	117	89	92	101,597	11,344
Mildmay Mission	313	519	96	334	100	36	32	23,557	2,174
Miller Hospital and Royal Kent Dispensary	286	252	57	149	4	9	14	75,129	6,850
North-West London	417	585	356	157	27	46	26	41,991	6,124
Poplar	729	877	207	610	69	56	60	22,429	840
Queen's Jubilee	nil	117	10	89	5	7	6	18 669	1,803
Royal Free	1,094	1,984	1,011	767	177	93	246	93,863	18,866
St. George's	2,683	4,396	2,704		1,207	278	436	121,095	8,649
SS. John and Elizabeth	78	—	—	—	—	—	—	—	—
St. Mary's	1,927	3,363	841	1,802	240	242	308	96,767	389
St. Thomas's	104	5,831	5,286		752	382	557	94,836	777
Seamen's	1,146	2,515	374	1,851	40	214	186	93,128	—
The Middlesex	2,188	3,611	2,663		816	273	396	119,623	—
Tottenham	260	530	54	385	—	22	59	24,507	4,747
University College	1,406	2,708	936	1,108	267	163	246	131,467	26,104
Walthamstow	89	465	44	355	7	26	34	3,000	—
West Ham	406	636	201	334	14	32	69	70,187	9,299
West London	625	2,042	1,733		—	127	182	68,647	15,400
Westminster	1,458	1,866	1,545		320	126	195	70,000	12,591
	£28,175	65,461	13,581	18,283	7,746	4,008	6,123	1,912,857	250,294
Estimated to supply omissions	—	—	7,438	14,181	156	68	—	20,768	34,394
Total	£28,175	65,461	21,019	32,464	7,902	4,076	6,123	1,933 625	284,688

* We reproduce the term "General Hospitals" as employed by the Council of the Metropolitan Hospital Sunday Fund.

of detail which it is just possible that they might otherwise forget. It is to the effect that the good education referred to could have been obtained in no other way had there been no hospitals at which to seek it. It was in the great hospitals which are maintained in all parts of our beloved Queen's dominions by the open-handed charity of her subjects, and more particularly in those great hospitals of London in whose behalf we plead to-day, that the skill was acquired which is saving the lives of thousands in South Africa. It is by the discoveries that have rewarded labour and research in these and similar institutions that medical knowledge has attained to its present position. We may seem to our professional readers to labour the point by discussing it further, but we are not sure that to all of them it is as abundantly clear as it is to us that the education of the medical man, as he now is, would be an impossibility, and that his science could never have reached its present point but for hospitals. This page will fall into the hands of dealt with in hospitals. This is equally so whether the medical man is obstetric physician to a hospital or whether he is relying on the record of observations made by hospital officers for the benefit of those studying under them, and for the medical world at large. We need not multiply examples; the truth is obvious.

Many will read these pages, and into whatever hands they fall many of those hands will have been pressed by hands now far away on the veldts and kopjes of the enemy's country; many of the eyes that scan these lines will have been dimmed with tears at the thought of the suffering or death of someone loved, and very few indeed will not be able to call to mind someone with whom he or she is acquainted and who has been during the past months in close daily peril of wound or disease. To the men and women of this great metropolis we appeal, and to the men and women of this great country, to remember their brethren who have fought in Africa in a climate exposing them to deadly disease, against an enemy armed with weapons of precision said to be superior to our own.

They must rely on medical aid when the disease strikes them down or the bullet flies true. It is for the institutions that have trained many of those who are giving this medical aid that we appeal, and not only that the hospitals may gain by any sense of gratitude aroused, but because there is danger that owing to the war the hospitals may actually suffer heavy loss.

TABLE II.—SPECIAL HOSPITALS.

Name of hospital.	Hospital Sunday Fund award.	In-patients.	Relieved.	Cured.	Convalescent homes.	Remaining under treatment.	Died.	Out-patients' visits.	Accidents and emergencies
	£								
City of London for Diseases of Chest	938	1,021	926	—	—	111	95	58,973	—
Hospital for Consumption	1,823	1,725	1,175		—	290	258	74,470	—
North London ,,	365	511	389	—	—	79	22	22,000	—
Royal Hospital for Diseases of Chest	417	798	631		31	66	101	26,342	—
Royal National Hosp. for Consumption	260	880	729	—	—	129	13	—	—
Alexandra Hospital for Hip Disease	172	65	15	8	16	25	—	2,212	—
Banstead Surgical Home	42	83	35	29	—	19	2	—	—
Barnet Home Hospital	52	51	25	14	—	11	—	—	—
Belgrave Hospital for Children	135	281	—	—	—	—	38	—	—
Cheyne for Incurable ,,	125	76	3	7	4	50	12	—	—
East Lond. Hosp. for ,,	677	1,446	293	742	317	76	245	76,037	8,527
Evelina Hosp. for Sick ,,	469	1,108	853		132	68	187	39,274	—
Home for Incurable ,,	78	34	—	—	—	26	3	—	—
Home for Sick ,,	135	229	150	—	144	—	19	3,582	—
Hospital for Sick ,,	781	1,962	—	—	—	—	—	93,368	—
North-East. Hosp. for ,,	365	792	182	434	85	50	74	59,203	3,595
Paddington-green for ,,	260	633	538		93	28	67	43,453	1,155
St. Mary's for ,,	172	569	80	410	58	—	68	44,216	39
St Monica's for ,,	104	71	12	19	—	30	2	—	—
Victoria Hospital for ,,	625	374	249		407	36	27	45,756	—
Victoria Home, Margate	31	60	15	4	—	36	2	—	—
"The Vine"	42	—	—	—	—	—	—	—	—
British Lying-in Hospital	36	331	331	—	4	19	—	—	—
Clapham Maternity	38	401	401	—	—	—	—	10,600	—
East-end Mothers' Home	89	264	—	252	—	12	1	2,550	—
General Lying-in	52	560	540	—	6	—	3	10,002	—
Queen Charlotte's Lying-in	313	1,150	1,150		—	—	5	7,077	—
Chelsea Hospital for Women	365	587	514		114	46	9	8,977	—
Hospital for Women	313	706	253	354	73	42	17	19,977	—
Grosvenor Hosp. for Women and Children	83	189	—	—	—	15	1	11,365	—
New Hospital for Women	260	594	—	—	—	39	25	83,087	—
Royal Hosp. for Children and Women	229	627	—	—	—	41	75	37,357	—
Samaritan Free	417	517	55	412	30	39	22	21,502	—
Cancer	695	757	641		227	86	98	12,448	—
London Fever	1,042	629	—	577	—	106	17	—	—
Gordon for Fistula	39	185	19	159	—	7	—	3,604	—
St. Mark's ,,	156	382	24	306	—	21	2	5,885	—
National for Diseases of Heart, &c.	83	153	100	21	—	11	12	13,020	—
Female Lock	198	534	440		—	94	3	2,244	—
Hospital for Epilepsy, &c.	68	90	—	—	1	14	1	4,645	—
National for the Paralysed, &c.	781	1,032	389	209	166	188	65	37,065	—
West-End for Nervous System	125	325	163	27	—	44	5	33,971	—
Central London Ophthalmic	47	402	402		—	18	1	30,275	850
Royal Eye	208	570	—	—	—	22	1	52,927	—
Royal London Ophthalmic	625	1,919	—	—	—	55	1	93,250	—
Royal Westminster ,,	125	630	—	—	2	13	—	28,427	—
Western ,,	42	188	44	94	—	—	—	26,624	—
City Orthopædic	83	—	—	—	—	—	—	—	—
National ,,	104	203	149		—	54	—	3,476	—
Royal ,,	78	171	95	8	16	49	3	2,793	—
Royal Sea Bathing Infirmary	521	572	380	59	—	85	6	—	—
Hospital for Diseases of Skin	10	—	—	—	—	—	—	13,551	—
St. Peter's for Stone	42	562	543		—	9	19	37,474	—
Central London Throat and Ear	42	272	21	240	3	5	3	55,112	—
London Throat	31	579	15	564	1	7	5	15,057	—
Metropolitan Ear and Nose	—	103	10	93	—	—	—	8,625	—
Royal Ear	10	269	269		—	—	—	8,018	
The Dental	130	—	—	—	—	—	—	68,487	—
National Dental	83	—	—	—	—	—	—	26,641	—
	£15,559	29,152	5,674	5,042	1,930	2,271	1,635	1,335,009	14,166
Estimated to supply omissions	—	172	5,105	8,195	836	278	236	16,895	7,795
Total	£15,559	29,324	10,779	13,237	2,766	2,549	1,871	1,351,904	21,961

May we remind our present readers that when it became apparent that the Royal Army Medical Corps would be overstrained in point of numbers by the call made upon it, and when it was, moreover, thought advisable to enlist the services of well-known civilian consulting surgeons, that there was one source only from which the auxiliaries needed could be drawn. That source was the hospitals. It was not to the extent or remunerative character of their private practices that Sir William MacCormac and Mr. Frederick Treves and their colleagues owed the fact that they were selected to proceed to South Africa, but to the reputation they had earned and to the skill they had acquired in dealing with deadly injury in our great London hospitals—in hospitals situated in the midst of a crowded poor population, where serious injury to body and limb and the operations entailed thereby are matters of daily recurrence, and where all possible facilities for observation and record as well as for operative performance are provided. Nor was it with regard to their private practices that any of the small band of able medical men who have worked or are working with our forces in South Africa were chosen. They were chosen because of the work which they had done and the experience

they had acquired in the hospitals for which we appeal to-day. And be it remembered that in the hospitals in which our surgeons, military and civil, now in South Africa began their professional education they acquired at an early stage of their careers more than professional skill. There they first gained knowledge of the value of organisation where life-saving has to be done on a large scale, and while learning the value of organisation learnt also by observation how to organise. There they first knew the value of discipline in such institutions and learnt how to enforce it, or to obey it, as the occasion might demand. The men who have attended our sick and wounded abroad have gained in their hospitals at home the *esprit de corps*, the honourable traditions, the habit of instinctive devotion to duty which alone could have enabled them to earn the praise which they have earned in appeal to rich and to poor equally. The letters of private and officer alike have spoken of the treatment all ranks have received when sick and wounded. We ask those who have received such letters to remember that every contribution to the Hospital Sunday Fund, however small, helps to swell its total, and that someone among their friends may have forgotten the claim of the hospitals and of Hospital Sunday who, however poor, might yet be grateful for being opportunely reminded. We want cheerful givers to the Fund and importunate beggars for it.

State-aided and Rate-aided Hospitals and Voluntary Hospitals.

Is the need so urgent? it may be asked by many. Undoubtedly it is. It may safely be said of almost every great hospital in London that were it a commercial concern,

TABLE III.—COTTAGE HOSPITALS AND CONVALESCENT HOMES.

Name of hospital.	Hospital Sunday Fund award.	In-patients.	Relieved.	Cured.	Convalescent homes.	Remaining under treatment.	Died.	Out-patients' visits.	Accidents and emergencies
	£								
Metropolitan Convalescent	625	4,141	1,158	2,762	122	93	6	—	—
Bexhill ,,	344	1,893	544	1,231	79	35	4	—	—
All Saints ,,	417	3,506	1,084	1,459	—	113	2	—	—
Ascot Priory ,,	57	278	73	192	—	25	3	-	—
Chelsea Hospital for Women Convalescent	44	236	—	231	—	4	1	—	—
Mrs. Gladstone's Convalescent	63	—	—	—	—	—	—	—	—
Hahnemann ,,	31	198	127	18	4	26	3	4,975	6
Hanwell ,,	27	174	--	—	—	15	—	—	—
Herbert ,,	21	427	222	148	—	39	1	—	—
Herne Bay (Baldwin-Brown) Convalescent	36	341	—	—	—	—	—	—	—
Herne Bay Mothers' Home	44	429	429	—	—	—	—	—	—
Homœopathic Convalescent	21	194	—	—	—	—	—	—	—
King's College ,,	63	387	82	276	—	11	1	—	—
Mrs. Kitto's ,,	83	312	—	—	—	—	—	—	—
London and Brighton Female Convalescent	10	2,275	—	—	—	40	1	—	—
Mary Wardell Convalescent	104	193	—	—	—	—	—	—	—
Morley House ,,	156	940	—	936	—	—	4	—	—
Police Seaside Home	52	—	—	—	—	—	—	—	—
St. Andrew's (Clewer) Convalescent	156	—	—	—	—	—	—	—	—
Do. (Folkestone) ,,	281	2,241	—	—	—	75	1	—	—
St. John's Home for Convalescent Children	115	306	—	—	—	—	—	—	—
St. Joseph's Convalescent	52	611	358	214	—	51	3	—	—
St. Leonards-on-Sea ,,	104	721	717		—	30	2	—	—
St. Mary's ,,	17	97	97		—	7	—	—	—
St. Michael's ,,	31	214	—	—	—	—	—	—	—
Seaside ,,	146	—	—	—	—	—	—	—	—
Warley ,,	10	78	—	—	—	—	—	—	—
Friendly Societies ,,	21	489	—	—		—	—	—	-
Deptford Medical Mission Convalescent	21	—	—	—	—	—	—	—	—
Beckenham Cottage Hospital	52	111	1	88	—	17	5	—	21
Blackheath and Charlton Cottage Hospital	73	190	50	93	—	16	21	3,440	22
Bromley, Kent, ,,	89	381	46	280	20	28	19	—	93
Chislehurst, Sidcup, &c. ,,	42	160	18	125	—	8	7	—	—
Eltham ,,	31	138	12	103	—	12	9	—	15
Enfield ,,	50	172	12	149	—	11	11	—	35
Epsom and Ewell ,,	57	131	6	102	16	13	8	—	9
Hounslow ,,	19	—	—	—	—	—	—	—	—
Livingstone ,,	52	145	139		—	9	7	—	44
Mildmay ,,	62	—	—	—	—	—	—	—	—
Reigate and Redhill ,,	68	251	32	285	18	16	6	—	55
Sidcup ,,	38	144	5	120	12	5	2	429	28
Tilbury (Passmore Edwards) ,,	26	81	10	56	2	6	9	1,425	—
Wimbledon ,,	31	146	18	114	1	5	5	—	37
Establishment for Gentlewomen	133	151	10	128	—	13	3	—	—
St. Saviour's Hospital and Nursing Home	123	119	42	62	—	16	6	—	—
National Sanatorium for Consumption	83	259	—	—	—	51	3	—	—
Invalid Asylum	62	180	106	36	6	11	2	—	—
Firs Home	16	53	21	—	—	16	16	—	—
St. Catherine's Home	31	25	17	—	—	7	1	—	—
Friedenheim Home for the Dying	260	147	13	—	—	31	80	—	—
	£4,550	23,665	4,496	9,208	280	855	252	10,269	365
Estimated to supply omissions	—	3,443	3,589	7,397	—	279	31	3,757	54
Total	£4,550	27,108	8,085	16,605	280	1,134	283	14,026	419

our hospitals on the field and at the base alike. We ask our readers also not to forget the devoted women who have aided them in their work, who also have acquired their knowledge and skill, their discipline and their devotion to duty, in hospitals in London and elsewhere; who, whatever toil they may have encountered in the years of their training and of their employment at home, have cheerfully encountered ten times that toil amid the hardships, anxieties, and dangers of the campaign.

Let us say again, in case we may not have said it plainly enough already, that any appeal on behalf of our hospitals on the ground of the good work done in the war is an conducted for the sake of profit by those responsible for its solvency, or by men whose personal reputation as respectable members of society depended on the pecuniary prosperity of the institutions governed by them and associated with their names, it would have either to close its doors or cut down its expenses until an income was assured to it very greatly exceeding that which it at present enjoys. But to diminish the outlay of a hospital and cut down its expenses means to close wards, now perhaps crowded; and to turn away applicants waiting until beds may be ready for them means the loss to many sufferers of a last hope of health and strength. So the hospitals struggle on, living

from hand to mouth, relying on the splendid generosity of the wealthy and the smaller but no less generous and welcome contributions of all citizens who may come to their aid.

And those to whom such a story of poverty as this is told may ask another question. They may say, Is there no waste, no avoidable loss either in the administration of the Fund to which you ask us to give, or in the management of the hospitals in support of which the Fund is raised? To this we answer that it is as an administrative and economising agency that the Metropolitan Hospital Sunday Fund has achieved its greatest success. Among suggestions made from time to time with a view to better economic arrangements in our hospitals that of a Central Board has had many supporters. No such board as yet exists, but the council of the Metropolitan Hospital Sunday Fund has been in a position to accomplish much that those who urge the need of a Central Board demand, by its own suggestions and criticism made in the interests of coöperation and methodical administration among the various charitable institutions for the London sick. In distributing the funds annually at its disposal the Council has been able to exercise a gentle but not ineffective supervision over hospital expenditure, and to aid in enforcing upon each institution the doctrine that every pound of expenditure must be represented by its equivalent in the form of service or necessaries supplied to the objects which the revenue of the institution is intended to benefit. It will be remembered that when, in the Diamond Jubilee year, 1897, the Prince of Wales selected the London hospitals as the special objects to be benefited by those who sought to commemorate by their generosity the long reign of our revered and beloved Queen, it was to the Metropolitan Hospital Sunday Fund that His Royal Highness (acting, no doubt, under the best advice obtainable) turned for assistance and coöperation in regulating and organising the distribution of the resources placed at his command.

Some may say this year, as many on former occasions have said:—You ask us again to help to place the London hospitals upon a sound financial basis by charity, whereas, if they were the national institutions which you claim them to be, they should be aided from State or municipal funds. Look at the sum which a half-penny on the income tax would realise for them, or, if the rates should be selected to bear what must in the main be a metropolitan burden, consider that a penny in the pound is reckoned to be the rate that will supply the district voting for it with a free library. What is a free library compared with a hospital? Would not a far higher rate be cheerfully paid for the sake of placing these great charities upon a sound footing? Our answer is that it is precisely because these noble institutions are charities that we resist the suggestion that they should depend on incomes paid to them by State or city under the compulsion of Acts of Parliament. In their origin and throughout their existence they have represented the generosity of those that have towards those that have not, and we would not deprive the former of a single opportunity of showing sympathy for their poorer brethren; nor would we have those poorer brethren receive their help in trouble from any other source than the loving charity of those who feel for others in affliction. The question, be it moreover remembered, is one of substituting State or municipal aid for the incomes of hospitals not already derived from fixed sources, rather than of supplementing from public funds the charitable donations already received. We mean that if State or municipal aid was introduced to ever so small an extent a complete change of the whole system would follow inevitably in due time. Those who found themselves taxed for the hospitals would gradually cease to subscribe voluntarily, some because they would not care, or could not afford, to pay twice over; others because they would think that their subscriptions were not needed for a State-aided institution; and others because they would hold that the State or the municipality ought to do thoroughly, and bear the whole cost of, that which it did in part and over which it exercised control. With regard to this latter point it can hardly be denied that where the public supplied the funds it would expect to have a voice in the spending of them. Thus, instead of institutions ruling themselves independently through their wisest and most experienced members we should have branches of a Government department aided by local municipal wisdom directing the internal affairs of our hospitals. We cannot believe that we should see better hospital administration under such a rule, and we should soon expect to hear of a shower of legacies and donations falling to the London School Board as to see charitable benefactions continue in such circumstances. The name, by the way, of the School Board reminds us that the schools which the Board maintains from the rates are open to all children whose parents choose to send them thither without questions being asked as to the parents' means. We submit that those compelled to support the hospitals would in like manner expect the hospitals to be open to them. We do not, as matters stand, find that there is any great bashfulness in seeking aid from hospitals on the part of many who are not fit objects of charity and who could well afford to employ and pay their own medical men, and any innovation likely to foster this abuse must. in the interests of rich and poor alike, be wrong.

The present income required by hospitals affords no criterion of what hospitals would require to support them did they cease to be charities. We note, on reference to Mulhall's Dictionary of Statistics, that in Paris, where the State subvention to hospitals is put at £358,000 annually, the number of beds provided for 10,000 of the population is computed to be 41, whereas for London it is given as 18. We heartily wish that the proportion of beds provided for the London suffering poor might come nearer to that of Paris; but we would see it made to approximate, not under the compulsion of the law by taxing the whole or some already burdened portion of the community, but by the charity and benevolence of rich and poor moved to more universal recognition of the greatness of the hospitals' need and of the nobleness of the institutions that they are asked to assist.

Rich and Poor Alike Should Give: A Tax on Pleasure.

In asking for more universal support for the Hospital Sunday Fund we are influenced by the last balance-sheet of the Fund and the table[1] often placed before our readers which gives the sums that have hitherto been subscribed to it, distinguishing the amount received at places of worship from the "donations" which represent the larger gifts of the wealthy and comparatively few. On comparing the figures of last year with those of previous occasions it will be noticed that last year was distinctly a good year for the Fund. The total collected was £53,504, an aggregate larger than that of any previous year save 1895, when the sum reached was £60,361. Last year, however, as in 1895, the fact that the total stood out above previous totals was due, not so much to any notable increase in the gifts of the many, but to the fact that the generosity of the donors outside those subscribing in places of worship rose to an unusually high pitch. In 1895, out of the splendid total of £60,361, nearly £22,000 were privately given, and in 1899, out of £53,504, the individual donations came to over £15,000. A glance at the notes appended to the table that gives the progress of the Metropolitan Hospital Sunday Fund will prove to how few the Fund has to turn when expressing its gratitude for these princely gifts, and as a natural consequence with how little certainty the continued magnitude of such donations can be reckoned upon. Few can be expected to vie with Sir Savile Crossley in subscribing sums of a thousand or five hundred pounds annually; the note to the year 1891 shows that out of donations of £9019 a sum of £5000 came from the late Duke of Cleveland; while in 1895 the £21,990 given as donations included £10,000 from the late Mr. B. Barnato and his friends, £3400 from the Stock Exchange, and three separate gifts of £1000, of which one, like the £10,000 and the £3400, came from a source largely affected by the present situation in South Africa. There was no South African boom last year, yet £15,000 were given in donations, so that we must hope that in 1900, in spite of their liberality to the war funds and to the funds in aid of the famine- and plague-stricken population of India, the wealthy will not forget the hospitals at home. When, however, we point to the increase of donations as distinct from collections in places of worship as largely accounting for the increase of the Fund in certain years our object is to urge the general giver to increase that portion of the Fund which must be looked upon as constituting its more or less fixed income. For there must be but a limited supply of donors of the quality of those we have mentioned and of the late Dr. James Wakley.

Last year £38,194 represented the generosity of the general public, a body which in 1898 gave £36,532, in 1897 £37,396,

[1] See previous Hospital Sunday Fund supplements.

and in 1896 £40,501. Last year, therefore, although the gross total was the second highest on record, the gifts of the general public only exceeded the average of the three preceding years by £50. But if the general public were to raise its subscription to £40,000 as a normal figure, even this would only represent twopence halfpenny a head levied on a population of 3,840,000. Now the population of London numbers about 4,500,000, or considerably more than 3,840,000, even after the deduction from it of the "submerged tenth" which may be taken as incapable of subscribing anything. The hospitals are designed for the reception and succour of the poor, a class which admittedly includes many besides the "submerged tenth," but we can see no reason why the gratitude of the working man for the aid afforded to him and his in time of sickness or injury should not take a concrete form, implying that he is too independent to accept charity and offer nothing in return. To the working poor, therefore, we suggest that a gift which represents an economy of less than a farthing a month for each member of the family is hardly an impossibility. Nor would it represent an excessive or disproportionate gratitude for those benefits which the giver may himself some day receive at the hands of the hospital, and which hundreds of his fellow men and women of the working class receive daily. There are more ways than one, we admit, of looking at the subscription of a working man to a charitable object. Many will say that a shilling a year for a poor man with a wife and two or three children (each member of the family being represented by 2½d.) is an excessive amount, too much for any reasonable person to expect. In a measure this may be true, and we do not say that we expect to find subscriptions to the Hospital Sunday Fund from working men on such a scale; but at the same time, when we suggest a shilling once a year we cannot help fancying that the average working man, even with a family dependent on him, does not regard a shilling as an excessive amount to spend on beer in a single week, for it will be remembered that our calculation eliminates more than three quarters of a million of the poorest part of the population altogether.

Still, in fixing on the poorest class of possible contributor and suggesting that his gift should be his fair proportion of the present sum contributed by the public, we have no doubt suggested a possibility that we can never hope to see fulfilled. It is different when we turn to those more favourably situated and ask them to remember that upon them has fallen the task of keeping the average at its present pitch, and that upon them we rely for raising it to a still higher point. Among suggestions for helping the hospitals to attain a fixed income it has been said that to tax theatres and places of amusement for their benefit would be to levy a toll upon pleasure for the benefit of distress. That such a toll might well be levied upon many who rarely or never contribute anything to charity in the year we freely agree; but we would have it a voluntary one, levied by each man or woman upon himself or herself. Is the price that is paid without afterthought for the seat in the theatre pit or gallery too much for even the least well endowed to deny themselves occasionally, even if the denial involves the missing of a performance at the play? Is the price of the box or stalls anything that will seriously affect the comfort of him who pays it ungrudgingly perhaps several times during the run of a popular piece? Surely on one occasion he might bestow it to benefit his fellow-men. Pleasure is a costly item in the lives of Englishmen and Englishwomen, particularly in London, whether it is sought on golf links or racecourse, on polo ground or lawn tennis court, at the opera-house or on the river, or simply in the wearing of expensive costumes in public places or at private entertainments. If the tax, then, be self-inflicted let it be levied with an unsparing hand, remembering that those who will benefit by it ask for no pleasure, only for relief from pain. Let the giver of it, if he wants self-interest as well as charity for a motive, remember that the help he confers upon the hospitals may some day come back a hundred-fold upon himself. He may not belong to the class with which accidents are frequent in their daily work, but some day a mishap may lay him low so that the saving of his life may depend on the promptitude of succour. The doors of the nearest hospital will stand open for him as widely as they do for the labourer or for the poorest beggar in the streets. His life may depend upon the application of some new discovery of science, and let him remember that it is in the hospitals that such discoveries are brought to perfection. But while we suggest such possible selfish motives it is primarily to charity that we appeal.

As the Population increases the Fund should increase.

To the general hospitals last year the Fund distributed £28,175, to the special hospitals £15,559, and such sums, we are aware, mean important additions to the revenues of these institutions. We are anxious that the addition should be greater; that the part played by the Fund in the year's work of charity should be larger. Above all, we wish that its variations should be constant, and in one direction only, constituting a steady increase, as rapid as may be, from year to year. The year before last, all contributions told, the total was £40,397; last year it was £53,504. Are we justified in hoping that last year's figure may be maintained, or must we anticipate a drop back to something nearer the average of the past ten years? 1898 fell below that average; have we any reason to anticipate that 1900 will be better than 1898, with war in Africa and with famine and plague in India?

This is a terrible question for those who are actively engaged in the management of hospitals and who feel the anxiety, in all its keenness, without any power to evade it or remove its cause. They know the need of ample accommodation, of funds for repairs, of a larger staff perhaps, of freedom from debt, and of work unfettered by the necessity for daily parsimony. They watch the demand upon their space increasing as the population around them thickens, and they know that their income, which is inadequate even to maintain the existing state of things, instead of increasing, is stationary or actually diminishing from year to year. We can all see at a glance that the difference between the £28,175 given last year to the general hospitals of London and the £18,958 of 1898 amounted to over £9000, but only those who watch the incomes of individual institutions from year to year know how welcome the extra hundreds of pounds were to them; how important it is to the good work that their receipts this year should not be by so many hundreds less. The tables we give will suffice to show any who care to note it how the different amounts of the Fund in a bad year and a good year affect each hospital to which the Fund lends its aid, while those who have had experience in estimating the annual expenditure of large concerns will know how difficult it is to form such estimates with accuracy even under favourable conditions. And thoughtful persons will realise how hard it is to keep within a margin of safety when the income is insufficient and when such as it is it fluctuates to the extent of hundreds or even thousands of pounds.

Of the cases that demand treatment in our London hospitals we can show no statistics. The figures before our readers deal with those that have been actually treated in the past year, but do not show how many might have been treated had the accommodation and pecuniary resources of the hospitals been sufficient to supply their needs; no lists are made of those turned away from the hospital doors. The 65,461 in-patients taken in by the general hospitals constitute a greater number than those which we gave in our tables for 1896, 1897, and 1898, but if in this or any one year the number suddenly drops by four or five thousand it probably will not mean that there were less persons in London in need of aid; rather it will mean that owing to the condition of the hospitals' funds there were less beds ready to receive them. The increased number accommodated last year as in-patients may have distinct relation to the increased revenue of the hospitals through the larger amount of the Hospital Sunday Fund, and the splendid donations of the Prince of Wales's Hospital Fund. This is in the nature of speculation and conjecture. What is not either speculation or conjecture is that the population of this huge metropolis is from year to year growing larger. London grows greater, not because the members of its wealthier classes grow more numerous, although, no doubt, these to some extent increase in number. London grows greater because by the attraction of its wealth and by the promise of work which it is supposed to hold out to those without means of livelihood it draws from all parts of the country poor working-men with their wives and families; London grows greater because by the glamour of its opportunities and by the fame of the equal laws enjoyed by all in the British Isles it attracts from all parts of Europe many who are industrious and capable of useful work, many also who select it as a new home because where they come from they are oppressed. They are not oppressed in London, but it is to be feared that their destitution continues, and it may safely be said that of the thousands who yearly swell our population the greater number are of the class from which the inmates of

TABLE IV.—DISPENSARIES.

Name of dispensary.	Hospital Sunday Fund award.	Out-patients' visits.
Battersea Provident	£89	29,846
Bloomsbury „	11	—
Brixton, &c.	52	19,435
Brompton Provident	25	5,378
Camberwell „	89	101,585
Camden „	12	8,584
Chelsea, Brompton, and Belgrave Provident	46	—
Chelsea Provident	17	2,985
Child's Hill „	11	3,107
City	115	20,723
City of London and East London	26	79,548
Clapham General and Provident	27	13,887
Deptford Medical Mission	21	2,933
Eastern	31	14,982
East Dulwich Provident	29	9,731
Farringdon General	40	14,114
Finsbury	16	38,813
Forest Hill	42	6,545
Hackney Provident	11	1,508
Hampstead „	42	—
Holloway and North Islington	57	28,085
Islington	47	12,402
Kensal-town Provident	10	4,751
Kensington	68	5,073
Kilburn, Maida-vale, and St. John's-wood	42	3,719
Kilburn Provident Medical Institution	36	—
London	21	—
London Medical Mission	94	34,712
Margaret-street Infirmary for Consumption	—	—
Metropolitan	57	30,789
Notting-hill	10	2,586
Paddington Provident	34	12,687
Pimlico „	19	21,036
Portland-town	18	8,288
Public	42	15,212
Queen Adelaide's	19	18,129
Royal General	36	11,559
Royal Pimlico Provident	68	63,412
Royal South London	47	18,765
St. George's and St. James's	47	8,000
St. George's (Hanover-square) Provident	36	2,545
St. John's-wood and Portland-town „	35	5,544
St. Marylebone General	46	8,333
St. Pancras and Northern	38	—
South Lambeth, Stockwell, & North Brixton	47	5,760
Stamford-hill, Stoke Newington, &c.	50	14,162
Tower Hamlets	42	10,660
Walworth Provident	10	5,514
Wandsworth-common Provident	8	4,437
Westbourne Provident	14	12,154
Western	54	26,765
Western General	135	17,305
Westminster General	31	33,985
Whitechapel Provident	21	20,931
Woolwich „	11	1,427
	£2,102	842,411
Estimated to supply omissions	—	120,812
Total	£2,102	963,223

hospitals are drawn, while the overcrowding which their arrival causes does not tend to benefit the public health. Vast, therefore, as are the riches of London its poverty is vaster still, the poverty more than keeping pace with growth of wealth. In order to deal with this increase of poverty adequately there should be a correspondingly rapid, regular increase in the funds of our hospitals. And although the Hospital Sunday Fund enjoys what might be called good years at times, as the figures show, it cannot be said that even these years are good save in comparison with worse ones, and it cannot be said either that the improvement is rapid or regular.

In introducing our appeal to our readers in 1896 we pointed to the total of over £60,000 reached in 1895. We urged that the sum collected should not be allowed to recede again to its former lower level; but we were obliged to admit that having regard to the source of the sudden increase we feared that it might do so. In 1896 the total was lower than in 1895. In 1897 it was lower again, and again it fell a little in 1898. If in 1899 it rose once more, it was, as we have pointed out, owing to the magnitude of the "donations." And yet the Hospital Sunday Fund should appeal to all in a way in which the individual appeals of hospitals and other institutions cannot do, and for this reason. While asking all to give with the liberality that their means allow, we are aware that the subscription-list with its orthodox guinea is beyond the reach of many, while to many the publicity which it affords to their generosity offers no attractions. The bag and collection-box of the church, even the plate which gives a very modified publicity to the individual offering, should appeal to these in a way in which no more formal methods of subscribing can do. We are referring now to an enormous class, the class between rich and poor, the class with more or less fixed incomes, who are all competent to give something. It may not be a very great something, but it should be more per head than the twopence-farthing or twopence-halfpenny which represents, as we have shown, the average individual liberality of London towards the Fund. This is an age of education, in which men and women read and think and in which children are brought up to know and understand all that is going on around them. Not only by these pages and by such direct appeals as these, but by their knowledge of what is good and right, by their acquaintance with the facts of life and the many sides of the subjects that come before them, should the great mass of the population learn to support the hospitals as a duty imposed upon them by their humanity. We appeal primarily to Londoners, but those who live far from London should remember that London hospitals do not exist for Londoners only. Very few of those who are sufficiently interested in the welfare of their fellows to subscribe liberally to their local hospitals, and who might think this a reason for leaving the Metropolitan Hospital Sunday Fund unaided, but can remember persons who have been helped to be treated in London. Surely this is a reason why those who live in the country should support the Fund which aids all London hospitals. We may also point out to country dwellers that it is in the schools of the London hospitals that the majority of the medical men who carry on the work of the hospitals in the country, and who practise among the inhabitants of country districts all over England, have acquired their training.

In Memory of a Great Century.

Lastly, something of the nature of a centenary celebration might well be imported this year into the donations to the Hospital Sunday Fund. The last year of the nineteenth century is rapidly running out, and should not be suffered to close upon the Hospital Fund without a special mark from the public of their sense of what hospitals have wrought during the last hundred years. In no previous century that the world has known have the discoveries of science been so astounding, so calculated to amaze absolutely anyone who, having inhabited the globe during the century before, might be imagined as revisiting it during the later one. In no department of science has the revolution during the nineteenth century of all the conditions of our life been more marked than it has in medicine and surgery. It would be easy to multiply lists of surgical operations now possible that were not only undreamt of in 1800, but which, if conceived, could not have been performed with success. It is simpler to refer to the two great discoveries that have rendered others possible, and remind those who need to be reminded that antiseptic surgery and the use of anæsthetics are discoveries of the nineteenth century.

SUMMARY OF TABLES.

—	Hospital Sunday Fund award.	In-patients.	Relieved.	Cured.	Convalescent homes.	Remaining under treatment.	Died.	Out-patients' visits.	Accidents and emergencies
General Hospitals	£28,175	65,461	21,019	32,464	7,902	4,076	6,123	1,933,635	284,688
Special Hospitals	15,559	29,324	10,779	13,237	2,766	2,549	1,871	1,351,904	21,961
Cottage Hospitals and Convalescent Homes	4,550	27,108	8,085	16,605	280	1,134	283	14,026	419
Dispensaries	2,102	—	—	—	—	—	—	963,223	—
Total	£50,386	121,893	39,883	62,306	10,948	7,759	8,277	4,262,778	307,068

Particularly appropriate is it to remind our readers of these at the present time, for during the raging war both these aids to surgery have produced a condition of things that without them would have been absolutely impossible. And preventive medicine is the child of this century. Again, let those who have friends in South Africa turn their minds thither and reflect on what our camps, filled with cases of enteric fever and dysentery, due to the conditions of warfare, the climate, and the country, would have become had not practical sanitation, combined with medical treatment, been brought to a high pitch of perfection by those responsible for the health of our troops. Let those who wish to compare the present with the not-far-distant past remember our military hospitals at Scutari, in which the death-rate is reckoned to have been between 400 and 500 per 1000, and reflect on the change wrought by modern organisation, sanitation, and surgery.

That the use of ether and chloroform, antiseptics, and x rays is not black art or witchcraft everyone in the present year of grace is fully aware, but even in the eighteenth century Professor Roentgen might have been seriously accused of *diablerie*. Perhaps all do not realise that such wonders as these are not due to the sudden inspiration of genius operating in the minds of specially constituted human beings, but are the results of patient investigation, anxious thought, and untiring research, carried on in institutions suited for the observation and investigation of the phenomena of injury and disease, while the mind that evolves the new thing as the result of observation and investigation is one that has received long and laborious training in those same institutions. There may be some, *laudatores temporis acti*, who at any rate profess to regret the introduction of railways, telegraphs, telephones, penny postage, or popular education, who, while perforce they admit that they constitute great changes, deny that they bring any change for the better into the life of mankind. No human heart, however, can view without thankfulness those changes in our conditions which tend to alleviate the human suffering which, while man exists, will be in some measure his lot. And such of these changes as have occurred during the nineteenth century are in a great measure due to the hospitals for which we plead to-day.

In Conclusion.

We have now given reasons why *all* should contribute to the Metropolitan Hospital Sunday Fund, laying special stress upon the word all, and including in it rich and poor, dwellers in London, in its suburbs, and in far-off country towns and districts without distinction. We make the appeal to those who attend public worship on the Sunday on which the collections are made, and we ask them not to let any who may not be present with them forget the Fund or omit to contribute to it owing to ignorance of its claims upon them. To those who attend no place of public worship the Fund should appeal as closely as to those that do, for the hospitals dispense their boons without regard to character, conduct, or religion, drawing no distinction between forms of belief or unbelief, holding that the claim of physical misery imposes a universal duty.

> In faith and hope the world will disagree,
> But all mankind's concern is charity.

And so we ask all to give to the full extent of their power of giving because—

1. The war and other circumstances of the year seem to endanger the prosperity of the Hospital Sunday Fund and of the individual hospitals.

2. Because the hospitals have done more than any institutions that anyone can name in mitigating the horrors of the war for those engaged in it; among whom names of dear ones will occur to individual givers, while all are their countrymen defending the honour and integrity of England and her Empire.

3. Because they are rich, whether their annual incomes are reckoned by thousands and hundreds of thousands, by hundreds or by tens of pounds, or by shillings paid weekly, compared with the poor for whom the hospitals are maintained and whose sufferings the hospitals struggle to alleviate.

4. Because they are in good health and it is the sick and the maimed who crave their aid.

5. Because they may some day themselves need the aid of the science which strives to perfect itself year by year by ceaseless work in our hospitals and constant effort to diminish pain and arrest the progress of disease.

6. Because for all men, for all women, for all children, rich or poor, sick or well, it is good to give, good to exercise self-denial in order to give, good to know that the gift is on behalf of those in worse estate than the giver, on behalf of those who do not crave aid themselves but for whose sakes we crave it.

Wherefore let our readers select any reason, selfish or unselfish, from the above that may please them, or frame a fresh one for themselves; but in any case let them give. And in giving themselves let them see that they do not omit to urge others to give also.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

Amounts received and disbursed in the year 1899.

Dr. — RECEIPTS *for the year ending 31st October, 1899.*

1899.	£ s. d.	£ s. d.
To Balance at Bank of England, 1st Nov., 1898	1,421 1 11	
,, Balance in hands of Secretary	16 10 9	
		1,437 12 8
,, Collections made at Sundry Places of Worship	38,168 14 9	
,, Collections at Schools	25 6 2	
,, Donations	14,046 15 4	
,, Donations for Surgical Appliances	16 14 6	
,, Dividend on £45,346 1s. 3d. 2¾ Consols, per Executors to the Will of W. A. Guesdon, deceased	1,247 0 4	
		53,504 11 1
		£54,942 3 9

Cr. — PAYMENTS *for the year ending 31st October, 1899.*

1899.	£ s. d	£ s. d.
By Awards to 131 Hospitals	47,396 15 6	
,, Awards to 7 Institutions	705 12 5	
,, Awards to 55 Dispensaries	2,095 16 3	
,, Surgical Appliances	2,254 17 1	
		52,453 1
,, Rent	170 0 0	
,, Fuel, Gas, and Office Cleaning	20 19 10	
,, Furniture and Repairs	13 19 6	
,, Printing and Stationery	237 15 3	
,, Stamps and Postage	90 13 2	
,, Advertisements	259 9 11	
,, Salaries and Gratuities	903 6 6	
,, Sundries	6 0 9	
		1,702 4 11
,, Special Expenses—Special Church and Chapel Appeals		64 1 8
,, Balance at Bank of England, 31st Oct., 1899	717 9 7	
,, Balance in hands of Secretary	5 6 4	
		722 15 11
		£54,942 3 9

Audited and found correct, this 29th day of November, 1899.
(Signed) W. H. PANNELL & Co., *Chartered Accountants*, 13, Basinghall-street, E.C.

*** In the preparation of the voluminous statistics of hospital work which have been here digested and exhibited in collected form (and which have been specially supplied to us in response to our applications, and are quite independent of any returns made to the Metropolitan Hospital Sunday Fund Committee) we have been greatly indebted to a large number of secretaries and other officers of the various medical charities of the metropolis To them we desire, as on many previous occasions, to tender our sincere thanks.—ED. L.

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church or keeping a hospital going there is always the fear of the subscribers before the eyes of the responsible managers. In the building it is made a *sine quâ non* that it must be finished by such a date, while the decorations are handed over to a firm to complete at a fixed sum, instead of, as formerly, various artists being employed to carve or paint different portions at their ease. The modern hospital, too, has to issue reports; it is expected by the subscribers to show a good record not so much in quality as in quantity. Let an impartial observer look at the reports of any of the London unendowed hospitals and he will see what we mean. "Funds are urgently needed to meet the ever-increasing work; the patients come to us from all parts of the kingdom; the out-patient department is far too small to treat the crowds which daily flock to us for relief," and so on. It is easy to point out faults, but the suggesting of a remedy is by no means easy and we shall be glad to see at what conclusions the suggested conference will arrive. A central hospital board may succeed in Manchester but in London the subject bristles with difficulties.

CORTICAL HYPERÆSTHESIA IN ACUTE ALCOHOLISM.

A LENGTHY paper with accounts of cases illustrating the above condition has been published in the *Archives de Neurologie*, May, 1900, by P. Cololian and A. Rodiet of Magnan's Clinic. Cortical (cerebral) hyperæsthesia is manifested in its most marked form during the course of acute alcoholism. In such patients it is possible by external excitation to call up hallucinations in one or other of the sensory spheres, results due to the cortical hyperæsthesia which is present. Lipmann was one of the first to note this hyperæsthesia—e.g., as shown by the easy induction of visual hallucinations after pressure on the eyeballs. Krafft-Ebing has also shown that merely closing the eyes will suffice to make visual hallucinations come forth. Magnan has noted that taps on the skin can give rise to sensations of biting or of the sting of an insect and may also indirectly evoke hallucinations of sight, hearing, or smell in some subjects. Blowing into the external auditory meatus will give rise to auditory hallucinations.[1] Mierzejewski[2] observed that at the onset of delirium tremens there exists such an excitation of the visual centre that impressions of colour leave a long-persistent trace, and hallucinations occurring at such moments take the same colour. He observed in an alcoholic subject that tapping of the skin with a mallet provoked auditory hallucinations in the form of voices uttering insults. In one of his theses Cololian has recorded instances of persecutory delusions arising from simple hallucinations.[3] Stimulating the tongue with a piece of paper rolled to a point after closing the patient's eyes provoked intense illusions of taste, with grimaces of disgust. One patient said he tasted sulphate of soda or quinine and made a horrid grimace, another said it was absinthe, a third said it was sugar, while a fourth experienced merely an agreeable taste which he could not define. The diagnosis of such cortical hyperæsthesia is of great practical importance for it occurs before the actual onset of the symptoms of agitation, tremor, and acute cerebral excitement of delirium tremens, and it is possible by immediate treatment to prevent or to mitigate the threatened attack. Of the several cases recorded in the paper by Cololian and Rodiet the following may be taken as a typical and instructive one. A man, aged 32 years, a bath attendant, was admitted to the infirmary of the police depôt at Paris on June 13th, 1899. He had never been arrested before. His family history was as follows. His maternal grandfather was an alcoholic, his father was a sober man and was separated from his wife who drank wine and absinthe and who spent most of her money (which she had inherited) in drink and in dissipation. There were no children of the marriage except the patient. His personal history was as follows. He had had convulsions during his youth, and typhoid fever (lasting two months) at the age of 13 years. At the age of 18 years the patient drank to excess. His habitual drinking for 14 years thereafter was a small glass of "marc" on rising in the morning, white wine before breakfast, about a litre of red wine at each meal, and absinthe before dinner. After some time he had an accident and suffered from nervousness, and on medical advice he gave up taking absinthe to substitute for it almost immediately, however, a bitter liquor ("picon"). Soon after this symptoms of alcoholism appeared—viz., insomnia with nocturnal hallucinations, tremblings of the hands, and cramps of the calves. At the beginning of 1898 he was seized in the middle of the night with an attack of delirium tremens, and more recently, and before admission to the infirmary, he had a second attack. The patient had been married about a year. Before and during the first few days of his marriage he accused his wife of indifference, coolness, and deceit towards him with the connivance of her mother. For three months he appeared sad and depressed and spoke of shooting himself to put himself out of *ennui*. On admission to the infirmary he appeared red and flushed, with brilliant eyes and a face covered with sweat. There were tremors all over the body, the pupils were equal, and there was no speech disturbance. The pulse was rapid, and the respirations were normal. There was hyperæsthesia of the skin at the neck and on the chest, at the soles of the feet, and on the flexor surfaces of the fore-arms. "In all these hyperæsthetic areas the least rubbing produced agitation and contortions of the body with movements of defence, and the patient experienced actual pain." Tapping produced similar effects, whereas pinching had less effect. By Lipmann's method it was easy to provoke definite visual hallucinations of quivering flashes of light, sparks, and flames. Buzzings and roaring sounds were induced by simple suggestion or blowing on the ears. Touching the tongue with paper induced tastes of "powders and of absinthe" so strong and nauseous that he attempted to vomit. Smell was normal. The cortical hyperæsthesia with its hallucinatory tendency subsided and a gradually developing melancholia succeeded. He was transferred to an asylum, his bad hereditary antecedents making the prognosis unfavourable.

[1] Leçons Cliniques, 1897, p. 207
[2] Archives Slaves de Biologie, March, 1886.
[3] Les Alcooliques Persécutés, Thèse de Paris, 1897.

NON-COMPLIANCE WITH ISOLATION LAWS.

IN order to protect the members of the general community from contracting certain of the infectious diseases laws have been enacted which direct that all persons suffering from these diseases shall be isolated so as to prevent them from spreading the infection. When this cannot be done in private houses hospitals are provided by the authorities in which the necessary isolation can be carried out. As a rule there is but little difficulty in inducing the patients or their friends (in the case of those in charge of children) to conform to these laws, but occasionally ignorance or stupidity compel force to be used. An instance of this kind recently came before the Newmarket Petty Sessions. A man and his wife, who did not appear, were charged with wilfully exposing their daughter while she was suffering from scarlet fever. The evidence showed that the child was conveyed a distance of 10 miles in a cab hired at a posting establishment. On being told to keep her daughter carefully isolated the female defendant became very abusive. Subsequently the child was found in the public streets, and the mother being again

remonstrated with said she did not care about the law and should take or send her child just where she liked. It was also proved that the child had been sent to shops and allowed to play in the streets with other children, and another case of scarlet fever had already been reported. Mr. C. F. Gray, M.R.C.S. Eng., one of the magistrates, most rightly said that the case was a very serious one as the child would be for some time in an infectious state. A fine of £2 10*s.* with £1 8*s.* 6*d.* costs was imposed. Unfortunately, since the proceedings had been instituted the parents with the child had left the town, thus still further running the risk of spreading contagion. It is exceedingly difficult to teach such persons as the defendants in the above case that laws are made not for one but for the many. Isolation of persons suffering from infectious diseases is not designed for the sole benefit of the patients but for the protection of the public. The community must be guarded from the acts of such wilful persons in the same way as from those of criminals. It is a crime wilfully to allow a child suffering from scarlet fever to play with other children; many deaths may be the result, and the law consequently deals sternly with such offenders.

ENTERIC FEVER IN SOUTH AFRICA.

THE lists of casualties which appear daily in the papers demonstrate only too plainly that we have not yet solved the problem of protecting large bodies of troops from the ravages of such diseases as enteric fever and dysentery. Much has been done in prophylactic measures against the former but very much more remains to be done. One of the greatest difficulties which confront the medical officers is to induce the men only to drink water which has been rendered as pure as possible by boiling or filtering. After a long march the average soldier will run any risk to obtain a draught of water, however bad, and the consequences of such action were seen after the march to Bloemfontein when the men partook freely of the water of the Modder which was defiled by the dead bodies of men and beasts. One of the main interests attaching to the medical aspects of this campaign will be to ascertain the results of the inoculation against enteric fever which was practised upon many thousands of the officers and men. We have been informed that measures have been taken to ensure careful records being kept as to the occurrence of enteric fever amongst the inoculated and the uninoculated, but it will be some time before such statistics can be carefully formulated and the value of such inoculation estimated.

PNEUMOCOCCIC OSTEO-ARTHRITIS.

IT is curious that pneumococcic arthritis which is a recognised, though rare, affection in France appears never to have been observed in this country. At the meeting of the Société Médicale des Hôpitaux of Paris on May 18th M. Ch. Fernet and M. Lacapère read notes of a case recently under their observation. A strong man of alcoholic habits, aged 47 years, had an attack of pneumonia which commenced on Jan. 6th. The crisis occurred on the seventh or eighth day. He entered hospital on Jan. 13th. Soon after his admission traces of the pneumonia—bronchial breathing and sub-crepitant râles in the lower lobe of the left lung—were found. Two or three days before the patient was admitted arthritis of the right wrist appeared. It was characterised by swelling which was rather marked on the dorsal aspect and which was accompanied by slight redness and pain. On Jan. 24th exploratory puncture gave exit to several drops of a liquid as clear as water which was found on bacteriological examination to contain the pneumococcus. On Feb. 6th the patient had completely recovered from the pulmonary disease, but there were still engorgement of the wrist and slight œdema of the back of the hand. The wrist was then immobilised on a splint and slight pressure was applied by means of wadding. On Feb. 14th the swelling had diminished, but fluctuation was still evident and lateral movements of the wrist were accompanied by crackling. On March 2nd the swelling had further diminished and the pain had disappeared. On March 22nd the wrist was still swollen and the cellular tissue seemed to be infiltrated. The axis of the hand was deflected outwards as if the radius was eroded at its extremity and the joint crackled on passive movement. Radiography showed on the sound side the bones of the forearm and the carpus clearly separated; on the diseased side the wrist was represented by a greyish mass, the ends of the bones of the forearm seemed to be in contact with the carpus, and the extremity of the radius was eroded and enlarged. There were thus evidently adhesions between the radius and ulna and the carpus. The case was one of pneumococcic periarthritis similar to two cases already reported to the society.[1] The lesions shown by the radiograph corresponded to those previously observed at a necropsy in another case of the disease. A similar rapid course, early erosion of the bones, and formation of adhesions have been observed in all cases. Ankylosis seems to be the natural termination. Pneumococcic osteo-arthritis is thus a special type of arthritis which is clearly distinct from pneumococcic synovitis.

COUNTY OF DURHAM SOCIETY FOR THE PREVENTION AND CURE OF CONSUMPTION.

THE above society has just opened its new sanatorium. The building is Horne Hall, at Stanhope, which stands in two and a half acres of garden, and the first instalment of patients entered on May 15th. At present there is only accommodation for 12 patients, but in the course of the summer it is intended to increase the number of beds to 20 by adding more bedrooms. The sanatorium will be maintained—(1) by ordinary subscriptions which may be allotted for the benefit of patients from particular districts or works; (2) by workmen's subscriptions, each man paying 3*d.* per quarter, and bodies of workmen subscribing regularly shall have a first claim on the beds to the full amount of their total subscriptions—e.g., if the total sum of their subscriptions amounts to half the cost of maintainence, half of the beds will be at their disposal without further payment; (3) by weekly payments by or on behalf of patients who do not belong to bodies of regularly subscribing workmen; and (4) by income from investments. There is to be a resident medical officer, who must be registered according to the Medical Acts, who shall devote all his time to the welfare of the inmates of the sanatorium and shall have his meals with them. He may have 21 days' holiday in the course of the year at times to be approved by the committee, and nothing is said about his getting any salary, although we suppose he is to have one.

URTICARIA HÆMORRHAGICA.

IN the *Intercolonial Journal of Australasia* of April 20th Mr. C. S. Hawkes has published a case which is of interest both on account of the rarity of the condition present—hæmorrhagic urticaria—and the medico-legal question which might have arisen. A boy, aged 21 months, was let fall by his nurse. He was supposed to have struck the back of his head, but the accident appeared to have been a slight one and no notice was taken of it at the time. Next morning there was a somewhat tense swelling about two inches in diameter on the right side of the back of the neck, reaching up to the level of the occiput, with dark bluish discolouration in the centre as from a bruise. There were also two bluish marks "like bruises"

[1] See THE LANCET, Dec. 11th, 1897, p. 1548.

over the left lower ribs. In the afternoon the cervical swelling was tense and painful, and over the body were many typical urticarial wheals varying in size from a quarter of an inch to two inches in diameter. All the larger ones showed deep purplish discolouration, and there were some bluish marks on the skin, evidently where wheals had disappeared. Itching was considerable. On the first day the wheals were confined to the trunk; on the second day they spread down the arms and hands; on the third day they were thickly distributed over the trunk, legs, arms, and face, and the eyelids were so swollen that they could not be opened. The hæmorrhages were chiefly confined to the larger wheals, which appeared in successive crops. In 24 hours they began to turn from a dark bluish purple to a brown colour. They had disappeared by the fourth or fifth day. After the fifth day only ordinary wheals appeared. Two days later a most severe attack of ordinary urticaria occurred. At its height there were attacks of dyspnœa with sonorous and cooing rhonchi, which passed off in from a quarter to half an hour. For a few days the cry was very hoarse and there was evidently sufficient laryngeal swelling to cause some inspiratory retraction of the chest. As the urticaria disappeared bronchopneumonia supervened, which was followed by whooping-cough. During the hæmorrhagic period examination of the blood showed decided leucocytosis. It is to be regretted that further details are not given of this highly interesting case. Mr. Hawkes appears to consider that the injury had no relation to the eruption for he does not even discuss the question. However, the large cervical swelling seems probably to have been due to the fall, especially as it differed so much from the other cutaneous hæmorrhages. The facts may be regarded as evidence of the hæmorrhagic tendencies of the patient.

THE CATARRH PRODUCED BY A 2 PER CENT SOLUTION OF SILVER NITRATE IN THE EYES OF NEWLY-BORN CHILDREN.

IT must have happened to many practitioners who follow Credé's teaching and introduce one or two drops of a 2 per cent. solution of silver nitrate into the eyes of newly-born children to find that the application sets up a good deal of catarrhal conjunctivitis. The question as to whether the occurrence of such an inflammatory reaction is the usual result of the treatment or not has aroused a considerable amount of controversy. Professor Leopold attributes the catarrh to a faulty technique; other authorities hold that it is the usual sequel and consider it a serious drawback to the treatment. With a view to settling the question Dr. H. Cramer[1] has investigated the effect of a 2 per cent. solution of silver nitrate upon the eyes of 300 newly-born children. One drop of the solution is placed in each eye while the child is lying upon the back. The baby is then rolled over on to either side alternately and by the successive opening and shutting of the lids the lotion is spread all over the conjunctival sac. The eyelids and the surrounding parts are then carefully wiped dry with cottonwool. In all the cases the conjunctiva was found to react to a greater or less degree, varying from simple congestion and swelling to an acute inflammation. In 5 cases only out of 100 which were carefully observed was there no discharge, the effect being limited to some redness and swelling of the mucous membrane. In the remaining 95 cases there was an abundant discharge. In 73 cases it lasted about five days while in 27 it continued for a longer period of time. In 11 cases a secondary infection occurred with a recrudescence of the symptoms. Dr. Cramer is inclined to believe that the reaction is more marked in children who have been born after a difficult labour or who have presented by the face. In two cases of ectropion of the upper lid the inflammation was extremely marked. The length of time the discharge lasts appears to depend upon the presence or absence of organisms in the conjunctival sac. For the first 24 hours the discharge is aseptic, but after the second day it contains numerous organisms of various kinds. In all the cases of secondary infection staphylococci or streptococci were found to be present. These investigations tend to confirm the view that the use of a 2 per cent. solution of silver nitrate is normally followed by a certain degree of conjunctivitis which tends to spontaneous cure and gives rise to no bad results. The fact that such a reaction does occur is no doubt the explanation of the unpopularity of this mode of treating the eyes of newly-born children with some medical men and with a great many monthly nurses. The dangers of ophthalmia neonatorum are, however, so great that there is no justification for neglecting any precautions that may tend to prevent the occurrence of this dread disease. There can be no doubt that the use of a 2 per cent. solution of silver nitrate is one of the most certain means of prevention, and its more general use would be of the greatest value in tending to diminish the very large number of cases of ophthalmia neonatorum which at the present time occur in midwifery practice.

[1] Centralblatt für Gynäkologie, No. 9, 1899.

THE ALLEGED POISONOUS COPPER-COATED MAUSER BULLETS.

IT has been stated pretty freely in the daily press that amongst other unfair devices adopted by the Boers in the present war was that of coating the Mauser bullet with a poisonous salt of copper — viz., verdigris. Strictly speaking, verdigris is basic acetate of copper, which may be obtained by allowing vinegar to come into contact with, or to evaporate on, a used copper coin. The same French word, however, has been applied, but wrongly, to the green rust (basic carbonate of copper) which forms on copper when in contact with moist air. Our Special Correspondent at the base also stated in a letter published in THE LANCET of May 5th, 1900, p. 1312, that he had seen a "clip" of Mauser cartridges the bullets of which had been dipped in verdigris, but in our issue this week he reports that on being submitted to a thorough analysis this green coating proved to be not verdigris but a mixture of paraffin wax and carbonate of copper, which, he adds, appears to have been used for the double purpose of preventing the cartridge suffering from damp and of supplying a hermetical closing between the brass capsule and the bullet, and thus preventing rust of the barrel. By the courtesy of Sir William Mac Cormac, who placed at our disposal some of these so-called copper-dipped bullets, we have been able to submit the coating as well as the nickel case which encloses the lead bullet to complete analysis. The results are of special interest in regard to the accusations made as to the sinister intentions of our enemy, and we are confident that the interpretation to which these results lead is correct and absolves absolutely the Boers from the charge of tipping the Mauser bullet with a poisonous salt. It is essential to state that the Mauser cartridge consists of a brass case (containing the explosive and detonator or cap) to the anterior end of which is attached a bullet of lead inclosed in a nickel jacket. The Mauser bullets which we examined were covered seemingly with a green coating extending from the apex of the bullet to about a quarter of an inch along the brass cartridge case. On scraping this wax carefully off, however, the first shavings proved to be quite colourless and, in fact, consisted of paraffin wax such as is used in making modern candles. As the scraping approached the surface of the nickel case the shavings became light green until on the surface itself the scrapings were quite green. The nickel

case proved to contain on analysis not only nickel but copper, and the green wax contained both those metals also. We have not the slightest doubt, therefore, that the bullets in the first instance were steeped in melted paraffin wax or wax candles solely to prevent fouling of the gun-barrel and to protect the nickel case against rusting, to which this metal is particularly liable, and that after a time both the copper and nickel of the case of the bullet entered into combination with the stearic acid (which is commonly added to wax candles) in the wax and turned it green. The same phenomenon is familiar to everybody in the green tears of a wax candle in a brass candlestick. It has been suggested that the colouring was of arsenical origin, but we failed to find the slightest trace of arsenic. The fact that the wax on the bullets contained precisely the same metals as were present in the case entirely sweeps away the suspicion that the Boers entertained a malicious intention and expressly coated their Mauser bullets with poisonous copper salts. This should be stated with some emphasis in order that our enemy may be treated with common fairness. Further, it is doubtful whether the bullet would carry the smallest amount of this green wax coating (considering its comparatively low melting point) to its billet. The metals only existed in traces. Many erroneous and contradictory statements have been made in regard to this matter and we are glad to be able to present such a satisfactory and, as we believe, perfectly true interpretation of the facts as revealed by analysis, which hitherto does not appear to have been carried out at that length or with that precision which the serious nature of the suspicion demanded.

THE HUXLEY LECTURE.

AS will be seen by a reference to our advertisement columns Lord Lister has consented to deliver the third Huxley Lecture at Charing Cross Hospital on October 2nd. The lectureship was founded upon the death of Professor Huxley out of a sum raised by the medical school of Charing Cross Hospital and various friends in commemoration of Huxley having received his medical education at Charing Cross Hospital, and the subject appointed was that of Recent Advances in Science and their Bearing upon Medicine and Surgery. The first lecture was delivered by Professor Michael Foster in 1896 and the second in 1898, the lecture being biennial, by Professor Virchow. Lord Lister is a worthy follower of his two distinguished predecessors and his selection as lecturer in the present year is all the more fitting on account of our country being at war. The extraordinary and unprecedented success which the Royal Army Medical Corps has attained in the treatment of the wounded is due in very large measure to Lord Lister's world-renowned researches upon asepticism and its results.

THE Helen Prideaux Memorial Scholarship, value £50, will be awarded in July, 1900, to a graduate of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be registered medical women of not more than three years' standing on June 1st, 1900, and must send in to the trustees, under cover to the secretary, an essay on some medical subject, on or before July 15th, 1900. The subject chosen by each candidate may be connected with any department of medical or surgical practice. In estimating the relative value of the essays the trustees will attach special value to the evidence afforded of clinical work and of direct and personal experience.

AT a general monthly meeting of the members of the Royal Institution held on Monday, June 11th, Sir James Crichton Browne, treasurer and vice-president, being in the chair, the following motion was unanimously agreed to:—

The managers of the Royal Institution of Great Britain, on the occasion of the retirement of Sir Frederick Bramwell from the office of honorary secretary, desire to place on permanent record an expression of their high appreciation of the admirable way in which he has performed the duties of that office and of his signal services to the institution generally.

THE Ingleby Lectures of the Mason University College, Birmingham, will be delivered on Wednesday, June 27th and July 4th, at four P.M., in the medical lecture theatre of the College, by Dr. O. J. Kauffmann, who has taken for his subject "The Commoner Neuroses of Childhood, their Pathology and Treatment."

Staff Surgeon Henry Peacock (retired R.N.) died on June 5th in his eighty-eighth year. He qualified in 1837 and in 1839 entered the Royal Navy. Subsequently he was appointed medical officer to the Dockyard at Chatham and staff surgeon to the Royal Dockyard Battalion.

A REUTER'S telegram states that Dr. J. Farrell Easmon of Cape Coast, West Africa, died from pneumonia on June 9th.

THE WAR IN SOUTH AFRICA.

THE war chronicle for the past week is of a mixed but, on the whole, of a very satisfactory character. It is nevertheless disappointing to learn at this stage of the campaign, and despite all the experience which our army has had of the tactics of the enemy that we still appear to be unable to prevent isolated bodies of troops and detachments from being surprised, surrounded, and defeated by superior numbers of the enemy. The defeat and capture of the Sherwood Foresters' (4th Derbyshires) Militia at Roodeval was a regrettable business, notwithstanding that it can have no real influence on the course of the campaign. The direct result of the wrecking of some miles of railway by the Boers and the consequent interruption of Lord Roberts's line of communication cutting him off from his base at Cape Town put a temporary check on his military operations. These occurrences indicate that the spirit and activity of the Transvaalers and Free Staters are factors which have still to be taken into account. Nevertheless, with the occupation of the enemy's capitals, with the successes we have obtained in capturing Botha's Pass and Almond's Nek by Buller's troops, and the news from the Western side and elsewhere, taken in connexion with the overwhelming forces at our disposal, we may confidently assert that the enemy's back is broken. The Boer forces may strike a furtive blow here and there, successfully attack different points and intercept Lord Roberts's long lines of communication from time to time, and by making occasional raids and then skilfully retreating cause the war to drag on, but these efforts must inevitably only prove futile in the end. How soon that end may now come no one can tell, for just at the moment of our writing the welcome telegraphic news has arrived of Lord Roberts's successful attack on Botha's force, and of the defeat and complete rout of De Wet by Lord Methuen's troops. The most unsatisfactory part of the business has hitherto been the way in which the Boers have usually succeeded in retreating without loss of their guns and convoys or any material loss to themselves. The British have rarely succeeded in "cornering" them so as to compel their surrender. We hope that it is true what a telegram from Pretoria, dated June 5th, says—namely, that 150 officers and 3500 men whom the Boers held as prisoners had been released. The Boers had intended to take all the British prisoners with them on evacuating Pretoria, but were frustrated by the arrival of the British invading force. Mr. Krüger nevertheless succeeded in taking away about 900 with him as hostages in his retreat towards the East. The casualties in the Sherwood Foresters' Militia at Roodeval were 36 killed and 104 wounded, and the news of the disaster

appears to have been telegraphed by Major Stonham, the medical officer commanding the Imperial Yeomanry Hospital. Lady Georgiana Curzon, president of the Imperial Yeomanry Hospital Committee, has since received the following cable from the Military Secretary, Cape Town: "Imperial Yeomanry Field Hospital in action, Roodeval. All safe."

Large batches of sick and wounded are arriving in this country by different transports. The steamship *America* (Transport 79) reached the Albert Docks last Saturday and disembarked 14 officers and 310 men invalided from South Africa. The ship left Cape Town on May 12th and had a good voyage, only two deaths occurring on the way. The whole of the men, of whom about 50 suffered from the effects of wounds, benefited greatly in health. 80 lying-down cases were on board at the beginning of the voyage, but with six exceptions these were convalescent on arrival. Three men very ill with enteric fever were transferred to Denton Sanitary Hospital and there were three cases of a serious nature for the Herbert Hospital, Woolwich. Dr. C. F. K. Murray and Dr. L. H. Hitchens were in medical charge, having the assistance of three nurses.

The transport *Orotava* arrived on June 10th with about 600 sick and wounded soldiers from the front, nearly all convalescent, there being only some 12 bad cases on board on arrival. Most of the men were transferred to Netley and the remainder to Colchester. Other transports are on their way home and arrivals will, of course, be of frequent occurrence. Meanwhile, strong reinforcements are leaving this country for the front. The home barracks are crowded and recruiting is going on apace. The saying is no doubt true enough that if we are not a military, we are nevertheless a warlike, people.

The last return issued by the War Office showing the total casualties since the beginning of the war up to the end of last week gives the total (exclusive of sick and wounded now in British hospitals in South Africa) as 25,728. The list is made up as follows:—

—	Officers.	Non-commissioned officers and men.
Killed in action	235	2,283
Died from wounds	63	551
Missing and prisoners (excluding those who have been recovered or released)	186	4,486
Died from disease	112	3,609
Accidental deaths	—	58
Sent home as invalids	664	13,481
Total	1260	24,468

The returns received by the last mail from the Portland Hospital in South Africa show: total admissions in hospital, 762; returned to duty, 108; sent to England, 98; convalescent, 258; deaths, 14; transferred to other hospitals at base, 133; remaining in hospital, 151, including 91 cases of enteric fever. In consequence of the fever epidemic 60 additional beds have been opened, making 160 in all, and two of the nursing sisters from New Zealand had been added by the War Office authorities to the hospital. The amount of sickness in the neighbourhood of Bloemfontein is abnormal. Further additional stores sent from England were being received at the date of this communication—viz., May 18th.

In consequence of the prevalence of the fever epidemic the Imperial Yeomanry Hospital has been compelled to provide a considerable number of additional beds, and large stores of hospital clothing, linen, &c., are being received. This reminds us that considering the enormous pressure on the lines of railway at the Cape there is much difficulty and delay in forwarding and distributing the stores sent out from this country. It would be well, then, for people forwarding gifts in kind to the hospitals and troops to try to find out beforehand whether supplies are procurable or not at the particular towns and stations to which they intend to despatch them, and, if they are, to forward cheques and money orders for their purchase locally. The diurnal variations of temperature in South Africa are already great and very trying. The nights are very cold and the troops—especially the sick and wounded—will need ample supplies of warm underclothing.

At the present time the sick in our hospitals altogether outnumber the wounded. The principal diseases are enteric fever and dysentery and sufferers from these complaints are sincerely to be pitied; they will stand in need of all that can be done for them in the way of good nursing and the most careful dieting. From what we have heard we may say that those who happen to know any of the nurses serving at the front and the particular hospitals to which they are attached would find it a good plan to send periodically any articles of clothing by parcels' post to their address for the use at discretion of the patients under their care. Supplies of this kind are often useful to meet emergencies or to provide for sick and wounded when leaving the hospital.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

Though there are still two of the English huts unfinished the Imperial Yeomanry Hospital has in all other respects reached at last its full state of development and I thought you might like to have a short account of some of the main features. The appended plan of the hospital grounds has been prepared by Dr. Barclay Black and with that plan in front of me I have jotted down a description of its various parts as one meets them in taking any visitor for a tour of inspection. Dr. Black, who is my staff officer, superintends all the work of the cleanliness and latrine departments of the camp. His plan not being the work of a skilled surveyor does not pretend to be of more than approximate accuracy as to distance, but it is at least faithful in intention and in effect.

To take first the smaller half of the hospital, which lies to the right of the railway line as you arrive from Cape Town, we have a group of isolation tents, for, like other base hospitals, we have not been exempt from the occurrence of an occasional case of scarlet fever. Further to the right are the tents of the medical staff, the two marquees being occupied by the ten surgeons' dressers. The bell tents occupied by the detachment of about 100 orderlies are seen to be separated by the main drain and also by the main road which leads from the wards to the main latrine from the tents of the medical officers. The main drain is made of four-inch earthenware pipes and is fed by various sinks throughout the hospital grounds. No solid matter is allowed to be thrown into the sinks, nor any infected water from the enteric fever department (this is all carried by our natives along the route indicated not far from the laundry to the dumping ground), nor greasy water from the kitchens (this is used to feed the pigs), nor does the drain go near any latrine or any water-supply pipe. Practically the only thing thrown down the sinks is water that has been used for washing. The main drain discharges by means of a system of subdividing trenches on to a part of the veldt which has a good incline away from the hospital. Between the bell tents and the railway line is placed a galvanised iron building which is subdivided into a central dry canteen for the orderlies and two lateral compartments forming workshops for the carpenters and painters respectively. Then comes a large tent used by the orderlies as a mess-room, recreation-room, and bath-room, followed by a collection of hospital marquees which are used only when the hospital is over full for the temporary accommodation of convalescent patients awaiting a train for transfer to Cape Town. The main urinal and latrine are shown towards the bottom centre of the plan. It has separate compartments for the sergeants, the orderlies, and the hospital patients, and we consider it a masterpiece for the Karroo. The floor is cemented throughout and for four feet outside the corrugated iron walls it is inclined and grooved so efficiently that the four natives, who are always on duty there, can, when they are not busy carrying buckets away to the dumping ground, frequently flush out the whole enclosure by means of an armoured hose which has a good head of water from a standpipe. The washings are collected in a cement-lined pit just outside and are thence removed in buckets to the dumping ground. No buckets come back from the dumping ground to any part of the hospital without having undergone a prolonged soaking and subsequent thorough cleansing in a large tank of disinfectant at the dumping ground. The bedpans and the urine-receivers from all patients in the hospital who are not able to walk to this latrine are carried thither by the orderlies and left in a special annexe, clean utensils being taken back to the wards in their place. The excreta are removed to the dumping ground by the natives at 6 A.M. For the enteric fever

and dysentery departments special disinfecting latrines are provided, as will be described later. To the right, in and near the laundry are (*a*) a Washington-Lyons disinfector capable of dealing with nine mattresses and many smaller articles in each batch; (*b*) a Russian bath for the treatment of stiff limbs which are so frequent both from rheumatism and from injury; (*c*) a blacksmith's forge; (*d*) a refuse-destructor, through which all paper, straw, small boxes, empty canned-meat tins, and other camp litter are passed, and the ash is then buried; and (*e*) a large filter plant by Messrs. Defries, which is driven by steam from the laundry and is large enough to cope easily with all the drinking water of the hospital. The laundry plant is large and efficient. It has been supplied by Messrs. Defries and is worked by men sent out by that firm, who are helped by four of the wardmaids and some 15 natives. It easily deals with the washing of the 700 white individuals at present in our camp. All of this plant is housed in corrugated iron sheds. All mattresses, bedding, and linen from the enteric fever and other infected wards are put through the Washington-Lyons disinfector at 7 A.M., having been stored, if necessary, overnight in an annexe of the enteric fever latrine between the huts occupied by enteric fever patients. The last point to note is the secondary well which has been sunk on the way to the station as a resource in case of emergency, but we have not yet had to fall back upon this water-supply, as that from the railway well at the station has proved amply sufficient for our needs.

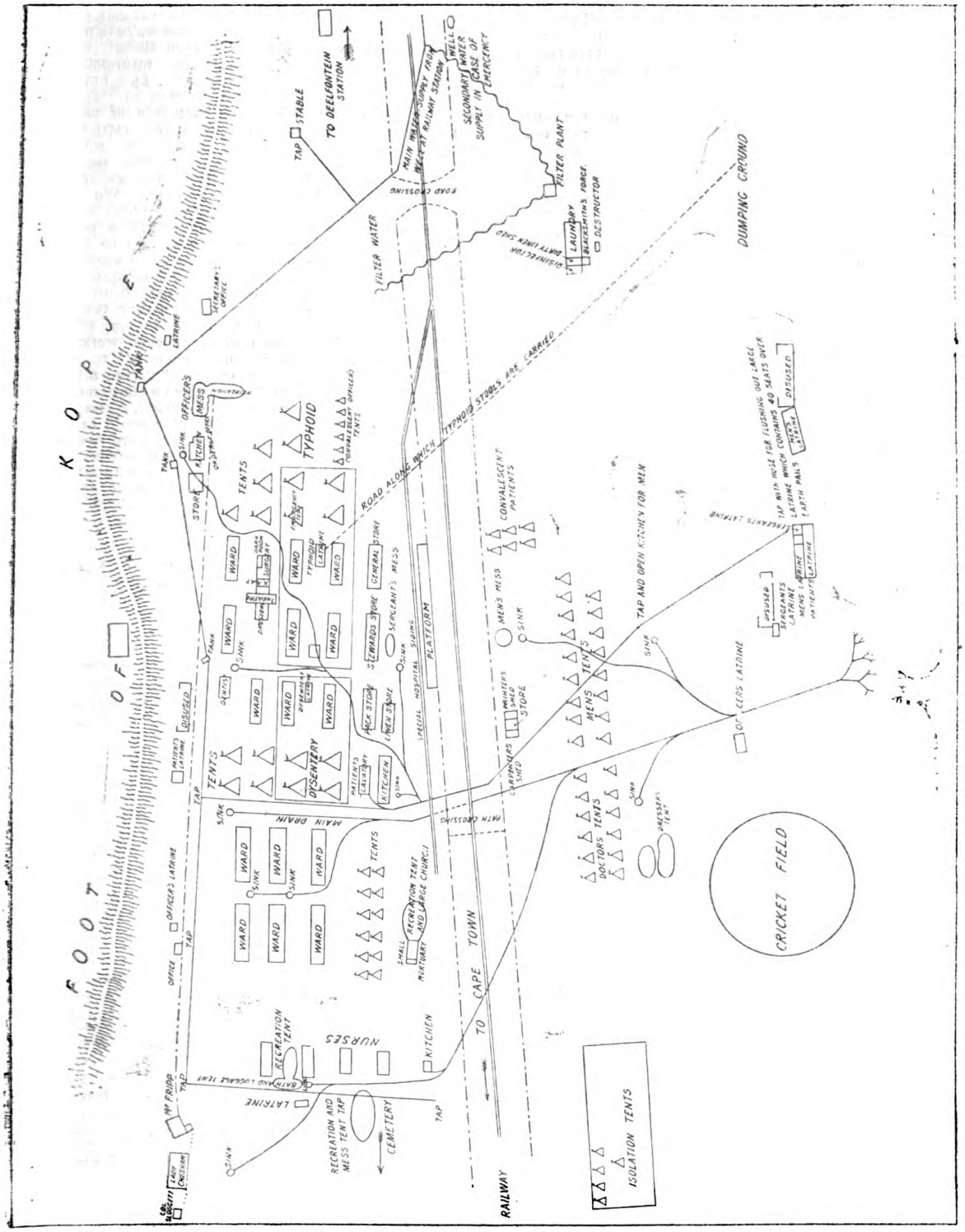
If we now retrace our steps to the main drain and walk up a slight natural incline to the railway line and cross the latter at the most southerly of the three level crossings indicated in the plan, and, starting from the extreme south of the hospital grounds, walk northward among the wards, we shall be going up a slight hill nearly all the way. The cemetery, a quarter of a mile off towards Cape Town, lies at our back. On our left-hand side is a group of three private residences and the sisters' quarters, which consist of: (*a*) four huts, the upper two of which, which are the largest, are occupied by the 29 day sisters, the next one by the 10 night sisters, and the fourth by the 10 wardmaids and the housekeeper (Miss Cheesman), whose services have been of the utmost value, for she not only attends to all the domestic arrangements of this department, but also superintends the laundry, which in itself is a very onerous and important task in view of our isolated position from the rest of civilisation; (*b*) the kitchen, which is seen close to the railway; (*c*) the luggage tent, which is placed between the two upper huts and opens into (*d*) the bath tent, which has its own supply of cold water from the main and of hot water from a boiler placed half way between the three private residences and the sisters' quarters, as well as its own sink just outside the tent for discharge into the main drain, the interior of the tent being separated by curtains into several bath rooms and the floor boarded; and (*e*) the latrine just behind the bath tent, which, like all the other latrines in the hospital, is worked on the bucket-and-earth system and served by natives who withdraw the buckets by means of a trap-door at the back of the seats without going into the latrine. The group of six large huts, sent out from England by Messrs. Boulton and Paul of Norwich, with a foreman to put them up, are a great success. They are admirably suited to the climate which yields considerable extremes of temperature in 24 hours and they are well ventilated. The material employed is corrugated iron outside, wood inside, and felt between. Each will be provided with a verandah as soon as the carpenters have time to get to work on the many similar improvements required throughout the hospital. Hitherto they have all been busy with the absolute essentials of construction. Each hut accommodates 34 patients without any crowding. The middle one of the first row that we come to is full of officers and the one just above it is full of Yeomanry. Sinks are shown contiguous to all the huts throughout the hospital, and the water-supply is drawn by the orderlies in cans from stand-pipes placed at convenient distances outside the hut. Boiler tanks are also scattered about the hospital so that there is an ample supply of both hot and cold water. Each hut has a lean-to outside for washing-up purposes. Below these on the plan will be seen a group of a dozen tents, half "tortoise" tent and green in colour and half "hospital" marquee. Each tent is equipped to accommodate eight iron frame and spring mattress bedsteads permanently, with which luxuries the hospital is provided throughout by the Birmingham Bedstead Manufacturers, but each tent is in addition liable to have thrust upon it in times of emergency four or five trestle beds. Close to these tents is the patients' large recreation tent, which on Sundays is transformed into the body of a church. The chancel, which is sufficient for the needs of the week-day services, is formed by a small hut separated from the recreation tent by large folding-doors and from the mortuary at the altar end by a thick partition. The mortuary, like the latrines, has a cement floor and a table and galvanised iron walls. No dead body lies there for more than 24 hours. Five o'clock is the hour for funerals. These, of course, are military, though the salute is dispensed with for fear it should disturb those patients who are in a precarious condition.

Thanks to the kindness of friends at home there is a most excellent library and supply of periodicals. These are in great demand. The books are kept in cases in the recreation tent, and Mr. Atkins, one of the surgeons' dressers, performs the duties of librarian. Similarly Mr. William Turner, one of the surgeons, presides over the distribution of all the indoor games throughout the hospital and organises all the outdoor sports, including cricket, football, lawn tennis, golf, &c. All the requisites for these games have to be procured in Cape Town and they are very expensive. The ground, also, does not lend itself at all favourably to the necessary preparation of level areas, so that we have had great difficulties to overcome. Then there is a group of eight white "tortoise" tents, larger than the last, for they accommodate ten permanent bedsteads, and beside them will be seen patients' lavatory and bath hut; it has a cement floor sloping to a sink in the corner and a good water-supply. In the kitchen hut all hospital food is cooked and the cooks have stores and offices. A latrine is placed between the two acute dysentery wards, On the plan a line is seen drawn round the dysentery department; this indicates that four of the "tortoise" tents mentioned already are included. These four are used for the convalescent dysentery patients.

Above the dysentery department is shown another hut, and above that again the small hut used by Mr. Newland-Pedley as his store-room, work-room, and living-room, though the actual operative dental work is carried on in the second or spare operating theatre to be described later. Below the dysentery department are seen the huts that house the pack store and the linen store. Close together are the sergeants' mess tent; a group of five convalescent tents; small tents, each house a convalescent officer; the officers' mess, into which opens the officers' recreation room, the secretary's office, a small latrine, the orderly's room, the store and kitchen for the officers' mess, and the dairy, from which the milk for the entire camp is dispensed after sterilisation by several large Aymard sterilisers. Miss Brereton, in addition to her work in the operative surgical department, presides over the work of the dairy. Half way to the station are the stable and coach-house in which a couple of Cape carts, each drawn by two horses, a cart which carries the linen backwards and forwards to the laundry, and the riding horses of the various officers, both medical and combatant, are housed.

This leaves for description only the enteric fever department and the cross-shaped surgical building.

In the cross-shaped building shown in the upper third of the plan towards the centre are the operating theatres, the surgery and dispensary, the x-ray department, and the surgical store. The last-named forms the head of the cross and, with the two operating theatres, is in the charge of Miss Brereton, till lately the sister in charge of the pay wards at Guy's Hospital. In her surgical store are accumulated all the supplies of instruments, dressings, antiseptics, anæsthetics, splints, trusses, and other medical and surgical paraphernalia. It is separated by a roofed-in open-air lobby from the operating theatres, one of which is devoted, except in times of stress, to the dental surgeon. The two theatres form the cross-piece of the cross. The theatre used for surgical operations is admirably equipped and furnished, Messrs. Down Brothers, who executed the order for all the instruments, having presented a complete set of aseptic metal furniture, including washhand stands, stools, dressing-tables, and a raise-and-lower table. The wooden lining of the theatre has been painted white. There are two large slabs of corrugated glass which give an excellent top light. The wooden floor is covered with linoleum. The doors are four



Plan of the Imperial Yeomanry Hospital. Prepared by Dr. Barclay Black.

feet wide, giving easy access for the bearers from the open air or from the x-ray department. The long limb of the cross is also separated from the operating theatre by a roofed-in air-space and is occupied as to the end nearest the operating theatre by the x-ray department (which is singularly well equipped and is doing most excellent work under Mr. Hall Edwards), and as to the foot of the cross by the surgery and dispensary. The photographic dark-room is placed in the furthermost corner of the dispensary, so that the large store of plates shall not be spoiled by the proximity of the x-ray apparatus.

The enteric fever department consists of four huts which accommodate from 22 to 26 patients each. In the centre of the department is a corrugated iron hut, half of which is used as a disinfecting latrine for the infected excreta and the other half for the storing of used linen and bedding, including mattresses, until the regular hours which are appointed for the transference of these infected articles to the Washington-Lyons disinfector. All the bed-pans and urine utensils used in the department, and also all the water with which the patients have been washed, are carried by the orderlies to this enteric fever latrine and are there emptied into large pails containing izal and disposed on the concrete floor, while on the zinc shelf there are sets of zinc baths (labeled A and B) for the thorough disinfection of all the utensils. In the baths marked A the utensils are swabbed out with izal solution and they are then put to soak in a similar solution in baths marked B until required again in the wards. An intelligent native is always on duty at the typhoid fever latrine swabbing out the walls and floor and iron shelves, which are all sloped especially to facilitate this process, while two other natives are continually on duty carrying the pails of the disinfected excreta away by the route indicated on the plan to a special dumping ground in a natural hollow far removed from the camp. The pails brought back from the dumping ground are fished out from a large tank of carbolic and the dirty ones are put in their place to undergo a similar soaking before they go back to the latrine.

The staff of attendants on duty in the typhoid fever department is entirely separate from the rest of the sisters and orderlies. Thus one of the senior sisters is in charge of the nursing staff which consists of a day sister and a night sister for each hut and a day sister for every two tents and a night sister for every three tents. Similarly a special ward-master is in charge of the orderlies, of whom there are two on duty with each day sister and one on duty with each night sister. The day staff and the night staff are each on duty for 12 hours in this department, their occasional holidays being arranged for by there being always one extra sister and two extra orderlies in addition to those already mentioned. By this means not only is efficiency ensured among the attendants of the department but also uniformity in the methods adopted for carrying out the rules. These rules have been printed and given to every attendant and are strictly enforced. There is a special hut between the two left-hand wards for the use of all sisters engaged in the department and here they have their tea, &c., for the taking of any food by the attendants or even the preparation of food in the wards is, of course, strictly forbidden. There is also a special lavatory for the enteric fever attendants, so that they may be able to disinfect their hands as frequently as they like.

As a postscript to this short account of the plan of our grounds those interested in our hospital will be glad to hear that the longer we stop here the more pleased we are with the site. We are not free, of course, from many of the difficulties that beset all the military hospitals out here. For instance, we have to struggle with a very heavy visitation of enteric fever. This, by demanding the services of so many of our male and female staff, throws a severe strain upon our resources, for we have only 100 orderlies to the 160 orderlies of a general military hospital. Our sisters, also, often find it heart-breaking work to sustain the unequal battle against the never-ending invasion of vermin brought down by each train-load from the front. We are harassed, too, by the fact that the supply of milk is precarious and that eggs are extremely scarce. Fruit and fresh vegetables, except potatoes and onions, are absolutely unobtainable. On the other hand, we have many things to be thankful for. Our water-supply, for instance, is unimpeachable. The climate, too, is most healthy, sunny and warm in the day and not yet very cold at night. The distant scenery is distinctly attractive. Our specialists in ophthalmic and dental surgery and in x-ray work have proved a godsend. The same may be said with the utmost truth of our body of nursing sisters which is larger than usual. Nor must our masseur be forgotten. His assistance has been most efficacious in many cases of fractures and stiff joints and withered muscles. Again, it is a great gain that we are able to do all our own washing and that we have a really efficient steriliser which can tackle, even though we are isolated in the Karroo, the otherwise insurmountable difficulty of how to disinfect on a large scale. Last, but by no means least, we owe much to our position of "splendid isolation." For nearly 30 miles on each side of us there are no signs of civilisation except a few ostrich and grazing farms. There are no troops to soil the ground, the water, or the air, except the necessary guard of 50 men. For this reason we suffer less than most similar hospitals from dust. We enjoy an immunity from outside interference which will be readily appreciated by all those who are in a position to realise what an amount of hard work has to be got out of the staff and how easily the harmonious working of a large volunteer staff such as ours is could be upset, or at least hampered, by the existence in our neighbourhood of any factors capable of still further complicating the many interests which have to be considered in the running of such a hospital. Not a few ladies devoted to good works but possessing no technical training have come out to South Africa on purpose to "help in any capacity" in the military hospitals, but the explicit instructions, which we have received from the committee in London for whom we act, no less than the fact that there is not a room which they could hire for their accommodation within 29 miles of us, have saved us from the unpleasant duty which might otherwise have devolved upon us of telling these willing but unwanted souls that after a considerable experience of the value of their kindly meant offers, and after the fullest consideration, we would very much rather have their room than their company.

PS.—Of course, we should not have put the enteric fever patients into the huts so near the operating theatre if we had not been flooded with them before any other accommodation was available, but we have not had cause to regret this proximity.

Deelfontein, May 14th.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

I mentioned in a previous letter[1] that I had seen a clip of Mauser bullets which had the appearance of being covered with a coating of verdigris. I am happy to be able to state that on being submitted to a thorough analysis this green coating is not verdigris but a mixture of paraffin wax and carbonate of copper which appears to have been used for the double purpose of preventing the cartridge suffering from damp and of supplying a hermetical closing between the brass capsule and the bullet, thus preventing rust of the barrel. This is vouched for by Dr. Impey of Cape Town and I am very glad to be able to put this matter at rest and thus clear up a baseless suspicion of the intentions of our "brother Boer."

The news for the past few weeks has been sufficiently exciting from a military point of view but has proved monotonous in a degree from a surgical aspect. The cases coming down from the front at present are, with very few surgical exceptions, entirely those of enteric fever and dysentery. Of these we have enough and to spare, every few days seeing a large convoy arrive. At present No. 1 General Hospital and No. 2 General Hospital are filled to overflowing. Fortunately, most of the patients are convalescent and simply awaiting passage home, but of course amongst the crowd there are sure to be some who will require careful treatment and nursing for a considerable period before they are put on board. The enteric fever roll of this campaign is likely to be a record one, though I am happy to be able to say that our percentages of recoveries are very satisfactory, which is undoubtedly due to the excellent arrangements that exist for medical treatment and nursing. The fact remains, however, that, with very few exceptions, these men will not be fit for duty for some considerable time. The voyage home is a great factor in their treatment and it rapidly builds up the patients in those cases in which extreme nervous prostration is a pronounced feature, and there are many such. In fact, it is rare to see patients who

[1] THE LANCET, May 5th, 1900, p. 1312.

have had even slight attacks and no complications escape the nervous sequel.

Since my last letter No. 3 General Hospital has been sent up to Kroonstad from Rondebosch and by this time it is in full swing. The hospital was accompanied by 30 nursing sisters, and in its place a convalescent hospital for 500 cases is to be established. Already huts are springing up where tents once stood. The transports have been leaving at frequent intervals with full complements of invalids, both officers and men, and a very great number must have gone home during the past month. The Surgeon-General is at Bloemfontein, and Colonel McNamara (from Gibraltar) has succeeded Colonel W. F. Stevenson as principal medical officer of the lines of communication, the latter being at the front with the headquarters.

I am sorry to say that disease and hard work have been making themselves felt amongst the officers and men of the Royal Army Medical Corps. I hear that two officers have fallen victims to enteric fever at Bloemfontein and that a considerable number are on the sick list; but this was only to be expected—they are but flesh and blood like other men, though some people seem to think that they are machines and can go on for ever without rest or relaxation. This is a grim fallacy that will, I am afraid, have a rude awakening at the end of the war. Let us trust that the lesson may be taken to heart and that a more generous policy may be inaugurated in matters medical in the army of the future.

The winter rains have begun in this colony now and the mornings and evenings are cold and damp, but up-country the rains are over and the climate is charming.

A convalescent sanatorium for officers is to be established at Majesfontein at the end of this month and will relieve the pressure on the Claremont Officers' Hospital which during the past month has been very great.

The hospital ship *Princess of Wales* is lying in Simon's Bay and is, I hear, to be sent up the coast before coming home. She is an object of great curiosity to the inhabitants and is visited by numbers of people, who return amazed at the pitch of perfection attained in her fitting up.

Claremont, Cape Colony, May 23rd.

THE NEW CLINICAL LABORATORIES OF THE WESTMINSTER HOSPITAL.

ON June 12th Lord LISTER presided over the ceremony inaugurated by the governors of the Westminster Hospital for the official opening of the new clinical laboratories which have recently been added to that hospital. The proceedings consisted of a reception in the board room of about 100 guests by Sir John Wolfe Barry (chairman of the House Committee), Dr. W. H. Allchin (senior physician to the hospital), and Dr. W. S. Lazarus-Barlow (pathologist to the hospital).

Sir J. WOLFE BARRY explained that the clinical laboratories had been instituted for the elucidation of disease and thus to assist in relieving the suffering poor. The formation of such a department enabled surgeons and physicians to approach the treatment of disease with absolute scientific knowledge as compared with the greater difficulties that they had in times past.

Dr. LAZARUS-BARLOW said that before inspecting the laboratories he would like to call the attention of those present to one or two points of importance. The Westminster Hospital endeavoured to keep abreast of research work so as not only to give the very best chances to the patients, but also, speaking from a utilitarian standpoint, to render the most efficient return possible to the hospital subscribers for the money received. The House Committee had spared no expense in making the laboratories as perfect as possible in regard to equipment. The fundamental requirements in clinical laboratory work were that the bacteriological portion must be divided from the histological portion. It was necessary that the bacteriological investigations should be carried on with an absence of dust, and for that reason the two departments were divided from one another by a glass partition with a swinging door. For histological work light was an important consideration, and as far as natural light was concerned each investigator would be provided with a north light. For artificial light eight pendant electric lamps of 16 candle power had been provided and the walls and the ceilings had been lined with white encaustic tiles. There was an ample supply of hot and cold water and great attention had been paid to the drainage. With the exception of where the drains were actually under the flooring they were open earthenware channels specially constructed and lined with vitreous enamel. Every drain was most carefully trapped and the drainage system of the laboratory was entirely distinct from the hospital drainage. By making the fittings in the cupboards moveable and providing five manholes cut through the flooring all the drains could be thoroughly inspected in about 15 minutes. There was an ample supply of gas and there were 39 electric plugs which could be used for the purposes of motive power or for lighting. He would draw their attention particularly to a cupboard capable of holding 9000 microscopic slides, the idea being to preserve specimens so that any case which returned to the hospital after a lapse of some years could be discussed with the aid of the original sections prepared when the patient first came in. This would afford any observer the opportunity of forming a fresh opinion from the original specimen in case the individual judgment of the original pathologist was not accepted in every detail. All apparatus necessary for clinical work had been procured and was ready for use, but the hospital had not been asked for any funds to pay for research apparatus of a more or less speculative character. The laboratories were of such a kind that it was justifiable for the hospital to pay for their upkeep towards the advancement of scientific research. Dr. Lazarus-Barlow then read a letter of congratulation on the opening of the laboratories from Professor W. H. Welch of the Johns Hopkins University, Baltimore.

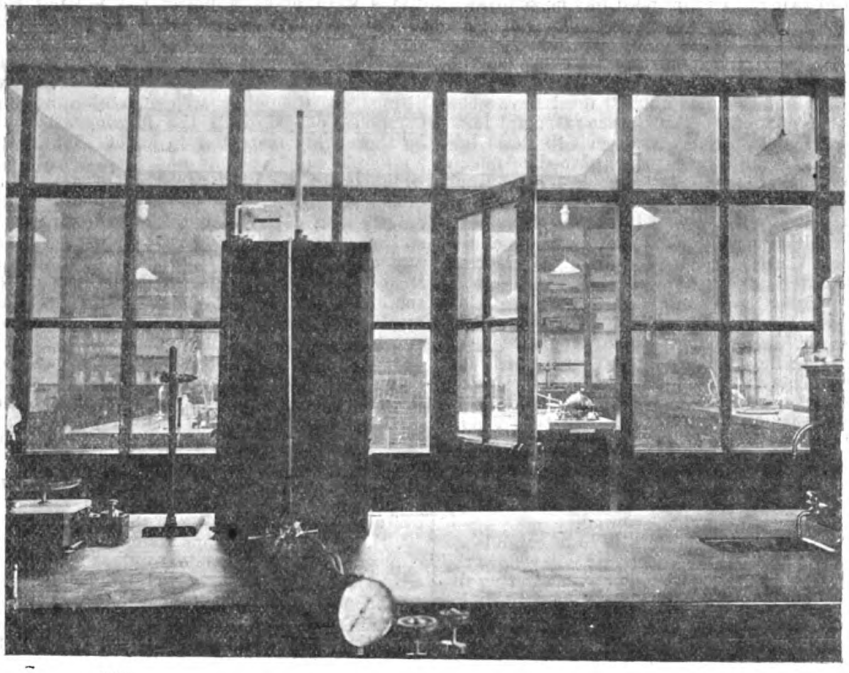
A visit was then made to the top floor of the hospital where the laboratories are situated and there Lord Kelvin put in motion a motor to shake some tubercle bacilli in carbolic acid and Lord Lister made a cultivation from some tubercle bacilli derived from the original tubercle discovered by Koch in 1884.

On re-assembling in the board room Lord LISTER gave an address in which he said that the clinical laboratories they had inspected would enable the physicians of the hospital to bring to bear on their cases the most advanced knowledge and the most refined methods of investigation. Many a diagnosis that otherwise would be obscure would be made clear. Successful treatment was directly proportionate to correct diagnosis. He was convinced that the work carried on there would not only benefit the patients in that hospital but would also unfailingly extend the boundaries of knowledge so as to promote the now rapid advance of pathological and therapeutical research. There was another important way in which service would be rendered and that was the powerful means the laboratories would afford for sound practical knowledge to the student. There was now a tendency to look askance at medical schools connected with hospitals and to grudge the money spent on their maintenance and extension. There could not possibly, he conceived, be a greater mistake. Without the opportunity of practical instruction afforded by hospitals the education of the rising generation of medical men would be absolutely impossible, and it might be fairly discussed whether the educational services rendered by hospitals were not of greater importance and benefit to the welfare of the community than their direct advantages to the patients treated in them. He considered it a matter for which the governing body of the Westminster Hospital was to be congratulated, and he thought that the public owed a debt of gratitude to them for wisely and boldly devoting a large sum of money to the creation of these laboratories. He felt sure that before many years were over it would be recognised that these laboratories were amongst the most important means which hospitals could contain of doing good service to the community. Lord Lister concluded with a complimentary reference to the appointment of Dr. Lazarus-Barlow as pathologist to the hospital.

Dr. W. S. CHURCH (President of the Royal College of Physicians of London) said that he would not be in a position to properly treat his patients at the hospital with which he was connected unless he had the advantage of the experimental work in the clinical laboratory. A great charity in the largest sense of the word would be effected by affording facilities for the investigation of disease leading to a decrease in the necessity for so many beds at the hospital.

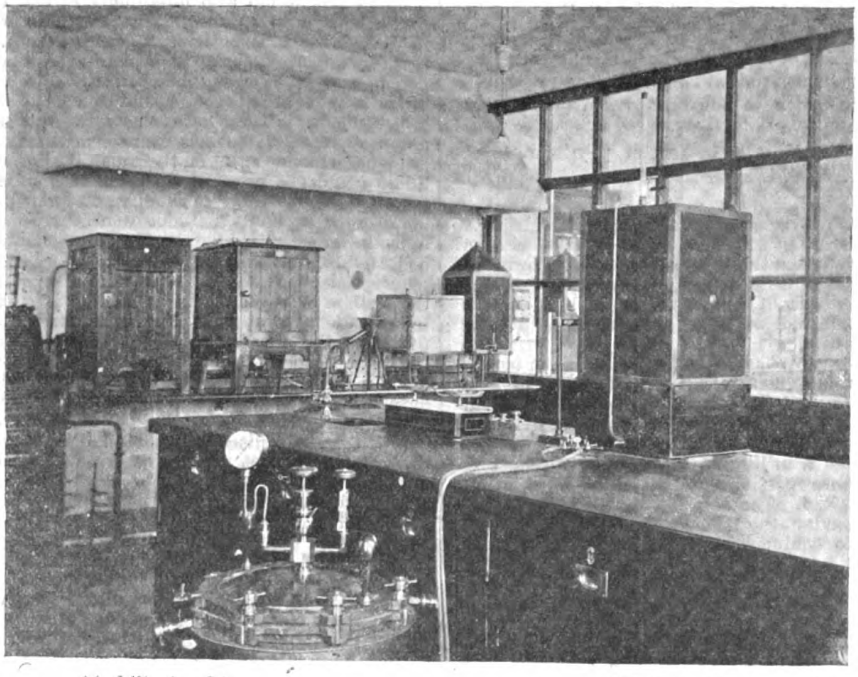
Sir WILLIAM MACCORMAC (President of the Royal College of Surgeons of England) referred to the creation

FIG. 1.



A general view of the two Laboratories

FIG. 2.



A corner in one of the Laboratories.

of similar laboratories at St. Thomas's Hospital five years ago and said that the greatest possible advantage had accrued in the treatment of the patients, the accuracy of diagnosis lending itself materially to increasing the certainty of success.

In the course of the ceremony the architect of the new buildings, Mr. H. Percy Adams, was introduced to Lord Lister and Lord Kelvin, and the excellence of the work, which was carried out by Messrs. Baird and Tatlock, received special notice.

A vote of thanks to Lord Lister was proposed by Lord KNUTSFORD, a vice-president of the hospital, seconded by Dr. ALLCHIN as representing the medical staff, and supported by Mr. W. G. SPENCER on behalf of the surgical staff.

Lord LISTER briefly replied and the proceedings terminated.

THE ANNUAL MEETING OF THE BRITISH DENTAL ASSOCIATION.

THE British Dental Association celebrated its twenty-first anniversary and held its annual meeting on Saturday, Monday, and Tuesday, June 2nd, 4th, and 5th, in Leeds. At the general meeting held on the first day in the Central Hall of Yorkshire College, the retiring President, Mr. J. H. Mummery read a valedictory address previously to vacating the chair in favour of the new President, Mr. George Brunton.

The treasurer's report which was submitted to this meeting showed that during the year the membership had considerably increased and numbered, at the end of 1899, 1089. The balance shown at the end of the year amounted to £1900. The secretary's report, which dealt principally with legal business and matters of discipline, called attention to a case which arose out of the use of the title "dentist" and the description "dental establishment." The result of the trial was the infliction of a penalty, the presiding magistrate remarking that the case must act as a warning to the defendant and others and that it was the duty of the bench to protect the public and they would do so.

After other business a hearty welcome was given to M. Burt, a delegate from the International Dental Congress to be held in Paris this year. M. Burt cordially invited the members of the British Dental Association to attend that Congress.

Subsequently the meeting was thrown open to visitors and a large number of ladies attended. Alderman JOHN GORDON, the mayor of Leeds, in a humorous speech welcomed the members and visitors to the city, and the PRESIDENT expressed on behalf of the association his thanks to the mayor for this welcome.

In his address the PRESIDENT alluded to the progress which dentistry had made and called to mind some of the great names connected with the dental profession. In the chemical lecture theatre of Yorkshire College during the afternoon several interesting lectures were given, and social gatherings terminated the first day's proceedings.

On the morning of the second day several important papers were read, among them being one by Mr. LLOYD WILLIAMS (London) on the Teaching of Mechanical Dentistry in Dental Schools. This was followed by a long and interesting discussion. The reader of the paper urged that the dental surgeon needed the continual exercise of manual dexterity to a greater degree than in any other branch of surgery and that the conditions required almost microscopic exactitude. Three years in the laboratory, he maintained, was barely time to enable the student to obtain a grasp of his work.

In the afternoon Mr. T. CHARTERS WHITE, the president of the Microscopical Section, gave an address on Photo-micrography, and demonstrations of crown work and other subjects filled the business portion of the time. Later in the afternoon a reception was held in the Medical School in Thoresby-place, and in the evening the annual dinner was held at the Hôtel Métropole. Mr. George Brunton, the President, occupied the chair and among those present were Mr. J. H. Mummery (ex-President of the association), Mr. T. Pridgin Teale, F.R.S., Professor De Burgh Birch (dean of the Yorkshire College Medical Department), Mr. J. Smith Turner, Mr. C. S. Tomes, F.R.S., M. Burt, Mr. T. R. Jessop, Mr. F. Canton, Professor T. Wardrop Griffith, Mr. Storer Bennett (chairman of the representative board of the association), Dr. A. G. Barrs, Dr. E. F. Trevelyan, Dr. J. Spottiswoode Cameron (medical officer of health of Leeds), Mr. T. S. Carter, Dr. T. Churton, Dr. J. F. W. Silk, Dr. J. B. Hellier and Mr. J. F. Pink (secretary of the association).

In responding to the toast of "The City and Trade of Leeds" Alderman HARDING said that he was glad that a school of dentistry for Leeds had been foreshadowed.

Mr. T. R. JESSOP, who proposed the toast of the evening, said he would like to see the British Dental Association amalgamated with the British Medical Association and occupying a position as a section of that association.

Mr. J. SMITH TURNER responded.

With the toast of "The Visitors" the name of Mr. Pridgin Teale was coupled.

In reply Mr. TEALE spoke of the interest taken by the General Medical Council in dental matters and from this he augured good things.

The work during the morning of the third and closing day principally consisted of various demonstrations of practical work in dentistry. In the afternoon the general meeting was continued in the chemical lecture theatre, where Mr. Norman G. Bennett (London) read a paper on the Need for the Recognition of the Association of Dental Surgeons by the War Office and Admiralty. Mr. Bennett said that between the years 1875 and 1885 one in every 138 recruits for the army was rejected on account of defective teeth. At the present time the facilities for obtaining the benefits of conservative dentistry in the service were nearly as meagre as they were 20 years ago, the list of instruments supplied to surgeons at the army station hospitals being quite inadequate for any useful purpose. The instruments supplied to the naval surgeons were certainly better than those given to the army. He contended that the conditions laid down with reference to recruits of both services were unduly severe, and referred to a question recently answered in the House of Commons by Mr. Goschen, who stated that the number of men and boys rejected on account of bad teeth was as large as 25 per cent. Reviewing the conditions prevailing in other countries, Mr. Bennett said that the United States were markedly in advance of other nations. For several years efforts had been made to bring about the appointment of dental surgeons in the army, and a Bill with a likelihood of becoming law was now before the House of Representatives, which provided for the appointment of contract dental surgeons with no rank—or possibly ranking with the civil surgeons who were with the English army in South Africa—to attend to the wants of the soldiers. A discussion followed in which the urgency and need for dental assistance in the services were insisted upon.

Subsequently a motion was carried requesting the Representative Board of the Association to seek steps to further the proposal to provide proper dental aid to the army and navy.

An informal reception by the President at the Hôtel Métropole brought the proceedings of a well-attended Congress to a close.

It was decided to hold the next annual meeting in London in August, 1901, and Mr. S. J. Hutchinson, consulting dental surgeon to University College Hospital, was chosen president-elect.

THE MEDICAL, SURGICAL, AND HYGIENIC EXHIBITION.

(*Continued from p. 1674.*)

FOODS and special foods were well represented and some new food products have been brought forward during the past year which are worthy of consideration. Plasmon, for example, is a cleverly prepared white powder, consisting of the proteids of milk together with the mineral substances, which is soluble almost completely in water. According to our own analysis, which at the present time is not completed, it consists broadly of one-tenth of milk salts and nine-tenths of milk proteid. This interesting preparation has been spoken of so favourably that we are at the present time submitting it to further

analysis in THE LANCET Laboratory, and on the results being obtained we shall be able to describe it more fully. Plasmon is used with advantage in raising the food value of biscuits, beef extract, and chocolate, all of which preparations were exhibited by the Plasmon Syndicate, Limited, of 56, Duke-street, Grosvenor-square, London, W. Messrs. G. Nelson Dale and Co., Limited, of 14, Dowgate-hill, London, E.C., devoted the space on their stall exclusively to the exhibition of specimens of "Hipi," a pure mutton essence. We have shown in our analytical records that this essence possesses a high nutritive value and affords an agreeable change from various beef extracts. It yields a broth of excellent flavour containing pronounced stimulating and nutritious properties. The well-known Milkmaid brand of condensed milk was amongst the exhibits of the Anglo-Swiss Milk Co. of 10, Mark-lane, London, E.C. The specimens included unsweetened, sterilised, and enriched milk known as ideal milk and cocoa, chocolate, and coffee and milk. It is satisfactory to add that this company take care in the preparation of their condensed milk not to eliminate the important article of food milk-fat during concentration. We have before referred to the excellence and convenience in use of Cerebos salt, which is in the condition of fine powder which does not cake through damp and which contains further added phosphates. This preparation was shown by Cerebos, Limited, of Newcastle-on-Tyne and 3, Maiden-lane, London, E.C. The Hovis Bread Flour Company of Macclesfield showed an assortment of their products, the basis of all of which is Hovis flour, which contains the germ of wheat unimpaired. Under the name of "Lemco" the well-known Liebig Company's extract of beef is in future to be known. Its composition and its mode of preparation leave no doubt of its nutritive value and it serves besides as a stimulant to the assimilative processes. The same company (of 9, Fenchurch-avenue, London, E.C.) exhibited specimens of Peptarnis which, as we have shown, contains a high proportion of peptones. It is therefore easily digestible without objectionable flavour and is valuable where weakness of the digestive system exists especially as a sequel of disease. Messrs. Fairchild Brothers and Foster of Snow-hill-buildings, London, E.C., presented to view their well-known food products which are, in the main, so constituted as to be admirably adapted for invalid use or in those cases where digestive capacity is impaired. The exhibit included pure specimens of pepsin and the zymines for producing peptonised milk. Some good meat preparations were shown by Messrs. Cooper and Co. of 80, Gloucester-road, South Kensington, London, W. These included meat-juice, beef essence, chicken, mutton, turtle, and veal essence, which are all supplied in glass jars bearing the distinctive title "Globena." These preparations appear to constitute such an excellent series of easily digestible and nourishing foods that we propose shortly to submit them to analysis in THE LANCET Laboratory. The Manhu Diabetic Foods deserve particular attention, since although they contain the cereal carbohydrates, yet it is stated that these are so broken up as not to affect the diabetic patient in the same manner as starch. Indeed, instances are quoted where these foods apparently have given benefit to diabetic patients. Our own analysis has shown that these foods consist of cereal flour which has been submitted to a process which practically dextrinises the starch. The question remains whether dextrine metabolises in the same way as does starch. It seems to us that this point is worth investigation, but it may be stated that chemically dextrinised starch is even more easily converted into sugar than is starch itself. The evidence of chemistry in the laboratory, however, is not always in accordance with physiological experience. In their published testimonials together with analysis and reports we notice that Messrs. Irving, Son, and Jones, of Liverpool, and of 83, Charing Cross-road, London, W.C., bring forward very little clinical evidence, and it would be more satisfactory if the statements in favour of these foods containing a great percentage of carbohydrates could be confirmed by well-known authorities on glycosuria. These remarks apply with equal force to the Cheltine Foods which are prepared by Worth's Foods Syndicate, Limited, of Cheltenham. These foods contain the derivatives of starch or dextrinised carbohydrates as the result of a special process, so that the proportion of carbohydrates is just the same as in wheaten flour. On the tin of Cheltine Food it is stated that the food cannot be converted into sugar—a statement which is quite incorrect. We have found, as we expected to find, that the food readily yielded sugar on hydrolysis. We repeat that testimonials based on analytical data are of no value whatever. What is wanted is clinical evidence, and clinical evidence alone, and this should not be difficult to obtain. We are glad to find that Messrs. Cadbury Brothers draw attention to the fact that there are strong grounds for objection to the addition to cocoa of certain foreign substances. This resource is quite unnecessary and, indeed, pernicious, especially having regard to the fact that cocoa alone is an excellent food as well as a stimulant, having a salutary action upon the nerve centres. Some excellent specimens of their admittedly pure articles were shown by Messrs. Cadbury Brothers of Bournville, near Birmingham. Milk foods were well represented at the exhibit of M. Henry Nestlé of 48, Cannon-street, London, E.C., the condensed Swiss milk being a notable example of this sort of preparation which contains a maximum amount of butter fat. Milk companies were well represented, especially in the direction of specially prepared milks. A notable example was that of the Aylesbury Dairy Co. of St. Petersburg-place, Bayswater, London, W. Here were shown all kinds of modified milk preparations, comprising sterilised milk and cream, humanised milk, peptonised milk, specially prepared whey, cream milk for infants, milk sugar, and a special sterilised food. The exhibit also included specimens of Koumiss which has been used with advantage in the early stages of phthisis. Excellent also are the milk preparations of the Friern Manor Dairy Farm of 20, Farringdon-street, London, E.C. The humanised milk of this company is prepared by Dr. Gaertner's process which presents special points of advantage, especially in regard to the requirements of infants. The Frame Food Company of Lombard-road, Battersea, London, S.W., showed their well-known extract which contains the nutritive principles of wheat bran, including a large proportion of soluble phosphates. Several food preparations were shown which are enriched with Frame Food, thus raising undoubtedly their nutritive value. Somatose, as we have shown in an analysis from THE LANCET Laboratory, consists practically of albumose derived from the digestion of beef. It is a practically tasteless and odourless powder soluble in water. It is, moreover, a powerful food and is well adapted also as a therapeutic adjuvant where the process of nutrition is feeble. The exhibit which was arranged by the British Somatose Company of 165, Queen Victoria-street, London, E.C., included the interesting compound of somatose with iron which possesses the advantages over the ordinary iron preparations of causing no gastric disturbance or constipation. Messrs. Cosenza and Co. of 95, Wigmore-street, Cavendish-square, London, W., exhibited the Maggi's Consommé and Cross Star soups which have proved so valuable in the preparation of soup for invalids and also for transport purposes, as evidenced by their adoption for hospital use in the present war. Special foods were a feature, also, of the exhibit of Messrs. Callard and Co. of 65, Regent-street, London, W. The specimens included food for the diabetic, food for reducing weight, food adapted for the rheumatic and gouty, and a food for patients in whom the digestive functions are easily disturbed. The Excel Milk Co. of 38, Vauxhall-bridge-road, London, S.W., showed specimens of their sterilised milk. Apart from the efficient process of sterilisation we have shown in our analytical records that the milk is of very high quality. Messrs. J. and G. Cox, Limited, of Edinburgh and Eastcheap-buildings, London, E.C., presented an attractive series of specimens of their "sparkling" gelatin. We have examined this gelatin in THE LANCET Laboratory and were able to report very favourably of this product. It is well adapted for culinary purposes and is convenient also for the making of wine or beef-tea jelly, more especially on account of its purity. A very interesting series of preparations of milk was presented to view by Messrs. Welford & Sons' Dairy Co., Limited, of Elgin-avenue, Maida Vale, London, W. The specimens shown included asses' milk, humanised milk, peptonised milk, ordinary sterilised milk, and sparkling Koumiss. The company carry on their business under strict medical supervision and on lines of organisation in accordance with modern knowledge. They further undertake to prepare modified milk in accordance with the directions which a medical man may think fit to prescribe. The Protene foods have been already fully described in the analytical records from THE LANCET Laboratory in THE LANCET of

Nov. 5th, 1898, p. 1207. Protene food itself is essentially pure milk proteid; its food value is therefore evident. Several food preparations are now made by the Protene Co., Limited, of 36, Welbeck-street, London, W., in which the normal food value is considerably raised by the addition of protene. Messrs. Broomfield and Co. of 83, Upper Thames-street, London, E.C., devoted their stall to the exhibition of specimens of Albene which is described as a pure, highly refined vegetable fat which is suggested as an efficient substitute for cooking purposes for lard, margarine, and butter. One advantage of it is that it does not get rancid. It presents the appearance of purified and refined cocoanut oil. A very interesting series of foods suitable for diabetics, dyspeptics, and invalids was shown by Messrs. G. Van Abbott and Son, of 104, Wigmore-street, Cavendish-square, London, W. The series comprises a selection which should enable the medical man to select exactly what he requires for any particular instance. The gluten loaf seems specially worthy of commendation. The Bovril Company, Limited (152-166, Old-street, City-road, London, E.C.) exhibited many forms of beef preparations, including extracts and raw juices, and a number of preparations of undoubted nutrient character. Indeed, the list of the company's specialities comprises a complete invalid dietary in addition to a number of foods for everyday use. Close by the Bovril preparations was a stall devoted to the exhibition of Virol, which is manufactured by the Bovril Company. As we have pointed out in our analytical records, this preparation presents the composition of not only a complete food, but also of a food containing elements that are readily assimilable.

An exhibit which attracted considerable attention was the Dowsing method of applying radiant heat and light in the treatment of rheumatism. The apparatus consists of a series of elongated electric incandescent lamps placed within reflectors at the side of the bed. By this method, of course, light as well as heat rays are brought to bear upon the patient. The apparatus may be viewed in working order at the offices of the Dowsing Radiant Heat Co., Limited, 24, Budge-row, Cannon-street, London, E.C. The specialities of the Domen Belts Co. of 456, Strand, London, W.C., are well known. Abdominal belts for all kinds of abnormal conditions were shown as well as the "stoop cure" and other appliances. More scientific, perhaps, than many of the other exhibits was that of Messrs. W. Watson and Sons of 313, High Holborn, London, W.C. Here were shown the requisite apparatus and accessories connected with the application of the x rays to medical practice. In addition there were microscopes and microscopical preparations and photo-micrographic accessories. Messrs. Wodderspoon and Co. of 7, Serle-street, Lincoln's Inn, London, W.C., showed an excellent series of temperature-, hour-, and diet-charts. Surgical instruments were well represented in an excellent selection especially adapted to meet the requirements of aseptic surgery by Messrs. Mayer and Meltzer of 71, Great Portland-street, London, W. Surgical instruments were also a feature of the exhibit of Messrs. John Weiss and Son of 287, Oxford-street, London, W., but they showed also some interesting apparatus for the purpose of sterilising both instruments and dressings. Messrs. Pate, Burke, and Co. of 6, Wool Exchange, Basinghall-street, London, E.C., presented to view their excellent surgical and sanitary dressings, the basis of which is Petanelle wool. Petanelle wool, besides being light and highly absorbent, serves also as a check to fermentation and putrefaction—a property which is of decided advantage.

The exhibit included Petanelle disinfecting powder, the absorbent containing the antiseptic and disinfectant being a peat substance. Messrs. Anderson, Anderson, and Anderson, of 37, Queen Victoria-street, London, E.C., showed a number of indiarubber and waterproof materials adapted especially for medical use. This firm is well known for its water-beds, water-cushions, and water-pillows. Mr. Harry Cox of 10, 11, and 28, Cursitor-street, Chancery-lane, London, E.C. undertook the demonstration of x rays with the very latest and best apparatus for the purpose. Examples were shown of x ray outfits supplied by him for the present war. The improved instep arch sock, the invention of Mr. Holland, of 40, South Audley-street, Grosvenor-square, London, W., is now made in three forms—namely, the ordinary sock for moderately flat feet, the low sock for severe cases, and the broad sock for long-standing cases. Besides this appliance, which is well known as an aid in the treatment of flat-foot, other similarly interesting exhibits were shown, such as cork boots for the lame and boots for corns on the soles of the feet. A very useful series of accessories for the use of nurses was submitted for inspection by Mr. William K. Stacy of 4, Newgate-street, London, E.C. It would be impossible in the space at our disposal to mention every individual speciality shown on the well-stocked stall of Messrs. Southall Brothers and Barclay, Limited, of Birmingham. The exhibit included every sort of medical and surgical appliance besides the sanitary preparations to which this firm gives special attention. A very useful little appliance, and one which we have mentioned favourably before, is the Instra Warmer, which was exhibited by Messrs. D. Blair and Co. of 6, Strand-on-the-Green, Chiswick. The principle of this invention—namely, that depending upon the slow combustion of a charcoal rod—is now applied not only to pocket-warmers but to chest-warmers, foot-warmers, food-warmers, and to ankle-straps also. The chief features of the exhibit of Messrs. S. Maw, Son, and Thompson, 7 to 12, Aldersgate-street, London, E.C., were perhaps the aseptic instruments and dressings, but there were besides a great number of recent surgical and medical appliances which afforded an interesting subject of inspection for medical men. The patent appliances for the lame made by the O'Connor Extension Company, of 2, Bloomsbury-street, London, W.C., are well known. It is worthy of remark that the appliances of this company were accepted by the War Office for use in South Africa.

Sanitary appliances and preparations are a distinct feature of this exhibition, but this year the space devoted to this section seemed to be smaller than on the previous occasion. Probably the sanitary appliance which first attracted the attention of the visitor as he entered the hall was the Blackburn Electric Fan and Motor. Doubtless the air in the building owed its freshness to this ventilator. The three fans employed for the purpose were supplied by the Blackburn Ventilating Co. of 63, Fore-street, London, E.C. The stall of Messrs. A. Boake, Roberts and Co. of Stratford, E., was devoted chiefly to specimens of sulphur dioxide for fumigation purposes. The gas liquefied by cold and pressure is contained in cylinders. The exhibit also included a fluid preparation of phenol called "Lozar." In a more or less solid form a special wood fibre is employed for absorbing it which possesses advantages for this purpose. A very comprehensive series of disinfectant preparations the composition of which is based mostly on Sanitas was shown by the Sanitas Co., Limited, of Bethnal-green, London, E. The exhibit included, however, some other disinfectant and antiseptic preparations. The chief advantage of Sanitas is that while it is a distinct and efficient disinfectant it is very agreeable by reason of its pleasant pine-like smell. The exhibit of Messrs. J. Defries and Sons of 147, Houndsditch, London, E.C., afforded an opportunity of demonstrating three interesting and, we may add, scientific appliances. These were several forms of the Pasteur-Chamberland Filter, an illustration of the equifex disinfecting apparatus, and Scurfield's simple ventilation indicator. The last-named instrument affords a quick and fairly accurate way of estimating the carbonic acid in the air, the process being based on the classic method of Pettenkofer. According to the results of experiments quoted by Messrs. Newton, Chambers and Co. of Thorncliffe (near Sheffield) and 331, Gray's Inn-road, London, W.C., Izal is an effective germicide, and it is stated that over 9,000,000 gallons of this fluid have been ordered for the use of the army in South Africa. Medical Izal is said to be four times as powerful as a germicide as absolute phenol and is also said to be non-poisonous and non-corrosive. The exhibit included preparations of Izal such as lint, wool, gauze, lozenges, "perles," &c. Messrs. Major and Co. of Sculcoates, Hull, exhibited chiefly their Eucryl preparations. Eucryl itself is a very agreeable and powerful antiseptic and disinfecting fluid. We have dealt with its composition in the Analytical Records of THE LANCET Laboratory. The Berkefeld Filter Company of 121, Oxford-street, London, W., gave a demonstration of their well-known filters, the tubes of which are composed of a specially prepared *kieselguhr*. The advantage of these filters is that while they are rapid in action they yield a sterile filtrate. Jeyes' disinfectant fluids have now been a long time before the public and on all sides excellent reports have come to hand of their germicidal activity. The exhibit of the company (of 64, Cannon-street, London, E.C.) contained a great number of creolin compounds and preparations.

A variation in the *tout ensemble* of the exhibits just

described is afforded by mineral waters and other beverages, which, moreover, are not without medical interest. For example, the Bellawattee Company, of 244, Oxford-street, London, W., exhibited a great number of patterns of their patent teapot which provides against an excessive amount of tannin entering into the infusion of tea. The device is quite simple and effectual. Stower's lime-juice cordial and clarified lemon-squash were the two specialities exhibited by Messrs. Alexander Riddle and Co., of 36 and 38, Commercial-street, London, E. The wholesomeness of these preparations and their adaptability for the easy production of a beverage are established, the materials used being of the best kind and no objectionable ingredients being added. We have been able to speak in favour of the purity of these preparations in our analytical records, but the case is somewhat overstated, we think, when the manufacturers assert that the cordial "materially assists the digestion and is practically invaluable to dyspeptic dispositions." Specimens representing the various natural mineral waters of Vichy and Carlsbad were shown by Messrs. Ingram and Royle, Limited, of 26, Upper Thames-street, London, E.C. The exhibit also included bottles of Hunyadi Janos, a natural aperient water which was exhaustively dealt with by THE LANCET Special Analytical Commission on Natural Mineral Waters in THE LANCET of Dec. 5th, 1896, p. 1622. Lastly may be added the medicated wines of Messrs. Stephen Smith and Co., of Malmesbury-road, Bow, London, E. These included an excellent coca wine prepared from the leaf and therefore not containing the chemically prepared alkaloid; keystone beef wine; and keystone burgundy—preparations of distinct merit as we have already shown in our analytical columns.

There were also exhibited a selection of objects of interest to the medical man but of a miscellaneous character, as exemplified in the medical books, charts, and diagrams shown by Messrs. John Bale, Sons, and Danielsson, of 83, 85, 87, and 89, Great Titchfield-street, Oxford-street, London, W. Again, several typewriters were exhibited possessing some novelty; amongst these were the instrument of the Oliver Typewriter Co., 42, Poultry, E.C., and that of the Williams Typewriter Co., of 104, Newgate-street, London, E.C. Lastly, the Blickensderfer typewriter attracted some attention, since it may be fitted with a special wheel for writing medical prescriptions. The machine may be inspected at 9, Cheapside, London, E.C. Many of the stalls were devoted to the exhibition of new publications. Amongst the publishers represented were Messrs. Rebman, Limited, of 129, Shaftesbury-avenue, London, W.C., Messrs. John Bale, Sons, and Danielsson, 83, 85, 87, and 89, Great Titchfield-street, Oxford-street, London, W., and the Scientific Press, Limited, of 28 and 29, Southampton-street, Strand, London W.C.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 5473 births and 3748 deaths were registered during the week ending June 9th. The annual rate of mortality in these towns, which had been 18·4 and 17·7 per 1000 in the two preceding weeks, further declined to 16·8 last week. In London the death-rate was 15·9 per 1000, while it averaged 17·5 in the 32 provincial towns. The lowest death-rates in these towns were 8·0 in Birkenhead, 11·4 in Swansea, 12·1 in Derby and in Burnley, and 12·3 in Croydon; the highest rates were 19·9 in Sheffield, 21·3 in Salford, 23·1 in Manchester, and 24·8 in Liverpool. The 3748 deaths in these towns included 386 which were referred to the principal zymotic diseases, against 443 and 423 in the two preceding weeks; of these, 128 resulted from measles, 111 from whooping-cough, 65 from diphtheria, 30 from scarlet fever, 27 from diarrhœa, 24 from "fever" (principally enteric), and one from small-pox. The lowest death-rates from these diseases last week occurred in Norwich, Nottingham, Birkenhead, Huddersfield, and Newcastle; and the highest rates in Cardiff, Derby, Oldham, and Blackburn. The greatest mortality from measles occurred in Bristol, Cardiff, Derby, and Sunderland; from whooping-cough in Liverpool, Manchester, Oldham, and Gateshead; and from diarrhœa in Blackburn. The mortality from scarlet fever and from "fever" showed no marked excess in any of the 33 towns. The 65 deaths from diphtheria included 24 in London, seven in Leeds, six in Leicester, four in Cardiff, and four in Sheffield. One fatal case of small-pox was registered last week in Oldham, but not one in any other of the 33 large towns. There were 11 small-pox patients under treatment in the Metropolitan Asylums Hospitals at the end of the week, against three, five, and seven on the three preceding Saturdays; four new cases were admitted during the week, against three and four in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, June 9th, was 1754, against 1784 and 1759 at the end of the two preceding weeks; 203 new cases were admitted during the week, against 221, 216, and 194 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 417 to 266 in the five preceding weeks, rose to 268 last week, but were slightly below the corrected average. The causes of 52, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Nottingham, Bolton, Oldham, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, Blackburn, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·6 and 18·6 per 1000 in the two preceding weeks, further declined to 18·3 during the week ending June 9th, but exceeded by 1·5 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Paisley and 15·8 in Aberdeen to 19·9 in Glasgow and 21·5 in Greenock. The 564 deaths in these towns included 19 which were referred to measles, 17 to whooping-cough, seven to diarrhœa, six to scarlet fever, five to "fever," and three to diphtheria. In all 57 deaths resulted from these principal zymotic diseases, against 65, 76, and 73 in the three preceding weeks. These 57 deaths were equal to an annual rate of 1·9 per 1000, which was 0·2 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The deaths from measles, which had been 10 and 16 in the two preceding weeks, further rose last week to 19, of which 14 occurred in Glasgow and four in Edinburgh. The fatal cases of whooping-cough, which had been 36 and 25 in the two preceding weeks, further declined to 17 last week, and included 14 in Glasgow and two in Aberdeen. The deaths from diarrhœa, which had increased from nine to 25 in the four preceding weeks, declined again last week to seven, of which four were registered in Glasgow and two in Dundee. The fatal cases of scarlet fever, which had been seven, three, and one in the three preceding weeks, rose again to six last week and included four in Glasgow and two in Paisley. The deaths referred to different forms of "fever," which had been six, two, and one in the three preceding weeks, rose again last week to five, of which four occurred in Glasgow, where two of the three fatal cases of diphtheria were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 84, 94, and 104 in the three preceding weeks, further rose last week to 106, and were 13 in excess of the number in the corresponding period of last year. The causes of 24, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·2 and 21·9 per 1000 in the two preceding weeks, rose again to 23·1 during the week ending June 9th. During the past four weeks the death-rate in the city has averaged 23·3 per 1000, the rate during the same period being 16·4 in London and 18·4 in Edinburgh. The 155 deaths belonging to Dublin registered during the week under notice were eight in excess of the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against nine, five, and three in the three preceding weeks; of these, five resulted from whooping-cough, two from diphtheria, two from diarrhœa, one from "fever," and not one either from small-pox, measles, or scarlet fever. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·2 in Edinburgh. The fatal cases of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1900.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,589,129	9	1278	1160	1	240	8	20	449	—	3165	7·2	1	299	29	129	230	—	38	—	49	775	1·8	7283	16·6	120
West Districts.																										
Paddington	130,104	—	12	22	—	5	1	—	10	—	50	4·0	—	17	—	4	10	—	—	—	2	33	2·6	222	17·8	135
Kensington	173,603	2	31	31	—	8	—	1	15	—	87	5·2	—	28	—	1	2	—	1	—	3	35	2·1	251	15·1	141
Hammersmith	110,203	—	24	18	—	7	—	1	10	—	60	5·7	—	31	—	2	—	—	2	—	—	35	3·3	190	18·0	139
Fulham	136,383	—	50	53	—	4	1	—	13	—	121	9·3	—	1	1	1	2	—	1	—	1	7	0·5	185	14·1	91
Chelsea	96,715	1	23	22	—	2	—	—	8	—	56	6·0	—	1	—	2	2	—	—	—	2	7	0·8	164	17·7	134
St. George Hanover-square	81,133	1	21	9	—	6	—	—	5	—	42	5·4	—	1	1	1	2	—	1	—	1	7	0·9	96	12·3	107
Westminster	51,657	—	10	10	—	7	—	1	6	—	34	6·9	—	4	—	—	2	—	1	—	—	7	1·4	91	18·4	200
St. James Westminster	21,457	—	5	8	—	—	—	—	2	—	15	7·3	—	1	—	1	—	—	—	—	—	2	1·0	29	14·1	122
North Districts.																										
Marylebone	139,777	2	34	29	—	4	—	—	23	—	92	6·9	1	7	1	4	4	—	—	—	3	20	1·5	261	19·5	117
Hampstead	81,766	—	20	5	—	1	—	1	2	—	29	3·7	—	3	—	—	—	—	—	—	—	3	0·4	80	10·2	63
St. Pancras	245,651	—	43	48	—	20	—	2	24	—	137	5·8	—	19	—	9	12	—	1	—	3	44	1·9	390	16·6	118
Islington	351,541	—	82	64	—	21	—	2	28	—	197	5·8	—	27	4	14	9	—	3	—	1	58	1·7	515	15·3	107
Stoke Newington	35,718	—	10	8	—	1	—	1	3	—	23	6·7	—	—	—	—	2	—	—	—	—	2	0·6	38	11·1	99
Hackney	225,519	—	59	59	—	14	2	3	25	—	162	7·5	—	4	2	8	14	—	2	—	2	32	1·5	289	13·4	101
Central Districts.																										
St. Giles	36,870	—	10	9	—	2	—	—	9	—	30	8·5	—	3	—	1	2	—	—	—	—	6	1·7	72	20·4	87
St. Martin-in-the-Fields	11,855	—	2	1	—	1	—	—	—	—	4	3·5	—	—	—	—	—	—	1	—	—	1	0·9	24	21·1	143
Strand	22,748	—	4	7	—	1	—	—	1	—	13	6·0	—	—	—	2	2	—	—	—	2	6	2·8	41	18·8	71
Holborn	29,188	—	7	8	—	2	1	—	6	—	24	8·6	—	5	—	1	3	—	—	—	1	10	3·6	79	28·2	250
Clerkenwell	66,007	—	15	18	—	2	—	—	8	—	43	6·8	—	10	1	2	8	—	—	—	1	22	3·5	136	21·5	183
St. Luke	40,655	—	9	12	—	3	—	—	7	—	31	8·0	—	7	—	—	1	—	—	—	2	10	2·6	93	23·9	79
City of London	26,922	—	14	11	—	1	—	—	3	—	29	11·2	—	—	1	1	2	—	—	—	—	4	1·5	62	24·0	179
East Districts.																										
Shoreditch	120,641	1	34	29	—	6	—	—	15	—	85	7·3	—	9	2	5	6	—	—	—	3	25	2·2	239	20·7	154
Bethnal Green	128,831	—	36	53	—	7	—	1	16	—	113	9·1	—	12	1	4	11	—	—	—	1	29	2·3	228	18·5	144
Whitechapel	82,220	—	55	32	—	—	—	1	10	—	98	12·4	—	3	1	1	2	—	—	—	1	8	1·0	158	20·0	110
St. George-in-the-East	48,875	1	35	20	—	3	—	1	8	—	68	14·5	—	3	—	3	1	—	1	—	—	8	1·7	85	18·1	83
Limehouse	58,944	—	19	14	—	1	—	—	6	—	40	7·1	—	9	—	2	15	—	—	—	—	26	4·6	129	22·8	181
Mile End Old Town	113,781	1	51	35	—	2	—	—	10	—	99	9·1	—	10	—	2	5	—	—	—	2	19	1·7	206	18·9	115
Poplar	170,968	—	25	41	1	21	1	2	21	—	112	6·8	—	11	—	2	14	—	4	—	—	31	1·9	321	19·6	126
South Districts.																										
St. Saviour Southwark	23,854	—	12	18	—	—	—	—	3	—	33	14·4	—	—	—	5	1	—	—	—	1	7	3·1	57	24·9	234
St. George Southwark	60,697	—	30	24	—	4	—	1	11	—	70	12·0	—	3	1	2	5	—	—	—	2	13	2·2	131	22·5	151
Newington	125,138	—	45	46	—	4	—	—	11	—	106	8·8	—	3	2	9	4	—	2	—	2	22	1·8	219	18·3	142
St. Olave Southwark	10,909	—	3	3	—	—	—	—	1	—	7	6·7	—	—	—	—	1	—	—	—	—	1	1·0	17	16·3	26
Bermondsey	85,920	—	25	43	—	10	—	—	7	—	85	10·3	—	1	1	3	11	—	5	—	1	22	2·7	166	20·1	107
Rotherhithe	41,246	—	5	9	—	5	—	—	2	—	21	5·3	—	5	1	2	4	—	—	—	1	13	3·3	73	18·5	120
Lambeth	312,152	—	77	92	—	13	2	—	20	—	204	6·8	—	10	3	14	13	—	3	—	1	44	1·5	445	14·9	118
Battersea	178,100	—	59	19	—	10	—	—	10	—	98	5·7	—	10	2	2	16	—	4	—	—	34	2·0	250	14·6	109
Wandsworth	217,004	—	62	44	—	11	—	1	19	—	137	6·6	—	17	—	—	2	—	1	—	3	23	1·1	274	13·2	117
Camberwell	268,457	—	66	64	—	5	—	—	22	—	157	6·1	—	7	—	7	14	—	2	—	3	33	1·3	336	13·1	101
Greenwich	184,582	—	57	35	—	11	—	—	28	—	131	7·4	—	10	1	4	15	—	1	—	3	34	1·9	289	16·3	121
Lewisham (excluding Penge)	93,548	—	37	37	—	4	—	—	5	—	83	9·3	—	1	—	3	7	—	1	—	—	12	1·3	129	14·4	103
Woolwich	41,600	—	19	8	—	1	—	—	4	—	32	8·0	—	2	2	—	1	—	—	—	—	5	1·3	84	21·1	157
Lee	40,722	—	8	9	—	5	—	—	3	—	25	6·4	—	—	—	—	2	—	1	—	—	3	0·8	50	12·8	145
Plumstead	65,558	—	32	32	—	2	—	2	9	—	77	12·2	—	4	1	5	1	—	—	—	1	12	1·9	89	14·2	89
Port of London	—	—	1	1	—	3	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 25 cases of membranous croup.

† Including deaths from membranous croup.

whooping-cough, which had been one, three, and none in the three preceding weeks, rose again to five last week. The two deaths from diphtheria showed an excess over the average of recent weeks. The fatal cases of diarrhœa, which had been two, none, and one in the three preceding weeks, rose to two last week. The mortality from "fever," corresponded with that in the preceding week. The 155 deaths in Dublin last week included 29 of infants under one year of age and 23 of persons aged upwards of 60 years; the deaths of infants were equal to the number recorded in the preceding week, but the deaths of elderly persons showed a considerable decline. Eight inquest cases and four deaths from violence were registered; and 60, or nearly two-fifths, of the deaths occurred in public institutions. The causes of 12, or nearly 8 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING MAY, 1900.

IN the accompanying table will be found complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 7·2 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 7·0, 6·6, and 6·2 per 1000 respectively. The rates were considerably below the average in Paddington, Kensington, St. George Hanover-square, Hampstead, St. Martin-in-the-Fields, and Rotherhithe; while they showed the largest excess in City of London, Whitechapel, St. George in the East, St. Saviour Southwark, St. George Southwark, and Plumstead sanitary areas. Nine small-pox cases were notified during May, of which two belonged to Kensington, two to Marylebone, and one each to Chelsea, St. George Hanover-square, Shoreditch, St. George-in-the-East, and Mile End Old Town sanitary areas; seven small-pox patients were admitted into the Metropolitan Asylums Hospitals during May, and seven remained under treatment at the end of the month. The prevalence of scarlet fever showed a further slight increase upon that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in City of London, Whitechapel, St. George-in-the-East, St. Saviour Southwark, St. George Southwark, and Plumstead. The Metropolitan Asylums Hospitals contained 1735 scarlet fever patients at the end of May, against 1827, 1654, and 1619 at the end of the three preceding months; the weekly admissions averaged 198, against 152, 162, and 174 in the three preceding months. The prevalence of diphtheria showed a marked increase upon that in the preceding month; the proportional prevalence of this disease was greatest in City of London, Bethnal Green, St. George in the East, St. Saviour Southwark, Bermondsey, and Plumstead sanitary areas. There were 1209 diphtheria patients in the Metropolitan Asylums Hospitals at the end of May, against 1402, 1236, and 1131 at the end of the three preceding months; the weekly admissions averaged 172, against 165, 148, and 135 in the three preceding months. The prevalence of enteric fever in London showed a continued decrease from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in Westminster, St. Martin in the Fields, Poplar, Bermondsey, Rotherhithe, and Lee. The Metropolitan Asylums Hospitals contained 176 enteric fever patients at the end of May, against 274, 263, and 208 at the end of the three preceding months; the weekly admissions averaged 24, against 40, 36, and 27 in the three preceding months. Erysipelas was proportionally most prevalent in Marylebone, St. Giles Holborn, St. Luke, St. George-in-the-East, and St. George Southwark sanitary areas. The 20 cases of puerperal fever included three in Hackney, and two each in St. Pancras, Islington, Poplar, and Plumstead sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the five weeks ending June 2nd the deaths of 7283 persons belonging to London were registered, equal to an annual rate of 16·6 per 1000, against 20·4, 19·1, and 20·2 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 10·2 in Hampstead, 11·1 in Stoke Newington, 12·3 in St. George Hanover-square, 12·8 in Lee, 13·1 in Camberwell, and 13·2 in Wandsworth; the highest rates were 22·5 in St. George Southwark, 22·8 in Limehouse, 23·9 in St. Luke, 24·0 in City of London, 24·9 in St. Saviour Southwark, and 28·2 in Holborn. During the five weeks of May 775 deaths were referred to the principal zymotic diseases in London; of these, one resulted from small-pox, 299 from measles, 29 from scarlet fever, 129 from diphtheria, 230 from whooping-cough, 38 from enteric fever, and 49 from diarrhœa. These 775 deaths were equal to an annual rate of 1·8 per 1000, against 1·8, 1·7, and 1·8 in the three preceding months. The lowest death-rates from these diseases last month occurred in Fulham, Chelsea, St. George Hanover Square, Hampstead, Stoke Newington, St. Martin-in-the-Fields, and Lee; and the highest rates in Hammersmith, Holborn, Clerkenwell, Limehouse, St. Saviour Southwark, and Rotherhithe sanitary areas. The fatal case of small-pox belonged to Marylebone sanitary area. The 299 deaths from measles were 94 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Kensington, Hammersmith, Holborn, Clerkenwell, St. Luke, and Mile End Old Town sanitary areas. The 29 fatal cases of scarlet fever showed a decline of 47 from the corrected average number; the greatest proportional fatality from this disease occurred in City of London, Shoreditch, St. George Southwark, Newington, Rotherhithe, and Woolwich. The 129 deaths from diphtheria were 55 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Islington, Strand, St. George in the East, St. Saviour Southwark, Newington, and Plumstead. The 230 fatal cases of whooping-cough showed a decline of 86 from the corrected average number; this disease showed the highest proportional fatality in Strand, Holborn, Clerkenwell, Limehouse, Battersea, Bermondsey, and Rotherhithe sanitary areas. The 38 deaths referred to enteric fever were slightly in excess of the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Westminster, St. Martin in the Fields, St. George in the East, Poplar, Bermondsey, and Battersea. The 49 fatal cases of diarrhœa showed a marked decline from the corrected average number; the greatest proportional fatality from this disease was recorded in Marylebone, Strand, Holborn, St. Luke, Shoreditch, and St. George Southwark sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during May was more than 26 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 120 per 1000. The lowest rates of infant mortality were recorded in Hampstead, St. Giles, Strand, St. Luke, St. George-in-the-East, and St. Olave Southwark sanitary areas; and the highest rates in Westminster, Holborn, Clerkenwell, City of London, Limehouse, and St. Saviour Southwark.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: M. H. Knapp to the *Doris* and S. T. Reid to the *Gleaner*.

ROYAL ARMY MEDICAL CORPS.

Major James McM. Bolster, from half-pay, to be Major, with precedence next below C. J. Addison, vice T. A. P. Marsh, deceased. The undermentioned Surgeons on probation to be Lieutenants:—Charles Henry Carr, Edmund Bennett, Francis Pius Lauder, Arthur Charles Adderley, John Tobin, George Edward Leary, and Herbert Ernest Weston. Lieutenant-Colonel Henry J. Michael retires on retired pay in consequence of ill-health. Surgeon-Captain A. Mifsud, Royal Malta Artillery, is granted the temporary rank of Captain whilst serving in Egypt.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Henry John MacKay, 2nd Volunteer Battalion the Wiltshire Regiment, to be Surgeon-Captain; Surgeon-Captain W. J. Harnett to be Surgeon-Major.

VOLUNTEER MEDICAL STAFF CORPS.

The Woolwich Companies: Mowbray Taylor to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 2nd Hampshire (Southern Division, Royal Garrison Artillery): Herbert Fox to be Surgeon-Lieutenant. *Rifle:* 1st Dumbartonshire: William Buchan Armstrong to be Surgeon-Lieutenant. 1st Volunteer Battalion the Highland Light Infantry: Surgeon-Lieutenant P. F. Shaw to be Surgeon-Captain. 2nd Volunteer Battalion the Worcestershire Regiment: Herbert Bree Emerson to be Surgeon-Lieutenant. 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Lieutenant H. J. C. Godfrey resigns his commission.

VITAL STATISTICS OF THE GERMAN NAVY.

The statistical information contained in the subjoined table has been compiled from the official returns issued by the medical department of the Imperial German Navy.

From April 1st to March 31st.	1895-96.	1896-97.
Average strength	21,477	21,675
Admitted (per 1000)	847·6	860·6
Discharged to duty (per 1000)	706·8	716·8
Died in hospital (per 1000)	1·4	0·9
Invalided (per 1000)	116·5	115·5
Remaining (per 1000)	22·9	27·4
Number constantly sick (per 1000)	37·2	39·8
Average duration of cases (days)	14·5	15·3
Total death-rate (per 1000)	4·8	2·9
General diseases (per 1000)	61·3	64·9
Infectious (per 1000)	26·4	29·9
Infectious (Foreign Service) (per 1000) *	98·0	101·5
Infectious diseases, Home Waters (per 1000) *	5·0	5·7
Infectious diseases, African Stations (per 1000) *	268·3	368·3
Infectious diseases, Pacific Stations (per 1000) *	205·0	457·4
Infectious diseases, enteric fever (per 1000)	0·5	1·8

	1895-97.
Infectious diseases, dysentery (per 1000)	0·4
Infectious diseases, intermittent fever (per 1000)	23·5
Infectious diseases, influenza (per 1000)	10·1
Infectious diseases, phthisis pulmonalis (per 1000)	2·9
Infectious diseases, hæmoptysis (per 1000)	0·7
Diseases of respiratory system (per 1000)	100·2
,, circulatory ,, (per 1000)	26·7
,, digestive ,, (per 1000)	123·1
Ophthalmic diseases (per 1000)	38·9
Venereal ,, (per 1000)	133·0

* Local strength.

The deaths from disease during the two years were caused as follows: enteric fever, 8; dysentery, 3; intermittent fever, 4; influenza, 3; sunstroke, 3; pneumonia, 10; pleurisy, 6; phthisis pulmonalis, 13; circulatory affections, 6; other diseases, 24; total 80. The deaths from accidents amounted to 72, and there were 15 suicides—11 occurring in the commissioned ranks. Throughout the biennium the navy remained free from cholera, yellow fever, and small-pox; the immunity from the last-named scourge being unquestionably due to careful revaccination. The considerable prevalence of venereal affections is ascribed to the absence of supervision at foreign ports, especially those under English control. In conclusion, Dr. Wilm points with pride to the fact that during the period under report there were less sickness and mortality in the German navy than in any other. The only blot seems to have been a local but severe outbreak of follicular conjunctivitis which was due to the incautious acceptance of two recruits from Western Prussia who were suffering from granular lids.

TRANSVAAL WAR NOTES.

A field hospital, composed entirely of volunteers, has embarked on the *Tagus* for duty with the Rhodesian field force. The *Daily Telegraph* states that "this is the first mounted field hospital sent out."

With the object of relieving the pressure on the accommodation at the Military Hospital, Devonport, caused by the frequent arrivals of the sick and wounded soldiers from South Africa, a field hospital of 50 beds has been established at Staddon Heights, Plymouth, under the charge of Lieutenant-Colonel J. W. Belcher, R.A.M.C.

Of the 300 invalid soldiers who arrived at the Royal Military Hospital a fortnight ago less than 20 now remain, the rest having been discharged on furlough. On June 6th another party of over 200 arrived under the medical charge of Civil Surgeon Blackiston.

The General of Communications, Cape Town reports that Captain Smithson, R.A.M.C., was discharged from hospital for duty during the week ending May 27th

THE ROYAL ALBERT HOSPITAL, DEVONPORT.

On June 9th Princess Henry of Battenberg laid the foundation stone of the new Nurses' Home and other buildings of the Royal Albert Hospital, Devonport. At the hospital gate Her Royal Highness was received by members of the Reception Committee, which included Lord St. Levan, Admiral Cardale, and Mr. J. May and Mr. T. Leah, who represented the medical staff. The Royal Albert Hospital, which has been doing a most useful work for nearly 40 years, was named after the late Prince Consort by his permission, and he expressed a wish to lay the foundation stone, but unfortunately His Royal Highness died shortly after his desire was made known.

TRANSVAAL WAR CASUALTIES.

The following, attached to the Royal Army Medical Corps, are reported seriously ill at Kroonstad:—Civil Surgeon R. W. Jameson and Civil Surgeon Robertson.

Civil Surgeon H. Bryant, R.A.M.C., died from enteric fever at Bloemfontein on June 7th.

Major Hathaway, R.A.M.C., has been severely wounded in the recent operations near Pretoria.

In connexion with the scheme for the introduction into barracks in India of punkah-pulling by mechanical agency an additional sum of Rs.40,000 has been sanctioned, and the Government of India has called for a full report at the close of the hot weather on the various systems tried.

Correspondence.

"Audi alteram partem."

THE CANNON-STREET HOTEL MEETING AND DR. GLOVER.

To the Editors of THE LANCET.

SIRS,—With the permission of the chairman of the Beckenham and Penge Medical Society I forward the following correspondence for publication. Trusting you will kindly find room for it,

I am, Sirs, yours faithfully,

J. G. GLOVER.

BECKENHAM AND PENGE MEDICAL SOCIETY.

Oakwood-avenue, Beckenham, June 6th, 1900.

DEAR DR. GLOVER,—At a recent meeting of the Beckenham and Penge Medical Society Dr. Sturges, who was present as one of the delegates of the society at the meeting held at the Cannon-street Hotel to protest against the Midwives Bill at present before Parliament, reported what had taken place at that meeting and referred in terms of strong disapproval to the general management of the meeting and in particular to the motion which was brought forward by Dr. Lorimer Hart with reference to yourself just before the close of the meeting when only a few gentlemen were present. This society assisted the Corporate and Medical Reform Association and other societies in organising the Cannon-street meeting and our delegates went prepared to submit some very carefully considered alterations in the Midwives Bill which they hoped might render it a useful measure and one which would safeguard the public and be acceptable to the general practitioner. In consequence of the manner in which the meeting was conducted, the

Beckenham and Penge Medical Society have under consideration the desirability of severing their connexion with the Corporate and Medical Reform Association, and this they will doubtless do at their next general meeting. Meanwhile, I am directed to express to you the deep regret we all feel at the action taken at the meeting with regard to yourself and to assure you of our continued confidence and esteem.

I remain, dear Dr. Glover, yours very truly,
F. ALEX. BARTON, Honorary Secretary.

25, Highbury-place, N., June 8th, 1900

DEAR MR. BARTON,—I am much obliged to you and your society for the expression of your views touching the Cannon-street Hotel meeting and its action towards myself. It is impossible that we should agree on all details of a question so complicated as that of midwives, but I believe the agreement is deeper than is thought, and it will be much promoted by generously construing each other's views of the best way to attain the end we all aim at—the saving of the life of poor lying-in women and securing for all serious midwifery the advantage of medical attendance. Kindly convey to your society my best thanks and believe me, Yours very truly,
J. G. GLOVER.

F. Alex. Barton, Esq., B.A., L.R.C.P. Lond., &c.

THE TREATMENT OF RECENT SPRAINS AND DISLOCATIONS.

To the Editors of THE LANCET.

SIRS,—I am pleased that such an eminent authority as Mr. W. H. Bennett[1] has corroborated the soundness of the treatment of recent dislocations and sprains which I advocated in THE LANCET in 1898.[2] For over 10 years I have treated those and similar lesions by massage and movement, both active and passive, and I have never once had cause to regret my actions. My chief reason for writing to you two years ago, as it is now, was to try to influence medical men to treat such lesions in a way that weakness and stiffness could not remain. It is a notorious fact that bonesetters make their living and their widespread reputations by such cases falling into their hands. Since I have treated my cases in the way which I described in THE LANCET two years ago I have never had the annoyance of an irregular practitioner interfering with any of my uncompleted cases.

I am, Sirs, yours faithfully,
WM. DOIG, M.D. Edin.

Galashiels, N.B., June 9th, 1900.

"ON THE RELATIVE VALUE OF SYMPTOMS OF ACUTE PERITONITIS."

To the Editors of THE LANCET.

SIRS,—I have read Mr. Stanmore Bishop's admirable article on the Relative Value of Symptoms of Acute Peritonitis, published in THE LANCET of June 9th, and should like to endorse almost all that he has written. There are the very widest differences of opinion among practitioners as to the presence or absence of acute peritonitis in cases in which interference is required; and the teaching almost deserves the term which Mr. Stanmore Bishop has applied to it. But I fear even muscular rigidity is not an absolute criterion. It is scarcely more certain than the rest. I have watched throughout a case of acute septic peritonitis which proved fatal within five days in which the abdomen was from first to last perfectly soft, without a trace of muscular rigidity. And if not characteristic muscular rigidity, at least a very close imitation of it is often present in cases of abdominal cramp in which there is no suspicion of inflammation. There is, in fact, no single characteristic symptom of acute peritonitis which is present invariably in all cases alike. All of them are wanting sometimes, and the sooner this fact is recognised the more readily will the diagnosis be made. Muscular rigidity is one of the most constant, but its constancy is not absolute.

I am, Sirs, yours faithfully,
Wimpole-street, W., June 11th, 1900. C. MANSELL MOULLIN.

[1] THE LANCET, June 2nd, 1900, p. 1569.
[2] THE LANCET, Feb. 2nd, 1898, p. 465.

MEAT-SUPPLY OF CARDIFF.—The Cardiff Health Committee on June 1st considered the allegation that inferior meat was sold in the local market. A sub-committee had been appointed to go into the whole question, and after a thorough investigation they agreed with the statements and recommended the appointment of an additional inspector who should be a practical butcher thoroughly conversant with the trade. After a considerable discussion the Health Committee passed a resolution requesting the medical officer of health to draw up a list of the duties necessary to ensure efficient inspection.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

An Unparalleled Number of Visitors.—Order Reigns.—The Exhibition is Ready.

To have visited the Exhibition when it opened in April, and even during the earlier part of May, and then to return again at the commencement of June is to experience sensations that can be compared with the delightful feeling of freshness and calm that follow after a summer storm. The wagons, carts, railway trucks; the drivers, porters, labourers, masons, and workmen, have disappeared. The hurry and bustle are over. The loud, and sometimes angry, cries of those who were struggling to hasten on the work are now replaced by the satisfied voices, the murmurs of admiration from the vast crowds of spell-bound visitors. The sharp stones that cut the feet, the deep ruts made by heavy carts, the pitfalls, the planks and rafters, the empty packing-cases with their sharp protruding nails, have all been removed and safe, dry, and smooth gravel walks greet us on all sides. To the clouds of white chalk and plaster dust has succeeded the sweet air from numerous beds of beautiful flowers or artistically devised clusters of trees and shrubbery. Here and there large palm trees wave their plume-like branches as if to salute the visitors. The air comes fresh and clear from the well-watered verdure and the loudest noises are those of laughter, exclamations of delight and surprise, or of some strange music from a gipsy band or a group of Orientals, negroes and Arabs, rhythmically beating their tomtoms or giving weird expression on deep-toned flutes to an indefinable melody that recalls the nomadic life of the dwellers of the desert. In a word, the Exhibition is now complete. Here and there may be belated exhibitors whose installations are not yet quite in order, but these are so few, far between, and exceptional that they are but as minute specks on the vast and magnificent picture that invites the admiration of the whole world. The promise made has been fully kept. The Exhibition has been completed earlier in the year than any of the preceding universal exhibitions. Nor have the public been slow to acknowledge this fact. Already the number of admissions has beaten all previous records, for there were more than half a million visitors both on Whit-Sunday and on Whit-Monday; and since then even on the ordinary weekdays the admissions have exceeded 200,000. Indeed, it is anticipated that in the height of the season the crowds will exceed the limits of safety. Consequently all the entrances have been connected by telephone to a central office. Here, hour by hour, messages are received from each gate, additions made, and a record is kept as to the number of people actually within the Exhibition. Should this number exceed a certain fixed maximum then the gates will be closed for a while so as to prevent too great a crush. This is a wise and necessary precaution. Even as matters now stand, those who are not satisfied with merely walking round but want to examine minutely some of the exhibits had better devote the morning to serious study. They will then have elbow-room and better opportunities for talking to the exhibitors and for obtaining information. This doubtless involves lunching within the Exhibition, where the restaurants are naturally a good deal dearer than in the town; but as the admission ticket is sold at a discount and can now be obtained for 6*d*., it is no great loss to leave the Exhibition for meals and there are numerous cheap restaurants outside. Wealth is more evenly distributed in France, there are not so many large fortunes as in England, therefore the greater part of the catering is done for that very numerous class of thrifty people who know how to live well for a small expenditure. It is a happy country for those who possess a modest competency and the fear of spending too much need not deter such from visiting the Paris Exhibition.

THE PAVILION OF THE TOWN OF PARIS.

The more frequent the visits to the Exhibition and the more careful the examination of the wonders displayed, the more hopeless the task of description becomes. The details are of such absorbing interest and of such widespread importance that the difficulty is to know what to leave out, what to cut down to a few sentences—in fact, to use a Parliamentary idiom, how best to massacre the innocents. Take as an

example the exhibits of the town of Paris. We are all the guests of this beautiful capital and naturally anxious to know how the town is governed. Besides, it is the second largest metropolis in Europe and certainly the most beautiful and attractive, so that there must be much to learn concerning its methods of administration. Finally, the municipal authorities have organised a unique exhibition where every detail of their administrative work is set forth in a most graphic, realistic, and intelligible manner. But it is not a letter or two, it is a volume, and a very big and a very useful volume, that could be written on this one single exhibit. The pavilion of the town of Paris is situated on the right bank of the Seine, close to the Pont des Invalides, and faces the magnificent Italian Palace that is on the opposite side of the river. Entering by the door nearest to the bridge, the first rooms to the left contain exhibits that relate to the history of Paris. There are quaint edicts dating back some centuries and concerning the government of the town, pictures of old Paris, and some remarkable historical curiosities, including the cradle of the King of Rome, lent by the Emperor of Austria because it was the work of the celebrated Parisian bronze-chasers Odiot and Thomire. On the right hand side of the entrance there are first of all the exhibits of the Paris Municipal Laboratory, where, however, the Ravachol bombs, explosive sardine boxes, and other anarchists' contrivances are not shown; yet this laboratory is best known to the general public as the place where suspicious parcels are examined in case they contain explosives. But, needless to say, the real work of the laboratory is of a much more serious character, though it attracts less public attention. Indeed, it has always been a source of trouble with sanitary reformers that the public will take the greatest interest in an explosion of dynamite that as often as not does no harm at all, while an outbreak of disease which brings many thousands prematurely to the grave fails to awaken public attention. Dynamitards provide more sensational news for the papers than the studies of bacteriologists; but in this Exhibition all honour is rendered to the latter and nothing is said about the former. The Paris Municipal Laboratory is proud of its bacteriological researches, and for this purpose has a special department called the "Salle de Pasteur." It shows photographs of colonies of the bacillus coli and isolated bacilli, of the typhoid bacillus, micrographic photographic apparatus, Dr. Roux's culture stove, and other aids to bacteriology. M. Ogier has an apparatus for taking samples of water. The bottle stands on a heavy slab of lead, to which it is held by a brass frame, and can be used without touching with the hand while taking the sample. Further, all the apparatus used for testing and analysing tea, coffee, chicory, milk, alcohol, &c., is displayed. In a word, the visitor can see the applications of chemistry and bacteriology to the preservation of water- and food-supplies.

The next room contains the exhibits of the municipal veterinary department with very fine wax models of diseased meat, an exhibit which cannot fail to alarm a good many people and which prompted a visitor to exclaim somewhat appropriately, "Almost thou persuadest me to become a vegetarian." Perhaps, also, as a warning to the frequenters of cheap restaurants who have a weakness for *civet de lapin*, there are side by side the skeletons of a rabbit and a cat. With the exception of the heads the likeness between the two suggests how easy it would be to substitute the one for the other. Another department deals with the vegetable supply of Paris and there are maps showing from what parts of the country the various vegetables are obtained, together with pictures of the mushrooms that are edible and those that are poisonous. This exhibit includes the methods for detecting the effects of poisonous alimentary substances. Here is shown the apparatus devised by Professor Marey to record cardiac movements and a pump where a vacuum is produced by a fall of mercury, which is used to extract gases from the blood. The adjoining room or division is allotted to the demography of Paris where the growth of the population may be studied; and by its side there is a very large division containing every sort of information, plans and drawings concerning the domains of the town, its parks and gardens, its district town halls, the lands which it has bought in the provinces for asylums, convalescent homes, &c.

The next department, though most serious and technical, is so arranged that it does not fail to attract the general public and serves as a useful object lesson. It deals with the hospitals which, with but a few exceptions, are all under the management of the municipality. Here we find a little scenic effect. It consists of an old-fashioned four-poster bed, such as was employed at the old Hôtel Dieu a hundred years ago, and in which no less than four patients had to sleep. These patients are represented by life-sized lay figures. Three are in bed, one with his head at the bottom of the bed and his feet up by the faces of the other two patients. The fourth patient is sitting at the foot of the bed, so that the visitors may see the style of clothes that used to be provided in the hospitals. Indeed, these clothes are about the only satisfactory thing shown. By way of warming and ventilating there is a huge earthenware and portable receptacle that looks like an urn. Inside this some sort of smokeless fuel, presumably charcoal, used to be burnt, and it was brought close to the bed of the patients, thus helping still further to poison the atmosphere. The bed, bed-table, chairs, &c., are of wood. Immediately opposite there is a modern iron hospital bed and aseptic furniture such as is now used in the hospitals. In no case is wood employed, but only enamelled iron or hardware. Then there are the spittoons with a cone-shaped inner pan dipping into water which contains in solution some antiseptic. There is also a cylinder which can hold 14 spittoons. Below by means of a gas-burner water is warmed. There is a safety valve on one side, a thermometer on the other, and the steam generated disinfects the contents. These are now used in nearly all the hospitals though but a short time ago they were employed only in cases of phthisis. In another corner there are samples of the wheat, flour, &c., employed at the municipal bakery where the bread for all the hospitals is made. Next to this is a compartment which is fitted up more like a small drawing-room. This contains exhibits from the archives of the Public Assistance, a term which comprises poor relief, hospitals, and asylums. On the walls are several oil-paintings and these are the portraits of some of the best-known philanthropical benefactors. Then there are a number of documents, some parchment manuscripts illustrating former systems of poor relief, and a very fine illuminated mass book used in the hospital chapels. Round this little drawing-room there is all that relates to the care of infants and little children, notably those who are abandoned by their parents. There are models of hospitals for children, maternity hospitals, and specimen baby incubators. The latter are more useful as historical records, for they are very inferior to the more modern and improved types. There is also a glass partition that can be built up round a cot, so as to isolate the patient from the rest of the ward, and yet the patient remains visible from the ward. By the side of the kits provided for abandoned children there is a collection of strange tokens left with the children so that they may be ultimately recognised and reclaimed. Each child must wear up to the age of eight years a bead necklace to which a small medal is attached bearing a number. This number corresponds with the entry made in the book that records all that is known about the child. In frames there are diagrams and statistics setting forth, for instance, that while the number of children receiving public assistance in 1848 amounted to 13,000, 50 years later this help was extended to 28,000 children. Then come tables of the average number of children abandoned at the Hospice des Enfants Trouvés in periods of five years. The highest figure was 6800 and this dates back as far as the years 1770–74. In spite of the great increase of population there were only 4700 children thus abandoned from 1893 to 1898. During this century the maximum of abandoned children was 5803 in 1831, and the minimum was 2260 in 1876. Interspersed in different rooms are large glass cases containing elegant and elaborate costumes for ladies and other articles of clothing, embroidery, &c., all made by these abandoned children or other inmates of municipal asylums. There are likewise plans and drawings of various sanatoria, notably that of Hendaye for "scrofulous" children, and a very interesting and large album containing drawings and x ray photographs showing the results attained at Berck-sur-Mer in the treatment of Pott's disease. These were collected by Dr. V. Ménard, the chief surgeon in charge of this great establishment, where there are 710 beds for children needing sea air and sea bathing.

The next compartment is devoted to the meteorological work done by the city and in the centre there is a plan of Paris with a large number of pins so placed as to indicate

the whereabouts of the meteorological stations established in the capital. Attached to this service there is a bacteriological department which systematically and periodically tests and records the amount of microbes found in the atmosphere of the town. At the same time the air is analysed for ozone and for carbonic acid and the apparatus used is shown. Indeed, it is working in this section with the result that while no ozone has been found there is often an excess of carbonic acid. On the walls there are diagrams that represent an immense amount of labour. One gives per season, another per month, the meteorological variations recorded during the last 100 years. Below in the same columns are the variations in the prevailing diseases. Naturally this latter phase of the work is more ample and better classified during the latter part of the century. Still, such information as is available so as to establish the relationship between climate and disease is there, and all on the one chart. The next compartment might be called the municipal business department. It represents the money-realising services controlled by the municipality, such as the public markets, the omnibus lines, the Bercy wine depôt, the cemeteries, the museums, historical monuments, and the like. After that we come to the inspection of the habitation and its sanitary control. Here are models of the disinfecting stations which show how carefully the infected side is separated from the other side and how the attendants purify their uniforms, change all their clothes, and take a douche before they are allowed to go from one side to the other and mix with the general population. Dummy figures represent the attendants in their uniforms and also that worn by the nurses who help to remove the fever cases to the isolation hospitals. On the walls there are diagrams showing the prevalence of various contagious and infectious diseases in different parts of the town and also the quarters where it is necessary to disinfect most frequently. Finally, there are specimens of different clothing materials before and after disinfection. This is an important room for English visitors inasmuch as the French were much behind the English in practising disinfection, but now that it has become the custom their methods and their precautions are more minute and perfect than is usually the case in England. There is consequently a good deal to be learnt here. The next compartment indicates what has been done in organising relief by means of work—that is, in places where, under certain conditions, some sort of work is given and relief is granted when the task has been accomplished. This is a new and interesting institution founded so as to prevent the pauperisation of the destitute. This brings the visitor to the end of the right-hand side of the oblong pavilion of the City of Paris. There still remain the centre, the other side, and the galleries above. The questions of road surveying, drainage, sewage farms, water, gas, electric light, pneumatic motive power, domestic drainage, police, technical and other schools, primary education, &c., have still to be dealt with. Thus it will be seen what large and important exhibits are comprised in this one pavilion, and when from its balconies the visitor looks out on the miles and miles of Exhibition ground, thickly studded with other such pavilions, palaces, and enormous buildings, and thinks that they all contain objects of beauty and of interest, it does not seem like an exhibition but an entire world that is stretched out before him.

Paris, June 10th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Ravages of Famine and Cholera.—The Decline of Plague.—More Plague Rules.

THE enormous area of the famine and the terrible ravages of cholera have put all interest in the plague quite in the background. Although the total numbers under famine relief have not increased much during the past week, nothing could surpass the heartrending accounts of distress which are arriving at Simla from official and non-official sources. In some of the famine districts the mortality from cholera is appalling. In some places the natives refuse all outside assistance and they believe cholera to be a demon who is to be avoided by means of exorcisms and *poojahs* (prayers). At Bhagalpore the medical men tried to purify the wells, but there was such a row about it that they had to desist. As has been repeatedly recorded before, where cholera and plague are concerned ignorance and fear render the natives heartless In some places when a member of the family is attacked by the disease he or she is shut up in the house with a pitcher of water and left to die, while the rest—it may be parents, sister, wife, or husband—run away to avoid the infection. They may return to drag the corpse out of the hut and leave it in the open field to be food for the pariah dogs or the carrion birds. Help or sympathy is utterly wanting. In other places, again, groups may be seen lying beneath the trees, some dead and many dying. No attempt is made to remove the dead. The people have simply sat down there to die and they wait for death.

In view of this widespread and terrible distress it is satisfactory to find that plague is decreasing. The plague mortality throughout India last week was only 1214, as compared with the 1566 deaths which occurred the week before. Calcutta reported 170 deaths; Bombay city 342 deaths; Karachi 139 deaths; and Aden 59 deaths. With the satisfactory decline of plague it is astonishing to hear that the following addition has been made to the plague regulations in Bengal: "In any case in which the subdivisional magistrate or health officer thinks fit he is authorised to isolate the village or part of the village in which a case of plague is believed to have occurred by cordons, patrols, or in such other manner as he may think expedient. ..... No inmate of such village or part of a village shall leave the same or hold any communication with any other persons, and no other persons shall enter the same," &c. When it is known that the present Lieutenant-Governor avoids anything like compulsion in enforcing any of the existing regulations it will be obvious that this will be, as many other rules are, practically a dead letter. The Mahomedans in Benares met on May 11th and resolved to memorialise the Government against the plague rules to be introduced in the city. They have just discovered that they are contrary to the words of the Prophet. It is at least curious that this has not been noticed before. If it has been, however, I have not heard anything about it.

May 17th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending April 28th are as follows: Remaining at the beginning of the week, 70; admitted, 27; died, seven; remaining at the end of the week, 76. The total cases are now 156 and the total deaths are 53; the number discharged recovered is 27. Total "contacts" isolated, 924; "contacts" remaining, 260; cases among "contacts," five.

There is little of interest to record beyond the figures given above, only the number of cases has again approached the highest experienced in any preceding week. The rat-killing crusade hardly flourishes, and, indeed, the prevention of plague, in so far as it depends on destruction of rats, begins to appear impossible. It has been proposed that the ancient sport of ratting should be revived; it is a more hopeful suggestion than many others. In the meantime the capitation fee has been raised to 6*d*. Tubes containing cultures of some bacterium said to be capable of causing an infectious disease among rats have just been received from the Pasteur Institute; it was sent for on the independent testimony of an observer who, after watching its effects, felt sure that such an epidemic had been so caused. It is believed to be Danysz's microbe, but unfortunately has been forwarded accompanied only by those circulars which have been printed for information of the laity. However, it will not take very long to find out its characters and whether it is (as alleged) harmless to domestic animals, &c. The bacillus typhi murium certainly has not in this country the powers ascribed to it and, on the other hand, is fatal to many small birds at all events. It kills only the rats which eat food infected with it; very soon the whole colony becomes frightened and decamps, but no spreading illness is set up by it. This was ascertained in the laboratories of the department more than two years ago with the approach of plague in mind and has been checked by repeated experiments in the

field conducted under circumstances very favourable to observation. In all probability the speaker at the Berlin Conference on plague who suggested that rats especially disliked sulphurous acid because certain factories where water containing this body was constantly present were free from them, was right in his inference. This has long been known here and the practical use made of the knowledge during several years past has been the following. In fumigating ships for the purpose of destroying rats the quarantine staff are accustomed to burn quite small quantities of sulphur in the upper parts for the purpose of driving the rats into the holds and bilges. Retreat being then prevented they are very easily killed by burning more sulphur in the proportion of about three pounds per 1000 cubic feet. Unfortunately, sulphur damages many kinds of cargo, such as sugar, coffee, tea, &c. Still, those who suggest the substitution of carbon dioxide little understand the difficulties or the uses of sulphur. In attempting to prevent the introduction of plague it is absolutely essential that an island should be available on which cargoes might be landed for destruction of rats in them and while the nearly empty holds are fumigated. For obvious reasons cargo could not safely be landed from suspected ships on the mainland; and, indeed, the island should be a small one. But, as regards infected cities, if the plague does not itself kill off the rats how can any other communicable disease be expected to do it? The approach from France of a present of Yersin's serum, heralded with much circumstance, was anxiously regarded. The parcel has now come to hand and has been obligingly presented by the Consul-General, through the hands of the representative of the Pasteur Institute at Sydney. It consists of 120 cubic centimetres of serum and the equivalent of 10 cubic centimetres in dry form. These are very interesting exhibits and now occupy a place of honour on the shelves of the laboratory museum. The cleansing of portions of the city proceeds apace. A good enough thing in itself, it has no effect on the progress of the epidemic. Those who are of opinion that the virus can become localised in the soil will doubtless give it greater value than does the present writer. In other respects it is good exactly as far as it has gone. It is an attempt to repair in a hurry the effects of long neglect, and unless there is reform in the attitude of local authorities towards the health laws and the organisation of which the foundations have been laid by the department, in a few weeks the state of affairs must become as bad as it was before the cleansing. There are signs of an awakening, however. To provide machinery and to see it utterly neglected—to find the central health authority regarded as a local authority and expected to do the work of local authorities in every part of this extensive country—has been a disappointing and even an enraging situation. But epidemics are the sanitarian's opportunity and this one will yield its harvest in due time no doubt.

April 29th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Annual Report of the Medical Officer of Health of Liverpool for 1899.

THE report on the health of the city of Liverpool during the year 1899 by Dr. E. W. Hope, the medical officer of health, is an elaborate octavo volume of 234 pages. It is illustrated with a large map of the city and a diagram showing the birth-rate and death-rate in each of the districts of the city during 1899, together with the number of deaths of infants under one year out of every 1000 born and the estimated population per acre, excluding docks, quays, &c. The figures representing these four rates are printed in different colours, whereby comparisons of the corresponding rates in the 11 districts can be readily made. At the foot of this diagram is shown the birth-rate of the whole city during 1899, which was 33·6 per 1000 of the inhabitants, and the death-rate, which was 24·3 per 1000. The area of the city comprises 20½ square miles with an estimated population of 668,645 persons. The death-rate varied widely in different districts; the lowest death rate was in the Sefton Park district, where it was 10·1 per 1000. The highest was in the Exchange district, where it was 38·7 per 1000. An exceptionally large proportion of deaths occurred in workhouses and hospitals. The death-rate was higher by 0·9 per 1000 than in the preceding year, a fact attributed mainly to the prevalence of influenza which accounted for 203 deaths; but influenza was also associated with a large number of cases of fatal illness involving chiefly the respiratory system. A regrettable feature of the report was the increase in the number of deaths from excessive drinking. Deaths from measles and whooping-cough amongst children were especially deplored and caused 321 deaths and 314 deaths respectively. Dr. Hope again drew attention to the limitation of hospital accommodation; no provision had yet been made for measles and whooping-cough, whilst that for diphtheria was wholly inadequate. An interesting feature of the report was the increasing demand for accommodation in the city infectious hospitals. The present number of beds available for the various forms of infectious sickness is 480. Of these 37 are apportioned to small-pox cases, 20 to typhus fever, 75 to typhoid fever, 288 to scarlet fever, 30 to diphtheria, whilst 30 beds had to be kept for isolation purposes. Plans had been approved by the Local Government Board for the erection of small-pox wards for the accommodation of 44 patients at Fazakerley. Dr. Hope showed that at the lowest computation, based upon a wide experience and embodied in the recommendations of the Local Government Board, Liverpool requires a minimum of 650 beds for ordinary infectious sickness and 100 beds for small-pox. Possibly the recent outbreak of small-pox at the Liverpool Workhouse, which is now happily subsiding, may impress the Health Committee with the necessity for an increase in the number of beds for that disease. In a large seaport like Liverpool, with its extensive immigrant population, the dangers of infection from foreign ports cannot be over-estimated. There has been recorded in THE LANCET of May 26th and June 2nd the importation of a case of small-pox at Queenborough from Russia which found its way to Stalybridge, leading to deplorable results. It is to be hoped that a better supervision is exercised in Liverpool over ships arriving from the Continent; at the same time it would be always possible for an individual in the incubative stage of small-pox to pass muster even at that port, hence the necessity for an ample provision of beds in case of an outbreak of the disease in Liverpool. The steady decline in every form of tuberculosis is a satisfactory proof of the progress of sanitation in Liverpool. The report emphasised the fact that not only had every form of the disease diminished but at every age-period there had been a marked decline in the mortality from this cause; especially had this been the case in the earlier years of life, which was of the first importance. There had been a great increase in the number of references to and from the school board authorities chiefly relating to children who had come from infected houses and who were attending school. Special and systematic visits were made to courts and alleys with the object of ensuring the cleanliness of the domestic offices and the surfaces of the courts. Another satisfactory feature was the diminution in the number of courts and alleys owing to the demolition of low-class property for the extension of business premises or to the removal of insanitary property by the Insanitary Property and Artizans' Dwellings Committee. During the last nine years 733 courts had been demolished. An unsatisfactory feature of the report was the continuance of smoke nuisances to a very serious extent in spite of the infliction of heavy fines. The onerous and responsible work connected with the ambulance and disinfecting departments is fully described in the report and reflects much credit upon the respective staffs. The growing practice of the use of preservatives in the food-supply had been a matter of grave concern to the health authorities. Some of the preservatives under certain conditions had a poisonous effect. The total number of samples taken for chemical analysis was 1522, and the total number taken for bacteriological analysis reached 505. The work of the bacteriologist comprised (1) the examination of foodstuffs of various kinds; (2) regular examinations of water supplied to the city; (3) examinations into suspected cases of rabies, anthrax, glanders, &c.; (4) examinations for diagnostic purposes in suspected cases of diphtheria, typhoid fever, tuberculous sputa, &c.; and (5) special investigations, including the condition of the artificial foods supplied to infants giving rise to summer diarrhœa. The report also deals with the milk-supply to the city much on the same lines as last year, but pointing out that the Health Committee are seeking powers to still further safeguard the importation of milk into the city. The difficulties in the

way of re-housing persons displaced by the demolition of insanitary property, to which reference has been made in a former issue of THE LANCET, are increasing owing to the paucity of empty houses in the vicinity. Allusion is made in the report to the gratifying results which had accrued from the provision of public baths and wash-houses, which had been largely used by the poor of the city. For the purpose of carrying out the requirements of the various sanitary Acts of Parliament and the orders, by-laws, and regulations made thereunder, the staff of the medical officer of health's department consisted of 121 persons, comprising 96 inspectors and superintendents, 21 permanent clerical officials, three notice servers, and one temporary assistant. In every case officers are selected for these positions whose previous training and occupations had been such as to fit them for the special duties which they are called upon to discharge. Some are required to hold the certificate of the Sanitary Institute of Great Britain or a certificate equivalent thereto, others are required to possess marine engineers' first-class certificates, whilst the superintendent ambulance inspector must possess a sanitary certificate and also the certificate of the St. John Ambulance Association. The inspectors of meat and animals are required to be butchers by trade and those of fish and fruit must be fishmongers by trade. There are many other special points in the report which want of space prevents me from enumerating.

June 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Aberdeen University Sports.

THE ninth amateur meeting of the Aberdeen University Athletic Association was successfully held on June 7th and 8th at the University Recreation Ground, King's College. At the conclusion of the contests the Aberdeen team for the inter-University sports was selected.

Aberdeen Volunteer Medical Staff Corps.

The annual inspection of this corps took place in the grounds of the Grammar School on June 9th. There was a capital turn-out, 128 officers and men being on parade. The inspecting officer, Colonel J. P. Rooney, R.A.M.C., principal medical officer for the Scottish district, expressed himself as being exceedingly pleased with the corps.

Bequests to Aberdeen Hospitals.

By the death of Mrs. Macdonald of Kepplestone four hospitals will benefit to the extent of £1400 in all, of which £1000 will go to the Royal Infirmary. There is also a legacy of £100 to the Aberdeen District Nursing Association. All the legacies are free of duty.

June 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Apothecaries' Hall of Dublin.

MUCH satisfaction was felt in Dublin at the decision of the General Medical Council with reference to the examinations of the Apothecaries' Hall as reported in the proceedings of the Council contained in THE LANCET. Reports were received from the inspector, Dr. G. A. Gibson, stating that he had inspected the last three examinations, held in October, January, and April last, and that they were satisfactory in every respect.

The Gas-supply of Dublin.

Ever since the attention of the Dublin public was drawn to the dangers attending the addition of carburetted water-gas to the ordinary illuminating gas supplied to the citizens and to the necessity of precaution with reference to the fittings in houses in order to prevent leakage of a mixture now become more poisonous than heretofore, much anxiety has shown itself. It will be remembered that the above warning was conveyed in a letter addressed by Professor Emerson Reynolds of Trinity College to the Dublin papers some months ago. At a monthly meeting of the Dublin Corporation held on June 11th the matter was under discussion and it appeared that the Alliance and Dublin Consumers Gas Company has recently laid down plant by which they would be enabled to produce 4,000,000 cubic feet of water-gas per day, thus exceeding their present supply by 1,000,000 cubic feet. A proposal made by Alderman Meade was ultimately agreed to—viz., that the question should be referred to the special Gas Committee in order that full information as to the properties of the gas and the danger to life of admixtures of it might be obtained from experts.

The Typhoid Fever Outbreak at Belfast.

The medical superintendent officer of health of Belfast reports that the death-rate for the week ended June 2nd was 19·5 per 1000 from all sources, and 2·8 from the principal zymotic diseases. In the corresponding period of 1899 the death-rate from all causes was 23·1 and from zymotic diseases 1·9 (including only two from typhoid fever). For the week ending June 2nd 57 cases of typhoid fever were notified in Belfast. He also reported that the water-supply of the city was anything but satisfactory, and he advised the boiling of all water to be used for drinking or culinary purposes.

Burning of Newry Workhouse.

Newry workhouse was burned down on the night of June 7th. The local and military fire brigades were at hand, but owing to the want of water they were quite helpless. The infirm patients were carried to the fever hospital which is close to the workhouse, and during the course of removal one of the infirm patients expired and many others were much weakened from shock. It seems that, though repeated warnings were made as to the danger in case of fire and in spite of the master's request for fire appliances the guardians have been wrangling for a year over the question of introducing a water-supply from the town. Naturally great indignation is felt at their remissness. It is said that the fire was caused by the upsetting of a lamp, no gas being in the building. Fortunately there were only 200 inmates and as the fever hospital was empty no difficulty was experienced in providing for their accommodation. It is stated that the damage done will amount to close on £5000, but the place is insured. At a meeting of the Newry guardians on June 9th a sub-committee was appointed to consult with the architect in reference to the rebuilding of the place.

The Royal University Graduates' Association.

The secretaries of this association, which was formed last year (when Mr. Balfour's scheme was under discussion) to oppose the destruction of the Royal University of Ireland and the establishment of universities under sectarian control, have issued a circular to the graduates, who number upwards of 5000, urging them to become members of Convocation, so that no graduate shall be elected a member of the Senate who was in favour of sectarian universities. In this circular a very fair and judicial expression is given of the views of the Graduates' Association on the question of university education. They hold that continuity is essential to the success of a university, and they believe that improvement in Irish university education should be looked for not through destructive legislation, but through reforms in the internal organisation of the university and its associated colleges. They think that if the Royal University was re-organised—and an example in this direction is afforded by the London University—with the view of honestly promoting university education and not sectarian interests, the problem of Irish university education would be solved.

The Belfast Asylum and the Infectious Diseases Hospital.

At the usual monthly meeting of the Belfast Asylum governors held on June 11th, the following resolution, of which notice had been given, was upon discussion passed by 6 to 4 votes :—

That his Excellency the Lord-Lieutenant of Ireland be requested to take such steps as he may consider proper to prevent the erection of an infectious diseases hospital on any portion of the lands of Purdysburn which have been acquired for lunatic asylum purposes.

A very stormy discussion took place at the committee meeting in reference to a verdict of a coroner's jury on a female patient who died in the asylum from phthisis.

June 12th

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Illegal Practice of Medicine by Masseurs and Magnetisers.

THIS question, which is a matter of the highest interest as regards the rights of the medical profession, remains in abeyance, the courts in different departments having given different judgments in absolutely similar cases. In the department of the Sarthe, for instance, illegal practice of medicine flourishes unchecked, thanks to the indulgence afforded to masseurs and magnetisers by the courts, an indulgence which is made manifest by various judgments which by the medical profession are considered to be simply scandalous. The Court of Cassation has just decided to study the question, and although it has not yet given any decision the report of the counsel to whom was entrusted the inquiry is so favourable to the magnetisers that there is great fear of the court giving a decision in accordance with this disastrous opinion. It is true that the duty of the Court of Cassation is to interpret the formal text of the law and not to reform it even when it is manifestly bad. On this view it must be remembered that the law of 1892 which defined the illegal practice of medicine did not specially mention magnetisers. The Government Commissioner who was charged with seeing the Bill through the Chamber was Dr. Brouardel, now Dean of the Faculty of Medicine. In the original draft of the Bill magnetisers were expressly mentioned. The Chamber, however, was not at all prepared to look upon the Bill with favour in view of the opinions of many country electors, among whom bone-setters and quacks of all kinds enjoy great popularity and afford valuable help to the deputies at election times. Dr. Brouardel thought for the moment that the whole Bill would be lost, so he considered it better to make some concessions and the magnetisers were struck out. If the Court of Cassation adheres to the strict letter of the law and declares that magnetisers are not illegal practitioners the door to similar illegal practice will remain open unless some special law is passed to prevent it, which is extremely unlikely. Magnetisers are getting more and more numerous and have founded a school of magnetiser-masseurs which is a regular breeding ground for quacks and which solemnly issues diplomas by the aid of which the recipients make a good thing out of public credulity. They hold regular consultations, put a stop to treatment already recommended, and, not content with using magnetic passes, prescribe magnetised water which has been magnetised by themselves. It is, at first sight, astonishing to see masseurs joining with magnetisers, for they have nothing in common with these latter except in doing illegal practice by attributing medicinal virtues to movements. But masseurs have been formally taken cognisance of by the law from the point of view of illegal practice. Often, too, they have been sentenced by the courts; for instance, only recently the Court of Versailles sentenced a masseur who had treated two fractures and a dislocation, although the prisoner had been acquitted for a like offence by the Court of Mantes, which enunciated the remarkable opinion that the practice of massage was under no restriction whatever. The Court of Versailles, however, rejected this theory, quoting the terms of the law of 1892, which defines illegal practice as the continuous treatment (*diriger d'une façon suivie le traitement*) of surgical diseases or affections by anyone who has not a diploma except in such cases as when urgency is definitely proved. The court further added that the word "treatment" means any act or advice tending to the cure or alleviation of an illness or state of illness and that it must not be arbitrarily confined to a prescription for drugs or to the performance of surgical operations properly so-called. Masseurs, then, whose status is clearly defined have an incentive to associate themselves with magnetisers whose legal status is still indefinite. On the other hand, magnetisers, who are rightly considered by a great part of the public as quacks, have every incentive to pretend that their practices are similar to massage, of which the public hear the benefits lauded by medical men themselves. Here, then, is the explanation of this unnatural combination which at first sight seems inexplicable.

The Carriage of Small-pox by Flies.

At the meeting of the Academy of Medicine held on June 5th M. Hervieux, who has made a special study of the vaccination question, read a report of some observations made by M. Laforgue at Tamorna-Djedida in the province of Constantine. During an epidemic of small-pox at that place M. Laforgue ascertained that the parents of children who were attacked by small-pox all lived in the south-west of the village and that the northern part remained unaffected. He explained this fact as due to the direction of the prevailing winds which blow, especially during March and April. He also noticed that flies and gnats which become very numerous about this time are distributed with the wind. As these insects are known to play an important part in the dissemination of granular conjunctivitis M. Laforgue is of opinion that they act in the same way as regards small-pox, acting as carriers of the specific virus.

Obituary.

Dr. Cadet of Cassicourt died on June 10th at the age of 72 years. He was honorary physician to the Trousseau Hospital and a member and formerly annual secretary of the Legion of Honour. He had a great reputation for his knowledge of infantile pathology and left a large number of works upon that subject, especially the "Treatise upon the Diseases of Children." M. Masson, the well-known medical publisher, has just died. He succeeded his father, Victor Masson, as the head of the most important medical publishing house in France, and the number of medical and scientific journals published by the house amounted to 50. He was librarian of the Academy of Medicine, treasurer of the Association of French Medical Men, President of the Paris Chamber of Commerce, and Commander of the Legion of Honour. He was a man of the highest integrity and had no enemies.

June 12th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Hetol, a Remedy for Tuberculosis.

HETOL, or cinnamate of sodium, has been recommended by Professor Landerer of Stuttgart as a specific against tuberculosis and has been tried by Professor Ewald, whose results as described in a communication made to the *Berliner Klinische Wochenschrift* were less positive than those obtained by the originator of the method. The mode of administration was by injection into the median vein, the amount commencing with one milligramme and rising to 15 milligrammes. The injections were given to 25 patients, of whom one had laryngeal tuberculosis and the others had pulmonary tuberculosis, and all of them were in a stage of the disease in which successful treatment was still possible. The influence of the injections was shown by small hæmorrhages in the sputa; somewhat abundant hæmoptysis being observed only once. Another symptom was a sensation of drowsiness felt by the patients after the injections. The bacilli were not influenced by hetol nor was any effect observed on the perspiration or the temperature. With regard to the influence of the treatment on the general condition of the patients, Professor Ewald stated that in four cases complete success was obtained; in five cases there was an improvement; in six cases the progress of the disease was stopped; whilst in ten instances there was a rapid deterioration. One patient died after having been for 316 days in the hospital and after having had 70 injections. The post-mortem examination showed that the pulmonary tuberculosis had healed, but that there was a well-marked fatty degeneration of the heart which was the cause of death. In 14 cases an increase of weight was observed, but this was the rule with many patients of the poorer class who improved at once after admission to hospital on account of the food and the hygienic conditions being better than in their own homes. As to the patients in whom the disease continued its progress the report stated that seven out of 10 died. The prognosis of these cases was not very bad at the outset, as patients of this kind had not been chosen for the treatment. Professor Ewald concluded that success was obtained in only 8 per cent. of the cases. The results met with in the Augusta Hospital were therefore not in accordance with the experience of Professor Landerer. The method, being harmless, might be tried on a larger scale; but the statistics appeared to be not much better than those furnished by well-conducted sanatoria. In fact, many of the recoveries from phthisis were not due to any specific treatment but to the vital power of the organism when it was assisted by hygienic measures.

The German Ambulances with the Boers.

A second letter from Dr. Hildebrandt, one of the German medical officers to the Red Cross ambulances with the Boer army, has been published in the *Münchener Medicinische Wochenschrift*. In this communication, which was dated from Pretoria on April 7th, he referred to the occurrences after the capture of Jacobsdal by the British troops, a turn of events with which he was well satisfied, not only because the ambulance had then plenty of work, but also because the British authorities were much more agreeable to deal with than the Boers. The members of the ambulance had to pay for food and, in fact, for everything they wanted, and they were hindered in every way when they made requests for the sake of the wounded. The British authorities, on the other hand, met their wishes as much as possible. One of the surgeons and two attendants caught enteric fever. After the battles near Jacobsdal the ambulance had to provide for about 120 wounded soldiers, the majority being serious cases, but it fortunately happened that the wounds inflicted by modern rifle-bullets required operation only very seldom; wounds of the brain, however, where suppuration often ensued had to be operated on in many instances. The majority of intestinal wounds healed by conservative treatment. The ambulance received not only Boers but also British officers and men.

June 11th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Bacillus of Hospital Gangrene.

AT a recent meeting of the Vienna Society of Physicians there was an interesting discussion on the Etiology of Hospital Gangrene. It was introduced by a paper communicated by Dr. Matzenauer, an assistant in Professor Neumann's clinic for syphilis and dermatology, who stated that he had observed 22 cases of hospital gangrene situated on the penis and prepuce. On microscopical examination he found that the ulcers showed an inflammation causing early coagulation-necrosis of the tissues. In all these cases, especially at the junction of the inflamed and the necrotic tissues, there was a bacillus which could be stained by Weigert's method and seemed to be anaerobic. Cultures of the bacillus could be obtained only with difficulty and inoculation experiments did not give any result. Dr. Matzenauer pointed out that these gangrenous ulcers did not produce any enlargement of the inguinal glands. Some of the speakers were of opinion that the cases ought not to be called hospital gangrene, a disease which had hardly been seen for the last 30 years. It was, therefore, improbable that no less than 22 cases of that extinct disease should have occurred in one ward of the clinic in the course of the last three years, and the general opinion of the meeting was that the cases described by Dr. Matzenauer were merely phagedenic chancres and ulcers. On the other hand, it was admitted that the ulcers described by him showed the clinical signs attributed to hospital gangrene by various authors, and that as the bacillus discovered by him was found in all the cases it might be the cause of the disease, even though the experiments made on animals gave no result.

Peculiar Corpuscles in the Blood of Syphilitic Persons.

Dr. Lostorfer of Vienna has published a preliminary communication in which he states that some days after the appearance of a chancre, but before the coming out of the syphilitic eruption, small round corpuscles of the size of the blood-granules, having a peculiar lustre, are to be found in the blood of the patients. These corpuscles aggregate after some hours in groups of from two to 20, forming oblong bodies. After three days they begin to disappear, especially when mercurial treatment has been commenced, and after 20 or 25 inunctions they can no longer be found. Dr. Lostorfer could not find these corpuscles either in the blood of healthy persons or in that of patients suffering from other diseases than syphilis. Professor Paltauf confirmed this statement of Dr. Lostorfer; he said that these corpuscles were not stained with the ordinary staining solutions; they became more visible on the addition of acetic acid, and he believed that they were products secreted by tissues or coagula, but he could not state if they had a specific character. More than 20 years ago Dr. Lostorfer caused an animated controversy among the leading histologists by his alleged discovery of specific corpuscles in the blood of syphilitic patients, but on the present occasion he did not mention whether his recently discovered corpuscles were similar to those found before

June 11th.

Obituary.

GEORGE EDWARD WILLIAMSON, F.R.C.S. ENG.

DEATH has been very busy in the ranks of the medical profession at Newcastle-upon-Tyne during the last 12 months, seven well-known medical men having died. The latest of these is Mr. G. E. Williamson who succumbed to an acute attack of pleuro-pneumonia on Wednesday, June 6th. On the previous Thursday Mr. Williamson did his work in the Royal Infirmary, apparently in his usual health. Before leaving the institution, however, he complained to his house surgeon of not feeling well, and on arrival at his house in Eldon-square he had a rigor and retired to bed. Dr. D. Drummond saw him the same evening and found him to be suffering from an attack of pneumonia which ran a very acute course and terminated fatally on the sixth day. Throughout his illness he was most assiduously attended by his old friend Dr. Drummond and by Dr. J. D. Wardale, who for some years has acted as his assistant in the ophthalmic department of the Royal Infirmary.

Mr. Williamson was born at North Shields 48 years ago and received his medical education at the London Hospital, where he was a distinguished student and held several resident appointments. He also studied for a time in Paris. In 1874 he received the diploma of M.R.C.S. Eng. and in 1875 that of L.S.A.; in 1878 he was admitted F.R.C.S. Eng. He came to Newcastle to be house surgeon in the Royal Infirmary and was subsequently assistant to the late Mr. Heath, until in 1879 he commenced practice on his own account as an ophthalmic surgeon. He had already shown his inclination towards this branch of professional work while attending the Royal Ophthalmic Hospital, Moorfields, and he eventually made a reputation which led to his being appointed ophthalmic surgeon to the Royal Infirmary and lecturer in physiology in the University of Durham College of Medicine in Newcastle. On the death of Professor Arnison a few months ago Mr. Williamson became the colleague of Professor F. Page in the chair of surgery and was engaged up to the time of his death in conducting his operative surgery class.

He was till quite recently honorary secretary and treasurer of the North of England Branch of the British Medical Association and a representative of the branch on the General Council of the Association. At the meeting of the Association in Newcastle in 1893 he presided over the section of Ophthalmology, his address at the opening of the section being on the subjects of refraction testing and medical education in ophthalmology. Mr. Williamson was connected for 12 years as honorary surgeon with the Northern Counties Institution for the Deaf and Dumb and he took a very active interest in the Surgical Aid Society. The deceased was held in the highest esteem by his medical colleagues as well as by a wide circle of friends in the city, and much sympathy is felt for his widow and five young sons. The funeral took place on June 9th at St. Andrew's Cemetery, Moor Edge, in presence of a numerous assemblage.

THOMAS FITZ-PATRICK, M.D., M.A. DUB., M.D. CANTAB., M.R.C.P. LOND.

DR. THOMAS FITZ-PATRICK of 30, Sussex-gardens, Hyde Park, W., whose death is announced, was a distinguished graduate of Dublin University, obtaining his M.D. degree in 1862 and his M.A. in 1864. He was admitted M.D. of Cambridge in 1867 and M.R.C.P. Lond. in 1868. In 1856, the same year in which he was awarded the silver medal of the Pathological Society of Dublin for his work on "Chronic Diseases of the Liver," he indicated his future successes in his profession by passing, at a competitive examination, for the post of assistant surgeon in the service of the Honourable East India Company. His

health, however, soon broke down and after practising for some years in Ireland he settled to private practice in London. He married in 1865 Agnes Letitia, youngest daughter of the late William Robinson, LL.D., of Tottenham, Middlesex, of the Inner Temple, Barrister-at-law, J.P., and deputy-lieutenant of the county. He became a Fellow of the Royal Medical and Chirurgical Society and served as a member of its council in 1894–95; he was also a member of the Clinical Society of London. Dr. Fitz-Patrick was, however, far more than a talented physician. He was a *savant* in its highest sense and a linguist of high order, conversing in Italian, German, and French almost as fluently as in his own language, while his attainments as a classical scholar were far above the average. Moreover, he could read modern Greek with as much ease and pleasure as English. He possessed to a remarkable extent the faculty, so essential to members of the profession, of winning the confidence and attachment of his patients as well as the love and esteem of countless private friends. Unselfish almost to a fault, his thoughtfulness for everyone and his generosity and kindness to all who required help were proverbial, and it may truly be said of him that his right hand never knew what his left hand did. His two books, "An Autumn Cruise in the Ægean, or Notes of a Voyage in a Sailing Yacht," and "A Transatlantic Holiday," proved him the owner of a facile and graceful pen. He was a brilliant conversationalist and a *raconteur* with an absolutely wonderful memory for reciting either prose or poetry. In short he was a man of varied attainments, a steadfast and true friend, and a devoted husband.

JULIUS ALTHAUS, M.D. BERLIN, M.R.C.P. LOND.

THE death is announced of Dr. Julius Althaus in his sixty-eighth year. He was born at Detmold, in Germany, in 1833, where his father was a Lutheran minister. At the age of 17 years young Althaus entered the University of Bonn, intending to study classics, but before long he devoted himself to the subjects of medicine and natural philosophy. In the year 1851 he commenced to study medicine at the University of Gottingen, and thence went to Heidelberg and Berlin, at which last place he was selected by the great physiologist Müller to accompany him on a voyage of research to Sicily. Having taken the degree of M.D. at Berlin he went to Paris, Vienna, Prague, and London to perfect his studies. He finally settled in London, becoming a Member of the Royal College of Physicians in 1860. Having devoted himself mainly to the study of the nervous system and to electrical treatment, he was for some time assistant to the late Dr. R. B. Todd in King's College Hospital. In 1866 he founded the Hospital for Epilepsy and Paralysis in Regent's Park, where he acted as physician for 28 years and to which in 1894 he was unanimously elected consulting physician. He was a voluminous writer, chiefly of books upon electrical treatment and diseases of the nervous system, and his book upon "Failure of Brain Power" reached a fifth edition, the circulation being largely among laymen. Apart from purely professional knowledge he was a man of varied attainments and a good musician. He was a firm believer in the value of and necessity for a holiday, and last year while enjoying one in Switzerland met with an injury to his knee which was the beginning of his fatal illness. Gout supervened, followed by phlebitis and peritonitis, from which last complication he succumbed. His death is mourned by a large circle of patients and friends.

W. T. RADFORD, M.D. T.C.D.

ON May 19th there died at Sidmouth Dr. W. T. Radford at the patriarchal age of 89 years. He was the son of Peter Radford, a well-known physician in the West of England at the beginning of the present century. Dr. Radford was educated at Trinity College, Dublin, where he took the degree of M.D., and being blessed with private means he never practised his profession as a means of livelihood, but devoted himself to science and art. He was one of the earliest members of the Athenæum Club and travelled a great deal upon the continent, studying ecclesiastical architecture. He settled with his brother's family at Sidmount, near Sidmouth. Some 30 years ago it came to his knowledge that the poor, and especially lace-workers, were constantly imposed upon by itinerant vendors of spectacles, a fact which was often the cause of injury to their eyesight. He therefore gave out that he would supply any applicant whom he considered deserving with a pair of spectacles, and in addition he personally saw the applicants and tested their sight. He was a firm supporter of the local cottage hospital and dispensary, the former of which institutions was mainly founded by members of his family.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Heinrich Laudahn, Director of the Lindenburg Asylum, Cologne, at the age of 70 years.—Dr. Leopold Grossmann, the *doyen* of Hungarian ophthalmologists, at the age of 79 years.—Dr. Korsakoff, Professor of Mental Diseases in the University of Moscow, at the age of 48 years.—Dr. Benjamin F. Leonhard, Professor of Gynæcology and Children's Diseases in the Baltimore Medical College.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen have passed the First Professional Examination for the Diploma of Fellow:—

Joseph Ebenezer Adams, St. Thomas's Hospital; Robert Young Aitkin, M.D. Glasg., Glasgow University; Kenneth Anderson, Guy's Hospital; Charles Todd Andrew, Aberdeen University; Austin Lewis Badcock and Eric Bayley, Charing-cross Hospital; Edward Augustine Bell, King's College Hospital; Percy Stanley Blaker, M.R.C.S. Eng., L.R.C.P. Lond., Calcutta Medical College and University College, London; Harold Burrows, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital; John Beuzeville Byles, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Westminster Hospital; John Cameron, M.R.C.S. Eng., L.R.C.P. Lond., M.B., Ch.B. Edin., Edinburgh University; James Alane Coupland, Yorkshire College, Leeds; Maurice A. M. Fitzmaurice-Kelly, St. Mary's Hospital; William Robert Gibson, M.R.C.S. Eng., L.R.C.P. Lond., and John Dawson Hartley, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's and King's College Hospitals; Douglas Gray, Charing-cross Hospital; Edward Erskine Henderson, M.B., B.C. Cantab., Cambridge University, Guy's, and King's College Hospitals; Joseph Tremayne Hicks, Guy's Hospital; Somerville Hastings, Gerald Stephen Hughes, and William Warwick James, L.D.S. Eng., Middlesex Hospital; Robert Jacques, University College, Liverpool, and King's College, London; John Charles Grant Ledingham, B.Sc. Aberd., Aberdeen University; William Archibald Logan, M.B., Ch.B. New Zeal., M.R.C.S. Eng., L.R.C.P. Lond., New Zealand University, Dunedin, and King's College, London; Harold Ashton Lyth, University College, London; James McClure, M.B., C.M. Glasg., M.R.C.S. Eng., L.R.C.P. Lond., Glasgow University; Arthur Ronald McLachlan, M.R.C.S. Eng., L.R.C.P. Lond., Guy's Hospital; Thomas Holmes Middleboro', M.D. Toronto, M.R.C.S Eng., L.R.C.P. Lond., Toronto University, Canada, and Middlesex Hospital; Harry Overy, Edinburgh and St. Andrews Universities; John George Pardoe, M.B., C.M. Aberd., M.R.C.S. Eng., L.R.C.P. Lond., Aberdeen University and King's College London; John Herbert Parsons, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., University College and Royal Infirmary, Bristol, and University College, London; Carrick Hey Robertson, and Robert Pugh Rowlands, M.R.C.S. Eng., L.R.C.P. Lond., Guy's Hospital; Percy Wm. George Sargent, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Cambridge University, and St. Thomas's Hospital; Arthur Reginald Schofield and Hugh Barnard Willoughby Smith, London Hospital; William Edward James Tuhoy, Guy's Hospital; Herbert George Tymms, M.B., B.S. Melb., M.R.C.S. Eng., L.R.C.P. Lond., Melbourne University, St. Bartholomew's Hospital, and King's College, London; Sidney James Wareham, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond., Charing-cross Hospital; Noel Everard Waterfield and Herbert Victor Wenham, St. Bartholomew's Hospital; John Harry Watson, M.R.C.S. Eng., and L.R.C.P. Lond., University College and Royal Infirmary, Liverpool, and King's College, London; Moses Thomas Williams, London Hospital; Bertram Shera Wills, M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's Hospital.

Of the 113 gentlemen who presented themselves for this examination, 44 passed and 69 were referred.

The following gentlemen having passed the necessary examinations and conformed to the by-laws and regulations, have been admitted Fellows of the College in the order of their seniority as Members:—

Thomas Richard Mulroney (Major I.M.S., Bengal), M.D. Malta, L.R.C.P. & S. Edin., Bombay and King's College, London, date of Membership, Jan. 19th, 1880; Frederic Victor Milward, M.B., B.C. Cantab., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital, Member Feb. 7th, 1895; Hugh Mallinson Rigby, M.B., B.S. Lond., L.R.C.P. Lond., London Hospital, Member Feb. 7th, 1895; John Shields Fairbairn, M.B., B.Ch. Oxon., L.R.C.P. Lond., Oxford University and St. Thomas's Hospital, Member Nov. 14th, 1895; Louis Bathe Rawling, M.B., B.C. Cantab., L.R.C.P. Lond., St. Bartholomew's Hospital, Member August 4th, 1896; Stephen Frederick Lynch, L.R.C.P. Lond., King's College Hospital, Member Feb. 11th, 1897; Malcolm Goodworth Dyson, L.R.C.P. Lond., St. Bartholomew's Hospital,

Member May 13th, 1897; Donald John Armour, M.B. Toronto, M.R.C.P. Lond., M.C.P. & S. Ont., University of Toronto, Canada, and University College, London, Member July 8th, 1897; William Douglas Harmer, M.B., B.C. Cantab, L.R.C.P. Lond., St. Bartholomew's Hospital, Member August 2nd, 1898; Walter John Henry Hislop, M.B., C.M. Edin., L.R.C.P. Lond., St. Bartholomew's Hospital, Member August 2nd, 1898; Herbert Sherwell Clogg, M.B. Lond., L.R.C.P. Lond., Charing-cross Hospital, Member Nov. 10th, 1898; Lawrie Hugh McGavin, L.R.C.P. Lond., Guy's Hospital, Member Nov. 10th, 1898; Arthur Webb Jones, L.R.C.P. Lond., St. Thomas's Hospital, Member Feb. 9th, 1899; Thomas Holmes Middlebro', M.B. Toronto, L.R.C.P. Lond., University of Toronto, Canada, and King's College, London, Member Nov. 2nd, 1899; and John Percy Lockhart Mummery, L.R.C.P. Lond., St. George's Hospital, Member Nov. 2nd, 1899.

Of the 32 gentlemen who presented themselves for this examination 15 passed and 17 were referred.

UNIVERSITY OF CAMBRIDGE.—The following degrees were conferred at the Congregation on June 7th:—

Doctor of Medicine.—L. Falkener, M.A., King's; A. H. Thompson, M.A., Trinity; W. J. Harris, M.A., Christ's.

Bachelor of Medicine.—N. J. McCaskie, B.A., and E. A. Wilson, B.A., of Caius; J. E. Linnell, B.A., of Selwyn.

Bachelor of Medicine and Bachelor of Surgery.—J. G. Taylor, B.A., King's; W. P. S. Branson, B.A., Trinity; C. E. Marriott, B.A., Clare; E. Cox, B.A., and W. M. Willoughby, B.A., Caius; H. G. Cooper, B.A., Emmanuel.

Bachelor of Surgery.—L. Falkener, M.A., King's; T. S. Taylor, B.A., King's; W. L. Ascherson, non-collegiate.

The Raymond Horton-Smith Prize for the best M.D. thesis of the year has been awarded to Mr. Alan Baldrey Green, M.A., M.B., B.C., of Downing College. His subject was "Amyloid Disease."—Dr. G. H. F. Nuttall has been appointed University Lecturer in Bacteriology and Preventive Medicine.—The election to the Knightbridge Professorship of Moral Philosophy, vacant by the resignation of Dr. Sidgwick, will be held on June 30th.—Mr. G. F. C. Searle of Peterhouse has been appointed University Lecturer in Physics.—The Right Hon. A. J. Balfour, M.P., will deliver the inaugural lecture of the University extension summer courses on August 2nd.

THE MIDDLESEX HOSPITAL. — Miss Palmer Lovell has forwarded the sum of £315 to the treasurers of this hospital to endow a bed for the remainder of her life.

PRESENTATION TO A MEDICAL MAN. — On June 3rd, in the waiting-room of the Great Western Railway-station, Frome (Somerset), the members of the railway employés' ambulance class were presented by Mrs. Chill with badges and certificates of the St. John Ambulance Association. Mr. Edwin Albert Chill, M.D., C.M. Edin., was presented with a framed photographic group of the class as a mark of appreciation of his services as honorary instructor.

VACCINATION LAW.—At the last meeting of the Lampeter (Wales) Board of Guardians it was reported that the two youngest children of a medical practitioner in Lampeter were unvaccinated, the father having given certificates under his own signature of the unfitness of his children to be vaccinated on the ground that one was suffering from "anæmia" and the other from "neurasthenia." The question arose whether certificates given by a medical man in respect of his own children would be sufficient if the certifier were summoned for non-compliance with the vaccination law and the guardians had requested the medical practitioner to allow an independent medical man to examine the children, but this had not been permitted. The guardians eventually decided to consult the Local Government Board upon the matter.

FREEMASONRY.—*The Rahere Lodge, No. 2546.*—The installation meeting of the Rahere Lodge, No. 2546, was held in the Great Hall of St. Bartholomew's Hospital on Tuesday, June 12th. Bro. J. H. Drysdale, M.D., was elected a joining member. Bro. the Rev. Sir Borradaile Savory, Bart., and Bro. Cross were re-elected members of the standing committee, and Bro. A. W. Izard was elected a member of this committee. Bro. Reece, the W.M., installed his successor, Bro. Walter Gripper, P.P.G.D. Surrey, as W.M. for the ensuing year. A past-master's jewel was awarded to Bro. Reece, and Bro. Gripper, in the name of the Lodge, presented Bro. D'Arcy Power with the jewel of a P.G.D. in recognition of his services to the Lodge in the capacity of secretary and as a token of their appreciation on his appointment to the office of a Junior Grand Deacon. The report of the Audit Committee was received and adopted. The brethren and their guests to the number of 90 afterwards dined together at the Restaurant Frascati.

NEWPORT (MON.) WATERWORKS.—The total expenditure by the Newport Corporation on the Wentwood Waterworks up to the present has been £207,808.

THE NEW INFIRMARY, WARRINGTON. — This infirmary has been formally opened by Sir J. T. Hibbert, Chairman of the Lancashire County Council. It has been erected by the Warrington Board of Guardians at an outlay of £30,000 and will provide 184 beds.

THE BECKENHAM AND PENGE MEDICAL SOCIETY.—The fifth annual dinner of the Beckenham and Penge Medical Society took place on Thursday evening, May 31st, at Beckenham and was well attended by members and guests. Among the latter were Dr. J. G. Glover (Direct Representative on the General Medical Council), Dr. Handfield-Jones, and Mr. Arbuthnot Lane. Mr. Victor Horsley sent a message regretting his inability to be present. Dr. R. M. H. Randell, Vice-President of the Society, occupied the chair. Mr. Frank Sturges, in proposing the toast of "The General Medical Council," spoke of the work of the Council generally in terms of praise, and claimed for his society and for kindred associations the credit of having by their work impressed upon the Council a clearer idea of what was expected from them as the governing body and the mouthpiece of the profession. That the Council were now alive to their responsibility was shown by their energy and public spirit which in the last few years had become so increasingly apparent. Alluding to the Midwives Bill Mr. Sturges said that the Beckenham and Penge Medical Society were now of opinion that some legislation was necessary and even desirable, but they trusted to the Council to continue to use all their influence against any Bill which went further than simply to replace the present midwife, a danger to life and society, by a class of well-trained women of good character properly instructed as to where their duties began and ended. Referring to the proposed conciliation board Mr. Sturges expressed the opinion that in such a way the club difficulty could be overcome. He was proud of the action of his society on this question. Charity had nothing to do with it. The more important friendly societies were wealthy and powerful organisations, and that they should pay properly for medical attendance under proper regulations was simply a matter of business into which sentiment had no right to enter. In coupling the toast with the name of Dr. Glover Mr. Sturges said how completely they disapproved of the way in which the remnant of the Cannon-street meeting had treated their Direct Representative. They (the Beckenham and Penge Medical Society) had actively assisted in the promotion of that meeting because they disliked much in the present Midwives Bill and believed that the profession should speak out, but the methods of the promoters were distasteful to them and in future they should act by themselves. He trusted that the vote of sympathy and confidence unanimously carried at a large meeting of the society was some slight consolation to Dr. Glover. In his reply Dr. Glover thanked the society on behalf of the Council. He quite agreed as to the necessity for the restriction of the functions of the midwife as distinguished from the medical practitioner. He especially insisted that any legislation of the sort must, in the interest of the poor lying-in woman, stop the practice of unlicensed midwives, otherwise it would be quite valueless and should be resisted. He was glad to know that the proposal of a conciliation board had the approval of the society. The success or failure of the scheme rested very much with the British Medical Association. In conclusion, Dr. Glover thanked the society for their words of personal kindness and support. The Rev. Henry Arnott, F.R.C.S., rector of Beckenham, in proposing the toast of "The Beckenham and Penge Medical Society" spoke of the value of such societies in increasing professional knowledge and promoting fellow-feeling and a kindly spirit one to another, but he urged the society to follow the lines of the Royal Medical and Chirurgical Society and the Pathological Society of London, and to leave medico-political questions to be dealt with by the General Medical Council and the British Medical Association. Dr. Randell, in his reply for the society, maintained that it was part of their duty to take an active interest in all public questions vital to the profession, that knowledge was gained and opinion formed by debate, and that those in authority could act with far greater force if they knew that the voice of the profession was with them.

THE NEW WORKHOUSES AT LADYWELL, LEWISHAM. — These new buildings, erected by the St. Olave's Board of Guardians to provide accommodation for the aged and infirm poor of Lewisham, will be opened by the Prince and Princess of Wales on July 12th.

A GIFT TO BOURNEMOUTH.—Mr. Robert B. Scarlett, proprietor of the Shelley estates, on June 5th presented to the Mayor, in the presence of a large assembly of the inhabitants, as a gift to the borough in perpetuity, the new pleasure grounds on the cliff front.

COST OF VACCINATION.—At the last meeting of the Barnstaple (Devon) Board of Guardians it was reported that there had been 769 cases of successful vaccination during 1899, against 559 in 1898, the cost for 1899 being £434, and that for the previous year amounting to £122.—At the last meeting of the Merthyr Tydvil Board of Guardians one of the members said that comparing the year 1898 with 1899 the fees of the public vaccinators in the union had advanced from £285 to £905, and the fees of the vaccination officers from £101 to £180. It was decided to petition the Local Government Board to amend the Vaccination Order with a view to the reduction of the fees.—At the last meeting of the Neath (South Wales) Board of Guardians a letter was read from the Local Government Board in reference to the suggestion of the guardians for a reduction of the fees of the public vaccinators. The Local Government Board stated that it was intended at present not to reduce these fees, as under the new system the duties of public vaccinators had become so arduous.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED.—The monthly meeting of this society was held on May 29th, at 12, New-court, Lincoln's Inn. The report of the Charity Commissioners in reference to the Leek Cottage Memorial Hospital, concerning which complaint had been made by the society on behalf of one of its members, was laid before the council, several alleged irregularities being dealt with therein. The council authorised the formation of a new division of the society for the province of Ulster, and approved the list of officials, Dr. Alexander Dempsey of Belfast being the first president and Dr. S. W. Allworthy the secretary. Steps were reported to have been taken for the formation of a Yorkshire division. The secretary reported that the General Medical Council had decided to erase from the Dental Register the name of a dentist who had been charged by the society with advertising, this being the first instance in which the General Medical Council had so exercised its powers. 166 new members had joined the society since the annual general meeting in April. A satisfactory financial report was submitted.

ANNUAL MEETING OF THE BRITISH MEDICAL TEMPERANCE ASSOCIATION.—The annual meeting of this association was held on June 12th at the Examination Hall, Victoria Embankment, London, after a reception by the President (Professor Sims Woodhead) and council of medical and scientific delegates to the World's Temperance Congress which was being held in the same building. The annual report was read by the honorary secretary, Dr. J. J. Ridge, and showed an increase both of members and student associates to 487 and 515 respectively. The report expressed the hope that as it had been conclusively demonstrated that men could do harder and more continuous work without than with alcohol, the rum ration should be abolished and the canteen purged from intoxicating drinks. It was announced that a Manchester branch had been formed of which Dr. A. T. Wilkinson had been elected president and Dr. Gray Clegg honorary secretary. Dr. Legrain and Dr. Boisser of Paris were elected honorary members of the association. Votes of thanks were accorded to the President and officers. Previously to the meeting a demonstration, with the aid of the electric lantern, had been given by Dr. Ridge in the lecture theatre of Scientific Reasons for Total Abstinence. He showed that healthy cell-life, both vegetable and animal, was impossible in the presence of minute quantities of alcohol, while by its interference with oxidation and the removal of waste products it injured the proper performance of every function. A novel experiment shown was the influence of even 1 per cent. of alcohol on the oxygen-producing function of the chlorophyll of water-plants, which it greatly diminished. The presence of alcohol, while it lowered vital function, even of the yeast which produced it, favoured and accelerated decomposition. The cumulative effect of small "moderate" doses was proved by the experience of life assurance offices and friendly societies, the difference in favour of the abstainers being much more marked after the age of 60 years, when the degenerations caused by alcohol had had time to take place. Diagrams prepared by Dr. Legrain were shown indicating how the increasing consumption of alcohol in France and Belgium was accompanied by the increase of crime, &c., and the proportion of conscripts rejected, these diminishing in Sweden and Norway, where the amount of alcohol consumed was lessening. There was a large attendance at this demonstration.

NATIONAL SANATORIUM FOR CONSUMPTION, BOURNEMOUTH.—The annual general meeting of governors of this institution was held at the Westminster Palace Hotel on June 13th. In the unavoidable absence of the Earl of Eldon (the President), Mr. Arthur F. Jeffreys, M.P., occupied the chair. It was resolved that the report and statement of accounts for the year 1899, as submitted, should be adopted and printed. Sir Edward H. Hulse, Bart., the Hon. T. A. Brassey, and Mr. D. H. W. Robson-Burrows were appointed trustees. The report showed that there was a debt of £655 for the building of a new sanitary wing at a cost of £1000, and that the ordinary annual expenses had been increased to the extent of about £200, due mainly to the expenditure requisite for efficiently carrying out the open-air treatment, and that this further sum would be required to meet the expenses of the present year. With the concurrence of the President, and of the Earl of Mount Edgcombe and Lord Wimborne, the vice-patrons, it was resolved that a special appeal should be issued to the general public for donations and subscriptions.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALLEN, V. F., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Pentney Sanitary District of the Freebridge Lynn Union.

ANDERSON, W., M.B., C.M. Edin., has been appointed a Public Vaccinator for the District of Wairau, New Zealand.

BELL, H. T. S., F.R.C.S. Eng., has been appointed Health Officer at Wallungarra, Queensland.

BINNEY, E. H., M.B., Ch.M. Syd., has been appointed Honorary Surgeon to the Children's Hospital, Sydney, New South Wales, vice W. Chisholm, resigned.

BOWKER, C. S., L.R.C.P. Lond., M.R.C.S., has been appointed Government Medical Officer and Vaccinator at Dungog, New South Wales.

BUCHANAN, P., M.B., C.M. Glasg., has been re-appointed Medical Officer by the West Dean Rural District Council.

CARR, MICHAEL, L.K.Q.C.P., L.R.C.S. Irel., has been appointed Officer of Health for the Shire of Woorayl, Victoria, Australia.

CODD, A. F. G., M.B. Durh., F.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory Acts for the Bromley District, comprising Bromley Urban District and the Civil Parishes of Keston, Cudham, Downe, Farnborough, Chelsfield, Knockholt, Hayes, and West Wickham in Bromley Rural District.

COURTENAY, K. J., L.R.C.P., L.R.C.S., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Wareham and Purbeck Rural District, vice D. Lys, resigned.

CROSSFIELD, ARTHUR KYFFIN, L.R.C.P., L.R.C.S. Edin., has been appointed Public Vaccinator for Dartmouth, Devon.

EADON, S. B., M.D., Ch.M. Aberd., has been appointed Officer of Health for the Shire of Karkarooe, Victoria, Australia.

ELLIOT, F. J., M.R.C.S., has been appointed Officer of Health to the Donnybrook Local Board of Health, West Australia.

FLINT, J. B., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Buxton District, which comprises the Urban Districts of Buxton and Fairfield, and the Townships of Hartington Upper Quarter, Wormhill, Kingsterndale, and Peak Forest in Chapel-en-le-Frith Rural District.

FREEMAN, JOHN, L.R.C.P. Lond., M.R.C.S., Civil Surgeon, has been appointed Officer in Medical Charge of Troops at Plymouth, vice R. Turner, Lieut.-Colonel, placed on the sick list.

HAYWARD, W. T., L.K.Q.C.P. Irel., M.R.C.S., has been appointed a Member of the Board of Management of the Adelaide Hospital, South Australia.

HEPWORTH, A. F., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Officer of Health for the Shire of Tungamah, Victoria, Australia.

HIGGINSON, C. G., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer of the Infirmary for the Parish of Birmingham, vice J. O. Dowd, resigned.

KELLY, C., M.D. Lond., F.R.C.P., has been re-appointed Medical Officer of Health, West Sussex Combined Sanitary District.

KENDALL, WALTER BENGER, M.R.C.S., L.R.C.P. Edin., has been appointed Public Vaccinator for Kingswear, Devon.

LIDDLE, P. H., M.B., Ch.B. Melb., M.R.C.S., has been appointed Officer of Health for the Western Riding of Warranga, Victoria, Australia.

MARKS, E. G. K., M.D., Ch.M. Irel., has been appointed Visiting Surgeon to the Police Gaol at Herberton, Queensland.

MORTON, G., M.B. Syd., has been appointed Senior Medical Officer to the Hospital for the Insane, Gladesville, New South Wales.

MUIR, J. S., M.B., C.M. Edin., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Selkirk District.

PAGET, OWEN, F., M.B., B.S. Cantab., has been appointed Health Officer to the North Fremantle Local Board of Health, West Australia.

PEIPERS, F., M.D. Berl., has been appointed a Public Vaccinator at Milawa, Victoria, Australia.

PONDER, C. F., M.B., Ch.M. Edin., has been appointed Government Medical Officer and Vaccinator at Hillston, New South Wales.

PRICE, S. E., L.S.A., has been appointed Medical Officer for the Ninth Sanitary District of the Bromley Union, vice C. N. Hamper, resigned.

RAMSAY, J. E., M.B. Lond., has been appointed Officer of Health to the Lennonville and Mount Magnet Local Boards of Health, West Australia.

RENDLE, R., F.R.C.S. Eng., has been appointed Medical Officer and Visiting Surgeon to the Gaol at Normanton, Queensland.

ROBINSON, T. H., M.D. Edin., Ch.M., has been appointed to act as District Medical Officer at Albany, West Australia, and Public Vaccinator for the Urban and Suburban Districts of Albany and Rural District of Plantagenet, also to be Quarantine Officer, *pro tem.*, at the Port of Albany.

ROOKE, C., M.R.C.S., has been appointed Health Officer and Medical Officer to the Police, Gaols, and Paupers for the Municipal District of Emu Bay, and also Public Vaccinator for Emu Bay, Tasmania.

ROPER, HENRY, B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Deputy Medical Officer for Lynton, Devon.

SANGSTER, J. I., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer at Kooringa, South Australia.

SCHLINK, R. H., M.D. Berl., has been appointed a Public Vaccinator at Wodonga, Victoria, Australia.

SMITH, W. R., M.B., M.Ch. Edin., has been appointed Honorary Physician to the Adelaide Hospital, South Australia.

STEWART, J. E. F., M.B., Ch.M. Glasg., has been appointed to act, *pro tem.*, as District Medical Officer at Guildford, West Australia, and Public Vaccinator for the Urban and Suburban Districts of Guildford, and also the Rural District of Swan.

THANE, E. H., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Government Medical Officer and Public Vaccinator at Wagga Wagga, New South Wales.

THWAITES, J. S., M.B. Melb., has been appointed a Public Vaccinator at Woodend, Victoria, Australia.

TREVOR-ROPER, G. D., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Massingham Sanitary District of the Freebridge Lynn Union.

WALES, T. G., M.R.C.S., has been re-appointed Medical Officer of Health by the Downham Market Urban District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM CITY ASYLUM, Rubery-hill, Barnt-green, S.O., Worcestershire.—Senior Assistant Medical Officer.

BOROUGH OF BOOTLE, HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Superintendent, unmarried. Salary £120 per annum, with board, washing, and apartments in the hospital. Applications to be addressed to the Chairman of the Hospital Sub-committee, Town-hall, Bootle.

BOROUGH HOSPITAL, Birkenhead.—Resident Junior House Surgeon. Salary £75 a year, with certain fees usually obtained.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board).

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer for twelve months. Salary £60 per annum.

CITY OF LONDON ASYLUM, near Dartford, Kent.—Assistant Medical Dfficer (Locum Tenens) for seven weeks. Terms 3 guineas a week.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CORPORATION OF MANCHESTER.—MONSALL FEVER HOSPITAL.—Third Medical Assistant for one year. Salary £100 per annum, with board and lodgings. Applications to the Sanitary Committee, Public Health Office, Town Hall, Manchester.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125 per annum, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

COUNTY ASYLUM, Whittingham, Lancashire.—Junior Assistant Medical Officer, unmarried. Salary commencing at £125 per annum, increasing conditionally to £250, with furnished apartments, board, attendance, and washing.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Locum Tenens. Terms 3 guineas per week, with board and residence.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for one year, unmarried. Salary £60, with board, lodging, and washing.

ESSEX AND COLCHESTER HOSPITAL, Colchester.—Resident House Surgeon. Salary £100 per annum, with board and washing.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25. Also Surgeon.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

ITALIAN HOSPITAL, Queen-square, London, W.C.—Honorary Ophthalmic Surgeon to Out-patients.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square.—Second Demonstrator of Physiology.

MERTHYR TYDFIL URBAN DISTRCT COUNCIL.—Medical Officer of Health for five years. Salary £400 per annum, rising £25 annually to a maximum of £500 per annum, exclusive of out-of-pocket expenses.—Applications to the Clerk, Town Hall, Merthyr Tydfil.

MIDDLESEX HOSPITAL, W.—Assistant Dental Surgeon.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary £60 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Registrar. Annual honorarium 50 guineas.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer, unmarried. Salary £125, rising £10 annually to £175, with board, furnished apartments, washing, and attendance.

NORTHUMBERLAND, DURHAM, AND NEWCASTLE INFIRMARY FOR DISEASES OF THE EYE, St. Mary's-place, Newcastle-on-Tyne.—Honorary Surgeon.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—A Senior and a Junior House Surgeon for one year. Salary £85 and £70 per annum respectively, with board, residence, and washing. Also Locum Tenens, for at least one month. Terms 4 guineas per week, with board and residence.

PARISH OF ST. LEONARD, Shoreditch, London.—Second Assistant Medical Officer for the Infirmary, Hoxton-street, N., for six months. Salary £80 per annum, with rations, washing, and furnished apartments in the Infirmary. Applications to the Clerk to the Guardians, Clerk's Offices, 213, Kingsland-road, N.E.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising by five equal annual additions to £150 per annum, with furnished apartments in the Asylum, with board and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 a year, with board, lodging, and washing.

ROYAL BERKSHIRE HOSPITAL, Reading.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road.—Assistant Surgeon.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor, Isle of Wight.—Clinical Assistant. Board, residence, and laundry provided.—Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months. Salary at the rate of £100 per annum, with residence and partial board.

ST. GEORGE'S HOSPITAL, London, S.W.—Surgeon. Also Assistant Surgeon.

ST. PANCRAS, London.—Junior Assistant Medical Officer (male or female), for one year, for the St. Pancras Workhouse. Honorarium £60, and residential allowances.

SALISBURY GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and washing.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SOMERSET HOSPITAL, CAPE TOWN.—Assistant Resident Surgeon. Apply to the Medical Officer at the Agency, 112, Victoria-street, S.W.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon for two years, unmarried. Salary £100 per annum, with board, lodging, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

THE CHIEF INSPECTOR OF FACTORIES gives notice of the following vacancies for Certifying Surgeons under the Factory Acts:—At Wolverton, in the county of Buckingham; at Ringwood, in the county of Southampton; at Gillingham, in the county of Dorset; and at Southport, in the county of Lancaster.

THE SECRETARY OF STATE FOR THE HOME DEPARTMENT gives notice of the following vacancy:—Medical Referee under the Workmen's Compensation Act, 1897, for Haverfordwest, Narberth, and Pembroke Dock in County Court District No. 31.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £80, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the Hospital.

WANDSWORTH AND CLAPHAM UNION INFIRMARY, St. John's-hill, near Clapham Junction, S.W.—Junior Assistant Medical Officer for twelve months. Board, lodging, and washing provided, and £35 at the end of each six months.

WEST DERBY UNION.—Resident Assistant Medical Officer (unmarried) at the Mill-road Infirmary, Everton, Liverpool, for one year. Salary £100 per annum, with rations. Subject to statutory deduction. Applications to the Clerk to the Guardians, Brougham. terrace, Liverpool.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Honorary Physician. Also House Surgeon, unmarried. Salary £75 per annum, with board and residence and 10s. a month for washing.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BATTERHAM.—On June 8th, at Grand-parade, St. Leonards-on-Sea, the wife of J. W. Batterham, M.B., F.R.C.S., of a son.

EARDLEY.—On June 9th, at Cantley Lodge, Goole, the wife of William Eardley, M.A., M.B., B.C. Cantab., of a daughter.

EVANSON-JONES.—On June 6th, at Ashton Old-road, Openshaw, the wife of E. Evanson-Jones, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of a daughter.

LEWIS.—On June 8th, at Willingham, Cambs, the wife of Robert Travers Lewis, M.B. Dub., of a daughter.

PAGET.—On June 5th, at Westbourne, Tenterden, Kent, the wife of Peter Paget, M.R.C.S., L.R.C.P. Lond., of a daughter.

PHILLIPS.—On June 7th, at Long-street, Devizes, the wife of George C. Phillips, M.A., M.D. Cantab., of a son.

SMYTH.—On June 10th, at Bournemouth, the wife of W. Johnson Smyth, M.D., C.M., of a son.

WALKER.—On June 9th, at Dawson-place, W., the wife of Basil Woodd Walker, M.D., of a son.

WHISTLER.—On May 26th, at Stockland Vicarage, Bridgwater, the wife of the Rev. Charles Watts Whistler, M.R.C.S., of a daughter.

YOUNG.—On June 7th, at 45, Stamford-hill, N., the wife of John Young, M.D., B.S., of a son.

MARRIAGES.

BALLARD—COMBE.—On June 12th, at St. Mary's, Chester, by the Rev. W. N. Mayne, assisted by the Revs. H. Grantham (Rector), H. H. Wright, and T. P. Dimond Hogg, Robert Ballard, M.R.C.S., L.R.C.P., youngest son of the late Edward Ballard, M.D., F.R.C.P., F.R.S., to Beatrice, youngest daughter of the late James Combe, of Ormiston, co. Down, J.P., and Mrs. Combe, of Glan Aber, Chester.

EASTON—HOWLAND.—On June 6th, at Interlaken, Switzerland, Frank Edward Easton, M.R.C.S., L.R.C.P., of Devonport-street, Hyde-park, to Alice Muriel, eldest daughter of the late William Holmes Howland, of Toronto, Canada.

GAUSSEN—KENNEDY.—On June 6th, at Donaghendry Church, Stewartstown, David P. Gaussen, M.D., of Dunmurry, co. Antrim, to Ethelind, only daughter of C. G. B. Kennedy, J.P., Mullantean, Stewartstown, co. Tyrone.

GILPIN—BOTT.—On June 6th, at the Parish Church of St. Pancras, by the Rev. C. C. Brookes, William John Gilpin, M.R.C.S., L.R.C.P., of Brook Lodge, Bourne, to Ada, widow of the late Arthur Bott, of Bourne, Lincolnshire.

ISAAC—THOMAS.—On June 5th, at Tabernacle Chapel, Morriston, Richard James Isaac, L.R.C.P. & S. E., elder son of the late Evan Isaac, Esq., Craigafon, Pontardulais, to Blodwen Mary, eldest daughter of the late Henry Thomas, Esq., Aberdare House, Pontardulais.

LONG—BEADLES.—On June 12th, at Christ Church, Forest-hill, by the Rev. William Longe (uncle of the bridegroom), assisted by the Rev. Gustavus Jones (Vicar) and the Rev. M. Persse Maturin, John Reginald Long, M.R.C.S., L.R.C.P., son of Arthur Long, M.R.C.S., of Dover, to Henrietta Annie, eldest daughter of Arthur Beadles, M.R.C.S., of Forest-hill.

ROGERS—PARKER.—On June 7th, at the Church of the Annunciation, Chislehurst, Kenneth Rogers, M.D. Lond., M.R.C.S., L.R.C.P., of Alford, Bromley, Kent, to Elizabeth Hope, third daughter of Archibald Parker, of Camden Wood, Chislehurst.

SMALLWOOD—COCK.—On June 7th, at S. Stephen's Westbourne-park, Robert Percy Smallwood, M.D., son of the late Robert Smallwood, of Rigby Hall, Bromsgrove, to Annie Elizabeth, younger daughter of the late Frederick Cock, M.D., of Porchester-houses, W.

SNELL—REID.—On June 14th, at the Roxburghe Hotel, Edinburgh, by the Rev. Alexander Badenoch, M.A., assisted by the Rev. Bernard J. Snell, M.A., B.Sc., Ernest Hugh Snell, M.D., B.Sc., of Coventry, to Mary Katharine, second daughter of the late William Reid of Dunfermline, N.B.

DEATHS.

ALTHAUS.—On June 11th, at Queen Anne-street, Cavendish-square, W., Julius Althaus, M.D., M.R.C.P. Lond., aged 67 years.

EDWARDS.—On June 6th, at Felixstowe, George Cordy Edwards, M.R.C.S., late of Ipswich, in his 81st year.

LIGHTFOOT.—On June 5th, at Saville-place, Newcastle-on-Tyne, suddenly, Charles L. Lightfoot, M.D., M.R.C.S., aged 38 years.

MERRYWEATHER.—On June 11th, at Guisborough, Yorkshire, James Merryweather, M.R.C.S., aged 68 years.

WILLIAMSON.—On June 6th, at Eldon-square, Newcastle-on-Tyne, George Edward Williamson, F.R.C.S. Eng., aged 48 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE SEXUAL QUACK.

WE have from time to time in these columns animadverted upon the circulars of "Dr." Bell, of the degraded blackguard who styles himself the "Reverend" David Jones (THE LANCET, Dec. 19th, 1896, p. 1774), of Madame Frain, and others, but for barefaced filth we have rarely seen anything to come up to a circular issued by an Oriental named Kabiraj Jasoda Handan Sircar whose wares are sold in Calcutta. According to the circular this person banks with Messrs Thacker, Spink, and Co., an announcement which may or may not be true. Abominable as the circular is it has one good point—namely, it is quite free from the disgusting cant and appeals to the Almighty which disfigure the effusions of David Jones. Kabiraj Sircar is an accommodating person. Does anyone wish for a large family he can obtain the desired result by taking or giving to his wife the Great Rasanayam at four rupees per ounce. Half an ounce is to be taken daily for apparently 41 days. Should he not wish for children, "use our linen which we will tell you how to use in order to be sterile." *The* panacea, however, seems to be a drug called G. Palashiam, which is nominally for ovarian tumour, but "if you do not know the name of your disease please state the nature of the pain you feel and the colour of the discharge." Oriental sexual imaginings are far more vivid than among the natives of the colder north and we make no doubt that Sircar drives a very good trade, neither, so far as we know, is there any way to stop him.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—The following extracts throw an interesting sidelight upon the matter which has been debated in your columns under the above heading. They are somewhat bewildering to a student of anæsthesia. The first three are taken from an article on chloroform by Professor Ogston in the "Encyclopædia Medica" (vol. i., 1899). The second three are taken from an article on anæsthesia, by Dr. Silk in Cheyne and Burghard's "Manual of Surgical Treatment" (part i., 1899). 1. "There is no advantage in using 'pure chloroform,' that is, chloroform prepared from pure alcohol. 'Methylated chloroform,' manufactured [from methylated spirit, is as good, as pure, and as safe and costs considerably less." 2. "The position of the patient should, if possible, be recumbent—on the back with a low pillow under the head; but this may be departed from if there be any sufficient reason, as in minor operations on the throat where roof light is not obtainable." 3. "No inhaler is so good as a clean towel. ..... The writer thinks it best to cover the entire face with the towel. ..... By thus covering the face a view of the expression and changes of colour, which may be helpful to a timid and experienced chloroformist, are excluded. but to the skilled administrator these are not things of much importance. 4. "Chloroform has a chemical formula of $CHCl_3$. Its spec. grav. should be 1·497, and only that made from pure alcohol should be employed; the so-called methylated chloroform is inadmissable for anæsthetic purposes." 5. (α) "With regard to position an emphatic protest must be entered against any attempt being made to administer chloroform to a patient sitting in a chair. This protest is necessary, because it is still occasionally used for tooth extraction with the patient in the ordinary dental position; when chloroform is inhaled the patient should always be recumbent." (β) "Neither chloroform nor any mixture containing that drug should be used with the patient sittting up in a chair; such a proceeding is absolutely unjustifiable." 6. "The ideal condition of a patient under chloroform should be somewhat as follows—viz., colour good or slightly pallid, respirations regular, fairly deep, slightly accelerated, quiet, or with a slight soft snore; eyeballs fixed or rotating very slowly from side to side, pupils moderately contracted and sluggishly sensitive, corneal conjunctivæ insensitive. ..... Blueness of the lips, cheeks, ears, &c., is quite unwarranted, as it indicates that the vapour is being given in far too great a strength, and air must at once be supplied. Some patients become very pale under any anæsthetic which contains chloroform, and if this pallor is gradually displaced by an ashen-grey hue it is an indication that the circulation is failing and the anæsthetic must be at once withdrawn, and, if need be, more energetic measures taken."

I am, Sirs, yours, faithfully,

West Ham Hospital, E, June 11th, 1900. SIDNEY VINES.

WORD-BLINDNESS—APHASIC PARALYSIS.

To the Editors of THE LANCET.

SIRS,—At page 1699 of THE LANCET of June 9th, there is an interesting query as to the possible use by aphasics of raised type, as used by the blind, and by which the blind read by touch instead of by sight.

If Mr. Menteath will refer to a paper by me on "Will-making in Aphasic Paralysis" in the *British Medical Journal* of March 31st, 1900, he will find that the use of raised letters by aphasics, both for enabling acute aphasics to make their wills and to enable

chronic aphasics to re-develop the faculty of language in the right hemisphere, has been dealt with. The method there described for the use of printed cards—as applying to aphasics in whom there is receptivity for ingoing ideas but inability to make the mind known to outsiders—was a notable success in my case. The use of raised letters for blind aphasics is also suggested and considered by me, and I have no doubt that there are some such cases in which the typewriter—made with raised key-letters for blind aphasics—may further serve such patients as mine was. But when we come to aphasics in whom receptivity for ingoing ideas also is impaired, if only to the extent of "word-blindness," used in its mental sense and not in the sense of blind aphasics, as I used it, the cases are less promising. Here the mind is profoundly affected, to a greater or less extent, over the various channels of receptivity. But the trial of raised-letter print, or of a special typewriter made with bold raised key-letters would be an interesting experiment, and I have intended to try the experiment in the next suitable case of aphasic paralysis which may fall under my care. Block letters—such as are cemented on to plate-glass shop windows or such as are used to teach young children to spell—may enable certain aphasics to spell out or indicate the names of things, places, or persons of which they have a clear conception but cannot give utterance to, neither by speech nor writing. Gesture is unavailable for concrete substantives. For such substantives the mind thinks in images and names are lost early.

In the case described in my paper, considerable property, real and personal, was devised by a will made at my suggestion and design by means of printed cards. These cards were of three categories. 1. A list of the properties to be disposed of. 2. A list of offices to be assigned—trustees, executors, guardians, &c. 3. A list of all the testator's relatives, friends, and objects in which the testator was likely to be personally interested or which might have a claim for bequests. The cards each contained one item—property, office, or person. By a method of sorting out and combining these cards an aphasic lady was enabled to make her will perfectly and to dispose of all her property. Full details of the procedure will be found in my paper but it is too long to abstract here. I may add that in this case counsel advised the executor that the will, being without precedent and passing real property, should be proved in solemn form before the Court of Probate with notice to all such persons as might have profited by the rejection of the will. The result was a sort of action-at-law in open court before the learned President of the Probate Court, Sir Francis Jeune. The President formally approved of all that had been done and admitted the will to probate. This, therefore, becomes a leading case in will-making. In future there will be no reason why aphasics of the same type as my patient should not always have the opportunity for making their wills.

There is a very valuable and interesting chapter upon the jurisprudence of aphasia, will-making, and other topics in Sir Frederick Bateman's scholarly and researchful work on "Aphasia." I should be glad to place any brotherly help I could give at the disposal of any other practitioner who may happen to have in his charge one of these somewhat rare cases of aphasia. I should also be much obliged for an opportunity to see any such case.

I am, Sirs, yours faithfully,

Manchester-square, W., June 10th, 1900. JAMES EDMUNDS.

THE LOCAL GOVERNMENT BOARD AND VACCINATION.

To the Editors of THE LANCET.

SIRS,—In vaccinating will the following steps satisfy the requirements of the Local Government Board regulations? 1. Wash the arm with carbolised lint, using hot water and carbolic soap. 2. Thoroughly heat the lancet in a spirit flame. 3. Expel the lymph with an artificial blower. 4. Protect the surface with an antiseptic pad until the scabs fall off.

I am, Sirs, yours faithfully,

June 9th, 1900. VACCA.

*** Generally speaking we think the precautions referred to would merit the Government award. But the Government inspector would doubtless inquire as to whether the public vaccinator was careful to examine all children submitted to be vaccinated, and he would, we expect, wish to know the precise practice of the public vaccinator with regard to the use of antiseptic pads. We conclude that our correspondent does not wish to imply that one pad would suffice for the whole period in question. So, too, we infer that the lancet is to be thoroughly cleansed as well as sterilised in the flame.—ED. L.

THE PREVENTION OF TUBERCULOSIS: A CHEAP NOTIFICATION FEE.

To the Editors of THE LANCET.

SIRS,—"The Sanitary Committee" of Plymouth "recommended that the scheme should be adopted, and that notifying medical practitioners should be allowed a fee of 2*s.* 6*d.* for each private patient and a *fee of* 1*s.* for each parochial or dispensary patient notified. The recommendation was *unanimously* adopted."(THE LANCET, June 9th, 1900, p. 1675.) Surely it is bad enough to have to notify scarlet fever or erysipelas at such ridiculous fees as 1*s.* Still, both of these diseases are usually recognised at a glance when well marked, but notwithstanding this fact mistakes are often made. What then shall we say of phthisis? the diagnosis of which, in the early stages, is surrounded with so much difficulty and uncertainty, and where so much time is required not only for the careful examination but for the undressing and dressing in order to expose the thorax. I almost venture to doubt whether any medical man *capable* of making a *correct* diagnosis would accept such poor remuneration. Need we be surprised at the existence of 6*d.* dispensaries in our midst? Cheap (?) food and cheap (?) clothes are bad enough, but still, we can throw these away or survive them. But cheap (?) medical advice means, as a rule, lowering of professional dignity and skill and the speedy enrichment of the undertaker. Even the veterinary surgeons charge more for attending our domestic animals. I am, Sirs, yours faithfully,

Putney, S.W., June 9th, 1900. ALBERT S. MORTON, M.D. Durh.

THE QUESTION OF HORSE AMBULANCES.

WITH reference to an annotation in THE LANCET of June 2nd, p. 1604 we understand that Bolton possesses a horse ambulance which is kept at the fire-engine station, with the result that in the case of a street accident the patient is quickly conveyed to the hospital. By this means much suffering is prevented and perhaps many lives are saved, but it is obvious that the hospital or infirmary is the most desirable place for the ambulance to be stationed in order that a qualified attendant may accompany the vehicle.

Justitia.—The letter has reference apparently to some particular episode rather than to the general attitude of the public and the colonial practitioner towards each other. All the circumstances of the case must be made clear to us or we cannot appreciate the justice of our correspondent's deductions.

Mizpah is informed with regard to his recent inquiry for a copy of Albert Smith's "Physiology of the Medical Student" that if he will communicate with Mr. Edward Baker, 14, John Bright-street, Birmingham, he may be able to obtain a copy of the book for about 6*s.*

Student.—The school named would be an excellent one for the purpose. Our correspondent should consult the Student's Number of THE LANCET. The last issue was dated Sept. 2nd, 1899.

Dr. J. Aikman.—The tract is practical and timely and should prove of value.

During the week marked copies of the following newspapers have been received: *Public Health Engineer, Science Siftings, Jersey, Express, Westminster Gazette, Morning Advertiser, East Anglian Daily Times, Hereford Times, Norfolk Daily Standard, York Daily Herald, Evesham Journal, Western Mail, Leeds Mercury, Blackburn Daily Telegraph, Brighton Gazette, Kent Messenger (Maidstone), Yorkshire Post, Irish Times, Glasgow Herald, Times of India, Pioneer Mail, Manchester Guardian, Yarmouth Advertiser, Liverpool Daily Post, Builder, Citizen, Architect, Scotsman, Kentish Express, Bristol Mercury, Beverley Guardian, Sanitary Record, Cornish Times, Melbourne Leader, Local Government Chronicle, Mining Journal, Reading Mercury, Hertfordshire Mercury, City Press, Bedford Record, Dean Forest Guardian, British Realm, Bicester Herald, Boness Journal, Monetary Times, Huddersfield Chronicle, Surrey Advertiser, Walsall Observer, Local Government Journal, Weekly Free Press and Aberdeen Herald, Sunderland Morning Mail, Bradford Observer, &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 14th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 8	29·77	W.	0·17	109	76	52	54	58	Cloudy
" 9	29·95	S.W.	0·03	110	72	55	55	59	Cloudy
" 10	29·91	E.	...	126	85	55	61	72	Fine
" 11	29·84	S.	...	131	91	63	63	71	Hazy
" 12	29·86	S.W.	...	115	84	66	67	73	Hazy
" 13	29·86	S.W.	0·26	104	68	59	57	61	Overcast
" 14	30·10	S.W.	...	117	68	54	57	62	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (20th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Mr. W. Carruthers: Demonstration on the Structure of some Palæozoic Plants (with sections of the plants thrown on the screen).

THURSDAY (21st).—ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND (Medical School of the Owens College, Manchester).—10.30 A.M. Exhibition of Specimens. 11 A.M. to 1.30 P.M. Lantern Demonstrations by Dr. R. J. Berry, Prof. Dixon, and Dr. T. H. Bryce. Cases and Specimens will be shown by Prof. Fawcett. Papers:—Prof. Birmingham: Some Points in the Anatomy of the Digestive System.—Dr. Armour; A Note on the Genital Apparatus of the Jerboa. Council Meeting.

FRIDAY (22nd).—ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND (Medical School of the Owens College, Manchester).—10.30 A.M. Exhibition of Specimens. 11 A.M. to 1.30 P.M. Papers:—Dr. C. J. Patten: Note on the Configuration of the Heart in a Man and some other Mammalian Groups.—Dr. P. Thompson: On the Arrangement of the Pelvic Fasciæ and their Relationship to the Levator Ani.—Prof. Paterson: A Preliminary Note on the Development of the Sternum. Specimens, Preparations, Lantern Slides, and Microscopical Preparations will be shown by Prof. Paterson, Dr. A. Robinson, and Prof. Young.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. Fox: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. F. Potter: Hoarseness and Aphonia. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. E. Saunders: Diseases connected with Insanitary Surroundings.

TUESDAY (19th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. W. Mott: The Degeneration of the Neurone. (Croonian Lecture.) Lecture I. Syllabus:—Definition of the term "Neurone."—The Neurone Theory *versus* the Theories of the Diffuse Network of Gerlach and the Diffuse Nerve Network of Golgi.—The Structure of the Nerve Cell: a Stainable and Unstainable Substance revealed by the Nissl Method; Significance of the Nissl Granules.—Nerve Fibres; Correlation of Function and Myelination.—The Myelin Sheath; its Origin, Functions, and Relation to the Sheath of Schwann. Brief Historical Introduction:—The Researches of Waller upon Secondary Degeneration of Peripheral Nerve Fibres.—The Researches of Türck upon Secondary Degeneration of the Fibres of the Central Nervous System.—Disuse Atrophy.—Dickinson's Observations upon the Secondary Atrophy following Amputation.—The Gudden Atrophy Method.—Primary Degeneration the Outcome of the Cellular Theory of Virchow; its Relation to the Doctrine of the Neurone.—Practical Importance of the Neurone Doctrine.—The whole Central Nervous System in Physiological if not in Anatomical Continuity.—The Variable Resistance to the Spread of Excitation.—The Neurones Divided into Three Groups, Afferent, Efferent, and Association.—The Physiological Inter-relationship of these Groups and their Functional Equilibration.—Anatomical Correlation of Associated Systems of Neurones.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Consultation. (Medical.)

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. D. Ferrier: "Jacksonian Epilepsy." 5-7 P.M. Dr. W. J. Horne: Class. Practical Rhinology and Laryngology. Demonstration VI.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. G. Carpenter: Clinical Demonstration of Selected Medical Cases. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Horton-Smith: Clinical Varieties of Phthisis.

THURSDAY (21st).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. W. Mott: The Degeneration of the Neurone. (Croonian Lecture.)—Lecture II. Syllabus:—1. Effects of Injury of a Nerve upon the Cells of Origin.—2. Effects of Temporary and Permanent Failure of the Blood-supply upon the Cerebral Neurones as Studied by Ligation of the Cerebral Arteries.—3. Experimental Anæmia of the Spinal Cord.—4. Effects of Severe Hæmorrhage, Morbid Processes, and Poisons causing Anæmia.—5. The Bio-chemical Changes in the Neurone produced by Hyperpyrexia.—6. The Effects of Toxic Conditions of the Blood and Lymph upon the Neurone as Studied in Certain Experiments.—7. Selective Influence of Poisons upon the Neurone.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Demonstration. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. E. Saunders: Diseases connected with Insanitary Surroundings.

FRIDAY (22nd).—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Consultation. (Throat, Nose, and Ear.)

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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The Croonian Lectures

ON

THE DEGENERATION OF THE NEURONE.

Delivered before the Royal College of Physicians of London

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

LECTURE I.[1]

Delivered on June 19th, 1900.

MR. PRESIDENT AND GENTLEMEN,—Allow me to thank you for the great honour you have done me in asking me to give these lectures. I feel the responsibility all the more in lecturing upon the subject I have chosen, when I look back upon the eminent neurologists who have given these lectures on previous occasions. I cannot hope to attain to the philosophy of Hughlings Jackson or the epoch-making researches of Ferrier, but I will endeavour to put before you some thoughts, experiments, and observations relating to degeneration of the nervous system which have occupied my attention during the past three or four years.

DEFINITION OF THE NEURONE AND THE NEURONE THEORY.

Before considering the neurone under pathological conditions it is necessary to define the term, to make a few general remarks upon the neurone theory, and to describe our present knowledge of the structure of the neurone. The term "neurone" was introduced by Waldeyer for the nerve-cell and all its processes, including the protoplasmic processes or dendrons and the single axis-cylinder process with its cone of origin, its collaterals or side branches, and its terminal arborisation. The theory of the neurone put forward by Waldeyer[2] is that the nervous system consists of innumerable such anatomically independent nervous units in contiguity but not in continuity. There is interlacing of the processes, but no nerve network.

THE NETWORK OF GERLACH.

In 1871 Gerlach,[3] by the gold method of staining, showed an intricate network in the grey matter; he came to the conclusion that the protoplasmic processes of the nerve-cells were all connected in a delicate network, and that out of this network strands of fibrils joined together to form fibres which passed out of the posterior roots and became sensory nerve-fibres. For 15 years this theory was accepted; then Forel[4] and His,[5] by their studies respectively of degeneration and of the development of the nervous system in the embryo, completely overthrew the doctrine of Gerlach. Forel pointed out the limitation of secondary degeneration; and by the Gudden atrophy method showed that degeneration or atrophy did not pass beyond a cell station when the fibres which arise from those cells are cut through; and he claimed that the nervous system consisted of independent cellular units. Forel also called attention to the remarkable work of Golgi,[6] and although he opposed the diffuse nerve network theory put forward by that authority yet he recognised the great value of the researches made by his new chrome silver method. About this time Professor His published his researches upon the development of the nervous system, and he showed that the axis cylinder and the other processes of the nerve-cell were outgrowths of the cell protoplasm, and the apparent nervous network was really only an interlacing of innumerable cell processes.

The chrome silver method of Golgi was later adopted by Ramon y Cajal,[7] Retzius,[8] Kölliker,[9] Lenhossek,[10] Van Gehuchten,[11] and many others, and their researches *apparently* demonstrated the fact that the whole nervous system consists essentially of independent anatomical units, and the neurone theory seemed indisputably established. No matter how multitudinous and complex the branches of the cell might appear yet they never anastomosed with the branches of other cells; like the trees of a forest there is contiguity but not continuity. Within the last few years, however, owing to the researches of Apáthy,[12] Bethe,[13] Dogiel,[14] and Nissl,[15] there is a tendency on the part of some authorities to go back to a diffuse network theory. Some important researches by Held,[16] also have been put forward to disprove the neurone theory. In my opinion, however, one can still accept the neurone theory and admit the truth of Held's observations, namely, that the terminal arborisation of the axis-cylinder process of one neurone forms protoplasmic concrescences by fusion with the cell body and dendrons of another. This of course implies continuity of the protoplasm of one neurone with another, but trophically and genetically the two are independent, and it is merely a question of degree of contact of the protoplasm of one with the other. Held agrees with other investigators that in embryonic tissues, and even in early life, the neurones are entirely independent of one another. This independence he can determine by a line of demarcation at the points of contact due to a difference in refraction. This refractive limiting line is, however, not demonstrable in the adult, and he comes to the conclusion that during the process of growth the protoplasm of related neurones fuses. Turner and Hunter[17] by the *intra vitam* methylene blue method, however, come to a different conclusion to that of Held, for they have shown that the terminal arborisations of the axons of one set of neurones end in a basket work around the cells of functionally related neurones, but do not form protoplasmic connexions.

The neurone theory has always been opposed by Golgi, who maintained that his method demonstrates a diffuse network formed by the collaterals of the axons; but it is especially the work of Apáthy and Bethe which has led authorities such as Nissl to renounce the neurone theory. Lugaro,[18] Lenhossek,[19] Barker,[20] Van Gehuchten, and many other authorities, on the other hand, maintain that the observations of Apáthy and Bethe do not warrant the general conclusion that nerve-cells are connected with each other by means of their primitive fibrils. Moreover, Apáthy has only demonstrated a continuous network of elementary fibrils outside the nerve-cells in *invertebrates;* such an arrangement has not yet been proved to exist in vertebrates; in fact, there is the strongest histological evidence that it does not exist. The study of the development of the nervous system and secondary degeneration to my mind shows the genetic and trophic independence of the nervous units; and in spite of the opposition which the "neurone theory" has lately met with in some quarters it is still acceptable.

THE STRUCTURE OF THE NERVE-CELL AS REVEALED BY THE NISSL METHOD.

The Nissl method is generally used for demonstrating the internal structure of the protoplasms of the nerve-cell and its processes, but before referring to pathological conditions as studied by this method it is necessary to make a few remarks upon the method itself, and the appearances presented by normal nerve-cells.

Nervous tissue, which has been fixed in 96 per cent. of

[1] Lecture II. was delivered on June 21st, and Lectures III. and IV. will be delivered on June 26th and 28th respectively.

[2] Deutsche Medicinische Wochenschrift, 1891, Band xvii.

[3] Stricker's Handbook of Histology, Spinal Cord.

[4] Einige hirnanatomische Betrachtungen und Ergebnisse, Archiv für Psychiatrie und Nervenkrankheiten, Berlin, 1887, Band xviii.

[5] The Nervous System (L. Barker).

[6] Sulla Struttura della Sostanza grigia del Cervello, Gazzetta Medica Italiana Lombardia, 1873, tomo vi.

[7] Croonian Lectures, Proceedings of the Royal Society, 1894. Vide Barker's Nervous System for later publications.

[8] Vide Barker: The Nervous System.

[9] Handbuch der Geweblehre des Menschen, 1896.

[10] Neurologisches Centralblatt, 1899, No. 3.

[11] Anatomie du Système Nerveux.

[12] Das leitende Element des Nervensystems und seine topographischen Beziehungen zu den Zellen, Mittheilung aus der Zoologischen Station zu Neapel, 1897. Band xii.

[13] Ueber die Primitivfibrillen in den Ganglienzellen von Menschen und anderen Wirbelthieren, Morphologische Arbeiten herausgegeben von G. Schwalbe, 1898 Band viii., S. 95.

[14] Archiv für Mikroskopische Anatomie, 1893, 1895, and 1896.

[15] Nervenzellen und Graue Substanz, Münchener Medicinische Wochenschrift, Deutsche Zeitschrift für Nervenheilkunde, 1898, Band xiii.

[16] Beiträge zur Structur der Nervenzellen und Fortsätze, Archiv für Anatomie und Physiologie, Anatom. Abtheilung 1897.

[17] Brain, 1899.

[18] Rivista di Patologia, 1898, p. 500.

[19] Loc. cit.

[20] The Nervous System.

alcohol, formol solution, or corrosive sublimate solution, and of which sections have been cut and stained by basic aniline dyes—e.g., methylene blue, toluidine blue, thionine, and by many other modifications of the original method, shows pictures of the nerve-cells stained in a characteristic manner. If we take as a typical structure an interior horn cell stained by this method we shall observe the following characteristics. The body of the cell is stained a deep blue, but not uniformly, for the staining presents a mosaic appearance, due to little stained polygonal areas disposed more or less concentrically round the nucleus and separated one from another by an unstainable substance. Towards the periphery of the cell these polygonal stained areas become elongated, and upon the dendrons they are fusiform, their long axes being parallel to the processes. At one portion of the cell, if it is entire, a process—the axon—will be observed which does not possess any stainable substance, so that we see that this method differentiates two substances—a chromatic stainable substance and an achromatic substance.

Researches to be afterwards alluded to have shown that the stainable substance is a nucleo-proteid, a substance which contains phosphorus, but in less proportion than the nucleic acid of the nucleus, and the fact that the stainable substance is found around the nucleus may indicate that it is a result of the active metabolism of the nucleus on the surrounding protoplasm. By some authorities it is considered to be a store of nutriment, by others a store of energy; and on this account it has been termed by Marinesco "kinetoplasm." The changes which this substance undergoes, as studied by the Nissl method, show that it has some important functional relationship to the metabolic activity of the neurone; it is, however, not the essential substance. The unstainable substance, on the other hand, is essential, and consists of an organised network of delicate fibrils which extend into the dendrons, forming a network in the cell substance and passing out again in the axis-cylinder process. Consequently there is probably a direct protoplasmic fibrillary continuity between the dendrons and the axons. This was originally stated to be so by Max. Schultze.[21] The nucleus is apparently of simple structure and is permeated by irregular strands of karyo-plasm which form a coarse network; it is apparently situated in the centre of the cell and contains a nucleolus or several nuclear bodies, which, together with the nuclear membrane, stain with a basic dye.

THE SIGNIFICANCE OF THE NISSL GRANULES.

There is a vast amount of literature concerning the stainable bodies called "Nissl granules." They were at one time believed to be an essential constituent of the living cell, but the researches of Hardy have shown that there is a great difficulty in deciding to what extent structure demonstrable in the fresh or fixed state is the product of the chemical and physical changes which constitute the death changes or due to the action of fixatives. Moreover, Held[22] has shown that the *intra vitam* methylene blue method does not reveal Nissl granules in the cells. The stainable (chromatic or chromophilous) substance, therefore, is probably not present in the living cell in the definite form which we see it when the tissues are freed and stained by the Nissl method. It must not, however, be assumed, therefore, that the method is unreliable as a means of studying the bio-chemical changes occurring in the protoplasm of the nerve-cells, for providing certain precautions are taken, it has proved most valuable in demonstrating functional and organic changes occurring in the nerve-cells as a result of injury of the axon or of toxic substances in the blood.[23]

The large motor cells of the cord and brain are the best for studying the changes in the cell protoplasm, because in these structures the stainable substance appears in normal tissues as if it consisted of formed elements (Nissl granules) in the body of the cell and in the dendrons. I have always looked upon these elements as being due to a death-change of the fluid plasm of the cell whereby the nucleo-proteid substance contained in it is thrown down as a fine precipitate, much the same as myosin is precipated from myosinogen. If this substance is abundant in the fluid plasm it produces when precipitated these definite forms, because it fills up the spaces of the unstainable intracellular fibrillary reticulum. "Chromatolysis" is the term which is frequently applied to designate the disappearance or disintegration of these Nissl granules, and there may be various stages of chromatolysis. Usually the process begins at the periphery of the cell and on the dendrons. The stainable substance may be greatly diminished or entirely lost in these situations, or, again, the granules may be seen to consist of fine particles, their definite outline being lost, and in advanced chromatolysis the whole cell may be so affected.

The condition and amount of the stainable substance may be an indication of the functional activity of the cell, and it is conceivable that diminution of the nucleo-proteid colourable substance is the expression of the diminution of the vital interaction of the highly phosphorised nucleus upon the surrounding cell protoplasm. I do not consider that chromolytic changes alone are indicative of cell destruction, for, as I shall show later, most marked chromolytic changes may occur in the cells of origin after section of a nerve and yet the cells may completely recover.

Changes of the cell in form and size may be recognised—e.g., swelling or shrinking, due, no doubt to an alteration of the vital osmotic reaction of the cell-protoplasm to its fluid environment; likewise the nucleus may be clear and swollen or shrunken, the nuclear membrane in the latter case being thrown into folds. Very frequently the nucleus becomes eccentric in position instead of being situated in the centre of the cell, and owing to abnormal osmotic relations and protoplasmic change it may even be extruded and this of necessity would cause death of the cell. Another indication of death of the cell-protoplasm is revealed by uniform staining of the whole cell and its processes. It occurs in hyperpyrexia and in the coagulation necrosis resulting from obstruction of the blood-supply for a sufficient length of time to cause the death of the protoplasm.

The importance of the chemical and histological changes occurring in the myelin sheath in degeneration of the nervous system, the difference of opinion as to its origin, and the important discoveries which have been made by Flechsig, Bechterew, and others with regard to correlation of structure and function necessitate a somewhat full account of

THE MYELIN SHEATH AND NUCLEATED SHEATH OF SCHWANN.

Nerve-fibres are of two kinds, grey and white. The grey sympathetic fibres differ essentially from the white fibres by the existence in the latter of a complex phosphoretted fatty substance lying between the nucleated sheath of Schwann and the axis-cylinder process. The white fibres of the central nervous system differ from the peripheral white fibres by not possessing a nucleated sheath of Schwann. The myelin is probably contained in a neuro-keratin reticulum and this reticulum is much more abundant in the white matter of the central nervous system than in the peripheral, for Kühne and Chittenden[24] have shown that there is about eight times as much neuro-keratin in the white matter of the central nervous system as either in the grey matter of the central nervous system or the white matter of the peripheral nervous system. In 1884 Weigert introduced his hæmatoxylon method for staining the myelin sheath and by means of this Flechsig[25] and his pupils were able to show that certain tracts of fibres of the central nervous system were developed earlier than others. This method and its various modifications (Pal, Marchi-Pal, and Schäfer) have yielded the most valuable results. The different tracts of the posterior columns of the spinal cord were found to be myelinated at different periods, and it was owing to Flechsig's studies that those of endogenous origin (that is, arising from cells *within* the spinal cord) were differentiated from those which are exogenous (that is, have their trophic and genetic centres in the cells of the posterior spinal ganglia). The practical outcome of this research was the modern idea of the pathology of tabes, for it was shown that the exogenous fibres were alone atrophied in tabes, while the endogenous fibres—viz., cornu-commissural zone of Westphal[26] and the median oval area of Flechsig—were spared, these tracts having their trophic and genetic centre in cells within the grey matter of the cord. These facts were recognised as being incompatible

[21] Stricker's Manual of Histology.
[22] Ueber Experimentelle Reizung des Nervenmarks.
[23] Since the method is a *comparative* one great care must be exercised in practising the same details of method of fixation, cutting, and staining the morbid tissues and the normal tissues with which they are to be compared. Again, it is absolutely essential that the tissues examined should be fresh and free from any chance of post-mortem decomposition.

[24] Ueber das Neurokeratin, Zeitschrift für Biologie, 1890, Band viii.
[25] Ist die Tabes Dorsalis eine system Erkrankung? Neurologisches Centralblatt, 1890, vol. iii.
[26] Goldscheider: Die Bedeutung der Reize für Pathologie und Therapie im Lichte der Neuronlehre, 1898.

with the prevalent view that the degeneration was caused by a sclerosis or overgrowth of glia tissue in the posterior columns, or by vascular changes; but they pointed especially to a nutritive failure in the trophic and genetic centre by which the outlying projections of the axis-cylinder processes and their myelin coverings underwent a regressive atrophy; in fact a metamorphosis of the neurones occurred, the inverse of their development.

CORRELATION OF FUNCTION AND MYELINATION.

Again, the researches of Flechsig have demonstrated the different centres of the central nervous system, in which tracts of nerve-fibres have their origin or termination; and it is to the application of this method by Flechsig that we owe one of the most exact, and one of the most valuable, contributions to the structure and functions of the human brain. The method depends upon the fact that there is a correlation between the functions of systems, groups, and communities of neurones and the myelination of their axons; thus, in the brain and the spinal cord of the fœtus, the new-born child, and the developing infant, tracts of fibres are myelinated with definite regularity at successive periods of time, indicating ontogenetically their functional and structural development. The myelin sheath appears three or four months after the development of the axis-cylinder process; for example, a bundle of axis-cylinder fibres demonstrable by the Golgi chrome-silver method at the ninth month would not show a myelin sheath until three months or more after birth. When the myelination of a nervous system is complete further information by a study of the condition of the myelin sheath can only be obtained by observations made upon secondary degenerations produced either by disease or experimentally, and to this subject I shall refer later with especial reference to the Marchi method. To return, however, to the process of myelination. In the central nervous system, the afferent projection fibres are myelinated before the efferent, and it is a fundamental principle that bundles of fibres of different physiological functions are myelinated at different periods of time. The whole afferent tract, conducting tactile, articular, muscular, and visceral sensations by the posterior columns, fillet, thalamus, and corona radiata, is myelinated at birth. These bundles of fibres have already (while the fœtus was in utero) been exercised in conveying impressions to the appropriate receptive centres in the Rolandic region of the cortex, the stimuli being provided by contact of the teguments with the maternal structures and as a result of reflex movements which commence at quickening; for every movement must necessarily be associated with alterations in tension of muscular, tendinous, and cutaneous structures, giving rise thereby to kinæsthetic impressions.

Moreover, the myelination commences first in those parts of the occipital lobe situated around the calcarine fissure, which we know corresponds to the function of vision, the relays of neurones which proceed to the cortex forming the afferent projection systems are earliest myelinated, as they are the first to be acted upon by stimuli which excite the nerve terminations in the skin, joints, tendons, and mucous surfaces of the developing fœtus. Thus, as shown in the diagrams, in the new-born child only the lower centres of the spinal cord, medulla, pons, corpora quadrigemina, optic thalamus, and certain areas of the cerebral cortex are myelinated. The cortical areas which are so myelinated are situated around the primary fissures and correspond to areas which are the end stations of the afferent projection systems; for example, the tactile motor area is situated around the fissure of Rolando; the olfactory, gustatory, and auditory around the Sylvian fissure; and the visual around the calcarine (see Figs. 1 and 2).

Flechsig has shown that at least two-thirds of the cortex cerebri consist of neurones of association, and according to him (although this does not meet with general acceptation) these association centres possess no neurones belonging to the afferent or efferent projection systems. In the fœtus of eight months the pyramidal fibres of the motor efferent system are still without myelin, but Ambron and Held[27] have shown by a new method of examining the condition of the myelin, by the effect produced on polarised light, that the motor fibres of the anterior roots are myelinated earlier even than the posterior roots.[28]

[27] Ueber Entwickelung und Bedeutung des Nervenmarks, Archiv für Anatomie und Physiologie, Abtheilung 1896.

[28] This method is a very ingenious one, and as it is not generally known I will describe it a little more fully. *Method.*—Held and Ambron take nerves of new-born animals, tease them in normal saline solution, and examine them in the following manner with polarised light. They place the two prisms at right angles and put the nerve in the same line as the "quartz plate," when it gives a purple colour. The myelinated nerve will appear red, orange, or yellow, according to the stage of myelination (red being the most advanced); these are the subtraction colours, whereas non-myelinated nerve and connective tissue give the addition colours violet, indigo, and blue. In this way they have examined all the nerves and they have arrived at the conclusion that the peripheral motor nerves are more advanced in myelination than the sensory nerves at early periods of development. Flechsig, as I have remarked, has shown—and they confirm this—that the reverse is the case for the central nervous system. They offer no explanation, but possibly it may be found phylogenetically that in the evolution of specialised reflex acts in the zoological series the motor fibres have acquired first the myelin sheath; or it may be that the sensory bundles are made up of fibres having different functions, and that these are myelinated at different periods of time; again, we know that a large number of fibres entering a muscle (Sherrington) are afferent in function.

In a second paper Held has shown the important influence stimulus has upon myelination, thus establishing still more fully the correlation of function and myelination. Cats, dogs, rabbits (animals which are born blind) were

FIG. 1.

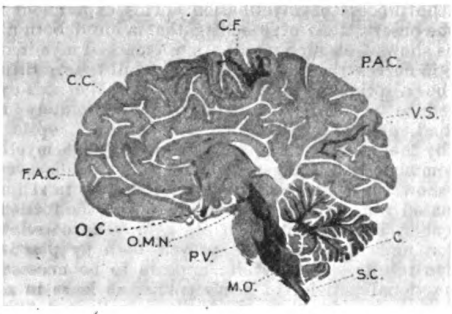


Diagram of vertical section through the brain of a new-born child stained by the Weigert method to show myelination of the fibres. All the parts which are dark contain myelinated fibres. Attention is particularly called to the rather faint deep staining about the central fissure which corresponds to the tactile motor area. It will be observed that the association centres are not myelinated. M O, Medulla oblongata. P V, Pons Varolii. O M N, Oculo-motor nerve. O C, Optic commissure. F A C, Frontal association centre. C C, Corpus callosum. C F, Central fissure. P A C, Posterior association centre. V S, Visual sphere. C, Cerebellum. S C, Spinal cord. It will be observed that the pyramidal efferent system is not myelinated.

experimented on in the following way. Light was admitted for varying periods to one eye by opening a lid, the other remaining closed. Examination of the optic nerve on the two sides under the same conditions showed a more obvious

FIG. 2.

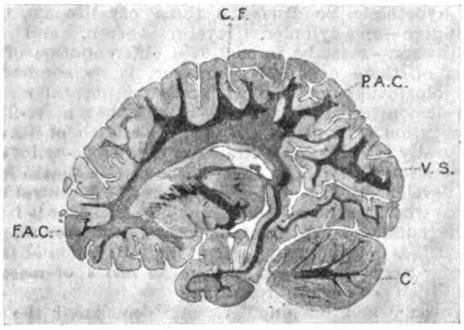


Diagram of vertical section of the brain of a child aged five months. The greater part of the brain now shows by the staining myelination of the white matter, showing development of the association centres. F A C, Frontal association centre. C F, Central fissure. P A C, Posterior association centre. V S, Visual sphere. C, Cerebellum. It will also be noticed that the corona radiata and internal capsule are myelinated.

myelination on the side exposed to light than on the other. The irritation which might be produced by opening the lid was not the cause of this difference, for an animal which had had the lid opened on one side and not on the other but which was kept in darkness showed no difference in myelination of the two sides. The obvious inference is that transmission of light impulses along the optic nerve had stimulated the process of myelination. This experiment agrees with the observations of Flechsig that a child born at eight months showed at nine months more marked myelination of the optic nerves than a child born at full time. Still there must be a primary innate tendency of the axis-cylinder to produce myelin, for a dog kept absolutely in the dark had, on the eighth day, orange-tinted optic nerve-fibres by the polarisation method, showing that myelination had commenced. Edinger[29] states that the discoveries of Kaes show that the cerebral cortex increases in richness of myelinated fibres for a long time, even to the fortieth year and longer, but diminishes in old age. The correlation of function and myelination is proved both by positive and negative results. The myelin appears to be necessary for the functional activity of nerve tracts, at least in animals which possess a nervous system with myelinated fibres, for the development of the myelin along particular tracts of fibres in the central nervous system proceeds in a manner *pari passu* with the development of function. Atrophy and degeneration of the myelin sheath in pathological processes, whether due to disuse atrophy, or to primary or secondary degeneration, are associated with marked disturbances appertaining to the functions of particular systems, groups, and communities of neurones.

THE HISTOGENESIS OF THE SHEATH OF SCHWANN.

This has been studied by many observers, and a paper has recently appeared by Gürwitsch[30] reviewing the work of previous observers and giving his own observation upon this subject. Küpffer,[31] Beard,[32] and Gegenbauer[33] believed that the axis-cylinder is developed from a chain of cells of ectodermal origin arranged in a series. Such an idea would conform with the researches of Apáthy upon invertebrates and is opposed to the axis-cylinder being an outgrowth of a nerve-cell situated either in the anterior cornua or the posterior spinal ganglia. If this hypothesis be true the three constituents of the nerve-fibre—axis-cylinder, myelin sheath, and sheath of Schwann—must be formed by a differentiation of protoplasm of these cells. If, however, it be admitted that embryological, morphological, and experimental researches have demonstrated that the axis-cylinder of a nerve-fibre is a prolongation of a nerve-cell, then the sheath of Schwann is genetically foreign and extraneous to the axis-cylinder; but the question arises, How, then, is the myelin sheath formed? Is it developed by the axis-cylinder, as in the central nervous system where the sheath of Schwann is absent, or is it formed by the nucleated sheath of Schwann? Another alternative is that it is developed by a metabolic interaction of the axis-cylinder upon the protoplasm of the series of mesoblastic cells which are wrapped round it.

Ranvier[34] and his pupil Vignal[35] compared the formation of the myelin to the formation of fat within a fat cell. Vignal's description of the process of myelination is as follows. At a particular stage of development, when the nerve-fibre consists of non-nucleated bundles of fibrils, mesoblastic cells migrate into the interior of the fibre and apply themselves closely to single groups. Their cell protoplasm increases in length and in breadth until some of the primitive fibrils are enclosed. The definite intervals in the enclosing sheath, corresponding to the nodes of Ranvier, coincide with the spaces between the ensheathing cells; consequently each internode represents a segment of the *continuous axis-cylinder* wrapped round by a mesoblastic cell. At the same time, according to Vignal, the myelin appears in the cell protoplasm in the form of minute droplets; these become more numerous and run together to form a general thin covering of the axis-cylinder. Vignal does not deny the possibility that the axoplasm may share in the formation of the myelin, but in quite a subordinate manner. The observations of Boveri, which recently have been confirmed by Bethe,[36] show that the sheath of Schwann is reflected inwards at the nodes along the axon; if this be true there is (as in a serous membrane) a parietal and central layer, and between the two the myelin is contained. This would prove Vignal's hypothesis. Gürwitsch has studied the development of peripheral nerves in embryo sheep, fixing the sciatic nerve with Apáthy's solution and employing various staining reagents used by that observer. He came to the conclusions: (1) that the nerve-fibre is a prolongation of the ganglion cell; (2) that the sheath of Schwann arises from the surrounding mesoblast; and (3) that the myelin sheath has nothing in common with the sheath of Schwann, and probably arises only as a product of the metabolism of axoplasm. Time will not allow me to give you more than

FIG. 3.

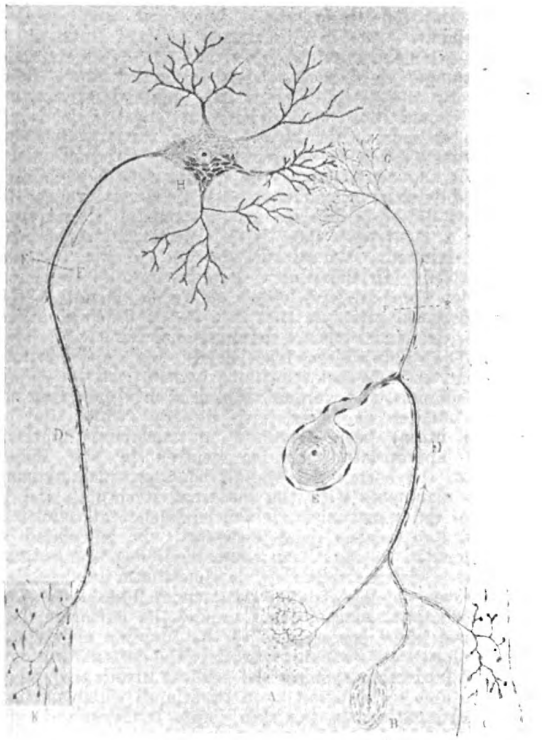


Diagram to show reflex arc. A, Skin with sensory endings. B, End organ, Pacinian corpuscle. C, End organ of tendon (Golgi). D, Sensory nerve fibre. (Only one sensory nerve fibre is represented as conveying impulses from the three above-mentioned structures, A B C, but it must be clearly understood that there are separate neurones for each.) E, Cell of posterior spinal ganglion with fine granules scattered through the body of the cell; these are the chromophil granules. Emerging from the capsule is the axis-cylinder process forming a T. The central process passes to the spinal cord; at F F the chain of tubular cells representing the sheath of Schwann ceases; but the axis-cylinder process is still covered with myelin; it breaks up at G into a terminal arborisation, which is in physiological connexion with H, the motor efferent neurone. The lower part of the cell is represented showing polygonal granules (Nissl); the upper part of the cell shows a fibrillary reticulum. The granules exist all over the cell and on the dendrons except at the emergence of the axis-cylinder process, but they are not represented in the upper part in order that the fibrillary reticulum of the achromatic substance may be clearly shown. The axon becomes coated with myelin; at F F it acquires a sheath of Schwann on emergence from the spinal cord and terminates at K in the motor end-plate.

[29] Anatomy of the Nervous System, translated by Hall, p. 233.
[30] Die Histogenese der schwanischen Scheide, Archiv für Anatomie und Physiologie, 1900; Anatom. Abtheilung, I. und II. Heft.
[31] Studien zur Entwickelung-geschichte des Kopfes der Kranioten; reference to Gürwitsch, loc. cit.
[32] Anatomischer Anzeiger, 1892.
[33] Lehrbuch der Vergleichenden Anatomie, 1898.
[34] Leçons sur l'Anatomie du Système Nerveux, 1898.
[35] Ranvier et Vignal: Sur le Développement des Élements du Système Cérébro-Spinal, Paris, 1889.
[36] Loc. cit.

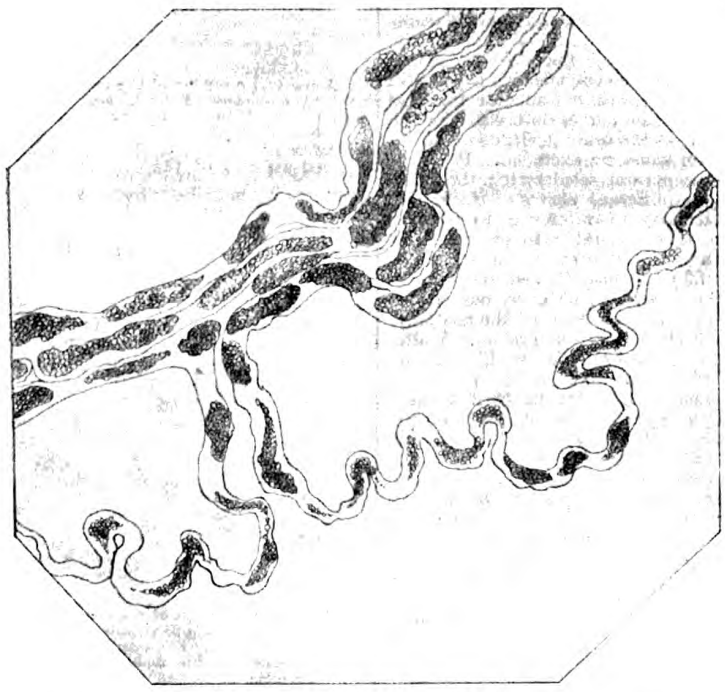
FIG. 4.



FIG. 5.



FIG. 6.



Drawings from the original monograph of Dr. Waller (*Philosophical Transactions*, 1850) to show the degeneration of the terminal fibrils of the nerves in the papillæ of the tongue of the frog after section of the nerves. Fig. 4, Papillary nerve of frog six days after ligature. Fig. 5, Papillary nerve three weeks after section, with muscular fibres in the interior of the capillary coil at the summit of the fungiform papilla. Fig. 6, Disorganised muscular nerve, from the inferior surface of the tongue, five days after section. The muscular fibre has been omitted in this drawing.

this very brief outline, and to those who are further interested in the subject I would refer them to an admirable digest on the Histology and Pathology of the Nerve-cell, by Ford Robertson,[37] or to the splendid new work of Barker on the Nervous System.

It would take too long here to describe the normal structure of the various forms of neurones, but to make myself more clear in speaking of degeneration and the changes which occur in the nerve-cell and its processes, I represent here diagramatically a spinal reflex arc, showing a sensory and motor neurone. (Fig. 3.) Each portion has a brief description appended, so that I need not detain you further with the details. I would call your attention, however, to two facts—viz., (1) the difference in the myelin sheath as it surrounds the axis-cylinder process and its fibrils within the spinal cord as compared with the myelin sheath outside the same—in the latter the axis-cylinder is surrounded by a chain of tubular cells containing the myelin, whereas in the former there is simply a continuous coating of the phosphoretted fat; and (2) the different arrangement and appearance of the stainable substance in the motor and sensory cell.

THE DEGENERATION OF THE NEURONE—BRIEF HISTORICAL INTRODUCTION.

New methods of experiment, observation, and technique mark the successive stages in our knowledge of the structure and functions of the nervous system in health and disease. 50 years ago Waller[38] gave his memorable communication to the Royal Society which was the commencement of our knowledge of the degeneration of the neurone. In his paper, "Experiments on the Section of the Glosso-pharyngeal and Hypoglossal Nerves of the Frog and Observations of the Alterations produced thereby in the Structure of their Primitive Fibres," he pointed out that Günther and Schön had ten years before stated that the primitive fibres at the end of a week after division of the nerve, and when it had lost its irritability, showed changes indicating degeneration; likewise Nasse and Steinrück had described changes following division of nerves. Waller's researches showed that a change took place throughout the whole of the nerve below the point of section, extending to its terminal fibrils. The diagrams exhibit the original pictures taken from Waller's monograph. (Figs. 4, 5, and 6.) He concludes his paper with this very apposite statement: "We cannot suppose that this is a local phenomenon and that the nerves do not participate in similar alterations, and that the brain itself, composed in great part of tubular fibres, must be excluded. It is impossible not to anticipate important results from the application of this inquiry to the different nerves of the animal system; but it is particularly in reference to nervous diseases that it will be most desirable to extend these researches." How much light the extension of these researches during the last 50 years has afforded to neurology can be best appreciated by reviewing the enormous strides which have been made in our knowledge of the anatomy, physiology, and pathology of the nervous system. Waller had anticipated that degenerative processes would be found to occur in the central nervous system, as in the peripheral nerves. He had not long to wait, for in 1852 Türck[39] published a paper showing secondary degeneration of the spinal cord after a transverse lesion, and in 1854 he published his classical paper on secondary degeneration of tracts in the spinal cord and their prolongations in the brain based upon 21 cases. As Waller's observations form the basis of our knowledge of secondary degeneration of the peripheral nervous system, so Türck's observations are the basis of our knowledge of secondary degeneration of the central nervous system. Waller in 1852 extended his researches and formulated the three following fundamental laws which are given in italics in an appendix to the work quoted. The appendix consists of 52 important statements bearing upon the results of his experiments.

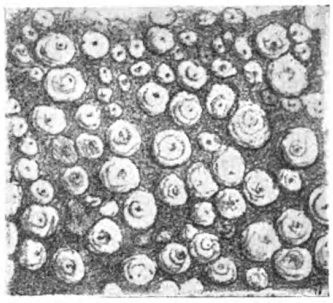
"As a general rule the sensory fibres develop by starting from the peripheral and radical poles of the ganglion corpuscles and extend from these into the peripheral organs and in the spinal cord to a height undetermined."

"The ganglion corpuscle is in consequence the central organ for the formation and nutrition of its peripheral and central fibres and accordingly we shall call it the neurogenotrophic corpuscle and the ganglion the neurogenotrophic body."[40] [The neurone doctrine foreshadowed.—F. W. M.]

"Considering the ganglion in its simplest state as a bipolar corpuscle we are able to assert that every part of the radical and peripheral poles which is separated from the corpuscle disorganises, whilst the whole of the poles in connexion with the corpuscle remains normal."

Numerous observers since have claimed that the law formulated by Waller, that every part of a nerve which is separated from its cell of origin undergoes degeneration, *whilst the rest remains normal*, although fundamentally true, may require some modification; and the first observer whom I find to suggest this is Dr. W. H. Dickinson[41] who, in a very interesting paper on "The Changes in the Nervous System which follow the Amputation of Limbs," stated as a result of his observations that the posterior roots may atrophy, though still in connexion with the ganglia, and the anterior though still in connexion with the cord; and it appears that long disuse of a nerve is sufficient to lead to its atrophy, although those nervous structures which immediately regulate its nutrition are complete. (Diagrams here reproduced.) (Figs. 7 and 8.) Bérard in 1839 had

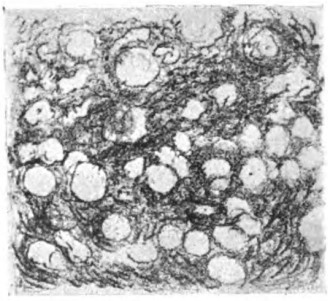
FIG. 7.



A transverse section of the normal sciatic nerve magnified 300 diameters. From an article by Dr. W. H. Dickinson published in the *Journal of Anatomy and Physiology*, November, 1868.

noticed atrophy of the central roots in a case of amputation. The degenerations described by Waller and Türck are degenerations *secondary* to injury and that described by

FIG. 8.



A transverse section of the sciatic nerve from the stump of the same person 53 years after amputation, also magnified 300 diameters. From an article by Dr. W. H. Dickinson, published in the *Journal of Anatomy and Physiology*, November, 1868.

Dr. Dickinson and numerous other observers since may be looked upon as a *disuse atrophy*. A little later Gudden[42] commenced his celebrated work upon atrophy of the cells

[37] Normal and Pathological Histology of the Nerve-cell, Brain, 1899, Part lxxxvi.

[38] Minute Structure of the Papillæ and Nerves of the Tongue of the Frog and Toad, Philosophical Transactions, 1849; Experiments on the Section of the Glosso-pharyngeal and Hypoglossal Nerves of the Frog, &c., ibid., 1850.

[39] Akademie der Wissenschaften Sitzungsbericht, Wien, Band ii., 1854.

[40] Nouvelle Méthode Anatomique pour l'Investigation du Système Nerveux. 1852. Waller. His son Dr. Waller gives on p. 352 of his Text-book of Human Physiology an unpublished drawing made in 1852 illustrating these very points.

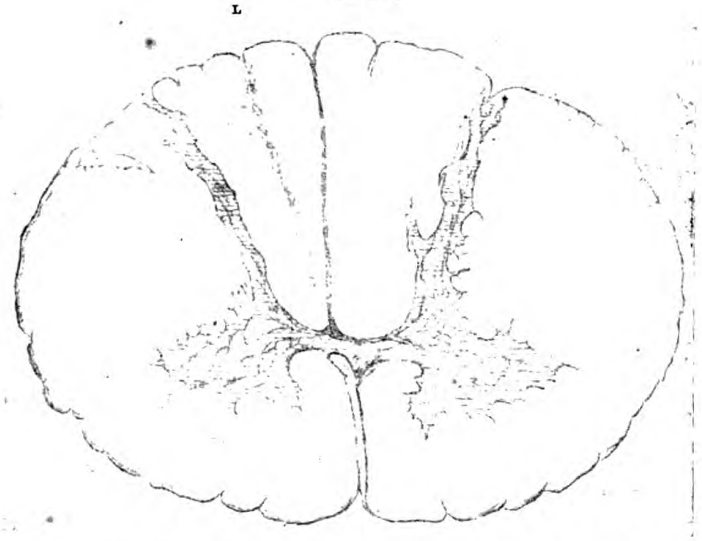
[41] Journal of Anatomy and Physiology, 1868.

[42] Ueber die Kerne der Augenbewegungsnerven, Neurologisches Centralblatt, 1882.

of origin of a nucleus by tearing out the nerve in young animals, and this method threw great light upon the anatomy of the nervous system. It was adopted with striking success by Forel and von Monakow.

There is another form of degeneration which, accepting the cellular theory of Virchow [43]—that the whole organism, including the nervous system, is made up of an aggregation of cells, each cell being a living unit having an independent existence—is a *primary* degeneration of the complex nerve-cell or neurone. Every cell of the body nourishes itself and is not nourished—that is to say, every cell behaves as a unicellular organism possessing a specific energy; and by the vital reaction of its protoplasm upon the lymph environment metabolic exchanges, constructive and destructive, are continually taking place correlative with functional activity. We have no evidence to show that regeneration of nerve-cells can take place in the higher vertebrates, but there is some evidence in favour of the view that all the nerve-cells of the adult body are present in a rudimentary form at birth. The growth of the nervous system depends not so much upon an increase in number of the nervous units, but in their size by multiplication and complexity of the processes. Cajal (I reproduce his diagram) has shown that this growth in complexity during the process of development is not only true ontogenetically but also phylogenetically. (Fig. 9.) Wallerian degeneration proves that the nerve-cell is the trophic centre and the embryological researches of His have shown that it is the genetic centre. If then we admit the generally accepted view that the nerve-cell in the higher vertebrates is incapable of regeneration when destroyed, the corollary is that every nerve-cell of the human body is endowed with a specific durability whereby in the healthy perfect organism every neurone possesses an equally adjusted vital energy, so that not only is functional equilibrium maintained in the physiological processes of active life but also of decay, the regressive metamorphosis incidental to old age being manifested by a gradual and general enfeeblement of the functions of the whole nervous system. Lucretius says: "When the body has been shattered by the mastering weight of Time, and the frame has drooped, with its forces dulled, then the intellect halts, the tongue dotes, the mind gives way, all faculties fail and are found wanting at the same time. It naturally follows that the whole nature of the 'soul' is dissolved like smoke into the high air, since we see that it is begotten along with the body and grows up along with it, and as I have shown breaks down at the same time worn out with age." [44] In contradistinction to this normal senile decay are premature pathological processes of decay, attacking groups, systems, or communities of neurones subserving special functions, whereby functional equilibrium is destroyed, symptoms of disease are manifested, and according to the functional relations of the system selected characteristic symptoms are presented, constituting clinical groups. The neurones of a particular system die prematurely owing to an *inherited or acquired want of durability* and the regressive process of decay may be looked upon as a nutritional failure on the part of the same cells to maintain that metabolic equilibrium essential and correlative to functional activity; consequently, *those parts most remote from the trophic and genetic centre of the complex cell (neurone) degenerate.* The process may be regarded as the inverse of development, the fine collaterals and terminal arborisations being the first to disappear. Dr. Hughlings Jackson [45] in his Croonian lectures, March, 1884, states: "I have long thought that we should be very much helped in our investigation of diseases of the nervous system, by considering them as reversals of evolution, that is, as dissolutions." Morphologically I conceive that the process of primary degeneration is an evolutional reversal commencing in the structures latest developed, namely, the myelin sheath and the terminal arborisations and collaterals of the neurone.

FIG. 9.



A transverse section of the cervical part of the spinal cord from a man whose left arm had been amputated 23 years before death. The left posterior column (L) is smaller than the right. From an article by Dr. W. H. Dickinson, published in the *Journal of Anatomy and Physiology*, November, 1868. Two circular darker patches in the white matter are accidental imperfections in the picture.

Before entering into a detailed account of my own observations upon the degeneration of the neurone, which will occupy most of the other three lectures, I will give a few illustrations relating to the neurone theory as regards the transmission of impulses and certain physiological problems connected with variable resistance to transmission and the spread of excitation.

EVERY POINT OF THE CENTRAL NERVOUS SYSTEM IS IN PHYSIOLOGICAL, IF NOT IN ANATOMICAL, CONNEXION WITH EVERY OTHER POINT, AND RESISTANCE TO THE SPREAD OF EXCITATION IS VARIABLE.

The nervous system may be said to consist of three systems of neurones—afferent, efferent, and association systems (*vide* diagram). (Fig. 10.) Every excitation can spread over the whole nervous system, but it is difficult to understand how there may be a variable resistance to the spread of an excitation, if we accept the diffuse

[43] Cellular Pathology.

[44] Lucretius, H. J. Monro's translation, p. 124.

[45] Post-Epileptic States, Journal of Mental Science, October, 1888.

continuous network theory of Gerlach or of Golgi, or how use may lead to the opening up of paths so that the time occupied by transmission of impulses may be diminished by repetition. Facts seem to show that there is a delay in the transmission of impulses in the passage from one neurone to another in the central nervous system. Does this delay occur at the junction of the terminal arborisations at the axon of one neurone with

FIG. 10.

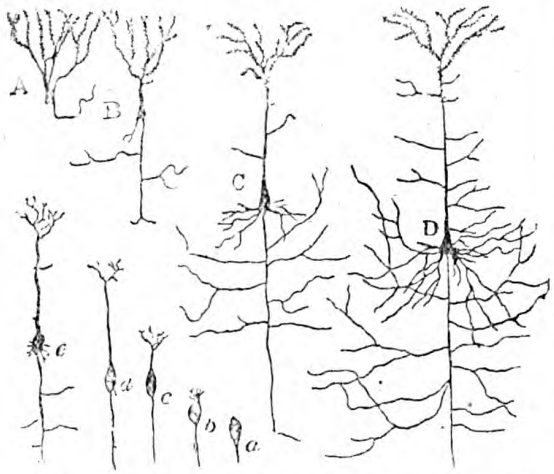


Diagram after Ramòn y Cajal to show the ontogenetic and phylogenetic development of a psycho-motor neurone. A, Frog. B, Newt. C, Mouse. D, Man. It will be noticed that as the zoological series rises there is an increase in complexity of the neurone and in the multitude of points of contact produced by an increase in the dendrons and side-branches of the axon. *a*, *b*, *c*, *d*, *e*, show ontogenetic development of a psycho-motor cell in the human embryo. The reversal of this process takes place in primary degeneration.

the dendrons of another? or does the resistance occur in the protoplasm of the cell body?

Bubnoff and Heidenhain found that the strength of stimulus was related to rate of transmission *in the central nervous system*, for on stimulation of the cerebral cortex of the dog, the reaction time is shortened by increase in the strength of the stimulus; whereas *the peripheral nerves* are influenced as regards rate of conduction only to a comparatively trifling degree by the same increase of stimulus.

It would therefore appear that a stimulus passes from the upper neurone to the lower more rapidly when the stimulus is strong than when weak, that is to say, the excitation in the upper neurone must reach a certain intensity before it is capable of flowing over and exciting the next in the series. Is the resistance to the passage of the impulses in the physiological junction of the upper and lower neurones, or in the protoplasm of the cell-body? According to the neurone theory it would be at the junction.

A stimulus which is insufficient to rise into consciousness may, by repetition, lead to summation, and the opening up of a path (*Bahnung*) by breaking down resistance; thus Urbantschitch has shown that very weak sounds, at first not audible, become so by repetition. This effect can be explained by the stimulus opening up the path to the auditory perceptive centre. The same effect can be produced by an effort of the will and concentration of attention, by which the auditory perceptive centre becomes more excitable. That an excitation may spread over the whole nervous system is not to be wondered at when we consider the length of some of the projection system neurones; for example, the posterior spinal sensory neurones, which have their cells of origin in the first sacral ganglion, extend from the nape of the neck to the sole of the foot. The central projection of the T-shaped process gives off a branch, which extends in the column of Goll the whole length of the spinal axis, and the peripheral portion as a sensory fibre extends to the sole of the foot. It is probable, therefore, that the central projection establishes connexions by delicate collaterals with the grey matter of the whole spinal axis. The reason why excitations do not spread is probably dependent upon the condition of the bio-chemical stability of the neurones. In strychnia and tetanus poisoning the most localised peripheral excitation will cause general muscular spasm; in both toxic conditions the spread is probably due to a bio-chemical change in the protoplasm of the spinal motor neurones to be referred to later, whereby the excitability is greatly increased, and a slight impulse is sufficient to fulminate the whole system of motor neurones. In epilepsy and other paroxysmal neuroses and psychoses it is possible that some altered condition of the blood associated with an inherited bio-chemical instability of certain groups, systems, or communities of neurones may act as *a fulminating agent*. In neuralgia and local hyperæsthesia the slightest general or distant local irritation suffices to produce pain; thus coughing, the vibration of a passing train, or a slamming door may produce pain by the stimulation of the hyper-excitable neurones.

If a skin reflex is increased on one side of the body then sometimes a slight excitation on the normal side is sufficient to produce the crossed reflex, while perhaps the excitation is not sufficient to bring about the normal reflex on the sound side. It sometimes occurs that associated sensations (in part of a painful nature) arise from pressure upon spots, which cannot be explained upon any known anatomical basis. This condition can be understood only by supposing that certain groups of neurones are in a state of hyper-excitability, and that the neurones which are stimulated have fortuitously opened up the connexion by association neurones and it has been fixed and made easier by each successive stimulation. The excitation spreads, but it is not of sufficient intensity to arise into consciousness, except in the hyper-excitable area.[46]

Besides hyper-excitability, there may be diminished excitability affecting groups, communities, and systems of neurones having special functions. It will be seen later that this lowered excitability is usually the result of the selective action of various poisons producing either functional depression or degeneration, whereby paralytic or other symptoms of loss of function arise in certain definite functionally related systems of neurones, thus causing correlative groups of clinical symptoms due, on the one hand, to perverted function, or loss of function, and on the other hand producing other groups of symptoms, as pointed out by Hughlings Jackson to be "due to over-activity of nervous arrangements which are perfectly healthy." This disturbance of the functional equilibration of the neurones may be studied by a consideration of the nervous mechanism concerned in voluntary movement. The diagram shows (Fig. 11) that three nervous circles, spinal, cerebral, and cerebellar, are engaged and all three systems of neurones take part, for in every voluntary movement impulses are passing up the afferent channels and down the efferent, and these two systems are brought into physiological harmony by the association systems.

DISTURBANCE OF THE FUNCTIONAL EQUILIBRATION OF THE NEURONES.

The perfection of a voluntary movement is brought about by the association and equable adjustment of systems and communities of neurones presiding over groups of correlated antagonistic muscles in such a way that the desired movement is produced with the least expenditure of nervous and muscular energy. Interference with the functions of any one system will disturb the normal functional equilibration that must of necessity exist in the action of the whole. Dr. Hughlings Jackson emphasises the fact that the symptoms of nervous disease are due as much to normal physiological functional activity imperfectly applied as to the actual loss of function occasioned by the disease. He pointed out that in paralysis of the external rectus, strabismus caused less trouble to the patient than the double vision occasioned by the physiological activity of the two retinæ upon which the images were prevented by the paralysis from falling upon corresponding points. Again, the importance of the integrity of one set of neurones having a specific function upon all the rest of the functionally related neurones was strikingly shown in some experiments by Sherrington and myself,[47] for we found that if the upper limb were rendered *apæsthete* by section of a number

[46] Goldscheider: Die Bedeutung der Reize für Pathologie und Therapie im Lichte der Neuronlehre, 1898.

[47] Experiments upon the Influence of Sensory Nerves upon Movement and Nutrition of the Limbs. Proceedings of the Royal Society, 1895, vol. lvii.

of the posterior roots (third cervical to third dorsal inclusive) not only was the limb of the animal rendered insensitive, but it was unable to perform the finer voluntary movements; although stimulation of the cerebral cortex in appropriate regions produced every movement, showing that the efferent path for voluntary movement was still open, but the animal

FIG. 11.

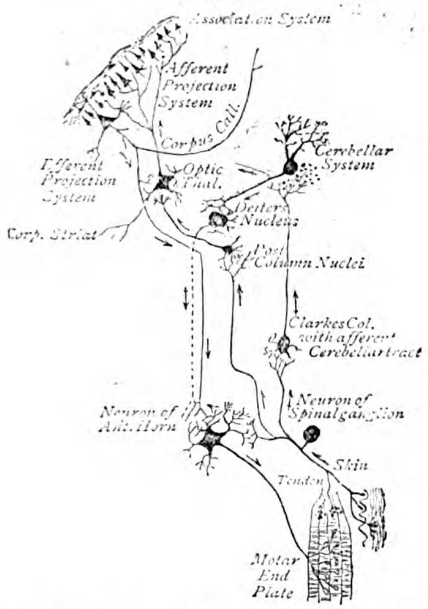


Diagram to show the three systems of neurones, illustrating the path of sensory impulses to the cerebrum and cerebellum, the path of outgoing impulses from the brain in a voluntary movement and the association of the afferent and efferent projection systems in the grey matter of the brain. This diagram also illustrates the path of a simple spinal reflex and of a psychical reflex.

was unable to *ideate* the movement. Another marked effect of section of the posterior roots was the immediate loss of tonus in the muscles, showing that peripheral stimulation is the important reflex agent in its production.

Again, the experiments of Bubnoff and Heidenhain[48] show the intimate relation which exists between the functionally related neurones. They found that a weaker stimulus was required to produce a movement of the limb by faradaisation of the cortex cerebri if the limb were gently stimulated; thus showing that not only in a movement do impulses pass from the cortex to the periphery, but that each successive movement and alteration in tension of the skin, muscles, tendons, and articular ligaments causes a transmission of *kinæsthetic* impulses (Bastian) from the periphery to the cortical centre with an increase of its excitability; thus there is a continuous molecular vibration occurring in all these circles, and this is of importance with regard to the metabolic exchange and nutrition of the neurones themselves; for stimulus is essential to function and bio-chemical action.

In discussing later the changes which occur in motor nerve-cells when their axons are cut we shall better appreciate the changes which take place by remembering that if a muscle is paralysed changes in tension of the related structures—namely, muscle, tendon, skin, ligaments, &c.—cannot occur, and that normal succession of kinæsthetic stimuli which travel up the afferent system *pari passu* with the stimuli that travel down the efferent no longer take place. Warrington,[49] indeed, has shown that section of posterior roots causes chromolytic changes in the anterior horn cells of the same side, indicating that this loss of stimulus produces a depression of the metabolic functions of the spinal motor cells, a fact quite in accord with the physiological results above described.

ANATOMICAL CORRELATION OF ASSOCIATED SYSTEMS OF NEURONES.

The correlation of associated functionally related systems, groups, and communities of neurones finds an anatomical proof in regressive associated atrophy of correlated structures. A good instance of this has lately been investigated in my laboratory by Mr. Tredgold. Cases have previously been published of a similar nature, but there are some points in this case which have not previously been noticed. The patient suffered from right congenital hemiplegia affecting especially the hand and foot. The lesion was primary in the optic thalamus of the left side; it caused atrophy of the left hemisphere, the right half of the cerebellum, and the spinal motor neurones of the cervical and lumbar enlargements, descending degeneration of the right crossed pyramidal tract, and of the left antero-lateral tract. We thus see, referring to the diagram, that all the functionally associated efferent tracts of the three nervous circles engaged in voluntary movement had undergone atrophy in consequence of the disuse occasioned by the primary lesion preventing the development of that normal association of correlated neurones necessary for perfect voluntary movement. There are certain very interesting points in this case which will be fully published in the next number of *Brain*.

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[48] Pflüger's Archiv, 1884, Band xxvi. Journal of Physiology, 1898, vol. viii., No. 1 and No. 2.

DIFFERENTIATION IN DIABETES.

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(*Continued from p. 1708.*)

THE "ALIMENTARY" FORM OF DIABETES.

A FAULTY power connected with the application of the carbohydrate matter of the food within the system constitutes the essential condition that we have to deal with in this form of diabetes. As a broad fact it is noticeable that when the carbohydrate principles of food are ingested by a healthy person nothing is seen of them afterwards and all that is observed is the general benefit that follows. The system possesses the power of placing them in a position to pass in the direction of utilisation. Neither in the blood of the general circulation nor in the urine do we find evidence given of their ingestion. A certain small standard amount of sugar is met with in both the blood and the urine, and this is not influenced by the presence or the absence of carbohydrate matter in the food. Not so, however, in the case of diabetes. Here the carbohydrate matter of the food finds its way in the form of sugar into the blood and thence into the urine. Failing to be assimilated, or placed in a position to be properly disposed of, it improperly reaches the general circulation as sugar, and this in its transit through the kidney runs off as waste material with the urine.

If by the exercise of assimilative power sugar is prevented from reaching the general circulation it cannot reach the urine. But the assimilative power is not in anyone found to be of unlimited capacity; and in the healthy subject sugar may appear in the urine as the result of an excessive ingestion of carbohydrate matter, especially if it be taken in the soluble form—for instance, as sugar—and at a period of fasting. When the assimilative power falls short of what is natural the amount of carbohydrate food that can be taken by a healthy person without giving rise to the escape of sugar can no longer do so without producing glycosuria, and in proportion as the power is reduced so is the curtailment in the amount of carbohydrate that can be taken without influencing the urine. Very varying degrees of impairment of the power are found to exist in different cases, producing varying degrees of severity of the complaint. This requires to be taken into account in treatment in order that a properly adjusted diet may be supplied to meet the particular demands of the case that is being dealt with. For the adoption, therefore, of a rational mode of procedure it is necessary that differentiation should be extended and carried into the group of cases that is now receiving attention.

We no longer hear of excessive secretion of sugar by the liver being talked of as the explanatory factor of diabetes. It is now generally accepted by those abreast of recent knowledge that things stand in a different position from what was

formerly taught. The phenomena of diabetes, as I have for a great number of years strenuously urged, stand in antagonism to the view that the carbohydrate of our food undergoes a functional transit in the form of sugar through the general circulation from the seat of ingestion to that of utilisation in the tissues. Everything points to the carbohydrate matter belonging to our food passing as sugar into the general circulation in diabetes in a manner that does not occur in health, and our language is shaped accordingly. We speak of its undergoing under natural circumstances a process of assimilation; and, in diabetes, of the failure of the proper performance of this process as leading to the result observed.

The object of assimilation is to put into a suitable state for contributing to utilisation. We know that animals are fat-producers from carbohydrates. No question now exists as to this. I have given grounds[1] for locating the chief seat of this process in the intestinal villi, the fat produced passing, like the ready formed fat that has been ingested, through the lacteals into the circulation. This is one method of the disposal of carbohydrate. I have also at the same time pointed[2] to its disposal by synthesis with nitrogenous matter into proteid, and my views, I think it may now be said, have been accepted by physiologists. Provision is thus made for the transit of carbohydrate within the circulation without passing into the urine. As a small-sized molecule, like that of sugar, there is nothing to prevent its escaping into the urine in the same manner as other small-sized molecular, and therefore diffusible, substances, whilst traversing the vessels of the kidney. It may rationally be taken that the size of the molecule constitutes an all-important point in relation to the question of elimination with the urine, and sugar locked up in a large-sized proteid molecule will not be placed in a suitable position for escaping, whilst in a free state it will. The investigations of the last few years on the relation between nitrogen and sugar elimination in phloridzin and pancreatic diabetes in the unfed animal, in which the tissues of necessity are the source of the sugar, show that there must be a very significant amount of carbohydrate entering into the constitution of a proteid molecule.

The recognition of the "*alimentary*" form of diabetes is effected, not only by the elimination of sugar being susceptible of control by the exclusion of carbohydrate matter from the food, but also by the absence of the products, diacetic and oxybutyric acids, of tissue breaking down, to which allusion has previously been made. If the ferric chloride test gives no reaction it may be taken that thus far the case is only in the "*alimentary*" form. It is fortunate for diagnostic purposes that the information can be so easily obtained. Corroborative evidence is afforded by comparing the results obtained by estimation of the sugar by cupric oxide reduction and the polarimeter; but, as has been mentioned, although it is compatible for diacetic acid to be present and oxybutyric acid to be absent the converse is not found to occur, from which it follows that an absence of diacetic acid implies also the absence of oxybutyric acid.

To ascertain the degree of severity of the condition existing in an "*alimentary*" case the food test must be employed. It may happen that the loss of assimilative power is such that even with a properly constructed restricted diet the carbohydrate contained in it (it is not possible to construct an existence diet entirely free from carbohydrate) suffices to throw a certain amount of sugar into the urine, but ordinarily the loss does not amount to this, and then under the restricted diet, rigorously followed, a sugar-free state of urine is secured. With a less degree of loss a certain amount of carbohydrate food is tolerated in conjunction with the restricted diet without leading to the passage of sugar; and so it runs on, more and more carbohydrate being tolerated in proportion as there is less and less loss of assimilative power, until the condition is presented in which it is only when an exceptionally large amount of carbohydrate has been taken that sugar is found in the urine. Such a condition is often the source of considerable perplexity on account of the irregularity as regards presence and absence of sugar noticeable in the state of the urine.

Having determined in a particular case the amount of carbohydrate tolerated the foundation is supplied for adjusting the diet rationally to meet the requirements. What is wanted is to keep the urine free from sugar and whilst doing this to allow as much carbohydrate as the circumstances permit. The medical practitioner has to feel his way, and this is best done by conjoining with the restricted diet a weighed amount of ordinary wheaten bread, which is the article most missed by the diabetic and most easily supplied in regular amount. It may be that only three ounces per diem, in one-ounce portions at each of the three principal meals, are found to be susceptible of being taken without leading to the passage of sugar. It may be four and a half, six, seven and a half, or nine ounces or more that are tolerated. Whatever the amount the conclusion may be drawn through its not running off as sugar in the urine that it falls within the assimilative power existing and thus stands in a position to go to the benefit of the system. Carbohydrate food that fails to be assimilated and is discharged as waste material with the urine cannot be of service to the economy; it is, indeed, pernicious on account of its passage as sugar through the circulation producing a deviation from the natural state. The larger the amount of sugar permitted to reach the general circulation and flow off with the urine the greater will be the abnormality existing and the more pronounced the various troubles occurring.

I have spoken of an allowance of bread as best suited to be given when it is desired to conjoin a certain amount of carbohydrate food with the restricted dietary, but if the quantity could be properly estimated the equivalent of starchy matter in any other article might be substituted. There is no scientific foundation for considering that the starchy matter of one article behaves in a different way from that of another. Between starch and the sugars, however, a difference exists inasmuch as the latter being soluble and diffusible, and therefore ready for immediate absorption, will enter the system with a rapidity not occurring with the former, which has to undergo transformation into sugar by the digestive secretions before absorption can take place. In cases where a considerable quantity of carbohydrate is tolerated it may be desirable to allow a portion of it to be drawn from other articles than bread. If this liberty is given in order to secure that the tolerating capacity is not overstepped a margin of assimilative power should be allowed to exist—in other words, the liberty allowed should stand well within that which will lead to the appearance of sugar in the urine.

We look to the urine for affording the means of ascertaining when the carbohydrate given surpasses the assimilative power existing, but it does not tell us when the carbohydrate is being unnecessarily curtailed. This we learn in another way. It is an interesting fact that the body weight in the following manner supplies the desired knowledge. When there is no toleration of carbohydrate food the restricted diet does not lead to loss of weight. Indeed, when the patient is first put upon it, after having sustained more or less loss before the commencement of treatment, the weight rises, sometimes to a marked extent, and is subsequently maintained. This subsequent maintenance of weight refers to the cases of the "*alimentary*" class in which the restricted diet is necessary for keeping the urine free from sugar. In such cases I have known patients go on for years fully maintaining their weight. On the other hand, should the case be one of a mild nature—one in which starchy food to some extent is tolerated—the restricted diet leads to a fall in weight. Loss of weight on the restricted diet with sugar-free urine may be read as meaning that an unnecessary amount of restriction is being practised, and when the starchy food is given, for the disposal of which sufficient assimilative power exists, the weight immediately rises.

When a restoration of assimilative power occurs in the course of treatment a loss of weight, upon the same principle, sets in unless the condition is met by a properly adjusted supply of carbohydrates. Restoration of assimilative power is the true *desideratum* of treatment and it often happens with persons above middle age that it is to a greater or less extent attainable. At first in these cases there is nothing special observable. The urine more or less quickly loses its sugar and the ordinary improvement in the weight and the general condition of the patient occurs. Later—it may be after the lapse of some weeks but more frequently of a few months—a loss of weight sometimes rather sharply sets in, with possibly a return of the feeling of weakness that was experienced at the commencement, which not unnaturally leads the patient to think that a relapse has occurred. With sugar-free urine, however, these phenomena, instead of being of bad augury, are really a good sign: they are indicative of returning assimilative power. As long as the assimilative power does not exist carbohydrate food

[1] Physiology of the Carbohydrates, 18 p. 248.
[2] Ibid., p. 241.

cannot be wanted by the system. As soon, however, as the power becomes restored the want springs up and unless it is met the described phenomena occur. I cannot penetrate the depths of metabolism and say why this should be, but it may be stated that it represents a return to the position belonging to health. We know that if a healthy person is deprived of carbohydrate food a loss of weight ensues. With the restoration of the absent assimilative power met with in the diabetic we have a retrocession to the natural state, and as the natural state in this respect is regained, so do the co-existing circumstances fall in with it. It is only gradually that the power is restored, and the case requires to be dealt with accordingly. A limited amount only of carbohydrate should be given at first. A large amount would to a certainty bring back sugar. The effect of the carbohydrate is to check the loss of weight and otherwise afford relief. Later there may be a recurrence of the phenomena, and this requires to be met by an advance in the allowance of carbohydrate food. Thus the case may progress until possibly, but not generally, the tolerance of about, or even actually, an ordinary diet is re-established.

The food test is often required to be applied for diagnostic purposes. It may also be turned to account in life insurance cases. In August, 1898, a patient came to me with an indefinite history of diabetes. He was not dieting and only sometimes had sugar been found. The urine passed for my examination at 10 A.M. was free from sugar. The patient went away and partook, at my suggestion, of greengages, sponge-cakes, and lemonade. The urine passed on his return three and a half hours afterwards contained 55·5 per 1000 of sugar.

In April, 1899, my opinion was sought in connexion with a life insurance case. The proposer's urine had for some time been occasionally found to contain sugar. He had been examined by a number of medical men and doubt existed with regard to his state. No dieting had been resorted to. The urine passed at the time of his visit to me contained no sugar. He partook in my house, at my request, of marmalade and bread and butter. This was at 1 P.M. He had a train to catch at 3 and at 2.35 he returned and passed urine which was found by copper reduction to contain 30·8 per 1000 of sugar. The existence of the sugar was confirmed by the polarimeter and the osazone test. In another similar life insurance case the amount of sugar found two and a half hours after the application of the food-test was 8 per 1000.

Any number of examples illustrative of the immediate effect of carbohydrate food on the urine in the diabetic might be brought forward and it represents the great point of contrast with the condition belonging to health. The contrast existing has an underlying significance in relation to the question of whether the carbohydrate of our food normally reaches the general circulation as sugar or not. If it is assimilated and thus disposed of before the general circulation is reached the opportunity is not afforded for its reaching the urine. If not so disposed of some other course of events must ensue and its appearance in the urine as sugar affords an indication of what must have happened. Failing to be properly arrested by assimilative action it passes as sugar into the general circulation where such sugar is to be recognised as distinctly as in the urine.

Everything contributes to show that in diabetes the fault lies with sugar being wrongly permitted to reach the general circulation as a sequence of the non-assimilation of the carbohydrate matter ingested, and not with failure of the disposal of sugar within the circulation under the assumption that it is normally fated to arrive there. The experimental introduction of sugar into the circulation by intravenous and subcutaneous injection affords us help in unravelling this matter and renders it manifest that our carbohydrate food could not reach the general circulation as sugar without the fact being revealed through the medium of the urine. I may refer to an extensive series of experiments recently undertaken by me and published in the *Journal of Physiology* for last year, from which it is seen that sugar, even in as small a quantity as the four-thousandth part of the weight of the animal, cannot be directly introduced into the circulation without exerting an influence upon the urine, and a certain amount of time is required for its disappearance from the blood to be effected. Looking at the quantity of sugar that reaches the urine from carbohydrate food in diabetes it is impossible, in view of the facts before us, to conceive that such could reach the general circulation in the normal state and escape showing itself in the urine. Evidence tells us that the system generally is not devoid of assimilative power over sugar after its arrival in the general circulation, but the power is altogether short of that which would be needed in this way to account for the disposal of the carbohydrate matter of our food, and especially without leading to implication of the urine. Disposed of by transformation into fat and synthesis into proteid before the opportunity is afforded for the general circulation to be reached conditions are supplied that harmonise with all the requirements of existing circumstances. Carbohydrate incorporated within the proteid molecule is in a position to be secure against exit with the urine. It can in this state exist in the circulation without escaping as waste material in its passage through the kidney and subsequently be applied wherever it is needed. In the "*composite*" form of diabetes it is abnormally set free from this combination and thence finds its way as sugar into the urine.

(*To be continued.*)

SOME NOTES ON THE INTRODUCTION AND SPREAD OF PLAGUE.

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THE gradual extension of plague over the world and its reappearance in Egypt bring home to us with great force the fact that this dread disease is knocking at our very doors and may soon effect an entrance unless we are constantly on the alert to prevent it. It seems, therefore, to be an opportune time to draw attention to some of the known facts about its spread and to make one or two suggestions with a view to preventing its introduction into this country.

It will be as well first to describe the course taken by plague when it attacks a place for the first time and then to consider the course taken by it later when it has assumed an epidemic form, because it has to be borne in mind that plague seldom starts as an epidemic but almost invariably as a few isolated cases which do not tend to spread to any extent and which soon disappear. In Bombay the disease was not recognised until it had practically become epidemic, but it is certain from information that has since been obtained that sporadic cases had been occurring in the city for some considerable time before the first case was reported. In Calcutta, on the other hand, it is probable that the very earliest cases were discovered immediately they occurred, as the health authorities had been constantly on the watch for the disease owing to its presence in Bombay. We have, therefore, had the opportunity in Calcutta of watching the progress of the disease from its commencement until now, when it has become epidemic.

The Calcutta experience has shown—and it is being confirmed elsewhere—that during the first year only a few cases occur. These are generally not of a very severe character, and in a short time the disease apparently disappears. The following year, however, it appears again about the same time as it originally made its appearance. Now, however, there are many more cases, the disease is distinctly more virulent and lasts longer, but can scarcely yet be said to be truly epidemic in character. Once more the disease appears almost to die out, but only to reappear in the next year as an epidemic, and we are now able to note the course pursued by an epidemic visitation. This course is shown very clearly in the chart published by Dr. T. Frederick Pearse in THE LANCET of May 5th, p. 1274. Starting about the time of the original appearance of the disease, at first few cases occur and the numbers increase slowly for some little time; then there is a sudden and swift rise—week by week the numbers mount higher until in about nine or ten weeks from the first definite rise they reach their maximum. For four or five weeks the numbers remain high, but fluctuate somewhat; then the decline sets in and the numbers fall rapidly for some weeks, until at last there is a gradual tailing-off to complete, or almost complete, extinction of the disease. The whole cycle in Bombay of the plague in its epidemic form occupies about six or seven months. During the remaining months of the year the disease appears to be slowly gathering strength for a

fresh and more virulent onslaught. Whether the limit of virulence has yet been reached it is impossible to say, as up to the present the sad experience of Bombay and Poona has only shown that each visitation has been more virulent than those preceding it.

Having described the course of a plague outbreak—and the bearing of this on the prevention of its spread will be seen later—a few words may be said about the means by which plague is passed from person to person and from place to place. Unfortunately, in spite of all efforts to discover it, the means by which plague is communicated from one person to another has not yet been discovered. We do not know how the sick infect the healthy. It appears improbable, however, that much, if any, infection takes place through the air or that mere contact with infected persons is sufficient to cause the disease, as it is rare for attendants on the sick to contract plague. It is very probable that the process is one of inoculation, either through wounds or abrasions, or, what is far more probable, by means of insects, especially fleas. It has been shown by Simon that fleas found on plague-infected rats contained the plague bacillus and it was proved by experiment that such fleas could convey the disease to other rats; and although it has been denied that the fleas which infest rats will bite human beings, it is only reasonable to suppose that the species which do bite human beings are as capable of conveying the disease from a diseased person to a healthy person as the flea of the rat is of conveying it from a diseased rat to a healthy one. It is, in fact, judging by clinical experience, extremely probable that vermin play an active part in passing plague on from person to person.

Of the means by which plague is conveyed from place to place we know very little more than we do about its passage from person to person. It can, of course, be carried by an individual who is already suffering from the disease; other modes of conveyance are more or less conjectural. A certain number of cases have been traced to the importation of rags and dirty clothing from infected localities, and in other cases it is assumed that rats have carried the disease. While it is probably true that diseased rats in one place have been the means of conveying the plague to healthy rats in another it has not yet been shown that rats play an important part in spreading the disease among human beings. In many places a great mortality has been observed among rats prior to the appearance of plague among the inhabitants, but such mortality has not always been followed by plague among human beings. It is possible that both rats and human beings are infected from the same unknown source, but as rats are much more susceptible to the disease than man is we should naturally expect that if both were infected from the same source the rats would first show evidence of the infection, while in a certain number of cases they would be infected and human beings would escape. Inasmuch, however, as the disease found in rats is undoubtedly identical with that which occurs in man, and as in a few cases proof has been forthcoming that persons have contracted plague from the bites of rats, these rodents must be considered to be a source of great danger. It is unnecessary to consider here the other animals which may contract, and be a possible means of disseminating, plague, as Dr. F. G. Clemow[1] has lately published full and instructive notes on this point, and as rats are the only animals with which we are likely to be immediately concerned.

I may now pass on to suggest some of the means to be adopted in trying to prevent the introduction and spread of plague, and must premise my remarks by saying that when once plague has become epidemic in a country we know as yet of no means of absolutely stamping it out. Every effort therefore should be made to prevent the disease from getting a footing in this country, as, once in, we shall have the greatest difficulty in getting it out again.

A recent writer has said that "there is no mystery about plague. It can be stamped out like any other infectious disease or like a pest of locusts or black beetles." Such a statement is justified neither by the present condition of things in Egypt nor by past experience of plague in other countries. Statements of this nature are calculated to do harm by engendering in the public and the profession a false sense of security and by leading them to believe that a few cases of plague occurring in a country are of no particular consequence as they can easily be stamped out by sanitary measures. It is because sanitary measures have hitherto generally failed to effect this desirable result that I lay such stress on our using every means in our power to prevent the introduction of the disease.

The measures to be adopted in preventing the spread of plague may be considered under two heads: first, those adopted by the country in which plague has appeared, to prevent the disease from passing out of the country by sea or by land; and secondly, the measures adopted by threatened countries to prevent the disease from gaining ingress. The Venice Convention has provided for the first, and it is unnecessary to say much about it, excepting on one point and that a very important one. Although provision is made for attempting to prevent the egress of plague while the disease is actually in a country, it cannot be too strongly urged that the danger of exporting the disease is not over when it has apparently been stamped out. Too little attention has been paid to this fact. I have already shown that a period of quiescence always follows an outbreak of plague and is especially marked while the disease is yet new to the country, may indeed be so marked that the plague appears to have ceased to exist in the community. But the belief that plague has died out with the last reported case does not appear to be founded on fact. When once the disease has attacked a place it has been abundantly proved that the same place is liable to be attacked again, and generally is so attacked within the next 12 months. From personal experience and from statements made to me by many capable native medical men in Bombay I am strongly inclined to believe that during the whole time between the dying out of plague in one year and its reappearance in the next the disease is really present among the community in a mild form. In 1898 and 1899, during the time when plague was supposed to be almost absent from Bombay considerable numbers of people suffered and recovered from a disease which there is little doubt was plague in a modified form, but which was not reported as such. The disease at this time was of such a mild nature that most of the characteristic features were absent; it appeared to be passing through a phase when it was gathering strength for a fresh attack, and the cases did indeed become gradually more virulent until they apparently led up to, and became merged in, a fresh outbreak of plague. This modified form may easily be overlooked, especially where simple fever is so common as it is in tropical countries, nevertheless plague is capable of being carried from place to place in this form, and of afterwards passing into the most virulent form of the disease. This probably accounts for the many unexplained outbreaks of the disease in widely separated places where no possible source of infection could be found. The great danger of this form of plague is not only that it easily escapes detection at its place of origin, but that it may give rise in a new community to a disease of such a mild and unsuspicious nature at first that it may have spread considerably and to distant parts of the country before it is recognised. Inquiry has shown that this is not purely an assumption, but that cases of this nature have undoubtedly occurred in India. No place, then, in which plague has occurred should be considered to be absolutely free from infection until 12 months after the outbreak, and suspicious cases should be carefully looked for during that time.

Some of the preventive measures to be adopted by a country threatened with a visitation of plague may now be considered. Most of these are obvious by what has been said about the various modes of disseminating plague. It is imperative, in the first place, that the strictest examination should be made of all vessels and all passengers coming from infected areas, and in this connexion it is necessary to say that we must have the cordial coöperation of the people if our efforts to prevent the introduction of the disease are to prove successful. All persons who come from places where plague is present, or is suspected of being present, should consider themselves possible sources of infection and should not treat even an apparently slight indisposition lightly for at least 10 days after leaving a vessel which has been in an infected port. It is only with the help of such persons that the first cases of plague will be discovered, and it is only by discovering the very first cases that the pestilence will be prevented from spreading and the country saved from this devastating disease.

The second point to which great attention should be paid is the mortality among rats in seaport towns. Not so much with a view to increasing this mortality as because in rats

[1] Brit. Med. Jour., May 12th and 19th.

we have the most valuable known indicator of the approach of plague. If, however, an organised attempt is to be made to destroy the rats in this country, but more especially in seaports, it should be made now; it will probably be useless when the plague has appeared among human beings. It is because rats generally show that plague is present among them before it has appeared among the inhabitants of the same place that, until such time as the rats are exterminated, if they are to be exterminated, a close watch should be kept on their movements and their death-rate in seaport towns, and some of those found dead should be regularly submitted to bacteriological examination. An increase in the rat mortality is a very plain danger signal to which we should pay prompt attention. If the plague bacillus is found in rats submitted for examination persons in the vicinity of the place where such rats were found should be urged to submit to inoculation as a prophylactic measure, and all medical men should be warned to be on the look-out for cases of the disease.

A crusade which it is quite as necessary should be instituted as the crusade against rats is that against vermin —fleas and bugs particularly. As I have already stated there is good reason for believing that fleas convey the plague from diseased persons to healthy persons and may act as carriers between the rat and man. Fortunately the majority of English persons have an instinctive aversion to vermin of any kind and try to keep their homes and persons clear of them, apart from the question as to whether they convey disease or not. But it is quite a different matter in the case of the slum-dwellers. Everyone who is acquainted with the slums in any of our cities knows that they simply swarm with vermin. Our sanitary measures have not touched this evil. We may provide people with pure water, unadulterated food, and good drains, but no sanitary measure, no Act of Parliament, will ensure personal cleanliness. We pride ourselves as a nation on our personal cleanliness. The slum-dweller in these islands is no cleaner than our ancestors were when the Great Plague swept over the country. Nor can we expect much improvement in this respect so long as the terrible overcrowding which is so prevalent in the slums is allowed to continue. This lack of personal cleanliness and this overcrowding constitute a danger of the gravest nature in view of the threatened invasion of plague. It should be made widely known that the extermination of vermin is an important factor in the prevention of the introduction and spread of plague.

The only other point to which I wish to draw attention is the disinfection of rags and dirty clothing coming from infected places. The undoubted danger existing in dirty clothes which have been in a plague-infected house is probably due rather to the vermin so often present in them than to the dirt in which the bacillus is supposed to be present, and for this reason the authorities should see to it that dirty clothing and rags from infected places are not imported into this country until they have been acted on in such a manner that not only all bacilli, but also all vermin, have been killed.

The conclusions to be drawn from these remarks are that if plague is to be prevented from entering this country there must be (1) a most careful search made for modified cases of plague for some considerable time after the disease has apparently died out in places that have been attacked by it; (2) rigid inspection of vessels and passengers coming from infected places, not only while they are known to be infected but for months afterwards; (3) disinfection of dirty clothing and rags coming from such places; (4) a sharp look-out kept for any increased mortality among rats in seaport towns, with repeated search for the plague bacillus in the bodies of those found dead; (5) an attempt made to exterminate the vermin which may act as carriers of the plague; and (6) early inoculation of the people when plague has appeared among rats.

Muswell Hill-road, N.

PRESENTATION TO A MEDICAL MAN.—On the occasion of the presentation of the certificates to the successful students of the "Home Nursing Class" of the Ware Division of the St. John Ambulance Association, held at the Mission Hall, Amwell End, on June 12th, Mr. A. J. Boyd, M.D. Dub., was the recipient of a pair of silver candlesticks and a silver penholder as tokens of gratitude for his able instructions to the class.

ON CHYLOUS ASCITES, WITH AN ILLUSTRATIVE CASE.[1]

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GYNÆCOLOGIST AND LECTURER ON DISEASES OF WOMEN TO THE ROYAL INFIRMARY, EDINBURGH; CONSULTING PHYSICIAN TO THE ROYAL MATERNITY HOSPITAL, EDINBURGH.

OBSTRUCTION of the thoracic duct, especially if it be gradual, may give rise to no symptoms whatever during life, since anastomotic channels are established through which the lymph and chyle enter the circulation. In other cases, however, congestion of the lymphatic system gives rise to definite signs which can be clinically recognised, and this is especially so when the lacteals of the abdominal cavity are within the area affected. A few cases have been recorded in which chylous fluid was found in the pleural cavity, but in all these this was only secondary to a similar effusion into the peritoneal cavity. Only some 63 cases of chylous ascites are recorded, so that it is an extremely rare condition, and I therefore feel justified in bringing the notes of the following case before the society.

A woman, aged 39 years, was sent to the Royal Infirmary, Edinburgh, by Dr. J. T. Prangnell of Falkirk, on Sept. 29th, 1899. She complained of swelling of the abdomen and gradually advancing weakness and emaciation. Up to within three months of admission she had enjoyed good health. She had had six children—the youngest being three and a half years old—and menstruation had been normal and regular. For two months she had noticed the gradual enlargement of the abdomen and had been losing weight. The patient was found to be generally somewhat emaciated and the examination of the abdomen revealed considerable distension evidently due to ascites. The superficial veins were much distended, the skin was somewhat deeply pigmented, and on deep palpation several irregular hard masses could be detected in the umbilical and epigastric regions. A diagnosis of cancer of the omentum and mesentery with resulting ascites was arrived at. For some time, with careful dieting, the patient's general condition distinctly improved, but occasionally for a day or two she had a relapse showing itself in nausea and vomiting. After being three weeks in hospital she was, however, on the whole, distinctly better, although the distension of the abdomen was greater and caused her much more inconvenience.

On Nov. 2nd the abdominal cavity was aspirated and 380 ounces of fluid were removed. This fluid presented a remarkable appearance. At first sight it was exactly like pus, but when placed in a specimen glass it seemed much more mobile. The fluid had a pale yellow colour with a suggestion of opalescence, and at first it was quite homogeneous, showing no deposit, but after standing for about 24 hours a slight creamy layer was found on the surface. It had a sweetish milky odour. Dr. T. H. Milroy kindly examined the fluid for me and reported as follows:—"The fluid which was sent to me consisted partly of finely emulsified fat, but more largely of a granular débris consisting mainly of fat. About 2 per cent. of fat was present. The pigment present was lutein." The granular débris was found on microscopical examination to consist of leucocytes in a state of fatty degeneration. After withdrawal of this fluid examination of the abdomen revealed a moveable tumour in the region of the gall-bladder and an indefinite irregular solid mass was detected in the region of the greater curvature of the stomach. The aspiration of the abdomen relieved the patient of her symptoms for some time, but she still suffered from occasional vomiting and inability to take solid food. The vomited matter was examined frequently, but contained no blood. From Nov. 16th—that is, about a fortnight after the tapping—remarkable and specially pronounced emaciation set in, while the abdominal cavity became more and more distended with fluid. The discomfort induced by rapid accumulation was so great that, although the patient was evidently sinking rapidly, she was tapped again and about 350 ounces of fluid were removed. The fluid presented exactly the same characters as before. The patient, however, did not seem to improve in the least, but gradually got worse and died five days later, on Nov. 26th.

[1] A paper read before the Obstetrical Society of Edinburgh on March 14th, 1900.

A post-mortem examination was made by Dr. D. A. Welsh of which the report was as follows:—"The body showed marked emaciation and the skin was jaundiced. Thorax.—Pericardium and heart were practically healthy, but the heart was small and showed some brown atrophy. Each pleural sac contained about six ounces of bile-stained fluid. The subpleural lymphatics were studded with minute cancerous nodules; these were not found in the substance of the lung. There were signs of chronic bronchitis and emphysema. Abdomen.—A few ounces of turbid bile-stained fluid were removed from the abdominal cavity. The small intestine showed some commencing peritonitis. The mesenteric glands were generally enlarged from malignant infiltration. The stomach was much shrunken and filled with deeply bile-stained mucus. A large cancerous neoplasm was growing from the inner surface of the anterior wall, extending from an inch from the pylorus for four inches along the lesser curvature. In appearance the tumour was a soft fungating mass raised about one inch above the surface of the healthy mucous membrane and presented some ulceration in the centre. The tumour consisted largely of soft gelatinous tissue, but was evidently malignant in nature and had undergone extensive colloid degeneration. The gall-bladder was distended with bile and the glands and tissues along the larger bile-ducts and in the porta of the liver were extensively infiltrated with cancer. The liver itself contained one small cancer nodule. The spleen was healthy, but the kidneys were somewhat cirrhotic and fatty. The small intestine was throughout its whole length greatly thickened and contracted. It showed an immense number of small cancer nodules surrounding the lacteals close to the mesenteric attachment. The lacteals were very extensively occluded. The thoracic duct and the receptaculum chyli were carefully dissected out and were found healthy. There was, however, a mass of infiltrated glands lying close beside and pressing on the receptaculum."

Remarks.—The cause of chylous extravasation is either an obstruction to the flow of chyle or a distinct rupture of the thoracic duct or of the receptaculum chyli. A few cases of rupture have been recorded—as, for example, by Quincke—in which chylous hydrothorax resulted, and Wilhelm reports a case in which the accident occurred during an attack of whooping-cough. Whitla has also recorded a case of rupture. Rokitansky records a case of peritoneal and pleural effusion in which the fluid was chylous in nature. It was associated with mitral regurgitation and cardiac dilatation. In my case the chylous effusion seemed to be due to an obstruction to the flow of chyle at the junction of the intestinal mesenteric lacteals. The thoracic duct itself was normal and the pressure of the cancerous glands around the receptaculum was probably not sufficient to occlude it. Thus in some cases the lesion was in the thoracic duct itself, whereas in others it has been due to congestion of the larger lymphatic capillaries or of the smaller lacteals within the mesentery itself. In most of the cases the termination has been fatal, due partly to the original disease and partly to the consequent starvation. Some authorities have endeavoured to differentiate between a true chylous ascites and an ascites adiposus or chyliformis. Microscopically the fluids are similar in appearance, but on chemical and microscopic examination the differences are detected. Senator adopts Quincke's classification and distinguishes the two as follows. In chylous ascites the microscope reveals very finely granular fat cells and an absence of large fat-globules; and in adipose ascites chemical examination shows the presence of sugar; it shows similar but much larger fat cells, lymph cells, and in some cases cancer cells. This variety occurs chiefly in tuberculous or malignant peritonitis and is a result of a fatty degeneration of the serous endothelium and of lymph and pus cells. Although this view is very generally accepted a few authorities maintain that the difference cannot be held to be absolute, for they assert that since sugar is absorbed chiefly into the portal circulation direct, and only a minute quantity, if any, by the lacteals, the presence or absence of sugar cannot be considered of any importance in differentiating between the two conditions. Further, they seem disinclined to believe that fatty degeneration of endothelial tuberculous or cancerous cells could occur to such an extent as to give ascitic fluid such definite characteristics.

In a recent paper read at the Société Médicale des Hôpitaux M. Fernand Widal and M. Prosper Merklen discussed lactescent ascites of lymphatic origin. They pointed out that many authorities regarded milky fluid in the abdominal cavity as chylous in nature. Others, however, consider that the fat might be due to fatty degeneration of extravasated cells. M. Lion first showed that milky ascitic fluid might be other than chyle. In a case of cancer of the ovary he found that the liquid contained a substance analogous to casein, but no fat. M. Aschard and M. Apert respectively published cases in which the fluid when examined under the microscope showed no fatty globules but innumerable minute refractile granules. M. Widal and M. Merklen hold that the distinction between chylous and non-chylous ascites presents great difficulties and, further, that in the chylous variety the quantity varies very much in different cases and even at different times in the same case. They also point out that the kind of leucocytes found in the effusion show that chylous ascites may be lymphatic in origin and they record an illustrative case. Microscopic examination of the fluid removed showed no fatty particles but abundance of leucocytes, 90,000 to 100,000 per cubic millimetre. Only cells of different sizes, all with a single nucleus, were discovered. At the necropsy no peritonitis was found and even though there was no apparent lesion of the abdominal lymphatics the milky liquid was proved to be lymphatic in origin. The patient had cirrhosis of the liver and tubercle of the lungs.

Edinburgh.

A PLEA FOR EARLY OPERATION IN CASES OF UNDOUBTED TUBERCLE OF THE LUNG.

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IN bringing forward the following suggestions with respect to the excision of portions of lung tissue in cases of tubercle I am met by two special difficulties. The first is that which must inevitably arise of persuading any patient, feeling comparatively well and suffering only from a small patch of tubercle, to submit to a more or less formidable operation for its removal. The second arises from the same cause and consists in the absence of actual cases of operation of the special kind referred to. I must therefore base my observations, chiefly on anatomical considerations, on accidents affecting the lung tissue and on those somewhat rare cases in which operation on the lung has been found necessary for other and graver reasons. The difficulties will no doubt disappear as the public mind becomes more familiar with surgery, but this can only take place concurrently with its progress in the direction here indicated.

The prognosis of tuberculosis is always difficult, its medical treatment vague, empirical, and uncertain. It is only surgery which offers a really good prospect of success. Some may be disposed to question this, but the fact is in practice admitted, for when any other organ than the lung is attacked extirpation is the first remedy proposed and it is usually attended with success. Tubercle in the joints, tubercle in the glands, lymphatic or otherwise, in the bones and muscles, in the skin, in the abdomen and pelvis is successfully treated by operation, while the lungs—in which, after all, the greatest havoc is wrought by this disease—remain practically unexplored by the surgeon's knife. The futility of all other treatment was recognised a hundred years ago by John Hunter. "Internal remedies," he said, speaking of scrofula, "have very little power."[1] "Local applications—especially those of a stimulating kind—all prove injurious."[2] "As to external parts, the only certain cure is extirpation."[3] "The best surgical treatment for those cases which will not admit of removal is to do nothing."[4] He finally emphasises his opinion by the statement that short of complete extirpation even "cutting always does harm."[5] In principle all these statements still hold good. In practice they mean something very different. Then they meant that most cases were incurable. Now they mean that most cases are curable. The area of surgery has enormously increased since Hunter's time. Indeed, it has been revolutionised. Then the cases that would admit of removal were few. Now the

[1] Works of John Hunter. Palmer's edition, vol. i., chapter xxi., p. 598.
[2] Ibid., p. 600. [3] Ibid. p. 598.
[4] Ibid., p. 600. [5] Ibid.

exceptions are few and surgical treatment is the rule. The principal exception, however, is just that region of the body where the greatest havoc is wrought by the disease. If "the only certain cure is extirpation"[6] extirpation ought to be universal, and our chief object should be to bring these great and highly susceptible organs within the scope of surgery. This does not mean the extinction of the physician. It means a development to the highest pitch of his accuracy of diagnosis, as well as of the observation of the bacteriologist and the skiagraphist, and of the thought, skill, and judgment of the surgeon. It is true now, as it was in Hunter's time, that "parts frequently get well of themselves." But it is equally true that still in some cases "the only certain cure is extirpation."[7] To decide which these cases are will tax all our powers of observation and diagnosis.[8]

The danger, generally speaking, of wounds of the lung is well known and has been recognised from the earliest times. πάγη δ' ἐν πνεύμονι χαλκός.[9] In this case death does not seem to have taken place until the abdomen was also ripped open with a sword. 3000 years ago it was understood that wounds of the lung were not immediately fatal.[10] The experiments of Professor A. Richet of Paris[11] on the living dog showed that the total collapse of one lung from opening the pleura caused a considerable degree of dyspnœa (suffocation he called it), but very rarely an immediate fatal result. In man, he says, the case is different: the sudden loss of so large a proportion of the breathing apparatus causes fatal suffocation.[12] He gives one case (from the "Bulletin de Thérapeutique," 1842, tome xxii., p. 358) in which death occurred several hours afterwards from an accident in which the pulmonary pleura was torn open and the lung collapsed; and another (from the "Archives de Médecine," 1840, tome ix., p. 489) in which death took place in three hours, when the right lung was found torn in three places and so collapsed as to be hardly visible. In this case the injured lung was normally the larger of the two.[13] On the other hand, Professor Longmore, in Holmes's "System of Surgery," in his article on Gunshot Wounds, states that "when the compression is limited to one lung, though it may be completely collapsed in consequence, especially if the opening in the chest wall be a large one, the symptom of dyspnœa may be wholly absent."[14] This, however, must be unusual. Indeed, all observers, both ancient and modern, are agreed that traumatic pneumothorax is a condition of great danger, though far less fatal than that resulting from ulceration of the pulmonary pleura from disease.[15] The traumatic form, too, when it affects only one side appears to be rarely fatal immediately. The danger is, *ceteris paribus*, in proportion to the degree of collapse.

This, then, is the most important danger in connexion with all operations involving the lung and pleura. The cause of this danger is an active and not a passive one. It was formerly taught that collapse of the lung in wounds of the chest-wall was due to atmospheric pressure. It is sufficiently obvious, however, that when the pulmonary pleura is intact and the parietal pleura opened the pulmonary pleura is subject to atmospheric pressure on both sides—on the outside through the hole in the chest-wall and on the inside through the trachea. These two are equal and contrary and as they must thus neutralise one another cannot either of them be adequate to cause collapse. There is evidently an active vital force at work also, and this is the retractility which is inherent in the elastic tissue of the lung and is one of the factors in ordinary expiration. The experiments of Richet on the dead subject proved this to demonstration. When the lung was healthy and free from adhesions collapse invariably took place on performing artificial respiration after making a subcutaneous incision into the lung by means of a tenotomy knife.[16] When congestion, or even emphysema, was present in the lung the retractility, of course, was incomplete.[17] But the principal condition which intervenes to prevent collapse of the lung is adhesion of the pleural surfaces. The prevalence of this condition accounts no doubt for many of those cases of gunshot and other wounds of the lung which would otherwise be fatal.[18] In operations on the lung the same holds good. After all, what is the normal condition of the pleura, adherent or non-adherent? Adhesion is due to a morbid process and must therefore be pathological. But a process which after a certain age appears to have taken place in the majority of a species, and which tends to save life after operation or accident, if pathological, can hardly be considered abnormal or unnatural. A condition so prevalent, although apparently subject to no special rule, is anomalous on account of its extensive incidence and its protective influence in certain injuries. It is difficult to see why, important as pleuritic adhesions are in preventing collapse of the lung, all people should, as we suppose, be born without them and that a large proportion should subsequently develop them as a pathological condition. The statistics of their actual incidence it would be interesting to know. A good working majority might sometimes tend to justify an operation.

"Perhaps there is hardly one in fifty," said John Hunter, "who at the age of fifty is without adhesion of the lungs to the pleura."[19] If this is correct—and Hunter was a great dissector and an accurate observer—it looks well for operations on those over fifty years of age, but this is not the age at which we usually expect to meet with incipient tubercle, although it is by no means uncommon even at a much later age. In 1845 Richet, in making some researches on the lymphatics of the lungs, dissected 75 subjects. Of these 150 lungs 36 only were free from adhesions.[20] In this instance he was selecting healthy lungs as far as possible. Ordinarily the proportion of adherent pleuræ was much greater. "Pour mon compte," he says, "depuis plusieurs années que mon attention est attirée sur cette disposition, c'est à peine si j'ai rencontré un sujet sur deux dont les poumons fussent complètement libres dans la cavité pleurale."[21] These figures, however, as far as I have been able on a small scale to test them, seem to be hardly borne out by the experience of some of the more recent examinations. Of 283 cases recorded in the post-mortem book at St. George's Hospital for 1892, 149, or 52 per cent., appear to be free from adhesions or other affections of the pleura; 100, or 35 per cent., to present old adhesions; and 40, or 14 per cent., effusion or growths in the pleura. Of the 149 subjects with healthy pluræ 34, or 22·7 per cent., were over 50; of the 100 with old adhesions 34, or 34 per cent., were over 50; and of the 40 with present pleural mischief eight, or 20 per cent., were over 50. The average age of the cases free from adhesions was 38, of those with adhesions 39·8, and of those with recent effusion 34

[6] Ibid., p. 598.

[7] Ibid., p. 598.

[8] I am not referring now to the electric cautery, the "point de fer" treatment, as it is called. This is already on trial and has been employed, I believe, with some success, especially in Paris. I refer to genuine cutting operations with the knife, in cases where it may be necessary to remove bodily large or small portions of the lung, or in which the "point de fer" treatment is for any reason inadmissible or insufficient.

[9] Iliad, Δ 523.

[10] This fact has been emphasised more than it has ever been before by the large proportion of recoveries from wound of the lung among the troops now fighting in South Africa. The antiseptic treatment has given such wounds fair play and the opportunity of running their normal course, which in former wars they did not have. In them the deaths were evidently due, not to pneumothorax or emphysema or hæmorrhage, but to septic poisoning.

[11] Surgeon, when I attended his course in 1869–70, to the Hôpital des Cliniques, the special hospital in connexion with the École de Médecine.

[12] A. Richet: "Traité Pratique d'Anatomie Médico-Chirurgicale," 1866, p. 581: "Dans les expériences sur les animaux, sur les chiens, par exemple, la privation subite d'une moitié de l'appareil respiratoire détermine des suffocations qui n'entrainent que rarement une morte immédiate; mais il n'en est pas de même chez l'homme; cette brusque suppression d'une aussi notable partie d'une fonction si prochainement liée à la vie, entraine des suffocations mortelles."

[13] Ibid., pp. 588 and 589.

[14] Holmes's "System of Surgery," second edition, vol. ii., p. 194.

[15] Vide, inter alia, Matas on Acute Traumatic Pneumothorax, Annals of Surgery, April, 1899; Brit. Med. Jour., 1899, vol. i., epitome, par. 343. Poland on Injuries of the Chest, Holmes's "System of Surgery," vol. ii., p. 589. Aitken's "Science and Practice of Medicine," vol. ii., p. 702.

[16] Richet: Traité Pratique d'Anatomie Médico-Chirurgicale, pp. 576 577, 578, 579.

[17] Professor Osler ("Principles and Practice of Medicine," p. 608) appears to be of opinion, based on the experiments of West, that the cohesion between the two pleural surfaces is normally in excess of the elasticity of the lung and is thus in many cases sufficient to prevent collapse. He admits, however, that in some cases pneumothorax has even followed exploratory punctures with a hypodermic needle. It does not seem quite clear that in all these experiments, as in those recorded by Richet, the pleura was absolutely free from adhesions. If not it would explain the strange discrepancy between them and the cases last mentioned, in which adhesions were obviously absent.

[18] One of the first, if not the first, to point out this fact was Roux in a paper in the Bibliothèque Médicale for 1807, entitled, "Sur les avantages de l'adhérence du poumon aux parois de la poitrine dans les plaies pénétrantes de cette cavité." The large percentage of recoveries from wound of the lung already referred to among the troops in South Africa is probably due in some degree to the prevalance of this condition.

[19] Surgical Works of John Hunter, Palmer's edition, vol. i., p. 442.

[20] Traité Pratique d'Anatomie Medico-Chirurgicale, p. 580.

[21] Ibid.

The addition of phthisical cases, which are excluded from the hospital, but in which pleural adhesions are very largely prevalent, would perhaps raise the general incidence of this condition to more than 50 per cent.[22]

In operations of the lung where the pleura is free from adhesions pneumothorax, of course, is possible. Pneumothorax alone, however, and limited to one lung, is not by any means a necessarily fatal symptom. Phthisical cases (and these constitute nine-tenths of all cases in which the pulmonary pleura alone is perforated from disease) die from suppuration or spreading tuberculous mischief, but pneumothorax in an otherwise healthy person—and this includes traumatic cases—often ends in recovery.[23] Rarely indeed does death take place immediately. In the most severe cases recorded some hours have elapsed. It is evident, therefere, that in cases of operation, if a plan of treatment is decided on, there is ample time to carry it out and restore the parts to a more natural position long before fatal collapse ensues.

The first danger, then, to guard against in operations on the lung—and this is present only when the lung is practically free from adhesions—is pneumothorax. In wounds of the lung, however, it seems to be, from recent experience, a not very frequent condition. In his report of the battle of Tugela Mr. Treves gives, among numerous chest wounds resulting in surgical emphysema and hæmothorax, and a case or two of empyema, only one of pneumothorax.[24] In the report of the Spion Kop action he lumps together pneumothorax, hæmothorax, and empyema. Yet, "taken as a whole," he says, "this series of cases has done well."[25] Mr. Dent, in a report from Maritzburg on Feb. 10th, says that although "hæmothorax occurs pretty frequently" "pneumothorax" is rarely seen.[26] Sir William Thomson, writing from Cape Town on March 6th, says: "The penetrating bullet wounds of the thorax are numerous, but are all doing well."[27]

An experiment of John Hunter shows the natural tendency to heal of wounds in the lung and pleura. He shot a dog through the lung to see the process of suppuration in the pleura. "But," he says, "both nature and the dog cheated me, for ..... the dog would always lie on the wounded side. The lungs adhered to the wound and no further inflammation took place."[28] Notwithstanding the result in this case Hunter utters a strong warning against opening the pleural cavity even in cases of pneumothorax and surgical emphysema "because it will produce the suppurative inflammation all over the internal cavities and most probably make the wound in the lung ulcerate."[29] Meanwhile, surgery has made certain advances since the time of Hunter and suppuration is not now the universal bugbear which it was 100 years ago. The history of two recent cases of lung surgery will serve to show some of the possibilities in this direction. The first is a case related by Steiner of echinococcus of both lungs. The symptoms were those of disease of the liver and lungs with displaced heart and a loud murmur. On the left side the seventh and eighth ribs were resected at the back, the pleural cavity laid open, and the echinococcus removed. The lung immediately expanded and filled up the space formerly occupied by the echinococcus. In this case, which was that of a young girl, the operator, Professor Israel, did not trust to the existence of pleural adhesions but united the parietal to the pulmonary pleura by a circle of sutures round the tumour before operating. This is one certain method of avoiding collapse and pneumothorax. The patient recovered and the normal capacity of the lung was completely restored. The tumour on the left side came away through the bronchial tubes during an attack of broncho-pneumonia, but not without some permanent injury to the lung.[30] Surgical treatment, it seems, gave the best results. The second was a case of gangrene of the apex of the right lung operated on by Lejars at the Hôpital Beaujon. The patient was a man, aged 51 years, and, true to the dictum of John Hunter, the two layers of the pleura were adherent. Two inches of the second, third, and fourth ribs were resected in the subclavicular region. The lung was incised and a fœtid mass of filamentous tissue was extracted. The cavity was washed out with hot water, drainage-tubes were inserted, and the skin wound was closed and dressed with iodoform gauze. The operation was perfectly successful, but the patient died six weeks later from a second attack of gangrene, both lungs being infiltrated with tubercle. The opened cavity was healing.[31] It would seem that an early diagnosis of, and operation for, tubercle would have obviated all the mischief. An operation successful at this late stage and in such a condition of the lungs would, *a fortiori*, have been successful at an earlier period for the removal of tubercle at its first appearance.

Another method of preventing collapse and consequent pneumothorax is to excite adhesions artificially by irritating the layers of the pleura in the sound part of the lung beyond the seat of the mischief, thus blocking up that part of the cavity, leaving free, as far as possible, the tuberculous portion which it is intended to remove. This method, however, is objectionable on account of the well-known tendency of tubercle to spread in the lung after any form of pleuritic inflammation. A fourth method has been suggested by Matas in the paper already referred to.[32] His plan is to keep the lung inflated by continuing artificial respiration throughout the operation. This is done by means of a pair of bellows in connexion with an O'Dwyer's intubation tube passed into the trachea. This appears to be free from most of the objections which attend other methods and where there are no adhesions leaves the whole lung free both for exploration and for any operative proceedings that may be found necessary. By one or other of the above methods the danger of pneumothorax and collapse of the lung may be almost certainly avoided in pulmonary surgery. These methods are: (1) to sew the pulmonary to the costal pleura beyond the seat of the disease before operating; (2) to trust in certain cases to the existence of adhesions already formed if the physical signs give evidence of it; (3) to excite artificial adhesions in the pleura; and (4) to expand the lungs artificially from within. The last appears to offer the best prospect of success and can, moreover, be discontinued if extensive adhesions are found to be present.

The second danger is surgical emphysema. It is said that this condition may be fatal from its effect on the muscles of respiration or even from pressure on the phrenic nerve. Emphysema may result from four causes: (1) rupture of the trachea or larger bronchial tubes; (2) external wounds into the cellular tissues surrounding the costal pleura without lesion of the latter; (3) lesion of the costal pleura only with external wound; and (4) lesion of both pleuræ with or without external wound. The first two have no bearing on the subject. The last two are also causes of pneumothorax. Richet is of opinion that pneumothorax and emphysema do not usually occur together.[33] The air escaping from the lung into the cavity of the pleura would, it is argued, take the line of least resistance. This would be that of compressing the lung rather than of penetrating into the cellular tissue. When, however, the lung is fully collapsed there is no more alternate contraction and expansion and consequently no further escape of air into the pleural cavity. He considers that emphysema usually indicates *partial* adhesion. In this case the air escapes into the pleural cavity and, being unable to compress the lung on account of adhesion, penetrates into the cellular tissue. This, of course, would only occur when the external wound is small or non-existent. If it were large (as it would be in the case of an operation) the air would escape through it and emphysema would not occur. In a case under my care, however, occurring in a child in whom adhesions would presumably be absent, emphysema took place

[22] The attendant at the Chelsea mortuary, who has assisted at all the post-mortem examinations for 11 years, gives me nine in ten as the proportion of adherent pleuræ, but this is only a cursory and unscientific observation and there are no statistics.

[23] Osler: Principles and Practice of Medicine, p. 610.

[24] Brit. Med. Jour., vol. i., 1900, p. 221.

[25] Ibid., p. 599.

[26] Ibid., p. 663.

[27] Ibid., p. 774.

[28] Works of John Hunter, Palmer's edition, vol. i., p. 444. Two striking cases of recovery from wounded lung are given in the "Annals of Surgery" for April, 1899. In one there was a perforating wound of the liver, kidney, diaphragm, and pleura by the shaft of a wagon. There appear to have been no (or only slight) adhesions, as a quart of blood mixed with bile and urine was removed from the pleural cavity. The other was a wound with a sharp instrument into the lung through the eighth intercostal space (Brit. Med. Jour., August 19th, 1899, Epitome of Current Literature, par. 135).

[29] Works of John Hunter, Palmer's edition, vol. i., p. 445.

[30] Centralblatt für Chirurgie, No. 1, 1898. Brit. Med. Jour., Jan. 22nd, 1898, Epitome of Current Medical Literature, par. 60.

[31] Bulletin et Mémoire de la Société Médicale des Hôpitaux de Paris, March 9th, 1899. Brit. Med. Jour., May 6th, 1899, Epitome of Current Medical Literature, par. 326.

[32] Annals of Surgery, April, 1899. Brit. Med. Jour., May 13th, 1899 Epitome of Current Medical Literature, par. 343.

[33] This is, of course, in reference to cases where the air comes from the lung only.

over the chest, the neck, and the face.[34] The child, however, recovered rapidly and completely without any further symptom, and my opinion from cases I have seen, confirmed by the experience of the war in South Africa, is that emphysema is not necessarily, when uncomplicated, a particularly dangerous symptom. When the pulmonary pleura is intact the case is different. In Mr. Turner's case of rupture of the œsophagus at the Royal Medical and Chirurgical Society emphysema extended over the chest, neck, and face, and the lung was found to be totally collapsed.[35] It is doubtful, however, even in these cases whether the infiltration continues much after the collapse of the lung, as the suction of air through the external wound would then be much less powerful. In operations on the lung the conditions of emphysema should not occur. During the operation it is prevented by the free escape of air through the wound, while after the operation the entrance of air from without is prevented by its closure. From the experience of penetrating wounds at the seat of war the danger does not seem to be great. Sir William Thomson (March 6th) speaks of aspirating in some cases for hæmothorax but does not mention either emphysema or pneumothorax. Mr. Treves (Tugela) gives it (emphysema) as an occasional symptom, but the cases do well generally. At Spion Kop he gives pneumothorax, hæmothorax, and empyema, but no emphysema, while Mr. Dent (Feb. 10th), who refers to hæmothorax as common and pneumothorax as rare, makes no mention of emphysema at all.[36] In fact, surgical emphysema requires for its production a combination of conditions, some of which are usually absent, and although in operations on the lung it is possible for it to occur during the period which elapses between the closing of the external skin wound and the healing or blocking up of the wounds in the pleuræ, it is, for all practical purposes, a "quantité négligeable."

The third, and not the least important, danger is hæmorrhage. The pulmonary tissue is rich in blood-vessels, but these vessels increase in volume as we approach the pedicle and diminish towards the pleura. Therefore, as Richet observes, "superficial wounds, however large, are rarely followed by abundant hæmorrhage."[37] The earlier, then, that a tubercle is excised the less would be the danger. The history of gunshot wounds, too, shows that even when they are extensive the hæmorrhage is by no means necessarily fatal and that there is a considerable tendency to coagulation in the thick venous blood which issues from the arteries and capillaries of the lung. Among Sir W. Thomson's cases hæmothorax was not uncommon, but they all did well after paracentesis, and this seems to be the usual experience. In many other cases a single hæmoptysis was the only symptom, showing the natural tendency to a rapid cessation of hæmorrhage. In Israel's case the pulmonary pleura was possibly left intact, or wounded only to a very small extent. The question of hæmorrhage, therefore, did not arise. In Lejars's case the lung (or pulmonary pleura) was incised to a considerable extent, but here again hæmorrhage was presumably absent by reason of the morbid processes which had been going on in this part of the lung. Indeed, there is no mention of hæmorrhage. In cases where a cutting operation is required at the apex of the lung, and no adhesions are present, the diseased part, if not too extensive, might be included in a single ligature and the whole excised. In other superficial parts the same could be accomplished by drawing out the diseased part through the opening in the chest-wall with hooks or forceps. Where the disease is deeper or more extensive ligatures can be applied, after removal of the diseased portion of lung, to the larger vessels, the ligature in each case including the bronchial tube, with its accompanying artery and vein. In the first two classes of cases the most efficient method, perhaps, of preventing hæmorrhage would be by operating with the electric ecraseur. In the last the electric cautery could be applied after the use of the knife. In all the application of iodoform would be a useful adjunct, both as an antiseptic and a hæmostatic.

In all operations on the lung the introduction of bacteria from without, through the wound in the chest-wall, can be effectually prevented by modern antiseptic methods. But there is in these cases another channel of entrance for bacteria—viz., the trachea and bronchial tubes. The general experience of internal wounds of the lung where the skin is intact points to the pneumococcus as most to be feared in this direction. Pneumonia is the most frequent complication of rupture of the lung and the wounds caused by fractured ribs, injuries in which the trachea is the only passage for microbes, and which resemble in this respect operations on the lung with the external opening in the chest-wall hermetically sealed.

Royal-avenue, S.W.

[34] Reported in THE LANCET, Sept. 21st, 1878.

[35] Paper read before the society on May 27th, 1900. (Emphysema is very prevalent after this accident, probably on account of accompanying rupture of some of the larger bronchial tubes.)

[36] Brit. Med. Jour., vol. i., 1900, pp. 775, 221, 599, and 623.

[37] Traité Pratique, p. 591.

ACROPARÆSTHESIA.

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THE affection called "acroparæsthesia" has, as far as I know, not been described as occurring in this country, though it undoubtedly does occur, and always causes much distress and sometimes leads to inability to work. I shall preface a few general remarks on the subject by describing three cases.

CASE 1.—The patient, a married woman, aged 44 years, engaged in household work, came to the Bristol Royal Infirmary on Dec. 29th, 1898, complaining that on lying down at night her arms up to the elbows became "numb and dead" and "burned" so that she could not sleep. She had suffered in this way for four years, though more especially during the previous nine months. If she sat up in bed and rubbed her hands and arms the disagreeable feeling would get better, but it returned on lying down again, so that she could not sleep until she was quite worn out. She also suffered in the same way though in less degree during the daytime on using her hands. The hands did not change colour during the attacks, nor did she lose the power of feeling with them or of moving them. But for this she considered herself quite well and could not remember having had any serious disease. She menstruated regularly and did not suffer from flushes or anything else suggesting the onset of the change of life. No symptoms which might be hysterical had occurred. On examination no evidence of anything amiss was found; there was no weakness or wasting of the muscles of the arms; the elbow jerks were absent; sensation for touch, heat, cold, and pain was intact; the skin was of a natural colour; and the radial arteries and pulses were normal. The thoracic and abdominal organs and the urine were healthy. There were no hysterical stigmata. On asking her to repeatedly pick up a pin from the table she said, after a short time, that the numbness and burning feeling were coming on, but no vaso-motor change was apparent and sensation was still preserved.

CASE 2.—A widow, aged 48 years, a waistcoat maker, came to the Bristol Royal Infirmary on Dec. 14th, 1898. She said that for the previous three months she had suffered from a dead tingling feeling in both arms, at first in the left hand and afterwards in the right one also. When she was not doing anything she had the dead tingling sensation in the thumbs and fingers only, but on using the hands for any length of time this became much worse and gradually spread up to the elbows. She was consequently unable to earn her living and had to fall back upon parish relief. The feeling did not become worse at night and she could sleep well. The menopause had occurred nine months previously and she suffered much from flushes. As in the previously related case, nothing abnormal could be found on physical examination even when she had been using her hands for a considerable time.

CASE 3.—In this case the patient was a charwoman, aged 41 years. She came to the Bristol Royal Infirmary on Feb. 21st, 1900, and said that she was unable to do anything because using the hands brought on a dead tingling feeling in them which spread up to the elbows and was accompanied by a cramp-like pain, though there was no actual cramp of the muscles. This had been coming on for about five months and was gradually getting worse. She had had to give up her employment and she could not even dress herself or comb her own hair. When sitting quietly and not using her hands she had no tingling, dead feeling, or pain. At night the fingers felt as if they were swollen, though they did not actually swell, so that she took off her wedding-ring

on going to bed. The menopause had taken place four months previously and at times she went "all of a fever." On examination nothing abnormal could be found either when she was at rest or when she was using her hands and suffering from the tingling and dead feeling.

These cases are closely similar to those which have been already recorded by Schultze,[1] Chabot,[2] and Lereboullet.[3] The patients were women, between 40 and 50 years of age, engaged in earning their living by manual work, and otherwise in good health. The abnormal sensation complained of was a dead, tingling feeling in the hands and arms, which occurred either at night (as in the first case), or on using the hands (as in the first and third cases), or persistent though much worse on manual labour (as in the second case). In all three cases no objective sign of anything abnormal was discovered either when the patients were free from or suffering from the abnormal sensation. No symptom or sign of hysteria was present.

The pathology of acroparæsthesia is unknown. According to Lereboullet the fault lies in the peripheral venous circulation which, by producing ischæmia, or it may be passive hyperæmia, results in serous infiltration of the terminal branches of the nerves. And certainly in some instances objective signs of vaso-motor disturbance have been noted. But this theory would cover at most a few only of the recorded cases and does not, for instance, explain those described above in which no vaso-motor changes were apparent. The origin of the disease is probably to be found in the age and sex of the patients and the affection may be related to those other abnormal actions of the central nervous system which are so apt to occur in women during the years preceding and following the menopause. The diagnosis should be based on the conjunction of these abnormal sensations with an absence or insignificance of signs of vaso-motor disturbance.

The affections with which acroparæsthesia is most likely to be confounded are hysteria, peripheral neuritis, erythromelalgia, acrocyanosis, acromegaly, and arterial degeneration. Cases of hysteria simulating acroparæsthesia may be diagnosed by the history or by the associated physical signs. Two such cases are the following.

CASE 4.—A woman, aged 43 years, came to the Bristol Royal Infirmary on Jan. 2nd, 1898, saying that for some months she had had a constant "dead" feeling in both arms, which was so distressing that she could not sleep at night or do anything by day. No objective sign of anything wrong could be detected. On making further inquiries she said that she also suffered from a lump rising in the throat and threatening to choke her and that a month previously she had had a fit lasting, she was told, about an hour. The symptoms point to this case being one of hysteria.

CASE 5.—The patient, a man, aged 50 years, a tailor, came to the Bristol Royal Infirmary on July 10th, 1899, complaining that he had a dead, tingling feeling in the right arm and hand lasting all day and preventing sleep at night, also that he could not feel properly with his right hand; for instance, he did not know except by looking whether his thimble was on or off. This condition had lasted for over a year and it was somewhat variable, being worse when his "nerves were low." On examination it was found that a slight right hemianæsthesia existed which was more marked towards the extremity of the upper limb. There was general contraction of both fields of vision and absence of both plantar reflexes, whilst the tendon jerks, abdominal and cremasteric reflexes, and muscular system were normal. This was obviously a case of hysteria.

As a rule, peripheral neuritis can be easily distinguished from acroparæsthesia, though in some cases sensory disturbances may be paroxysmal and resemble those of the latter disease, as is shown by the following case.

CASE 6.—The patient, a tailor, aged 65 years, came to the Bristol Royal Infirmary on April 24th, 1899, saying that he had been ill for three weeks suffering from pain and a dead, numb, pricking feeling in the left hand and arm; this was not constant, but in attacks of from two to three hours' duration several times a day. During these attacks he could not feel to pick up a pin. On examination there was found to be a general weakness of the muscles of the left arm and a blunting of sensibility for touch and pain below the elbow, increasing in degree towards the ends of the fingers and not limited by the distribution of individual nerve trunks. The nerve trunks in the posterior triangle of the neck and in the bend of the elbow on the left side were tender on pressure. No other abnormal signs were present and no history of traumatism, rheumatism, or gout was elicited. A blister on the neck and salicylate of sodium soon relieved him, and on June 5th muscular power and cutaneous sensibility had returned, though the tops of the fingers were said to be still "dead and tingling" at times.

Erythromelalgia can be distinguished from acroparæsthesia by the associated marked vaso-motor changes, by its affecting the feet and legs almost exclusively, and by its dependence on the position of the limb.

Acrocyanosis may be accompanied by abnormal sensations resembling those of acroparæsthesia; the paroxysms, however, are not dependent on using the hands but, at least at first, on external cold, and are always accompanied by well-marked signs of vaso-motor change.

In acromegaly the abnormal sensations in the arms and hands may, as the following case proves, closely simulate those of acroparæsthesia.

CASE 7.—A woman, aged 34 years, came to the Bristol Royal Infirmary on Sept. 27th, 1899, complaining that both her hands and arms felt dead and tingling, especially on first awakening, so that she could not dress herself in the morning. The tingling gradually wore off as the day went on. She had had this for the previous two years and it was gradually getting worse. She had also noticed for about the same length of time that her hands and feet were gradually increasing in size, more especially in breadth. It was found on examination that she had the spade-like hands, broad feet, and coarse features of acromegaly. There was neither anæsthesia of the hands or arms nor evidence of vaso motor disturbances. Under the administration of thyroid and pituitary extracts the abnormal sensations disappeared, though temporarily relapsing when she ceased for a time to take the medicine. The physical signs of acromegaly persisted.

In some cases paræsthesia of the hands may be dependent on arterial degeneration. The condition, however, may be distinguished from acroparæsthesia proper by the greater age of the patients, by the constancy of the abnormal sensations, by the presence of more or less anæsthesia, and by the existence of thickening of the arterial coats. The following are two such cases.

CASE 8.—A needlewoman, aged 60 years, came to the Bristol Royal Infirmary on Dec. 23rd, 1896, complaining of a constant dead tingling feeling in both hands which she had had for the previous nine months and which was gradually getting worse. The hands felt cold and numb and she could not readily pick up a pin or perform any delicate movement with them. She had generally drunk as much beer as she could afford. On examination the hands felt cold and looked bluish and slightly swollen. There was distinct dulling of sensibility to touch and pain in the hands and in the lower part of the forearms, more marked in the right than in the left hand. Muscular power was normal. The radial and brachial arteries were tortuous with thickened coats and the radial pulses were very small. The aortic second sound was somewhat accentuated and the apex beat was displaced a little outwards and downwards. The urine was normal and there was no dropsy. This condition persisted for the eight months during which she attended the Infirmary.

CASE 9.—The patient, a tailor, aged 65 years, came to the Bristol Royal Infirmary on April 9th, 1900, saying that he had a constant sense of numbness and tingling in both hands which had been gradually coming on since the previous November. This numbness and tingling got much better on putting the hands in hot water and when he became warm in bed at night. He also said that he could not feel with the fingers as well as he had been used to and had had to give up his employment. On examination it was found that there was some dulling of sensibility for touch, heat, and pain in both hands below the wrists without any definitely marked upper limit. Muscular power was good. The colour of the hands was normal, though they felt a little cold. There was no swelling. The radial and brachial pulses were small and the coats of the arteries were irregularly thickened. The aortic second sound was slightly accentuated and the apex beat was in the fifth space in the nipple line.

[1] Deutsche Zeitschrift für Nervheilkunde, 1893.
[2] Thèse de Lyon, 1896. Brit. Med. Jour., Epitome, Jan. 21st, 1897.
[3] Gazette Hebdomadaire de Médecine, Sept. 21st, 1899. Medical and Surgical Review of Reviews.

The condition in these two cases is probably to be attributed to arterial degeneration with resulting insufficient blood-supply to the extremities; in neither was there evidence of arterial thrombosis which, as is well known, may be the proximate cause of even gangrene in atheroma.

These various affections which simulate acroparæsthesia can thus be distinguished by the presence of physical signs which are wanting in that disease.

Acroparæsthesia is exceedingly persistent and very rebellious to treatment. It may last for years and seriously incapacitate the sufferer from earning a living. Quinine and galvanism have been recommended by Chabot and ergot is highly praised by Sinkler.[4] As far as my experience goes bromides combined with a small dose of nitro-glycerine were of most service. Under this treatment the first two cases described above completely recovered in six months.

Clifton, Bristol.

THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS.

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THE following experimental investigation was undertaken in order to ascertain the relative germ-destroying power possessed by some of the so-called disinfectants in common use when tested under conditions as precisely similar as it is possible to obtain. For this purpose their individual action was tried upon the same species of germ, of the same degree of virulence, under the same general environment, and for the same length of time, by means of a method which, briefly stated, is as follows: a pure culture of a germ having first been obtained, silk threads are impregnated with this and are afterwards exposed to the action of the disinfectant to be tested in a solution of known strength for a certain definite length of time, at the expiration of which they are removed, well washed in sterilised water, and placed under conditions known to be suitable for the growth and development of the germ in question. Should growth occur it is evident that the disinfectant in this particular strength of solution has failed to destroy the vitality of the germ; in other words, that disinfection has not taken place, and *vice versâ*.

The specific germ selected for these experiments was the bacillus coli communis, a bacillus which occurs normally in the human intestinal tract, and in health appears to be innocuous, but which under abnormal conditions may become markedly pathogenic. This bacillus possesses some very distinct advantages for the purpose of this investigation: it is extremely easy to obtain it in large quantity owing to the profuse nature of its growth on potato; it has many characteristic reactions by which it can be readily distinguished from other bacilli and by applying these at different stages in the course of the experiments it is possible to establish the purity of the cultures throughout; while, since it has, for a non-sporing bacillus, a comparatively high power of resistance to germicides, any results obtained with it may be held to apply even more forcibly in the case of other non-sporing bacilli, at any rate of such as are pathogenic. The bacillus was isolated from the stools of a young girl suffering from enteric fever by the method of successive gelatin plates. A pure culture having been obtained and proved by means of the characteristic reactions to be the bacillus coli communis, a stock culture was made on the sloped surface of agar-peptone bouillon in tubes and from these subcultures on potato were taken as required. These were made on the surface of freshly prepared sterilised potato medium, and were incubated at 37° C. for 10 days, when a profuse dark-brown growth, very characteristic of this bacillus, was found to have formed. This was removed with a thick sterilised platinum wire (care being taken not to carry along with it any of the potato medium), and mixed in a sterilised glass capsule with a little sterilised peptone bouillon so as to form a thick emulsion, into which the silk threads were immersed. These threads were cut from the finest "Turner's plaited silk," each being exactly one inch long, and were sterilised in a Koch's apparatus for one and a half hours in Petri's dishes, in which they were afterwards dried and kept till required for use. After immersion in the emulsion for 10 minutes the threads were transferred with sterilised forceps to a Petri's capsule, in which they were partially dried in the dark at a temperature of 24° C. for three hours by placing them in the "cool" incubator. They were next transferred to the disinfectant solutions to be tested, and after remaining in these for the allotted time were lifted out with a sterilised platinum hook, washed well in sterilised distilled water in order to remove any trace of disinfectant adhering to them, and placed each in a separate tube of sterilised peptone bouillon. These tubes were incubated at 37° C. for 10 days, being examined each 12 hours for the first 48 hours, after that daily. If no growth occurs the bouillon is perfectly clear at the end of this time; if it does occur the bouillon begins to show signs of turbidity at a period varying from 12 hours or even less to 72 hours. The presence or absence of growth is further shown by microscopical examination, and by the inoculation of gelatin plates. If no growth had taken place at the end of 10 days it was concluded that all the bacilli present on the thread had been killed by the disinfectant solution. In every case a control experiment was made precisely as above, except that sterilised distilled water replaced the disinfectant solution, and in each instance growth was found to be present at the end of 12 hours.

Objection may possibly be raised to the above method on the ground that some of the disinfectant solution might be carried over on the thread into the bouillon, and so, by its antiseptic or inhibitory action, prevent the development of bacilli in the thread which were not actually killed by it. To guard against this the threads were, as already stated, well washed in sterilised distilled water after removal from the action of the disinfectant, and as a further precaution all those tubes which exhibited no growth at the end of 10 days were re-inoculated from an emulsion of bacilli prepared as above and again placed in the incubator. In every such case growth occurred at the end of 12 hours, thus proving that the bouillon in these tubes was still a suitable medium for the development of the organism, and that their previous sterility was due, not to any transferred disinfectant, but to the fact that all the bacilli on the thread had been completely destroyed.

In order to establish a fair comparison between the germicidal effects of the various disinfectants tested I decided to allow the threads to remain in solutions of them for certain definite lengths of time, and to ascertain the weakest strength of any given disinfectant which would destroy all the bacilli on the threads in these times respectively—viz., one minute, five minutes, 10 minutes, 30 minutes, and one hour. For each strength of a disinfectant solution acting for a given time (e.g., carbolic acid, 1 in 20 acting for five minutes) six threads were used, each being subsequently placed in a separate tube of bouillon and incubated. In by far the majority of cases the result was the same in each of the six tubes, either positive or negative, showing that every care had been taken to prevent contamination of the threads in the process of transference from the disinfectant solution to the bouillon tubes. But occasionally, when approaching the limit of the germicidal power of the particular strength of disinfectant used, there was some discrepancy—e.g., five tubes might give a positive and one a negative reaction, or *vice versâ*, in which case the verdict of the majority was taken to be the correct one. If, however, the discrepancy were more than this—e.g., four and two, or three and three—the experiment was repeated with a second set of six threads, and the majority taken.

The following substances were tested: biniodide of mercury, perchloride of mercury, chlorinated lime, formal aldehyde, lysol, carbolic acid, izal, medical izal, creolin, Jeyes' sanitary fluid, Walker's I.X.L. disinfectant fluid, Condy's fluid, "sanitas" fluid, and boric acid. These experiments involved the inoculation and culture of some 2000 tubes of bouillon and were conducted in the laboratory of the Manchester Union Hospital, Crumpsall, during six months of my tenure of the resident medical officership there. The ultimate results obtained are arranged for ready comparison in the accompanying table, where, in addition to stating the weakest strength of each disinfectant necessary to kill the bacillus coli communis in the allotted times, I have in each case further stated that strength which just failed to do so.

In interpreting these results I wish it to be clearly understood that they are merely relative and can only be held to be absolute under the exact conditions laid down for these

[4] Philadelphia Medical News, 1894.

TABLE SHOWING RESULTS OF EXPERIMENTS.

Disinfectant.	Weakest strength of solution necessary to destroy the bacillus coli communis in the following times—									
	One minute.	Next strength tested that failed to destroy.	Five minutes.	Next strength tested that failed to destroy.	10 minutes.	Next strength tested that failed to destroy.	30 minutes.	Next strength tested that failed to destroy.	One hour.	Next strength tested that failed to destroy.
Biniodide of mercury	1 in 1000	1 in 1500	1 in 5000	1 in 7500	1 in 20,000	1 in 25,000	1 in 80,000	1 in 100,000	1 in 200,000	1 in 250,000
Perchloride of mercury	1 in 750	1 in 1000	1 in 2000	1 in 3000	1 in 7,500	1 in 10,000	1 in 15,000	1 in 20,000	1 in 40,000	1 in 50,000
Chlorinated lime	1 in 80	1 in 100	1 in 150	1 in 200	1 in 500	1 in 600	1 in 1,500	1 in 2,000	1 in 3,000	1 in 4,000
Formal aldehyde	1 in 30	1 in 40	1 in 50	1 in 60	1 in 100	1 in 150	1 in 150	1 in 200	1 in 250	1 in 300
Lysol	1 in 10	1 in 20	1 in 30	1 in 40	1 in 100	1 in 150	1 in 250	1 in 300	1 in 300	1 in 400
Carbolic acid	1 in 10	1 in 20	1 in 40	1 in 60	1 in 80	1 in 100	1 in 100	1 in 150	1 in 150	1 in 200
Izal	—	Undiluted.	1 in 10	1 in 20	1 in 80	1 in 100	1 in 250	1 in 300	1 in 300	1 in 400
Medical izal	—	Undiluted.	1 in 10	1 in 20	1 in 80	1 in 100	1 in 250	1 in 300	1 in 300	1 in 400
Creolin	—	Undiluted.	1 in 5	1 in 10	1 in 60	1 in 80	1 in 150	1 in 200	1 in 200	1 in 300
Jeyes' fluid	—	Undiluted.	1 in 3	1 in 5	1 in 60	1 in 80	1 in 100	1 in 150	1 in 200	1 in 300
Walker's I.X.L. disinfectant	—	Undiluted.	Undiluted.	1 in 2	1 in 30	1 in 40	1 in 80	1 in 100	1 in 100	1 in 150
Condy's fluid	—	Undiluted.	—	Undiluted.	1 in 2	1 in 3	1 in 10	1 in 20	1 in 40	1 in 60
"Sanitas" fluid	—	Undiluted.	—	Undiluted.	Undiluted.	1 in 2	1 in 2	1 in 3	1 in 3	1 in 4
Boric acid	—	Saturated.	—	Saturated.	—	Saturated.	—	Saturated.	—	Saturated.

experiments—i.e., where the bacilli are freely exposed to the action of the disinfectant in solution, no albuminous matter being present. In the actual practice of disinfection such conditions are never met with, the most important difference being the presence of albuminous material in greater or less quantity. Especially does this apply to the case of perchloride of mercury, which forms a definite combination with albumin, resulting in the formation of a comparatively inert albuminate of mercury, and thus, to maintain its efficiency, the strength of the solution would require to be increased in proportion to the amount of albuminous matter present.

Biniodide of mercury.—This was brought into solution by the addition of iodide of potassium in quantity just sufficient to dissolve it, a stock solution of 1 part of biniodide in 500 of distilled water being first prepared, from which the more dilute solutions were afterwards obtained by the addition of the requisite proportion of ordinary tap-water. It will be noted that the germicidal power of this drug is far superior to that of any other used in these experiments, and as it does not precipitate with albumin the results obtained should hold good even in the presence of albuminous material, thereby contrasting with the perchloride of mercury.

Chlorinated lime (commonly called "chloride of lime").—This is a white powder which is only partially soluble in water, and after standing for a little the insoluble portion falls to the bottom. This was kept in suspension in these experiments by frequent shaking of the glass vessel containing the threads immersed in the solution, but I also found that the germicidal power was not in any way altered by previously filtering the solution so as to remove this insoluble portion. In the stronger solutions of this substance not only are the bacilli on the threads all killed but the threads themselves are destroyed and in a short time almost all trace of them disappears.

Formal aldehyde.—The solutions of this substance were prepared from Schering's formalin, which is a 40 per cent. solution of formal aldehyde in water, the latter itself only existing in the gaseous state. It must be clearly understood that the proportions stated in the accompanying table refer to formal aldehyde and not to formalin.

Izal and medical izal.—These two coal products are prepared by Messrs. Newton, Chambers, and Co., the latter being a refined preparation of the former specially adapted to medical and surgical use. I found no difference between them as regards their germicidal properties. It should be stated that the proportions given in the accompanying table refer to the product as sold for use and not to the proportions of izal oil, of which "izal" disinfectant is an emulsion containing 40 per cent.

Boric acid.—This substance has no claim to be regarded as a disinfectant, since its saturated solution failed to destroy the bacillus coli communis in any of the allotted times.

Manchester.

ACUTE GLOSSITIS COMPLICATING A CASE OF TYPHOID FEVER.

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THE patient, a woman aged 34 years, suffering from typhoid fever, was admitted into the Middlesex Hospital on Nov. 17th, 1899, under the care of Dr. J. Kingston Fowler, to whom I am indebted for permission to make use of the clinical notes of the case. The early symptoms of the attack consisted of weakness, languor, pain in the back, and shivering. The bowels were confined at first and later they became more freely opened, but diarrhœa was never a troublesome factor. There was no vomiting. The blood showed Widal's reaction and the urine gave Ehrlich's test. There was a well-marked rash on the abdomen.

The patient was from the first very seriously ill and in spite of all treatment her condition became gradually worse till on Dec. 16th the pulse was scarcely perceptible and she was evidently *in extremis*. On the 17th, at 7 P.M., the tongue was first noticed to be swollen and examination showed the swelling to be confined to the left half of the organ. This condition must have arisen very rapidly as the tongue had previously been examined at midday and there was then no sign of any swelling. The swelling was firm and did not fluctuate, the mucous membrane over it was reddened, it was tender when touched, and gave rise to some difficulty in swallowing. At 10 P.M. on the same evening the swelling had increased and it now involved the right half of the tongue. The size of the swelling made it advisable to take some steps to try to reduce it, and accordingly after the part had been anæsthetised with cocaine a grooved needle was passed into the tumour, but only a little blood escaped. The patient's general condition, however, was so bad that it was not considered advisable to take any further measures and a few hours later death occurred. A post-mortem examination was made on the following day and extensive intestinal ulceration was found which had terminated in general peritonitis from a perforation at the lower end of the ileum. The tongue was swollen, especially the left half, and the mucous membrane over it was reddened; there were also one or two superficial

ulcerations on the dorsum of the tongue. On section the tissues were reddened and swollen, but there was no suppuration present.

The condition is of interest both on account of its rarity and its importance, for it may be a very formidable complication, and in this case had the patient not succumbed to the intestinal lesions vigorous measures would, no doubt, have had to be taken to reduce the swelling.

A case which occurred in Dr. Osler's clinic has been recorded by MacCrae,[1] in which glossitis was the first symptom of a relapse after 24 days of normal temperature. The tongue was red, inflamed, symmetrically enlarged, markedly tender, and somewhat indurated as far back as could be felt. Cultures taken from the left half gave a negative result, and after puncturing, the swelling of this half diminished, showing, as MacCrae thinks, the line of treatment which should be pursued. In this instance the patient made a good recovery. MacCrae states that this was the only case of glossitis which occurred in over 700 cases of typhoid fever treated in the Johns Hopkins Hospital. He quotes Nichols as having recorded a case of "septic infection in typhoid fever" in which two days before death swelling of the right half of the tongue was noted. This case ended fatally. At the necropsy the right half of the tongue was red and swollen and on section small abscesses and hæmorrhages were seen. Cultures yielded streptococci and the bacillus coli.

The cause of glossitis in the course of typhoid fever is an interesting question. The large majority of the cases probably arise from secondary local infections, and the presence of superficial ulcers of the tongue is suggestive of this mode of origin in the case I now record. Other cases, however, would seem to be part of a general infection—as, for instance, MacCrae's case in which the glossitis was the first symptom of a relapse after 24 days of normal temperature.

Queen Anne-street, W.

IMPERFORATE HYMEN AND RETAINED MENSTRUAL ACCUMULATION.

BY HUGH HOWIE BORLAND, M.B., C.M. GLASG., D.P.H. CANTAB.,
LATE HOUSE SURGEON, GLASGOW MATERNITY HOSPITAL.

I WAS called on Jan. 4th, 1900, to see a girl, aged 13 years and nine months, who was complaining of diarrhœa, rigors, and abdominal pain. The history was that on Dec. 30th, 1899, she began to suffer from diarrhœa and on the following day abdominal pain set in. This state of matters continued more or less until Jan. 4th, when diarrhœa, bearing-down pains, dysuria, and, finally, retention of urine supervened. The mother stated that the girl had always enjoyed good health. She had never menstruated, but as bearing upon her present illness it was noticed when a child that there was a "large blue vein" about the lower aspect of the genitals. Nothing, however, in the way of operation had been done for it. The girl was in a condition of extreme distress, crying out with agony and throwing herself about in bed when paroxysmal pains set in. She was a well-nourished and well-developed girl with womanly configuration, having large, plump, and well-formed breasts. The lower aspect of the abdomen showed a large, round, globular tumour which rose out of the pelvis, reached from the pubes to two inches above the umbilicus, and was so tense and resistant that it simulated the gravid uterus. Fluctuation could not be elicited. The vulva was greatly bulged downwards and the perineum was distended. On separating the thighs, but without everting the labia minora, the vaginal orifice was seen to be completely occluded by a bulging membrane across which some minute blood-vessels were traced. The colour of the membrane was that of a bluish plum; it measured two and a half inches and one and a half inches from before backward and had a convex projection one inch in extent. Fluctuation was here easily obtained. There was a considerable bulging of the lower aspect of the vulva and adjacent parts. There was no dilatation of the anus, although there had been severe diarrhœa. Rectal examination revealed that the lower lumen of the bowel had been extensively encroached upon by a large balloon-like mass, which was smooth and elastic. This tumour had not only pressed upon the bowel, but had pushed up the anterior aspect of the vulva to such an extent that the meatus urinarius was practically occluded, causing complete retention of urine.

On a catheter being passed 40 ounces of urine were drawn off, and to clear out the bowels thoroughly castor oil was ordered. The parts were also prepared for operation next morning. In the interval, however, previously to my arrival the dense membrane had become perforated in the median line. This aperture was only able to admit a small probe, yet a considerable amount of treacle-like substance had oozed out, and thus there had come about that slow aspiration which most authorities recommend in treating such cases. The vulva and perineum were again thoroughly cleansed by a solution of lysol (1 in 200). An incision with a sterilised knife was then made from before backward in the entire extent of the membrane in the median line. The index finger was introduced into the now open vaginal orifice in order to induce a free flow of the retained menses. The mucous membrane of the utero-vaginal canal was found to be perfectly smooth and devoid of rugæ. Suprapubic pressure was avoided during the evacuation of the fluid, and to prevent re-uniting of the cut surface of the membrane a sterilised perforated glass tube containing iodoform and boric powder was inserted into the aperture and retained *in situ*. Pads of wood wool were then placed over the vulva and perineum and fixed in position with a double T bandage. The patient was instructed to put gentle pressure on the glass tube to keep it in position when passing urine, and her mother, the nurse, was instructed to cleanse the parts most carefully thereafter with lysol solution on each occasion. For diet the patient had milk only, and two grains of quinine were given every three hours. The recumbent posture was enjoined unless while taking food when the semi-recumbent position was to be adopted.

On Jan. 6th I found that the patient had passed a good night; her temperature was 98° F. and her pulse was 89. I removed the glass which was half filled with the treacle-like material. Examination per rectum showed that the balloon-like mass had disappeared. Examination per vaginam failed to detect the os uteri. There were now, however, well-marked rugæ felt longitudinally in the previously smooth-lined utero-vaginal canal. The retained menses were apparently well drained. The glass tube was sterilised and again inserted and the same kind of dressings were applied. The subsequent history of the case was quite uneventful. There was no rise of temperature and the girl was allowed to get up on Jan. 12th, on which date there was no discharge of any kind in the tube or on the dressings. On the 15th examination per vaginam revealed rugæ almost of a scirrhus-like nature. The uterus was found to be normal and the os closed. It was directed that the glass tube should be inserted twice a week for some time. On Feb. 17th (six weeks after the operation had been performed) the girl menstruated normally, being poorly for four days.

It will be observed that the patient had reached puberty, although she was barely 14 years of age, and the accumulation must have been going on for many months to judge from the size of the abdominal swelling. It contained over three pints of altered blood which continued to run for several days as the uterus slowly contracted. The girl was quite unaware that there was anything abnormal and stated most clearly that there had been no monthly periodic occurrence of pelvic or bearing-down pains whatever.

Previously to the era of asepsis and antiseptics incision of an imperforate hymen was not infrequently followed by fatal results from septic absorption. Gradual withdrawal of the fluid enables the uterus to accommodate itself to its diminishing contents, but, as Lewers has pointed out, if it is rapidly emptied contractions are set up, some of the fluid with septic matter from the air may be forced along the Fallopian tubes into the peritoneum, and death from peritonitis may result.

Newmilns, Ayrshire.

[1] Johns Hopkins Hospital Bulletin, May, 1898.

THE Colne Town Council has decided to erect a new infectious diseases hospital at the Old Farm, near Colne, at an outlay of £8530. Accommodation will be provided for 26 beds.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. PANCRAS INFIRMARY.

A CASE OF THROMBOSIS OF THE SUPERIOR MESENTERIC VEINS.

(Under the care of Dr. W. M. DUNLOP, medical superintendent.)

AMONG the many conditions simulating true intestinal obstruction there is none more interesting than thrombosis of the mesenteric vessels. Either the arteries or the veins may be affected; in thrombosis of the arteries the symptoms are very acute, but when the veins only are involved the more chronic forms of obstruction are simulated. Barth,[1] Bradford,[2] and Koster[3] have published cases of thrombosis of the mesenteric veins and 14 cases have been collected by Elliot. In most cases a diagnosis of intestinal obstruction is made and a laparotomy is performed. In one case in which the arteries were thrombosed the portion of bowel concerned was excised with success. For the notes of the case we are indebted to Miss Mabel Stevenson, M.B. Lond., junior assistant medical officer.

A man, aged 51 years, was admitted into the St. Pancras Infirmary in a state of extreme collapse. The patient could give very little account of himself, but stated that for some time he had been suffering privations and had had vague abdominal pain. Two days before admission he was suddenly seized with acute pain in the hypogastrium accompanied by vomiting. In this condition he was found by the police and taken to the infirmary. On admission he was evidently moribund, with subnormal temperature and pale and shrunken features. He complained of intense thirst, but the ingestion of the smallest quantity of food provoked copious vomiting of greenish-black fluid which was entirely free from fæcal odour. There was acute pain in the abdomen which was paroxysmal in character. The abdominal walls were flaccid, there was no abdominal distension or tenderness, and the respiratory movements were normal. A few hours later a quantity of bright red fluid blood was passed per rectum. The pain lessened considerably after this, but the patient quickly sank from exhaustion, death taking place within seven hours of admission.

Necropsy.—On post-mortem examination the body was found to be spare and thin, but not emaciated. The abdominal viscera were normal in position. Two feet of the middle part of the ileum were intensely congested, almost black in colour, but not distended. There was a sharp line of demarcation between the diseased and the healthy portions of the bowel, extending into the mesentery along the line of vessels supplying the affected part. There were no signs of peritonitis. On section the intestinal wall was thick and œdematous; the mucous surface was intact. The intestine contained some bloody fluid, similar to that passed before death, but no fæcal matter. The veins in the congested portion of the mesentery were uniformly plugged with firm, dark clotted blood; the corresponding arteries were pervious and healthy. The venous thrombosis did not extend beyond the affected part of the mesentery and no evidence of thrombosis was found in the rest of the venous system, neither could any cause for thrombosis be detected. The rest of the viscera were pale and shrunken, but showed no evidence of disease. The case was apparently one of primary thrombosis of the superior mesenteric veins.

[1] Semaine Médicale, 1897, p. 395.
[2] Transactions of the Clinical Society of London, 1898, vol. xxi., p. 203.
[3] Deutsche Medicinische Wochenschrift, May 26th, 1898.

MONSALL FEVER HOSPITAL, MANCHESTER.

TWO CASES OF PERFORATION OF THE INTESTINE DURING AN ATTACK OF TYPHOID FEVER TREATED BY LAPAROTOMY; ONE RECOVERY.

(Under the care of Dr. R. W. MARSDEN, medical superintendent.)

THERE is no more dangerous complication in typhoid fever than perforation of an ulcer. It is difficult to state with accuracy the mortality from these cases when treated medically, for in most of those in which the patients have recovered after apparent perforation a great doubt must always remain that perforation has not taken place, but we shall not be over-estimating the death-rate in such cases, when not treated surgically, if we put it as at least 90 per cent. Monod and Vauverts[1] have shown conclusively that the mortality in cases treated surgically is certainly less than this. Finney[2] collected 52 cases in which laparotomy was performed, and of these 17 patients recovered. In 1898 there had been recorded 83 cases and 16 recoveries, a mortality of a little over 80 per cent. This is still a high death-rate, but when we consider the low general condition of the patients we are justified in thinking the result good.

CASE 1.—On Nov. 23rd, 1899, a youth, aged 16 years, was admitted into the Monsall Fever Hospital suffering from typhoid fever. He had been ailing for a fortnight and on Nov. 22nd an examination of the blood had shown that it gave the Widal reaction. Clinically the symptoms were distinctive of a moderately severe attack of typhoid fever—i.e., rose spots, enlarged spleen, general bronchitis, a temperature of 104° F., &c.—but the abdomen was soft and free from tumidity, and there was only slight diarrhœa. On Dec. 10th he began to convalesce and the temperature remained normal until the 25th, when a relapse occurred. The relapse was only of moderate severity and was not accompanied by abdominal fulness or diarrhœa, and after 10 days—i.e., on Jan. 4th, 1900—it seemed to be terminating. The general condition of the patient at this time was extremely satisfactory. At 4.30 P.M. on that day, however, he complained of acute cutting pain in the abdomen, which caused the legs to be drawn up and was accompanied by an ineffectual desire to micturate. At 5.30 P.M. the pain was worse, the abdominal muscles were in a state of tonic contraction, and on percussion there was an absence of liver dulness at the ends of the eighth, ninth, and tenth ribs on the right side. The pulse was 88, the temperature was 99·2°, and there was no evidence of "primary shock." At 10.30 P.M. the condition of the abdomen was as described, there being a little fulness, but marked tenderness midway between the umbilicus and the right anterior superior iliac spine. In the interval a greenish fluid had been vomited on three occasions. As the patient was now looking much worse, the eyes being sunken, the pulse 120 and small, the temperature 102·8°, and the respiration of a purely thoracic type, Dr. Marsden decided to perform laparotomy.

The operation was done at 1 A.M. on Jan. 5th, 1900, apparently eight and a half hours after the onset of peritonitis. On opening the peritoneum through a median incision three and a half inches long, a considerable quantity of yellow serous fluid exuded, having a milky appearance from the presence of minute particles of lymph. The intestines were not at all distended—in fact, their walls were quite flaccid and soft. The first loop withdrawn contained a Meckel's diverticulum about one inch in length, and with this excellent landmark there was very little difficulty in finding the perforation, which was situated six inches to the cæcal side of it. It was small, round, about three millimetres in diameter, and, as usual, there was the increased quantity of lymph on the bowel in its immediate neighbourhood. The patches of lymph had a very "curdy" appearance and were readily wiped off. The perforation had occurred in the centre of a greatly thickened patch and had apparently arisen from a progressive ulceration, as there were no signs of sloughing at the edges. There were no peritoneal adhesions—in fact, there was a remarkable absence even of "stickiness" between opposed peritoneal surfaces, and though two and

[1] Revue de Chirurgie, March, 1897.
[2] Annals of Surgery, March, 1897.

a half feet of bowel were examined only one other inflamed patch could be detected through the walls. The perforation was closed by folding inwards and uniting the peritoneum from each side of the patch by means of interrupted Lembert's sutures. A large drainage tube being passed towards the pelvis, the abdominal cavity was thoroughly irrigated with warm saline solution and the operation terminated after lasting 30 minutes. The patient's general condition did not seem to have suffered any deterioration, and with the exception of repeated attacks of vomiting during the next 38 hours the further course was one of uninterrupted progress. The tube, which had been shortened daily, was removed on Jan. 10th as there was no discharge and the wound was allowed to heal. The patient left the hospital apparently perfectly recovered on Feb. 13th.

CASE 2.—A youth, aged 18 years, was admitted into the Monsall Fever Hospital on Jan. 30th, 1900, suffering from a moderately severe attack of typhoid fever. He had been ill for two or three weeks previously and from the above date to Feb. 8th, when the first indications of perforation occurred, there were no signs of improvement. Rose spots were numerous, the temperature continued between 102° and 104° F., the pulse remained about 120 per minute, there was marked general bronchitis, and he was delirious. There was only slight diarrhœa, and the distension of the abdomen, which was considerable on admission, had appreciably diminished. On Feb. 8th, at 8.45 A.M., he complained of pain in the abdomen after defecation, and an examination revealed general tenderness over the hypogastrium, with absence of liver dulness internal to the nipple line. At the same time it was noticed that the respirations were shallow, 44 per minute, and purely thoracic. At 2 P.M. the tenderness was more extensive and the liver dulness was absent internal to the anterior axillary line. The temperature remained steadily between 102° and 103°, but the pulse, which was small and 158 per minute immediately after the onset of the pain, fell to 144 by 4 P.M., so that, the preliminary shock having evidently passed off, Dr. Marsden decided to attempt a laparotomy.

The operation was begun apparently about eight hours after the onset of peritonitis. A median incision was made and on opening the peritoneum a considerable amount of light yellow milky fluid exuded. The bowel was found to be only slightly distended, but much injected, and there were no signs of adhesions between opposed peritoneal surfaces. A considerable length of the ileum had to be eventrated before the perforation could be found, and its situation was again detected by the increased amount of lymph upon the intestine in its neighbourhood. It occupied the centre of a thickened, œdematous patch, and its edges were distinctly sloughy, whilst thin fluid yellow fæces were exuding from the opening. It was closed, as in the former case, by interrupted Lembert's sutures, but owing to the œdematous condition mentioned the peritoneum was very friable, and after three unsuccessful attempts to hold the surfaces together the sutures had to be entered into the outermost part of the thickened area. There was evidence of numerous other inflamed patches in the bowel but there were no signs of another perforation, so that a tube being inserted into the pelvis the peritoneal cavity was irrigated with warm saline solution, and the operation terminated after lasting 35 minutes. At the end of the operation the patient was evidently collapsed, the temperature in the axilla being 98·4°, the extremities cold, and the face and hands slightly cyanotic. He rallied, however, and on the next day (Feb. 9th) seemed to be progressing favourably, but on the 10th he was distinctly worse and he died on the same afternoon 48 hours after the operation.

Remarks by Dr. MARSDEN.—Laparotomy for perforation of the intestine in typhoid fever is still sufficiently in its infancy to call for a record of the various cases in which this treatment is pursued, and the patients who have recovered are sufficiently rare to demand a detailed account of the individual cases in order that reliable statistics may be obtained for future guidance. It is with this object in view that I have ventured to report the above cases. It is impossible to imagine two cases which could better illustrate Keen's[3] statement when he says: "Naturally the cases operated on after relapses or toward the end of the acute febrile attack will result better than those in which the perforation, occurring earlier, requires the patient not only to recover from the operation but to have strength enough to carry him through the fever which has not as yet subsided." In Case 1 the patient was at the end of a relapse and evidently about to convalesce, whereas in Case 2 I think that the fatal termination was undoubtedly almost solely due to the typhoid toxæmia. Moreover, from a consideration of these two cases alone one cannot help concluding that such factors as age, time of operation after perforation, and type of case—i.e., whether a tympanitic abdomen preventing leakage of intestinal contents or a doughy abdomen allowing free extravasation—are insignificant as regards a successful issue compared with the general condition of the patient at the time of the operation.

[3] Complications and Sequels of Typhoid Fever, p. 226.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Occlusion of the Central Retinal Artery on Both Sides.—The Arithmetical Triangle in Ophthalmology.—Dermoid Tumour of the Conjunctiva.—Periarteritis of the Retinal Arteries.—Illustrations of Forest Scenery executed by an Artist after Cataract Extraction.—Ophthalmitis associated with Basal Meningitis.—Exhibition of Cases and Card Specimens.

AN ordinary meeting of this society was held on June 14th, Mr. ANDERSON CRITCHETT, President, being in the chair.

Mr. W. H. JESSOP described a case of Occlusion of Both Central Arteries of the Retina. The patient was a woman, aged 35 years, married nine years, who had no children living. She had had one miscarriage soon after marrying and eight months ago she was delivered of a child at the ninth month which only lived a few hours. On Oct. 24th, 1899, on awaking she found that she could not see with the right eye, although she was quite well at the time and had had no previous illness except an attack of influenza nine years and epistaxis two years back which continued for some weeks. On ophthalmoscopic examination the eye presented the symptoms of embolism of the central artery. There was doubtful perception of light. The left eye was normal. On Dec. 28th, 1899, she suddenly at 11.20 A.M. lost the sight of the left eye, and on examination all the signs of embolism of the central artery were present and there was no perception of light. Both optic discs were now atrophied, the retinal vessels were reduced to mere threads, and in places there was a white thickened condition of the sheath (periarteritis). The vision of the right eye had improved to $\frac{6}{36}$, but with the left there was perception of light only. The patient had been treated with mercury by inunction and internally. The interest of the case was in the arteries of each eye being affected and in the fact that the only symptom and sign pointing to embolus was the suddenness of each attack. No possible source of the emboli could be suggested. This rather pointed to a retinitis being the predisposing cause, and considering the great improvement of the vision under treatment it was probably of syphilitic origin. The changes seen in the vessels pointed to arterial degeneration.—Mr. E. T. COLLINS described the case which he had shown before the society in 1897. The patient also had epistaxis and amenorrhœa. He suggested the possibility of hæmorrhage into the optic nerve-sheath.—Dr. J. ABERCROMBIE asked if the patient had any uterine disease and suggested that spasm of an artery might last long enough to cause gangrene.—Mr. R. W. DOYNE thought that after embolism the peripheral parts of the retinal vessels were usually somewhat larger than the central portion, and this not being so in Mr. Jessop's case was suggestive of arterial disease as the chief cause of the condition.—Mr. JESSOP, in reply, said that he agreed with Mr. Doyne and also stated that there was no uterine disease.

Mr. C. WRAY read a paper entitled "The Arithmetical Triangle in Ophthalmology: How to Use It and What It Reveals." This method of investigation was a new one and Mr. Wray's plan of using it was as follows. Determine the maximum negative error of refraction and assume provisionally, in accordance with the general law of error, that the positive errors will be equal in amount and frequency. The paper assumed the negative error + 11—that is, 1 D. under E.—and this suggested the use of the twenty-third

line of the triangle, with the result E. = 15 per cent., M. 26 per cent., H. 59 per cent., and myopia over – 6 D. 0.66 per 1000, the minimum number found in any province of France being 1 per 1000 (French army statistics). If the twenty-fifth line were used under the assumption that the commonest refraction is E., then there would be E. 13.2 per cent., M. 43.4 per cent., and H. 48.4 per cent. This would raise the myopes with over – 6 D. far over 14.7, the very highest number that occurred per 1000, and prove E as the commonest refraction impossible. It would appear as though the highest myopia transmissible was – 11 and that the maximum grades were due to non-hereditary causes acting in addition. Mr. Wray deduced that there was no evidence that the effect of civilisation was as serious as it was usually thought, seeing that an increase of 1 D. in the commonest or normal refraction was an impossible and unnecessary hypothesis. Indeed, in that case there would be three cases per 1000 with over 6 D. of myopia from heredity alone, not counting those classed as over 6 D. from such patients generally preferring a – 6.5 lens, spasm of accommodation, &c. Seeing that the maximum is 14.7, very little room is left for the causes that operate seriously in producing acquired myopia.

Mr. SIMEON SNELL (Sheffield) related a case of Congenital Papilloma of the Conjunctiva which occurred in an infant, aged five months. The tumour hung from between the eyelids and fell over the lower lid at about its outer third, the lower part of the growth being enlarged into a rounded ball of about the size of a small pea. It was attached to the conjunctiva about halfway between the corneal margin and the inner canthus, and somewhat broadened out at this attachment. The stalk measured about half an inch, but traction readily lengthened it to an inch. The growth was snipped off with scissors. Mr. Treacher Collins had kindly examined the specimen and he had reported that its microscopical appearances were similar to those of a dermoid cyst of the eye.—Mr. J. GRIFFITH thought that the case should really be called a dermoid tumour, and with this opinion both Mr. COLLINS and Mr. SNELL agreed.

Mr. SIMEON SNELL related a case of Periarteritis of the Retinal Arteries and exhibited an Ophthalmoscopic Drawing. The patient was a woman, aged 43 years, and when first seen the sight in the right eye had been failing for about four months. On ophthalmoscopic examination a peculiar appearance of the arteries on the optic disc was observable. The arteries were encased in a snowy-white and somewhat glistening sheath. This appearance extended only a short distance beyond the optic papilla, and was confined chiefly to the arteries on the expanse of the disc. The vision equalled $\frac{1}{60}$. There was only one small hæmorrhage in the retina but now there were two others on the disc. In the left eye the appearances were very much less marked but the disease was evidently commencing. The vision equalled $\frac{6}{9}$. The urine contained a trace of albumin and there were granular casts. The arteries were rigid and tortuous and there was hypertrophy of the left ventricle. Reference was made to Mules's case recorded in the second volume of the Transactions of the Ophthalmological Society of the United Kingdom, but in the present instance, whilst the changes were confined to the optic disc and its immediate neighbourhood they appeared to be much more pronounced.—Mr. JESSOP asked if the fields of vision were contracted and, in reply, Mr. SNELL stated that such was the case.

Mr. SNELL also exhibited an Illustrated Book on Forest Scenery. The interest attaching to the work was that the illustrations, which were very numerous and of a high-class character, had all been executed by a gentleman, a patient of his, who had several years before undergone extraction of cataract in one eye. The other eye was useless for visual purposes owing to complete cataract. The same gentleman, an amateur artist, had been a successful exhibitor at the Royal Academy, but before the operation his paintings had not been accepted.

Mr. SYDNEY STEPHENSON read notes of a case of Ophthalmitis in a child of seven months associated with Simple Posterior Basic Meningitis. An effusion of lymph into the anterior chamber of one eye was soon followed by closure of the pupil, diminution of tension, and shrinking of the globe. Death took place on the thirty-third day of the disease which was characterised by retraction of the head, convulsions, progressive wasting, and fluctuating temperature. At the necropsy lympho-pus was found on the medulla and surrounding parts and could be traced along the crura, the optic tracts, and the commissure to the left optic nerve. The meningeal exudation was found to contain several micro-organisms including the diplococcus intracellularis meningitidis of Weichselbaum. Microscopically evidences of inflammation were traced from the chiasma and along the optic nerve to the papilla of the inflamed eye. The essential pathological changes in the eyeball itself were neuro-retinitis along with diffuse inflammation of the uveal tract. Mr. Stephenson concluded that inflammation passed from the cerebral meninges along the optic nerve to the eyeball, probably by means of the perivascular lymph sheaths.

The following cases and card specimens were shown :—

Dr. J. ROWAN: Sections of the Healing Stump of an Optic Nerve four days after Enucleation.

Dr. J. HERN: (*a*) A case of Essential Shrinking of the Conjunctiva; (*b*) Persistent Pupillary Membrane; (*c*) case of Abnormally large Cornea and deep Anterior Chamber.

Mr. H. E. JULER: Retinal Detachment with (?) intraocular growth.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Indications for the Removal of the Uterine Appendages.

A MEETING of this society was held on June 14th, Dr. W. J. SMYLY, the President, being in the chair.

Dr. W. H. A. NEWNHAM (Bristol) showed a Uterine Myoma removed by Intraperitoneal Hysterectomy from a patient, aged 24 years.

Dr. G. ELDER (Nottingham) showed a Double Ovarian Dermoid Tumour.

Mr. J. FURNEAUX JORDAN (Birmingham) showed Specimens Removed by Vaginal Cœliotomy.

The discussion on a paper by Dr. MACPHERSON LAWRIE upon Indications for the Removal of the Uterine Appendages which was adjourned from the last meeting was opened by a communication from Dr. MACNAUGHTON-JONES, sen., who was unable to be present. He held that there was unanimity of opinion as to the necessity of removing the appendages in the case of (1) disease of the oviduct, suppurative, cystic, or other, destroying its integrity and obliterating its lumen; (2) in blood cysts both of the ovaries and Fallopian tubes; (3) in solid tumours of the ovary; and (4) in most cases of ectopic gestation. As to the large number of sufferers from reflex troubles and nervous conditions, in which gross changes might or might not be found in the genitalia, it had often been proved that the pathological changes found in the ovaries and tubes, though not apparently of great importance on examination beforehand, had been of a grave character, incurable in their nature and therefore wrong to leave unremoved. On the general question of the removal of the whole or part of the internal genitalia, such removal was not to be considered except (1) where other therapeutical steps had either been tried and proved valueless or the procrastination involved in resorting to them was both directly and indirectly injurious to the woman; and (2) when the risk of operation was less than that of non-interference.

Dr. C. H. F. ROUTH strongly opposed the removal of the uterine appendages, whether the inflammation was suppurative or not. In the former case the plan he advocated was aspiration of the tumour, followed by the injection of iodine. He considered that they had no right to remove the ovaries on account of pain, especially as oöphorectomy altered the frame of the woman's mind and predisposed to insanity.

Dr. G. ELDER (Nottingham) said that none of them doubted the propriety of removing the appendages for pyosalpinx, suppurating ovaries, ectopic gestation, and tumours, and some of them believed in removing the ovaries for myoma in certain cases. But there were grounds for discussion as to the propriety of dealing with non-suppurative diseases such as Dr. Lawrie had described in group "*a*." When the late Mr. Lawson Tait had the inspiration to remove the ovaries and tubes in the case of inflammatory conditions it was a great advance on previous methods. No doubt many ovaries and tubes were subsequently removed that ought to have been allowed to remain. Probably most of those present had removed ovaries which on after-consideration they would have allowed to remain. He was led to reconsider the matter by the fact that in some instances after the removal of the appendages the pain was no better than before. His own practice now in doubtful

cases was to examine the patient under an anæsthetic and, if necessary, make an exploratory incision, dealing with the appendages according to the condition found at the time.

Mr. E. STANMORE BISHOP (Manchester) took exception to some points in the paper—e.g., to the recommendation that a pyosalpinx should be tapped and drained, if by this was meant that the swelling should be aspirated by means of a trocar. A free incision was needed, otherwise the sac would fill up again. Dr. Lawrie had mentioned two classes of cases of myoma where he advocated oöphorectomy—when the myoma was small and the appendages were diseased, and when the patient was much weakened by hæmorrhage. In the first case he presumed that Dr. Lawrie removed the appendages because they were diseased and not on account of the myoma; in the second case, he would point out that the removal of the appendages was often insufficient to control the hæmorrhage. With regard to a second operation, his view was that this was always bad for the patient.

Mr. J. FURNEAUX JORDAN (Birmingham) agreed with the greater part of the paper. He did not think, however, that a conservative reaction could go too far. In one case of pyosalpinx he incised and washed out the tube with a good result. In another case of cystic ovaries he removed one ovary and dealt with the other ovary by ignipuncture and the patient bore a living child 12 months later. He held that the appendages should never be removed unless they were palpably diseased and for the determination of this point an exploratory incision was often valuable. He agreed with Dr. Lawrie's remarks about oöphorectomy for myoma and, contrary to Mr. Stanmore Bishop's views, he held that hysterectomy was easier after a preliminary oöphorectomy, for he had operated under those circumstances in three cases.

Mr. J. BLAND-SUTTON expressed his interest in Dr. Lawrie's paper and said that it was important to observe how much the operation of oöphorectomy had become limited in recent years. From the beginning of his surgical career he had always acted upon one rule—never to remove ovaries and Fallopian tubes unless there was very tangible evidence of disease in these structures. Increased experience had taught him to limit the removal of tubes and ovaries to two sets of conditions—viz., inflammatory lesions and tubal pregnancy. Under the title of inflammatory lesions of the uterine appendages he included chronic salpingitis, pyosalpinx, and hydrosalpinx, and also tuberculous salpingitis. These were the commonest conditions for which double oöphorectomy was required. The extreme frequency of gonorrhœal and post-partum endometritis among hospital patients was in striking contrast to its infrequency among private patients, and this he believed was due to the fact that the poorer harlots took less care of their genitals than the well-to-do courtesans; and that the wives of the poor did not receive the same careful obstetric nursing as the wives of the rich. He had never performed oöphorectomy for the cure of neurotic conditions and he discountenanced removal of ovaries in patients with dysmenorrhœa when there were no obvious physical signs. It was disappointing to find that such a progressive surgeon as Dr. Lawrie still practised the removal of ovaries for the relief of fibroids, but that operation, like the still more unsatisfactory one of double oöphorectomy for the relief of mammary cancer, was rapidly disappearing from the field of legitimate surgery. The results in Dr. Lawrie's series of cases were very satisfactory. Dr. Victor Bonney had drawn up a series of cases in which Mr. Bland-Sutton had performed abdominal oöphorectomy for inflammatory lesions and tubal pregnancy at the Chelsea Hospital for Women since he was appointed surgeon to that institution. The table contained 92 consecutive cases and there were no deaths in the series. This gratifying result was due to the maintenance of thorough asepsis, abstention from irrigation, and the substitution of a strip of sterilised gauze for the drainage-tube. Mr. Bland-Sutton requested that his table of cases should be appended to his remarks when they were published in the society's journal. His results in private practice had been equally successful, but he preferred to publish the table drawn up by an independent person, with the dates and initials of the patients operated upon in a public institution where anyone could examine the records.

Mr. F. BOWREMAN JESSETT thought that Dr. Lawrie's attitude had been misunderstood. It had been assumed that he advocated operation in all cases, whereas he specified that it should be restricted to cases in which other methods had failed. Dr. Mary Dixon Jones had shown that there were cases in which the ovaries presented no enlargement and yet were much diseased, and he imagined that some of Dr. Lawrie's cases came under this category. He thought that the plan advocated by Dr. Routh in the case of pyosalpinx was not without considerable risk.

Mr. SKENE KEITH remarked that he did not believe in removing ovaries from patients who were in perfect health. There was a condition of the ovaries to which no reference had been made, in which the ovary appeared to be healthy on the surface, but on cutting it open there was a thick capsule almost as hard as cartilage. With each recurrence of ovulation much pain must necessarily result and the patient became emaciated; if the general health of the patient was not thus affected it was not time to operate. He did not agree with Mr. Bland-Sutton as to oöphorectomy for myoma; if the whole of the ovaries were removed he would guarantee the cure of the bleeding.

Dr. FREDERICK EDGE (Wolverhampton) said that no doubt the results of conservative operations on the appendages had been disappointing in many cases but they had been equally gratifying in others, and the practical point was to find out in which cases it was well to try conservative methods. It had struck him that the cases where conservative plans had failed were much the same as those in which the removal of the appendages was not followed by full recovery—i.e., the uterus and other pelvic structures were implicated, and either radical removal of the uterus and adnexa should be performed or the case should be left to medical treatment. It was a rule with him to remove the appendages and not to try conservative operation in gonorrhœal cases; but Mr. Taylor had shown that many of these cases had a syphilitic basis, or at least alterative treatment would relieve them.

Mr. CHARLES RYALL pointed out that the tendency to the removal of the ovaries had diminished since it was realised that they had a function of internal secretion which had an effect on the whole system. He believed that oöphorectomy for myoma should be abandoned except in the conditions mentioned by Mr. Furneaux Jordan.

Dr. ARTHUR GILES thought the justifiability of operations such as those grouped together by Dr. Lawrie as class "*a*" must largely depend on their results. If a condition incapacitated a woman and prevented her from earning her living and an operation would restore her to health and usefulness he thought that Dr. Lawrie was right in saying that it was the duty of the surgeon to perform it. They required, however, to know more of the after-histories of these cases. Neurosis was a frequent cause of failure of these as well as of other operations, and he felt that in dealing with a neurotic patient no operation at all should be performed except as a matter of the most absolute necessity. He pointed out that oöphorectomy had failed to relieve hæmorrhage in cases of myoma, not only owing to a portion of ovary being left behind, but also because the operation had been done in some cases where the bleeding was due to a myoma that had become polypoid. When oöphorectomy was contemplated he thought that the cavity of the uterus ought always to be first explored to eliminate this source of failure. The cases of myoma requiring oöphorectomy were now, in his opinion, very few.

Dr. MACPHERSON LAWRIE briefly replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases, &c.—Blood-pressure in Sleeplessness and Sleep.—Origin, Development, and Structure of the Umbilical Cord.

THE eighth ordinary meeting of this society was held on June 6th, Dr. A. G. MILLER, the President, being in the chair.

Dr. JAMES CAMERON exhibited a woman, aged 50 years, suffering from Adiposis Dolorosa; a large epigastric pendulous tumour was present.

Mr. C. W. CATHCART exhibited:—1. A boy on whom he had performed Laparotomy for Intestinal Obstruction caused by

an accumulation of foreign bodies in the lumen of the tube, together with the pressure of a calcareous tuberculous gland on the outside. The obstructive material had evidently been eaten in an Italian salad and had undergone no digestion. The boy was not seen until three days subsequent to the onset of obstruction and when operated upon was in a very collapsed condition. 2. A woman from whom he had Excised a Portion of Gangrenous Bowel resulting from a Strangulation of a Femoral Hernia.

Mr. C. W. CATHCART also showed a Surgical Operating Case made in the shape of a box of polished zinc and having a waterproof covering. Such a case was much preferable to the ordinary surgical bag which could not be sterilised. In this case various parts (such as the lid, one side, covers of boxes, &c.) were removable and formed trays for holding the instruments in antiseptic solutions. All the parts were easily sterilised and, moreover, the case was comparatively cheap and compact.

Mr. C. W. CATHCART also showed a portion of the Sigmoid Flexure removed on account of a new growth.

Dr. LEWIS C. BRUCE read a paper on the Blood-pressure in Sleeplessness and Sleep. The instrument employed to estimate the arterial blood-pressure was Barnard and Hill's sphygmometer and the statement of Hill that "the normal general arterial pressure in the horizontal posture equals about 110 mm. of mercury" was assumed to be correct. The first points investigated were: (1) Were there any unusual conditions of blood-pressure which were associated with sleeplessness in mental disease? (2) What changes occurred in the blood-pressure when sleep was induced in these cases by drugs? There were two classes of cases met with: (1) conditions of sleeplessness with high blood-pressure—i.e., above 130 mm. of mercury; and (2) sleeplessness with a low blood-pressure—i.e., below 110 mm. of mercury. The drugs employed to promote sleep were the following: paraldehyde, sulphonal, trional, and bromide of potassium. In the group of cases with a high blood-pressure paraldehyde in large doses (two drachms) was found to be the most certain sleep producer; sulphonal came next in power, and then trional. Bromide of potassium was found to be unsatisfactory. When sleep was induced by any of these drugs the blood-pressure always fell to, or even below, 110 mm. of mercury during sleep. In the second group of cases, sleeplessness with low blood-pressure, paraldehyde in large doses of two drachms acted as a cerebral excitant, tended to raise the blood-pressure, and satisfactory sleep was never obtained. After small doses, however—from 15 to 30 minims—these same patients slept well. In this second class of cases trional in 20-grain doses and then sulphonal were the most satisfactory drugs. Trials were also made of erythrol tetranitrate in doses of one grain per day in cases of insomnia with high blood-pressure, the object being to induce sleep by artificially lowering the blood-pressure. Of nine cases three were immediately and permanently benefited, three were very temporarily relieved, and the remaining three cases were not affected by doses of even two grains per diem. A second series of observations was made upon convalescent patients in order to throw light upon the following questions. 1. Was sleep possible with blood-pressures of 130 mm. of mercury or higher? 2. What relation did the morning blood-pressure bear to the evening pressure when a person was sleeping well? 3. Were there any differences in the blood-pressure of the same person asleep under the action of drugs and during natural sleep? The results were as follows. 1. Sleep was possible with high blood-pressures, but the pressure always fell to 110 or about 110 mm. of mercury after the condition of sleep was established. 2. The general blood-pressure was, as a rule, higher in the morning than in the evening in a state of health and the reverse of this held good in some cases of sleeplessness. 3. In the drug sleep induced by paraldehyde the blood-pressure fell at its lowest about 10 mm. of mercury below the habitual blood-pressure of the same person when sleeping naturally. As the effect of the drug passed off the blood-pressure rose and eventually passed to the blood-pressure habitual to that person in natural sleep; in short, drug sleep passed in some cases into natural sleep.—The paper was discussed by Dr. T. S. CLOUSTON, Dr. JAMES FOULIS, Dr. CLAUDE B. KER, Dr. T. RONALDSON, Mr. C. W. CATHCART, and the PRESIDENT, and Dr. BRUCE replied.

Dr. JAMES FOULIS read a paper on the Origin, Development, and Structure of the Umbilical Cord and illustrated it with lantern slides. The object of the communication was to show that the cord itself had no covering of amnion at any period of its existence and that the usual statements in the text-books that the cord had a tubular investment of amnion were entirely wrong, the truth being that the cord proper was always within the amniotic sac and was a tubular prolongation of the somatopleure round the collapsed and shrivelled yelk sac. Numerous micro-photographs of sections of embryos from the deer and sheep were shown in order to illustrate the development of the umbilical cord. The amnion was everywhere continuous with, and an extension of, the somatopleure; and as the somatopleure itself was formed by the union of the epiblast with the somatic mesoblast the amnion was itself an extension of these two membranes and in the micro-photographs the amnion could easily be seen as a double-layered membrane as it passed round the dorsum of the embryo. Before the umbilical cord had an existence as such the amnion could be traced as an outgrowth from the sides of the *bauchstiel* of His, and from the somatopleure around the large umbilical foramen, now widely open. In the early embryo of the deer and sheep there was at first no such structure as the umbilical cord, but the vascular connexion between the embryo and the uterus was in the form of the ventral string of the *bauchstiel*. This *bauchstiel* was an outward growth of mesoblast from the caudal end of the embryo towards the chorion. In its mesoblastic substance were to be found the two large umbilical veins—two umbilical arteries with the allantois which might be traced as a tubular outgrowth from the cloacal end of the primitive intestine and lined with hypoblast. This *bauchstiel*, as the analogue of the true umbilical cord, had a great share in the formation of the cord itself. To trace out the formation of the umbilical cord from the *bauchstiel* was a difficult thing, unless the relation of the somatopleure to the amnion was constantly remembered. Transverse sections of the *bauchstiel* showed that the somatopleure folds, of which for the most part it consisted, gave out on both sides the amnion membrane by simple extension of the somatopleure substance. The caudal fold of the somatopleure gave off the amnion just in the same way as the lateral folds of somatopleure gave it off. The whole dorsal surface of the embryo was thus inclosed within the amnion sac, which was thus attached to the sides of the *bauchstiel* and to the margins of the large umbilical foramen round the collapsing yelk sac. It was important to notice that at the caudal end of the embryo the amnion was attached to, or came off from, the somatopleure at a spot between the under surface of the *bauchstiel* and the anal orifice. At first the *bauchstiel* or ventral string occupied an almost horizontal position as an extension of the caudal end of the embryo; but as soon as fluid began to accumulate within the amnion sac the *bauchstiel* was gradually raised up to an almost vertical position, the amnion coming off from its lateral margins being continuous with the amnion of the lateral somatopleure folds. The distal portion of the allantois gradually collapsed, while that part within the body cavity gradually became the urinary bladder. As a result of the distension of the amniotic sac in all parts by fluid the amnion itself was gradually lifted off the embryo at all parts except at the line of its attachment to the sides of the *bauchstiel* and to the somatopleure folds round the umbilical foramen, which was now closing in round the shrunken yelk sac. The somatic mesoblastic surfaces of the somatopleure were everywhere opposed to each other, and as they actually came in contact they adhered to each other round the yelk sac, thus shutting off the cœlom or body cavity from the false amnion sac. It was most important to bear in mind that this closing in of the somatopleure and the adhesion of its opposed mesoblastic surfaces took place only within the amnion sac, which was thus continuous with, and an extension of, the somatopleure tube thus formed round the yelk sac. No amnion at any time covered the cord or somatopleure tube thus formed, but it was always continuous with this somatopleure tube or umbilical cord at its distal end, and when the true amnion sac became more and more distended the mesoblastic surface of the amnion at last became opposed to the mesoblastic surface of the false amnion, to which it adhered slightly. The amnion thus invariably covered the fœtal surface of the placenta, from which it could be easily stripped off, but, of course, it could not be stripped off the umbilical cord because it was an extension of, and part of, the cord itself.—Dr. D. BERRY HART and others took part in the discussion which followed and Dr. FOULIS replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Cerebro-spinal Meningitis.

A MEETING of this section was held on May 18th, Sir J. W. MOORE, the President, being in the chair.

Dr. H. C. DRURY read a paper on Cases of Epidemic Cerebro-spinal Meningitis. After a brief reference to the past history of the disease from its first recognition in Geneva in 1805 he discussed its pathology and then the etiology, quoting various authorities on the questions of its contagiousness and mode of dissemination. The symptoms more or less important in, or peculiar to, this form of meningitis were then taken *seriatim* and fully discussed, and the means of certain diagnosis by the method of "lumbar puncture" and bacteriological examination were described in detail. Dr. Drury then related eight cases which he had met with in Cork-street Fever Hospital. The first patient, a man, aged 20 years, was admitted on Nov. 18th, 1899, and after a prolonged illness he recovered. Of the other seven patients four died. In only one case was there a rash—a feature so typical of the great Dublin epidemic of 1866–67—and this rash was not petechial, but pustular, with hæmorrhage into the pustules, and it came late in the disease. In all the cases the disease commenced suddenly with rigidity of the neck or actual retraction of the head, and in some cases opisthotonos; all of the patients had deafness in some degree, pain in the head and limbs, and Kernig's sign. One case was mentioned, though not included in the above eight cases, which without bacteriological examination could not have been diagnosed. It was the case of a man, aged 50 years, who had had pneumonia and was up about the ward convalescent for a week when he suddenly developed most marked symptoms of acute meningitis and died on the fourth day. Post-mortem examination revealed pus all over the meninges and a fungous growth on one of the aortic valves. This vegetation and the pus yielded pure cultures of pneumococcus and not the diplococcus intracellularis, though the pathologist (Dr. O'Sullivan) was looking for the latter, being unaware of the previous history of pneumonia.

Dr. A. R. PARSONS read a paper on Cerebro-spinal Meningitis, which was discussed with Dr. Drury's paper.

Dr. N. M. FALKINER presented a table showing the Number of Deaths in the Dublin Registration Area from all forms of Meningitis in the years 1895–1900. Taking the years 1895 to 1899 inclusive the average number of deaths from all forms of meningitis for the first 19 weeks of each year was 102·6, but in 1900 the number of deaths in a corresponding period was 182·0 and the increase embraced ordinary meningitis, tuberculous meningitis, cerebro-spinal meningitis, hydrocephalus, and secondary meningitis. All forms of meningitis should be treated as zymotic diseases. Sir Charles Cameron had adopted the proper course in making meningitis a notifiable disease.

The PRESIDENT remarked that that was the first occasion on which meningitis had been made a notifiable disease. At the Meath Hospital they had had 11 cases with three deaths and eight cases were still under treatment. This showed that the mortality was not at all so high as in the epidemic of 1867. The first case was that of a girl, aged three years, who was admitted on Feb. 24th and who recovered. As to treatment, in the present epidemic he had found that the most successful measures were leeching behind the ear and the repeated application of small blisters behind the ear. The agonising headache was relieved by a combination of acetanilide, caffein, and sodium bicarbonate.

Dr. O'SULLIVAN described the post-mortem appearances in some of the cases. The fluid obtained by lumbar puncture was turbid but colourless. The pus in the spinal region lay in one case altogether outside the spinal dura, the cord being quite firm and apparently healthy. In the other cases it lay in the meshes of or underneath the pia mater and the cord was softened. In the brain the pus was in all cases in or under the pia-arachnoid. The distribution of the pus on the surface of the brain was very symmetrical. In all cases the cerebro-spinal fluid was greatly increased in quantity and was turbid, but it was not bloody or (to the naked eye) purulent. The diplococcus intracellularis was found in the turbid fluid and in the pus, usually in pure culture. It grew best on Löffler's serum, but also on glycerine agar, and less actively on ordinary agar. In the pus the organisms were seen in the pus cells, usually in small numbers, as diplococci with their adjacent surfaces flattened, varying a good deal in size and depth of staining. They did not stain by Gram's method. Inoculation experiments were unsuccessful.

Professor E. J. MCWEENEY said that the first case which had come under his notice was that of a schoolgirl who died in the Mater Misericordiæ Hospital early in February. There was an accumulation of thick mucoid pus symmetrically placed in the posterior cornu of each lateral ventricle. Microscopical examination of the material at once revealed the intracellular diplococcus. In all the cases which he had subsequently examined post mortem the same features recurred: occurrence of actual suppuration, the pus being very tough and mucoid; symmetrical disposition of the lesions on each side of the brain; distension of the lateral ventricles with turbid fluid; implication of the sides and back of the cord; and paucity of the intracellular cocci in the fibrinous exudation on the membranes. In working with cultures of the organism care should be exercised, for three German observers had all contracted severe rhinitis and in the case of one there was some stiffness of the neck as well. This would seem to indicate a slight affection of the spinal meninges and if the observation were accurate it would serve to show that the path by which the infective matter enters the cranial cavity is through the nose—possibly then through the cribriform plate. There was a disease of horses, known in Germany as Borna's disease, in which the essential lesion was a cerebro-spinal meningitis. Intracellular cocci had been found in the pus and it seemed quite possible that the disease might prove to be identical with human cerebro-spinal meningitis. He had heard that numerous cases had lately been observed in horses about Dublin and this was of interest in connexion with the present epidemic amongst human beings.

Dr. TRAVERS SMITH, Professor E. H. BENNETT, Dr. J. KNOTT, and Dr. J. CRAIG also discussed the papers.

BRITISH ORTHOPÆDIC SOCIETY.—A meeting of this society was held at the Orthopædic Hospital, Bristol, on May 19th.—Mr. A. H. Tubby read a paper on the Treatment of Spinal Abscess. He advocated the opening of the abscess as soon as it approached the surface by two incisions as far apart as possible; its thorough evacuation, and scraping or rubbing of the lining membrane; irrigation with iodoform solution, paroleine, or menthol; and closure of the incisions.—Mr. Noble Smith advocated incision and drainage and frequent irrigation.—Mr. Jackson Clarke, Mr. W. H. Harsant, and Mr. J. Ewens also spoke, and Mr. Tubby replied.—Mr. T. Carwardine opened a discussion on the Treatment of Severe Congenital Equino Varus. He divided cases into four groups: (1) severe at birth, (2) severe in childhood, (3) in adolescents, and (4) in adults. Treatment should begin early. Constant personal attention was required and persistence in after-treatment. In rigid cases of the third and fourth degrees manipulation alone was not enough. Tenotomy and the gradual method with apparatus needed patience and perseverance for six or twelve months. Wrenching was suitable in patients aged five years and upwards, but it was unsurgical and its results were temporary. Free subcutaneous section was too severe for young children. The skin was usually too tight to allow of correction. Phelps's operation was therefore better. With respect to tarsotomy and tarsectomy he said that Phelps's original operation did not correct the deformity of the bones, and it made a large wound which took a long time to heal with subsequent contraction. The result of astragalectomy was immediate and little after-treatment was needed, but it had ended in suppuration and amputation in some cases. Cuneiform tarsectomy corrected the varus deformity and saved time and trouble and expensive after-treatment, but it was a mutilating method and it prevented the gradual method being employed afterwards. It shortened the foot and destroyed the arch, interfered with growth, and left a stumpy inelastic foot. It treated the effect on the outer side rather than the cause on the inner side of the foot. Phelps's latest operation had the following advantages. It saved time; bony mutilation was slight, plantigrade progression was immediate; the foot was not shortened, nor was its elasticity impaired; the ankle and tarsal joints were not interfered with and their mobility was

preserved; being a less severe form of tarsectomy it was applicable to younger patients; it could not appreciably interfere with growth; and it treated the foot at the point of anatomical deformity.—Mr. Ewens, Mr. Little, Mr. Thomas, Mr. Jackson Clarke, Mr. Tubby, Mr. Noble Smith, and Mr. Harsant took part in the discussion, and Mr. Carwardine replied.—Cases were shown by Mr. Ewens and Mr. A. F. Blagg.

Reviews and Notices of Books.

Ulcer of the Stomach and Duodenum and its Consequences. By SAMUEL FENWICK, M.D. St. And., F.R.C.P. Lond., Consulting Physician to the London Hospital; and W. SOLTAU FENWICK, M.D., M.R.C.P. Lond., Senior Physician to the London Temperance Hospital, Physician to the Evelina Hospital for Sick Children. London: J. & A. Churchill. 1900. Pp. 392. Price 10*s.* 6*d.*

THE morbid condition known as ulcer of the stomach is so frequently met with and its diagnosis and treatment present so many points of doubt and difficulty that a monograph on the subject from such a well-known authority on diseases of the digestive tract as Dr. Fenwick will be sure of a welcome from medical men. He has been assisted in the preparation of the book by his son, Dr. W. Soltau Fenwick.

The work is divided into four parts. The first part deals with the Pathology and Etiology of Gastric and Duodenal Ulcer. The chapter on Morbid Anatomy contains a very full account of the various changes found in the walls of the stomach when ulceration has occurred, and numerous reproductions of photographs of morbid specimens of ulcer of the stomach materially add to the value of the descriptive letter-press. The authors have taken considerable pains in the elaboration of their conclusions respecting the morbid anatomy; the material was derived from the post-mortem records of 1015 cases of ulcer of the stomach and of 130 cases of ulcer of the duodenum. In order to avoid the errors that are apt to arise from the collection of isolated examples of the disease the authors wisely confined themselves to the records of hospital cases. One of the principal features of the analysis of the cases is the distinction which is made between the acute and chronic forms of the complaint as regards their origin, appearances, and modes of termination. Some of the points drawn attention to in this respect are interesting. For instance, the relative frequency of acute and chronic ulcers in different regions of the stomach. Out of 39 cases of acute ulcers 13 (33·3 per cent.) occurred in the pyloric zone, whilst out of 70 cases of chronic ulcers no less than 53 (75·7 per cent.) were found in that region.

The chapter on the Results of Ulceration contains a large amount of useful information. Attention will naturally be paid to the remarks on hæmorrhage and perforation. Considering the wide area of destruction wrought by a chronic ulcer and the extreme vascularity of the stomach, it seems surprising at first sight that only about 18 per cent. of the fatal cases die from hæmorrhage. The authors therefore remind the reader that not only is liability to bleeding minimised to a great extent by obliterative inflammation and thrombosis of the vessels in the immediate neighbourhood of the disease, but that any rent in their walls is rapidly closed by the contraction of the muscular coat and the coagulation of the blood at the seat of puncture. It is probable, therefore, that in every case of fatal hæmorrhage one or more of the following conditions will be present: (1) non-obliteration of the vessel previously to its erosion; (2) insufficient contractility of its muscular coat; (3) deficient coagulation of the blood; and (4) an abnormally high tension in the arterial or venous system of the organ.

The effects of perforation of the stomach and duodenum are treated in an able manner. The pathogenesis of ulcer of the stomach has always been open to doubt. Many theories have been from time to time advanced, but no single one has been universally accepted, and the remark of the late Dr. H. Gawen Sutton in his lectures to the students at the London Hospital will probably commend itself to the majority of practitioners: "When asked, 'What is the cause of simple ulcer of the stomach?' say, 'I don't know.'" The authors of the work under consideration enter fully into the many views which have been expressed, for there are few subjects in pathology that have given rise to more discussion than the mode of production of a gastric ulcer; and finally they state that although our knowledge concerning the causation of gastric ulcer is still very imperfect certain facts warrant us in coming to the following conclusions. An acute ulcer of the stomach or duodenum may either appear as a primary affection or develop during the course of some organic or constitutional affection. Acute primary ulceration often commences as a hæmorrhage into the inner coats of the stomach during the hyperæmia which takes place at each menstrual epoch and under other conditions. Chronic ulcer of the stomach or duodenum may follow the acute disease in young women or commence by the superficial digestion of a portion of the mucous membrane, where vitality has been diminished by certain conditions, such as obliteration of a nutrient vessel by atheromatous, fatty, lardaceous, or syphilitic disease, chronic inflammation of the mucous and submucous tissues, local anæmia of the gastric wall from pressure, or fibroid or fatty degeneration of the mucous membrane such as occurs spontaneously after the age of 40 years.

The second part of the book contains a description of the symptoms, varieties, and treatment of acute ulceration of the stomach and duodenum. The separation of gastric ulcer into two varieties—acute and chronic—is certainly to be commended, as without this classification confusion has arisen in differentiating many clinical varieties of the complaint according to the exceptional prominence of some particular symptom. If this pathological basis be accepted the clinical sub-division is unnecessary. The account of the symptomatology and of the treatment is clearly and concisely written, and the style adopted is one calculated to attract the attention of the reader. The surgical treatment of perforation has been frequently carried out and the authors have collected the statistics of a large number of cases so treated. The results show that the operation depends for its success or failure upon three factors: 1. The time which is permitted to elapse between the occurrence of the perforation and the performance of laparotomy. The earlier the operation is performed the greater will be the chance of its success. 2. The treatment of the hole in the stomach—it is absolutely necessary that the perforation should be closed. 3. The care with which the peritoneum is cleansed. After a careful study of the reported cases the authors believe that in course of time the early performance of laparotomy, combined with skilful closure of the perforation and thorough cleansing of the peritoneum, will render the surgical treatment of perforated gastric ulcer one of the most successful operations of its kind.

The third part of the book deals with the symptomatology of the ordinary chronic ulcer. Five varieties are differentiated and the difficulties involved in their prognosis, diagnosis, and treatment are discussed. The classification is based on clinical grounds, according to the special predominance of some particular symptom such as pain, vomiting, dyspepsia, hæmorrhage, and cachexia. The chapter on Diagnosis is particularly well designed, and the introduction of tables summing up the points to be relied upon in differential diagnosis is to be commended.

The final portion of the volume is devoted to the different sequelæ of ulceration. In most text-books these have hitherto received less notice than they deserve. Special attention is directed to the effects of perigastric adhesions, to the deformities of the stomach that ensue from the cicatrisation of the ulcer, and to the various internal fistulæ. A full account is also given of such subjects as perigastric and periduodenal abscess, tetany and other nervous disorders, cancer, tuberculosis, pernicious anæmia, gastric catarrh, and hypersecretion. With regard to the latter complaint the belief is expressed that the excessive secretion of gastric juice is only a reflex result of the irritation produced by the presence of the ulcer, and reasons are given for believing that the so-called "disease of Reichmann," or gastrosuccorrhœa, instead of being a primary functional disorder of the stomach, is merely a consequence of the retention of the gastric contents in certain forms of pyloric obstruction. The arguments adduced in favour of this view are sound and we believe the authors' theory to be the correct one.

We were much interested in a study of this work and we can cordially recommend it to the attention of our readers.

Twentieth Century Practice: an International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In 20 Volumes. Vol. XIX.—Malaria and Micro-organisms. London: Sampson Low, Marston, and Company, Limited. 1900. Price 30s.

THE ardent way in which researches of a subtle, refined, and minute character have been pursued of late into all that relates to malaria and malarial disease, the discoveries that have been already made, and the promise of others which have yet to come, have combined to make up one of the most interesting—we might almost say romantic—stories in the history of scientific investigation on a miniature scale. The results, moreover, of our rapid progress in this direction, interesting and suggestive as they are, have this practical advantage—that they are not merely circumscribed within the limits of the scientific terms in which they are expressed, but have a very practical significance which may turn out to be capable of wide application and of the utmost value to humanity.

Having once got hold of a clue to the explanation of the nature and causes of the varied phenomena of malarial fever in man, the meaning of which had hitherto seemed so puzzling and mysterious, inquirers were naturally impelled to follow it up to a logical conclusion by tracing out the life-history of the parasitic micro-organism which is at the root of the whole matter, in order to see how it effected an entrance into the human system and, further, how this could be practically prevented.

Since Laveran in 1880 discovered the malarial parasite and opened out, as it were, an almost new zoological field of observation, the subject has been keenly investigated by numerous scientific workers, among whom the names of Golgi, Marchiafava, Bignami, Grassi, and Celli, of the Italian school, and of MacCallum, Manson, Ross, Koch, and others, will at once occur to such of our readers as have interested themselves in this special branch of natural history. More light and experimental observation are now wanted to determine the nature, and still more the extent, of the rôle played by the mosquito as a vehicle for the conveyance and spread of the malarial parasite.

The simple enumeration of the names of the contributors to this volume dealing with malaria and micro-organisms suffices to show that the subjects have been entrusted to worthy hands. Their names are Professor Bignami and Professor Marchiafava of the University of Rome, Professor Simon Flexner of the University of Pennsylvania, and Eugene L. Opie of the Johns Hopkins University at Baltimore, the section on Micro-organisms being by Professor Flexner. The contributions on Malaria by Marchiafava and Bignami are, it should be added, illustrated by a number of excellent plates. There is no need, even were it possible within the limits of a review, to deal with all the points connected with malaria. These are discussed with an elaboration of detail which leaves little to be desired. After a brief historical sketch and a reference to the parasitology of the subject, the life cycle of the malarial parasite in man in connexion with the different forms and varieties of malarial fever and the life cycle of the parasite in mosquitoes, the hæmosporidia of birds and mammals, the mode of entrance of the parasites into the human organism, the malarial environment and the general and special pathology of malarial disease are severally discussed, and a description of the varieties, complications, and sequelæ of malarial disease from a clinical and therapeutical point of view follows.

Biological researches in relation to health and disease have revolutionised our views in many respects all along the line of medical science, but this has been especially the case in regard to malaria and malarial disease. The danger now is, perhaps, lest the rising of a new and possibly partial truth should be accompanied by the setting or obscuring of some older ones. The progress of discoveries regarding the malarial parasite has been so rapid that we can quite appreciate the force of what the authors say in their introduction—namely, that it has been found necessary to re-write entire sections of their contributions and to change others. Those on Parasitology and Etiology, in particular, have had to be greatly modified as a result of the latest researches. A special section has been devoted to the subject of Tropical Malaria, and the consideration of Hæmoglobinuria has been included in the treatise. There are some descriptions of the rarer and more pernicious forms of climatic or malarial fever with which probably only those medical officers who have served a good deal abroad are acquainted. Some of the most acute and severe attacks of these forms of fever resemble Asiatic cholera so closely that they might easily be mistaken for that disease.

We may refer our readers to Dr. Patrick Manson's lecture on Malaria and the Malarial Parasite, published in THE LANCET of May 19th, 1900 (p. 1417) for much interesting and instructive information as to the position which the subject holds at the present time.

We have left ourselves very little room to speak of the section devoted to Micro-organisms, contributed by Professor Simon Flexner of Philadelphia, which occupies nearly 300 pages of the present volume. The article takes a comprehensive view of the subject and is very carefully and lucidly written and illustrated.

Speaking generally of the nineteenth volume of the Twentieth Century Practice of Medicine we may say that it forms an admirably executed treatise on the subjects with which it deals. Its contributors are men of high scientific repute and are well qualified for the task which they have undertaken, and they seem to have done their best to make the fulfilment of it as complete and up-to-date as practicable. The volume will remain for a long time a valuable book of reference in connexion with the subjects of which it treats.

Atlas und Grundriss der Lehre vom Geburtsakt und der Operativen Geburtshilfe. (*Atlas and Outlines of Labour and Operative Midwifery.*) By Dr. OSCAR SCHAEFFER. Fifth enlarged edition. With 16 coloured plates and 139 illustrations. Munich: T. F. Lehmann. 1900. Pp. 107. Price 8 marks.

THIS book consists of two parts with an atlas appended. The first part treats of the mechanism and the management of labour and the second part of the various obstetrical

operations. The mechanism of labour is well described and the author has happily combined the theoretical and clinical portion, so that at the end of the description of each of the stages in the mechanism the student is told what conditions he would find present on making an examination at that particular time.

The first chapter deals with the so-called natural presentations—viz., the vertex, the face, and the breech. In the second chapter abnormal varieties of the natural presentations are described, such as Naegele's and Litzmann's obliquity in vertex presentation, transverse position of the head in vertex and face presentations, and spontaneous evolution in shoulder presentations. Unnatural presentations—e.g., cross and shoulder and other varieties—are considered in Chapter III. In the second half of the book the various obstetrical operations with their indication and methods of performance are described. The atlas consists of some 120 drawings which serve as an excellent series of illustrations to the text, in which constant reference is made to them. The coloured plates, which have been drawn from a study of frozen sections and of the conditions actually met with at the bedside, are good and accurate, as are also the illustrations in the letterpress. The illustrations in the atlas can hardly be considered artistic and, indeed, in some cases they are not anatomically or clinically accurate. They are, however, really not much more than diagrams and they fully serve their purpose as diagrammatic illustrations of the various points discussed. A little more care might have been expended upon the correction of the proofs. Misprints are frequent and all the references in the text to the figures in the atlas after about figure 60 are erroneous. The book has reached a fifth edition in Germany and contains a greater amount of information upon the subjects of which it treats than many a larger and more pretentious work.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on June 14th, the President, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., being in the chair.

The PRESIDENT submitted a list of persons of distinction to whom the Centenary Committee recommended that invitations to the Centenary dinner should be sent. The list was approved. The following examiners were elected:—

Elementary Biology.—P. T. Bowman Beale, F. G. Parsons, T. W. Shore, and T. G. Stevens.

Anatomy under the Conjoint Board.—Stanley Boyd, W. Bruce Clarke, A. Robinson, and A. Thomson.

Physiology under the Conjoint Board.—J. Rose Bradford, G. A. Buckmaster, and L. E. Hill.

Anatomy for the Fellowship.—J. Ernest Lane, B. G. A. Moynihan, F. G. Parsons, and A. H. Young.

Physiology for the Fellowship.—T. G. Brodie, W. D. Halliburton, D'Arcy Power, and W. H. Thompson.

Midwifery under the Conjoint Board.—W. R. Dakin, W. S. A. Griffith, A. H. N. Lewers, and H. R. Spencer.

Diploma of Public Health.—Part I.: Christopher Childs. Part II.: S. A. M. Copeman.

INTERNATIONAL CONGRESS OF ELECTROLOGY AND MEDICAL RADIOLOGY.

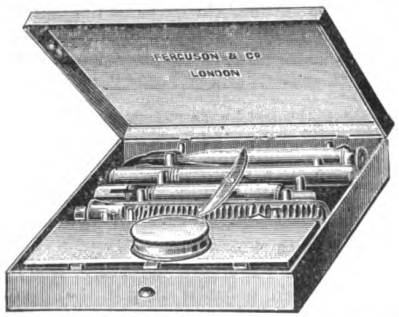
THE Organising Committee of the above Congress wish to inform those who purpose to attend the Congress that a reduction of 50 per cent. will be made for their tickets on the following French railway systems—namely, those of the west, the north, the east, the Paris-Lyons-Mediterranean, the Orleans, and the State. Reductions varying with the length of the journey will also be granted by the Italian railways, of from 30 to 50 per cent. Those who are going to attend the Congress and who desire to avail themselves of these privileges are requested to apply to the General Secretary, M. Doumer, 57, Rue Nicholas-Leblanc, Lille, before July 1st, 1900.

The committee also desire to inform intending members of the Congress that their tickets of membership confer upon them the right of free entry to the Paris Exhibition as long as the Congress lasts.

New Inventions.

AN ASEPTIC VACCINATION CASE.

THE illustration represents an aseptic vaccination case made for me by Messrs. Ferguson and Co., of Giltspur-street, London, E.C., which I think might be useful to public vaccinators, as it fulfils the requirements of the last Vaccination Act and it is so small that it can be carried in the



waistcoat pocket. The outside measurements are—3¼ inches by 2¾ inches by ¾ inch. The contents are—(1) spirit lamp, (2) tube of one-grain soloids of mercuric iodide (Burroughs, Wellcome, and Co.) for cleansing the skin, (3) aseptic vaccinator, (4) metal case for lymph tubes, and (5) blower. The vaccination pads can be carried in a separate case.

CHARLES CORBEN, M.R.C.S. Eng., L.R.C.P. Lond.
Caldicot, Chepstow.

A PORTABLE SPITTOON.

THE spittoon, three views of which are given in the accompanying illustrations, has been designed by Mr. W. Harrison Martindale of No. 10, New Cavendish-street, W., and is intended for the use of phthisical patients whose sputum is liable to disseminate the disease unless special precautions are taken. As will be seen, the spittoon is made in two separable parts, the larger one being the container and the



other one consisting of the funnel and lid. Being entirely of sheet metal it has a neat appearance, is not liable to be injured, and can be readily cleaned and sterilised by boiling. It is of a convenient size for the pocket, being three and a quarter inches high and two and three-quarter inches wide, or it may stand on a table beside the patient's chair or bed. The lid will, of course, generally be closed, but can be easily raised with the thumb of the hand which holds the spittoon. Some disinfectant should be used in the spittoon, and for this purpose bottles containing small tablets of thymol are supplied. The price of the spittoon is 6*s.* 6*d.*

THE LANCET.

LONDON: SATURDAY, JUNE 23, 1900.

A CASE which was tried this week in London before Mr. Justice PHILLIMORE and a common jury affords a striking example of the dangers which beset a medical man in the performance of his duty—dangers, moreover, which he cannot avoid save by shirking responsibilities not only towards his patients but towards the public at large. The action was brought by a man named SOPER, employed as a coachman, against Dr. J. H. GIBSON and Dr. W. M. YOUNG (practising in partnership in Maida-vale) under the following circumstances. The plaintiff consulted Dr. GIBSON who was medical officer of a club of which the plaintiff was a member. He was in a state of great mental depression because his wife had become pregnant, and the responsibilities of the future alarmed him. At the same time, according to the evidence of the two defendants, the wife of the plaintiff informed them that her husband had threatened to murder both her and her children and that "he had made up his mind to end it." One of the defendants, Dr. YOUNG, enjoyed the peculiar advantage in dealing with such a case of 15 years' experience in a county asylum. He went to the plaintiff's house and carefully examined him, when the plaintiff said, among other things, that he "heard voices which prevented him from sleeping." Dr. YOUNG, satisfied as to his condition and finding the wife still alarmed, thereupon himself communicated with the relieving officer, who eventually removed the plaintiff to the lunacy ward of the workhouse infirmary. From this institution SOPER was, according to his own evidence—which does not appear to have been supported by that of any medical man connected with the workhouse or of any other person—discharged as sane after three days' detention. He brought his action in respect of this detention, alleging that it was due to professional negligence on the part of the defendants that he had been sent to the lunacy ward of the workhouse and claiming as for "false imprisonment." In answer to the plaintiff the two defendants gave their version of what occurred, while Dr. J. F. WOODS (medical superintendent of the Hoxton House Asylum) and Mr. W. RAYNER (visiting medical officer to the Marylebone Workhouse) gave testimony in corroboration. Their evidence was to the effect that the facts as stated by the defendants showed that the case was one of suicidal mania and that the defendants had acted most properly and in the plaintiff's interest, while they further explained to the jury the possibility of rapid recovery from acute suicidal mania. Dr. WOODS cited an instance that had come under his personal observation in which a patient so affected became sane after two days' confinement. The case, as summed up to the jury by Mr. Justice PHILLIMORE, resolved itself into the answer to a comparatively simple question—whether the two medical gentlemen who were brought to the court as defendants, in coming to the conclusion that the plaintiff was in a dangerous state and in communicating with the relieving officer, had acted negligently. To this the jury found the only answer that 12 sensible citizens could find, and their verdict for the defendants relieved Dr. GIBSON and Dr. YOUNG of the danger of being mulcted in damages. The verdict was endorsed by a judgment in behalf of the defendants "with costs." This means that of their expenses in defending the suit a portion, cut down to a minimum by the taxing master, will be due to them from the plaintiff who may or may not be able to pay them.

The medical aspects of the case require no discussion. At the time when SOPER left the workhouse infirmary he may have been perfectly sane without this in any way affecting the question of his condition when Dr. YOUNG examined him, as to which we have that gentleman's opinion, and also the evidence of a letter from the plaintiff in which he wrote: "Fate is against me ..... future happiness and good health seem out of the question for me," clearly showing his melancholic condition. But the story forms another example of the extraordinarily difficult position that is occupied by the medical man in affairs of this sort. Any medical man may at any time be invited to give an opinion upon the question of a man's sanity. If he honestly believes that there is danger in allowing the patient freedom of action he has one duty only, which is to declare that opinion and give effect to that opinion. By doing this he becomes directly responsible for the confinement of the person whom he believes to be insane and may be subjected to the inconvenience, anxiety, and pecuniary loss inseparable from an action at law when the person whom he has certified as a lunatic finds himself at liberty. This is because there exists no means of testing in such an action the genuineness of the plaintiff's claim until it is brought into court with all the costly accompaniments of solicitors, counsel, witnesses, and court fees, and with the further inevitable circumstances, of great consequence to medical men, of waste of time and a publicity of an unenviable sort. The public must have a remedy no doubt where the medical man is negligent, and the courts should be open to all who have a just claim to prefer, but there must be some defect in our legal machinery to make the comparatively small and poor class of medical men run such risks for the good of the public. We have, perhaps, the most expensive legal system in the world, and it is one which lays all persons who are worth attacking open to the attack of anyone, be his claim just or unjust. And if the claim should be unjust the unfortunate defendants have no remedy. The pecuniary loss to the successful defendants in the case of SOPER *v.* GIBSON and YOUNG will be at least £100, even if the plaintiff is able to pay that proportion of the expenses now due from him in accordance with the verdict. It is a significant fact in this case that the solicitor who represented the plaintiff is the son of the plaintiff's employer; this the wife of the employer admitted when in the witness-box.

IT will be remembered that some few weeks ago considerable sensation was caused by the alleged abduction o

Madame DE MARTEL, widely known under her pen-name of "GYP." The story, as told with circumstantial detail by Madame DE MARTEL, went the round of the press of Europe, meeting everywhere with scant credence. And this was not, and is not, surprising, for undoubtedly it bore upon its face a striking resemblance to the episodes with which popular French romances are besprent, so that many who read the narrative experienced a feeling that what had occurred to the lady was too much like a chapter from one of M. XAVIER DE MONTÉPIN'S interminable and impossible novels to be an episode in real life. In particular medical men were unbelieving, for the invention of such stories by those posing as victims of assaults is a form of hysteria familiar to all of us. Consequently Madame DE MARTEL, though she was able to adduce corroborative testimony to parts of her story, and though her written work displays her as a woman of particular sanity, was very generally condemned as the victim of hallucination or of mad desire for notoriety. Possibly this condemnation was hasty. For M. KARL, the ingenious painter who hoaxed M. Q. DE BEAUREPAIRE so egregiously during the DREYFUS trial, has written to the *Matin* to say that he and three of his friends abducted "GYP" in much the way that she had described to a sceptical public. It appears from M. KARL'S confession that there were concerned in the assault on Madame DE MARTEL a gang of confederates and a complacent *cocher*, and that the drive to the distant suburb, the confinement in the deserted villa, and the escape from the windows of the second story were facts and not the imaginings of a mentally unstable person. If M. KARL'S account is true the reason why Madame DE MARTEL'S adventure looked too like the fictional heroine's misfortune to be credible becomes clear. M. KARL, in describing his method of kidnapping "GYP" has fallen back upon just those literary authorities from whom his victim was suspected of having plagiarised, and while universal opinion was right in refusing to believe the abduction to be a serious outrage it was wrong in attributing imposture to Madame DE MARTEL. If the communication to the *Matin* is untrue—a hypothesis with something to recommend it—the "joyous" KARL, as our contemporary calls him, must himself be in a curious condition of mental balance.

Practical joking is obsolete in this country, and no one of sense, especially no medical man, regrets the manners and sentiments of the time when it was held in consideration as a form of humour. Indeed, the disrepute into which practical joking has fallen may be pointed to without exaggeration as one of the most certain proofs—if proof be needed—that the race has attained to a higher plane of civilisation during the nineteenth century. A hundred years ago the practical joke flourished in England side by side with an elaborate social demeanour, the absence of which we are often called upon to deplore in the present less ceremonious days. But the appreciation bestowed by our grandfathers and their fathers upon practical jokes, however cruel, however dangerous to life and limb, and against whomsoever directed, does much to nullify the fine effect produced by the elegance of their clothes, the loftiness of their sentiments, and the formality of their diction. The callousness which derives amusement from the pain of another is now a subject of reprobation, while the extreme danger to health of many forms of practical joking has been pointed out by the medical profession in terms which have ensured the discontinuance of many favourite tricks. And this is a sign of progress. It proves that we have outgrown the schoolboy desire to inflict misery upon our neighbours that we may enjoy their mortification. Here and there a practical joke may still be tolerated, but it is certain that unless the victim is a man, and a man who has merited rough reproof, the sympathies of the spectators, even in the hilarious environment of a country house-party, will be with the victim. Those who laugh will laugh because they feel that the man who makes an unappreciated joke is in a more melancholy plight than the man against whom the joke is levelled. The position long enjoyed by THEODORE HOOK will not be filled in the twentieth century. HOOK was, as everyone knows, a greater and more honest man than his reputation, but the things that he did two generations ago only, while he was occupying a distinguished place in society and letters, would nowadays ensure his being expelled from his clubs. We have, in fact, put away this childish thing—practical joking, and that we have done so is more significant than a little. It is constantly said that modern life has lost all delicate aroma, the hurry and stress of competition leaving men no leisure to attend to niceties of behaviour. But, as in many an oft-repeated statement, the little piece of truth is outweighed by the general incorrectness. If there is less politeness on the surface now than in Georgian days there is infinitely more true courtesy. The desire to please is as great while the resolve not to give pain is far greater. In the days when practical joking was a favourite form of humour no one was exempt from the ferocity of the fun-maker. A glance at the literature, especially at the novels, of 50 and 60 years ago reveals that to be old, to be ugly, or to be a spinster, were all considered a sufficient reason for ridicule and even for personal assault. Coarse personalities reflected little discredit on the utterers, for a majority could always be found to join in a laugh at the butt. This spirit of cruelty has been largely eliminated in recent days, and as a consequence our estimate of what constitutes good breeding has changed for the better in a remarkable degree, which is the more a subject for congratulation in that it is the habit of the unthinking sweepingly to condemn modern English manners, which are found to be abrupt and only suited to a utilitarian folk. Possibly, but those who speak so forget that an exquisite appreciation of beauty, a gift of mellifluous phrase-making, and a courtesy of manner that is wearisome in its elaboration can exist in the savage breast. For what is the Chinese judged by modern standards but a savage? His centuries of semi-civilisation have never taught him to moderate his cruelty. The subjugation of the childish instinct to give pain is the truest sign of progression in a people. The possession of the fruits of learning and science, so generally acclaimed as proving attainment to a high level of living, is not so true a sign.

France has always, in theory at any rate, been the most finely civilised and gallant of nations. Many things have combined of late to render this view difficult to hold; for

example, the treatment by Frenchmen in certain of their newspapers of our venerable QUEEN and their own conscientious President. But those who have social relations with them will always be found to say that French politicians, whatever views they represent, are never representative of the people, and that French writers, and especially French journalists, appear to take pains to traduce their country. In these circumstances it will be interesting to see what attitude France takes towards M. KARL, supposing that M. KARL'S words are true. When M. KARL befooled M. DE BEAUREPAIRE he shook the world with laughter. The supporters and the adversaries of DREYFUS alike saw the ridiculousness of the position occupied by the ex-judge, and M. KARL leapt into fame. It is possible that the humorist took more credit to himself than he should have done, and that his second attempt has been based upon faulty comprehension of the conditions under which his previous exploit was performed. His opportunity with regard to M. DE BEAUREPAIRE was most fortunate, for that person had laid himself specially open to the punishment that he received, proving himself credulous and ignorant in the precise directions in which he was posing as shrewd and well-informed. No such conditions exist in the case of Madame DE MARTEL, and while it is doubtful whether France will laugh again, for the rest of the world the joke will fall flat. "GYP," like M. DE BEAUREPAIRE, brought trouble upon herself. She, like him, is a vigorous political partisan—"the Eurydice of the Nationalists" M. KARL terms her—and her attitude towards the Jews is as uncompromising as was M. DE BEAUREPAIRE'S towards DREYFUS. But having said this, all that can be urged in extenuation of M. KARL'S cruelty has been said. We find it much too little and we trust that Frenchmen, regardless of politics, of the DREYFUS question, and of the anti-Semitic movement alike, will find it the same. If M. KARL has invented the story of the abduction he has been willing to exhibit himself as a complete anachronism and not a funny one. If he has done what he says that he has done, he should be severely punished. For practical joking is a danger and a nuisance to society that should not be tolerated.

DR. DANFORD THOMAS, coroner for Central London and Middlesex, has drawn up a series of questions relative to the cause of death in cases in which a patient has died presumably owing to an anæsthetic. In England inquests are always held in the case of such fatalities, while in Scotland the law does not deem a special inquiry necessary if the medical man in charge of the case can give a satisfactory statement that the death was not due to gross carelessness or unprofessional conduct. The questions which Dr. DANFORD THOMAS has formulated deal with the choice of the anæsthetic, the place in which it was given, and all the circumstances attending the administration, such as the temperature of the room, the condition of the patient, and the nature and duration of the anæsthetic. They further request the medical man who gave the anæsthetic to state in how many cases he has given anæsthetics, how much air was allowed to mix with the narcotic vapour, the quantity of the drug used, and by what method it was given. The phenomena associated with the induction and continuance of anæsthesia, and attending the death of the patient, are also inquired into, as well as the general state of the patient with regard to the heart, lungs, kidneys, and other organs before the operation. The questions are extremely useful as a guide for the scientific inquiry into such sad occurrences as deaths under anæsthetics, but whether it is at all possible, or indeed desirable, to attempt in a coroner's court to enter so fully into the details of purely medical questions we venture to express a doubt. It is assuredly the function of the court to ascertain whether an individual died from, we will say, an overdose of chloroform through inexpertness or malpraxis of the administrator, but it seems to us that this end may be obtained without placing before the jury purely medical facts, which are not always within their purview, or, in some instances, within that of the coroner himself. The public attending such courts as well as the jury are not, as a rule, skilled in questions of anæsthetics, and might certainly receive false impressions if the technical medical statements contained in the report were presented in detail as evidence in the case. Even experts reading answers to Dr. DANFORD THOMAS'S queries might arrive at very diverse decisions. While one might condemn the method which his neighbour extolled, many might find a cause of death quite other than that which the administrator believed to be the true one. It is at least an ordeal for any medical man to appear in the coroner's court, having first suffered the mental shock incident to losing a patient under an anæsthetic, when he has done his best according to his lights for that patient. If to this be added a searching inquiry into the scientific questions involved, with possibly a severe heckling from jurymen whose want of technical knowledge is often apt to induce misunderstanding of scientific facts and to confuse the issues, the medical witness will hardly welcome the innovation suggested.

We may not unreasonably expect that Dr. DANFORD THOMAS will regard such reports as "private and confidential" *communiqués*, and that the evidence thus collected will result in the ascertaining of facts and details which will be of scientific interest and benefit to those employed in the administration of anæsthetics. Provided that such inquiries are conducted by medical coroners and the statements made by the medical witness are given purely for the guidance of the coroner and not for that of the jury, we think that Dr. DANFORD THOMAS'S schedule of questions is to be welcomed. But unfortunately all coroners are not medical and we cannot quite see of what use the questions, which are of a highly technical medical nature, would be in the hands of legal coroners. Certainly the suggestion now under consideration appears to us to add one more to the many reasons why in all cases coroners' inquiries should be conducted by medical men and not by lawyers.

GIFT TO BLYTH.—Sir Matthew White Ridley, the Home Secretary, who is lord of the manor, has given land of some extent to the Blyth District Council for a park for the use of the inhabitants of the seaport.

Annotations.

"Ne quid nimis."

THE METROPOLITAN HOSPITAL SUNDAY FUND.

WE publish in another column a letter from the Lord Mayor urging on the public of London in terms of admirable directness the absolute necessity of contributing this year to the utmost of their power to the Metropolitan Hospital Sunday Fund. His lordship evidently feels that there is reason for apprehension that the very heavy calls which have been made during the past nine months of war and suffering upon the public purse may influence in an unfortunate manner the subscriptions to the Fund. In our Special Suppement in behalf of the Fund issued last week we spoke of the position in much the same terms. We admitted that the demands upon the benevolent had been so very heavy that the Fund might this year find itself in difficulties, and to the best of our power we urged upon the public the true view—viz., that a year of national suffering is a year when this Fund requires more than ever all the pecuniary assistance that the public can afford. The Lord Mayor boldly asks the public to send him £100,000, that is to say rather more than double the average annual total of the Fund. It will be an event of almost national importance if the sum he asks for is obtained. The Fund has started splendidly. Mr. George Herring, whose great generosity to the Fund we have chronicled on previous occasions, has given towards this ideal total of £100,000 no less than £10,000, and has also promised to give £10,000 more if the sum of £90,000 is raised. In the name of the suffering poor of London we thank Mr. Herring for his splendid munificence and we trust that the necessary subscribers will come forward to deplete his open purse of the second donation. We beg our readers to remember that next Sunday is Hospital Sunday, and we hope that they will impress the fact upon all whom they can influence.

DOWLING *v.* DODS.

IN the Queen's Bench Division, before Mr. Justice Darling and a common jury, Miss Agnes Dowling, a certificated nurse, sued Mr. Louis Ferdinand Dods, L.S.A., a medical practitioner residing in Marylebone, to recover damages for libel. The alleged libel consisted in a letter which the defendant had published and written to the relieving officer of the Paddington district in which he certified that to the best of his knowledge and belief the plaintiff was of unsound mind. The letter also stated that the plaintiff had passed an examination at the Apothecaries' Hall for certification as a dispenser, and that in her present frame of mind this constituted a danger to the community. He had interviewed sundry people who agreed as to her insanity and were afraid of her. The plaintiff gave evidence in support of her case and was cross-examined by Mr. Hammond Chambers. She said that she had been an inmate of the House of the Holy Cross in Ladbroke-square and admitted that she had written several letters to the nurses. To Sister St. Clair, the assistant matron, she had written, "When I was on night duty and sleeping at your home you kept me awake often, and made me write letters to you at Fulham." That, she said, was by telepathy. She also said, "You tried to take my soul from me with your diabolical practices. ..... You took possession of my mind, you could read most of my thoughts, you threw me down in the streets one day because you did not approve of them." This she accounted for by "thought body" phenomena. In reply to the judge the plaintiff admitted that when she was in Ireland she distinctly heard Dr. Groves's voice. He was at the time in the Isle of Wight. Mr. Dods gave evidence as to seeing the plaintiff with Mr. Farrar, a tutor whose lectures she attended at Westbourne Park-road. He had seen plaintiff in Mr. Farrar's house waving her arms about and talking to herself. He wrote the letter in the plaintiff's interest. Mr. Farrar gave evidence of eccentric behaviour on the part of the plaintiff, and Miss Matilda Ashby, matron of the Holy Cross Society, a Roman Catholic institution for training nurses, said that the behaviour of the plaintiff while in the home was very strange. Mr. Justice Darling, in the course of his summing-up, read passages from the plaintiff's letters to Miss Ashby which, in his opinion, justified the defendant's statement that persons went in terror of their lives on account of the plaintiff. He held that the letter was privileged, but left the following questions to the jury:—1. Did the defendant write to the relieving officer without malice and *bonâ fide* believing that the statements were true. 2. Were the statements true? 3. Did the defendant act in good faith and with reasonable care in the manner in which he brought the matter before the relieving officer? The jury answered the first and third questions in the negative and assessed the damages at £100. With regard to the second question, the jury found that the defendant had not spoken truly in stating that the plaintiff was of unsound mind, that it was not true that the plaintiff had sent threatening letters, that it was not true that she would be a source of danger as a dispenser. It was true, however, that she had hallucinations. Judgment was therefore entered for the plaintiff. To our minds the finding of the jury is remarkable. We can see no evidence to show that Mr. Dods did not act in good faith, and plaintiff was admitted by the jury to have hallucinations. A dispenser who has hallucinations is, we should say, by no means unlikely to make disastrous mistakes. Suppose, for instance, that a prescription recommended salicylate of soda and the dispenser heard a voice from the Isle of Wight recommending the substitution of arsenic? It must be remembered, too, that Miss Dowling could not have been committed to a lunatic asylum on the strength of Mr. Dods's letter. That letter was only the commencement of a possible inquiry into the plaintiff's state of mind.

THE ALDERSHOT FIELD DAY.

AFTER the expressions of regret that have been made regarding the recent catastrophe at Aldershot and the desire which evidently exists to lose no opportunity of preventing any similar disaster in the future we might be presumed to be able to rest content. But we regret to say that we cannot regard the result of what had previously taken place in the House of Commons and the statement of the Under-Secretary for War as to its causes as altogether satisfactory. Apart from the loss of life and the suffering that were entailed, such occurrences cannot tend to popularise the army, which is what the Government and everybody else are desirous should be done at the present time. While we quite admit that the going astray of carts containing refreshments was a very unfortunate accident on the occasion in question and that the sudden accession of an exceptionally hot and close day could not have been foreseen, we nevertheless consider that under such circumstances it would have been prudent either to postpone altogether or to curtail the time of the intended military operations. This is not, however, the question which concerns us now. What the public has a right to expect is that the military authorities, with all the experience which they have had of field days, military manœuvres, and marches in and around Aldershot, should be able to show that all practicable precautions are taken against occurrences of this

kind. It is no doubt not advisable, even were it practicable, to depart from a system of decentralisation by taking out of the hands of the local military authorities the duty and responsibility of making adequate arrangements on occasions of this sort. We cannot see, however, how these arrangements can be considered adequate so long as soldiers about to take part in a long and trying field day are not provided before starting with a more substantial breakfast than they seem to get at present, together with means of obtaining light refreshment and an abundance of fluid *en route* and during halts. We know, as a matter of fact, that sportsmen and civilians take care to secure a good breakfast before commencing any unwonted exertion, and if the existing regulations do not admit of this being done on field days in the case of the soldier the War Office should issue the necessary authority and incur the cost of having it done. It goes without saying, too, that the men should be protected from the sun and the heat by suitable clothing and head-dress and by marching in as open order as possible. The so-called forage or field service cap is quite unsuitable for such occasions; either helmets should be worn or, what would probably be preferable, the slouched form of head-dress used by the colonial troops should be adopted by our infantry soldiers. But it is of little use merely to protect the head against the direct rays of the sun so long as the danger from heat exhaustion arising from insufficient nourishment and fatigue be not also guarded against. It is often a matter of emulation with corps to "force the pace" in marching back to camp after a field day and it was on the return march that the soldiers, overcome with heat and fatigue, fell out in such numbers, and it is at such a time, therefore, that extra care should be taken.

THE ROYAL SOCIETY (SECOND) ANNUAL CONVERSAZIONE.

THE exhibition held by the Royal Society on June 20th, although containing very little of an entirely novel character, yet fully maintained the high standard it has reached in recent years. It frequently happens that the second or June conversazione, generally known as "ladies' night," is more or less a repetition of the one given in May. This year, however, we are glad to find that this is by no means the case, many fresh subjects of interest being brought forward. An able demonstration of an apparatus for the production of short electric waves and the study of electro-optic phenomena was given by Dr. J. A. Fleming, F.R.S. A beam of electric radiation was produced by a radiator, the wave length being about eight inches. External radiation is prevented by enclosing the instrument in a zinc box. The receiver is of the Branly type and is connected with a relay and an electric bell to indicate the impact of electric waves. Dr. Fleming showed that the latter could penetrate ordinary insulating screens but were at once stopped by those made of metal. Damp objects, such as a wet duster, a moist brick, or the human body, were quite impervious. The refraction of these waves was also cleverly shown by turning the radiator out of the horizontal plane when the receiver bell gave no indication until a prism of paraffin wax or a grating of parallel wire held at an angle diverted the rays into the aperture of the receiver. The spectra of the inert gases of the atmosphere were exhibited by Professor W. Ramsay, F.R.S., and Dr. M. W. Travers, who have now succeeded in thoroughly separating no less than five constituents from atmospheric nitrogen—viz., helium, neon, argon, krypton, and xenon, spectra of these five gases in a pure state being on view. It is interesting to notice that krypton with an atomic weight of about 80·54 comes close to bromine in the Periodic Law, whilst xenon again, with an atomic weight of 128, is close to iodine. An ingenious apparatus for the preparation of these gases in the pure state was also shown. It consists mainly of mercury levelling tubes, by means of which atmospheric air is driven into a tube, cooled by liquid air, and thereby compelled to condense. Diminution of pressure then causes the highest boiling liquid to vaporise away from the others, thereby practically bringing about fractional distillation of the gases present. The photographic observations of the solar eclipse of May 28th formed the interesting exhibit of the Joint Eclipse Committee of the Royal and Astronomical Societies. Many positives and negatives of the various stages of the eclipse were on view and naturally many of the corona. Ordinary and chromosphere spectra of the latter were also shown, and among other attractive items in this collection were some striking paintings by Mr. Wyllie, the well-known marine artist, of incidents which he witnessed whilst accompanying the official expedition. Dr. William J. S. Lockyer showed some clever photographs of bright and dark lightning flashes, the effects being purely photographic, probably caused by several sparks of varying intensity taking place at the same time. The poisonous lotus of Egypt (*Lotus Arabicus*) was shown by Professor Wyndham Dunstan, F.R.S. This very curious plant possesses the property of being extremely poisonous to animals in its living condition from the formation of prussic acid due to the action of water on a glucoside it contains, an enzyme present converting the latter into this poison and a yellow colouring matter, *loto flavin*. When, however, the plant is cut down and dried it becomes a most useful fodder and possesses an odour closely resembling fresh hay. Dr. W. J. Russell, F.R.S., showed some pictures on copper developed by iodine after contact with printer's ink and also after exposure to hydrogen peroxide. Some ancient cameos and gems dating back to the second or first century B.C. were exhibited by Sir John Evans, K.C.B., F.R.S., and some of the Roman remains from Silchester by Mr. W. Gowland. The latter included some fragments of the hearths of two of the old cupellation furnaces saturated with lead and copper oxide during the extraction of silver from argentiferous copper. Some very good experiments were performed by Professor Hele-Shaw, F.R.S., and Mr. Hay on stream line motion analogous to lines of magnetic induction. They exhibited a specially constructed glass plate by means of which a large number of results may be obtained with very little trouble suitable for both educational and research work. Last, but not least, Professor E. Ray Lankester, F.R.S., showed two ingenious models of mosquitoes enlarged 28 times linear and some models of human blood-corpuscles infested with the malaria parasite.

UNFOUNDED CHARGES AGAINST THE CARDIFF INFIRMARY.

THE working men of Cardiff and the colliers of the surrounding districts subscribe about £1000 per annum in support of the Cardiff Infirmary, not by any means a large amount when compared with the sums raised on Hospital Saturday in other large towns, Birmingham for instance. But if the Cardiff workmen are grudging in pecuniary support they are only too ready to bring against the staff of the institution charges which are of the most trivial nature and which will not bear even the most superficial examination. The latest instance occurred last week when at a meeting of the working-men governors it was stated that a collier who had met with an accident was sent by the colliery surgeon to the infirmary and that although he had a subscriber's ticket he was sent home without having his injury attended to. Such is the statement which appeared in the Cardiff daily papers of June 12th. The actual facts are these. A collier in one of the Rhondda valley collieries badly crushed three of his

fingers and was attended immediately by Mr. Edwards, the colliery surgeon, who was of opinion that with proper treatment the whole hand would be saved. At the end of two days the man suggested that he should see one of the Cardiff Infirmary surgeons and Mr. Edwards readily acquiesced. Upon presenting himself at the out-patients' room of the infirmary Dr. P. Rhys Griffiths made a careful examination of the injured hand and came to the same conclusion as the colliery surgeon, that there was no necessity to amputate any of the fingers, and after having the hand dressed he wrote to Mr. Edwards giving expression to his views as to the mode of treatment to be followed. It is thus evident that instead of receiving scant courtesy, as the working-man governor would have his colleagues believe, this particular patient received exceptionally good treatment at the hands of the infirmary surgeon. It is a great pity that such charges as these should not be investigated before finding their way into the daily papers and not after. Those who bring them must surely see that even the interval of the couple of days which must elapse before explanation is possible may be long enough to do a considerable injury to the institution whose interests we are convinced they have really at heart.

MARRIAGES BETWEEN PERSONS OF THE SAME SEX.

THE determination of the sex of a new-born child with malformed genital organs must often be a matter of considerable difficulty. With the advance of years and the advent of puberty the changes which take place in the body and the development of secondary sexual characters usually enable a correct diagnosis to be made. It would seem hardly credible that individuals could grow up and even enter the marriage state without their exact sex ever having been determined. In two articles of great interest in the *Revue de Gynécologie et de Chirurgie Abdominale*, March–April, 1899, and January–February, 1900, Dr. François Neugebauer has collected notes of no less than 53 cases of marriage between persons of the same sex. He has also collected from the literature 11 cases in which marriage engagements were broken off on the discovery of an error having been made in the sex of one or other of the parties, and 15 cases of "women" living a life of prostitution who were in reality of the male sex. A careful examination by a competent observer will rarely fail to determine with certainty the sex of a new-born child, but in many cases the matter is left to the judgment of the attendant nurse or midwife, who has not a sufficient knowledge of the various kinds of malformation of the genital organs to enable her to come to a correct conclusion. The unfortunate consequences that may result from an error are illustrated by Dr. Neugebauer's cases and by the fact that two unhappy victims of such a mistake were driven to commit suicide. In the 53 cases recorded, in 49 a man had been married as a woman, in three cases a woman had been married as a man, while in one the person was said to be an hermaphrodite. The majority of the cases of the men appear to have been very evident cases of peno-scrotal hypospadias. Some of these cases, however, even when examined by trained observers, cannot be decided upon with absolute certainty unless a microscopical examination of the supposed ovaries or testes is possible. The legal relations of the correct determination of the sex of a new-born child may be of the greatest possible importance. The question of the right of succession or inheritance to landed estate or to an estate limited by entailment may depend upon a correct appreciation of the preponderance of one or the other sex in the case of an hermaphrodite. If the subject of such a malformation die a short time after birth the rights of other people may rest to a large extent upon the decision of the medical attendant in the matter of the exact sex. In such cases no conclusion should be come to without the most complete post-mortem examination and if necessary a microscopical examination of the sexua glands. The law in France with regard to the nullity of marriage between two persons of the same sex differs from that in this country. If the person married is a malformed woman incapable of sexual intercourse then according to the French law no ground exists for declaring the marriage void. Such a condition is, however, recognised by English law as a sufficient cause for annulling the contract. If, on the other hand, the person is a malformed man there can have been no legal marriage and it is of necessity null and void. If the case is one of an hermaphrodite then nullity of marriage must exist since whatever the sex of the other contracting party there must be identity of sex between the two persons. In view of the grave results that may ensue cases of doubtful sex should be investigated with the greatest care, and in all cases where any doubt remains the child should be brought up and educated as a male.

THE COLONIAL SURGEONS IN ASHANTI.

THE dangers which are at present threatening our countrymen in the West Coast of Africa have a special interest for the medical profession from the fact that of the 26 Europeans whom the revolted Ashantis are believed to have surrounded in Coomassie no fewer than six are in the Colonial Medical Service. Under the most favourable conditions these gentlemen have very arduous and responsible positions, and the climate in which they live is proverbially one of the most fatal in the world for white men. At present they are in a most critical position, shut up in a native town far from the sea and with no immediate prospect of being relieved. These victims to duty, with whom we have to express the utmost sympathy, are Mr. Patrick Joseph Garland, senior assistant colonial surgeon, Gold Coast, Mr. Edward Herbert Tweedy, Mr. Albert John Chalmers, M.D. Vict., Mr. William Medlycott Graham, M.B. Dub., and Mr. J. B. Hay, M.B. Edin., assistant colonial surgeons, Gold Coast, the sixth being Mr. W. F. Macfarlane, assistant colonial surgeon, Lagos. All will unite in hoping that communication with Coomassie may be soon restored and the Europeans enabled to make their way to the sea-coast.

THE RATING OF SCIENTIFIC INSTITUTIONS.

THE Jenner Institute of Preventive Medicine has recently attempted to obtain exemption from the payment of rates and has failed to do so on its case coming before a Divisional Court. The ground of its claim to be excused was that the Jenner Institute came under the Act of Parliament passed in 1843 which exempts "any society instituted for purposes of science, literature, or the fine arts exclusively," provided that such society fulfils certain other conditions. It was not contested that the Jenner Institute did not fulfil these or that it was not instituted for purposes of science, but its difficulty arose from the application of the word "exclusively." It is, of course, well known to our readers that the Jenner Institute is not only responsible for much scientific investigation and research but also that it manufactures and sells antitoxin, mallein, tuberculin, and similar preparations for the benefit of members of the medical profession who are glad to be able to obtain them from such a source. It was not suggested to the Divisional Court that it carries on a profitable business in this respect; indeed, it was admitted that some of the preparations named were sold at a loss to the institute. The judges, however, held that giving full weight to the word "exclusively" in the Act under consideration they were bound to consider the appellants liable, Mr. Justice Channell

saying that "one of the objects of the appellants was no doubt the promotion of science, but one and probably the main object was to dispense to the public the benefits of science." We do not quite follow the distinction thus drawn which we cite from the *Times* report of the case, and we should have thought that "the dispensing of the benefits of science" to the public should hardly, according to the spirit of the Act, impose a liability from which a society not so dispensing them would be exempt, but we do not wish to re-argue a case which no doubt will shortly be re-argued to the full in the two courts which still remain open to it. We would rather protest against scientific societies having either to submit to taxation or to expend their revenues in claiming the protection of an Act of Parliament passed more than half a century ago and so vague in its terms that even now the interpretation of its provisoes is wholly uncertain, while such institutions as general hospitals might well have been included in its scope had they not at the time of its passing and for many years afterwards been universally deemed to be under no obligation to pay rates. In justification of what we have said as to the uncertainty and consequent cost of such an appeal as the Jenner Institute seems to have undertaken we need only point to the history of two more or less recent appeals under the same section which were cited in the course of argument in the Divisional Court and which we select at random. In the one case the Institution of Civil Engineers was the appellant. The Divisional Court decided against it. On its appealing to the Court of Appeal the decision of that tribunal was in its favour by a majority, one out of the three Lords of Appeal dissenting from the other two. In the House of Lords the Institution was again successful, but again one judge out of three—the Lord Chancellor, to wit—was against it and it succeeded by a bare majority only. In the other case the Art Union of London was the appellant. The Divisional Court decided against it; the Court of Appeal was in its favour, being, however, again divided in the proportion of two judges against one; and the House of Lords eventually reversed the decision of the Court of Appeal and held the Art Union liable. It is possible that the law on the subject of exemption from rates may have been rendered clearer by these two decisions and may be clearer still by the time the Jenner Institute has secured another from the House of Lords, but it seems time to amend, or to replace with a modern one, an old statute passed two generations ago which is still fraught with expensive litigation for the very institutions whose revenues it was passed to economise and which omits from its purview others equally deserving protection.

IRISH UNIVERSITY EDUCATION.

ALL Irishmen are naturally fond of discussion, and at the present time university education provides them with a most congenial subject, so that the question is constantly arising and the number of views put forward as solutions of the matter illustrates the proverb, "*Tot homines quot sententiæ.*" Here is the latest. At the yearly meeting of the Assembly of the Presbyterian Church in Ireland, held in Dublin on June 8th, the convener of the Committee on Higher Education strongly commended as an equitable solution of the university question "the nationalisation of Trinity College," by which was meant that the theological degrees, as well as the degrees in arts and other faculties (medicine, law, &c.), should become the property and privilege of the whole nation. According to this utopian scheme the Ulster Faculty—the six Presbyterian theological professors in Belfast and the three in Derry—should undertake the conducting of classes in Trinity College, Dublin, by availing themselves of the Trinity term that lies outside their own session. What the unfortunate professors in arts, law, and medicine of Queen's College, Belfast, or the arts professors of Derry would do under this scheme is apparently not worth considering. It need hardly be said that such a settlement—as the interesting debate showed, when it was broached—would be unworkable. In the first place, no statesman of any party would attempt to interfere with Trinity College, nor does any true Irishman wish to destroy the prestige and glory of a university the traditions of which go back to the days of Queen Elizabeth; secondly, it would be absurd to expect other educational bodies to join Trinity College unless on terms of absolute equality on the governing senate, as well as in other matters—a condition which Trinity College would never yield; and, finally, such a proposal as the nationalisation of Trinity College would in no way satisfy the Roman Catholic Church in Ireland, and the problem, as far as it is concerned, would be as acute as ever. The proposal to nationalise Trinity College is, therefore, as useless as it is impracticable.

THE LATE MRS. GLADSTONE.

ON June 14th Catherine Gladstone, the wife of perhaps the most notable statesman of the expiring century, passed from sleep into death. She was in her eighty-ninth year and no transit from this world to the next could have been more peaceful. Nearly all the members of her family were present—a family as devoted to their mother as she to them and to any one of whom the exquisite lines of Pope might apply—

> "Me, let the tender office long engage,
> To rock the cradle of reposing age,
> With lenient arts extend a mother's breath,
> Make languor smile and smooth the bed of death,
> Explore the thought, explain the asking eye,
> And keep awhile one parent from the sky."

To the deceased lady the medical profession owes a great debt in that she was the pioneer of the free convalescent home movement. It grew out of the distress caused by the cholera epidemic of 1866 which forced upon her attention the necessity for such institutions. She appealed to the public and generous donations were sent in including one of £1000 from the Queen. The first home was opened at Snaresbrook, but it was transferred in 1869 to Woodford. From the beginning she set her face against granting to subscribers any privileges in the way of "letters" or nomination of patients, and this opinion was endorsed at a great meeting held at the Mansion House in 1876, where Mr. Gladstone spoke.[1] This of course is the way in which any charity should be worked, but we fear that such a method needs the personal magnetism of a Gladstone to make it generally feasible. No better memorial could be raised to the memory of her who has gone than for one of the large London hospitals which has not already done so to do away with subscribers' letters.

RESULTS OF THE TREATMENT OF GRAVES'S DISEASE BY REMOVAL OF THE THYROID GLAND.

G. REMBACH contributes to the *Deutsche Medicinische Wochenschrift* of April 26th, 1900, a concise and very instructive review of the cases treated by removal of the thyroid gland in exophthalmic goitre. Nearly a decade has passed since Mikulicz of Buda-Pesth operated on his first case of Graves's (Basedow's) disease, and the final results are very gratifying to record. All the clinical symptoms of a disagreeable and distressing nature (palpitations, attacks of giddiness and of confusion, flushings and feelings of heat), have been entirely, or almost entirely, removed by the operation and the patients have been able to pursue their usual occupations and to enjoy their lives which before were wearisome and wretched. A

[1] THE LANCET, April 1st, 1876, p. 507.

review is given of 18 cases which had thus been operated on with beneficial results. It may be mentioned that resection of the thyroid gland was successfully performed in 13 cases and enucleation in three cases. Bilateral resection was found necessary in six cases, and in four of these it was completed at one sitting. The arteries supplying the thyroid gland were ligatured in five cases. Microscopic examinations were made of the excised glands, but the changes found were slight and variable. No constant pathological basis could be discovered, so that, apart from the view generally entertained that the gland is in a state of hyperplasia and over-activity in this disease, no specific statement on the pathology of the disease could be put forward.

THE QUESTION OF HORSE AMBULANCES.

OUR recent reference to horse ambulances has stimulated afresh interest in this important question, and among the correspondence relating to the matter which has reached us is a note from the Hon. F. Dudley Leigh calling our attention to an article from his pen in the *Nineteenth Century* for October, 1896. The author succinctly sketches the work that has been done in this direction in other countries; his descriptions of the celerity with which the American ambulances start out, picking up a surgeon on the way, being as thrilling as an account of the almost instantaneous receipt of a call and the turn-out of the New York Fire Brigade. Mr. Leigh concludes his paper with suggestions that various public bodies might interest themselves in the question, pointing out that our hospitals are too overburdened already in the matter of finance to take up the matter themselves. It is certainly to be regretted that, in an age when every possible effort is apparently being made to alleviate suffering, London should be behindhand in providing that rapid means of transport in the case of accidents which is provided not only in America and on the continent but also, we are happy to know, in Belfast, in Bolton, in Oldham, and which will soon, we trust, be provided in Manchester. Oxford, too, as will be seen from a letter in another part of THE LANCET, has done something towards providing transport of the kind in question. Surely if the matter were taken in hand by some responsible body there would be no lack of funds for the wiping out of what is now a blot upon our city.

THE PLUMBERS' REGISTRATION BILL.

IT is satisfactory to notice that our contemporary the *Daily Express* is making an effort to arouse public interest with regard to the importance of sound plumbers' work. This is the more opportune as that much-neglected measure, the Plumbers' Registration Bill, will shortly be again before the notice of Parliament. It may be that the lack of general interest exhibited towards this Bill by Members of the House is more apparent than real, but it would seem to exercise a heavy narcotic influence whenever it is introduced. Some measure of control over men operating as plumbers is surely needful; this is more particularly the case when, under the present conditions of the building trade, such work is undertaken by employers whose ostensible avocations by no means guarantee their ability to direct their workmen in the intricacies of their craft. Probably not half the workmen engaged in plumbing work are employed by master plumbers. Any man calling himself a builder, as well as ironmongers, gasfitters, stores, or universal providers are gradually wresting the trade from the master plumber. The employés suffer from this, the men having to a large extent to pick up a knowledge of their trade as best they can, the old system of apprenticeship rapidly becoming extinct with the decadence of the master plumber. The powers for evil that repose in the hands of these men have been frequently pointed out in the pages of THE LANCET. The disastrous effects that arise from their callousness or ignorance are constantly presenting themselves to our notice. The best men are all anxious for registration; it is only those who could well be spared from the trade who are inclined to reject it.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MR. J. A. BLOXAM, senior surgeon to Charing-cross Hospital, having decided to become a candidate for a seat on the Council of the Royal College of Surgeons of England, Mr. John H. Morgan has withdrawn his name from the list of candidates.

CAMBRIDGE SUMMER SCHOOL OF MEDICINE FOR QUALIFIED PRACTITIONERS.

WE have already given some details as to the Cambridge Summer School of Medicine which it was intended to hold from June 25th to June 30th. Demonstrations of the malarial and other blood parasites and of all the most recent work on cancer had been arranged for, while in addition to these subjects lectures were to have been given by experts in their several lines of work upon various other matters of medical and surgical interest. We regret, however, to have to announce that owing to the small number of acceptances it has been decided not to hold the meeting. The response with which the offer has met with this year is all the more disappointing after the enthusiasm and gratitude of the visitors at the last meeting five years ago and we learn that the offer will not be made again.

MEDICAL MEN AND HOSPITAL BOARDS.

FROM time to time we have to record differences of opinion between the board of management and the medical board of the same hospital. When, therefore, we find evidence of great cordiality between the two boards it affords us much gratification to chronicle the same. The board of management of the Wigan Infirmary at the first meeting of the new board appointed Mr. William Berry, the senior honorary surgeon and secretary of the medical board, to be chairman of the general board for the ensuing year. That a medical officer of an institution should have been appointed to such a high post as the chairmanship of the general board of that institution is not only a high compliment to the medical profession but also a tangible proof that the working of the Wigan Infirmary is conducted upon the most harmonious principles and therefore upon the system calculated to give the best results both for the patients and for the supporters by whose generosity the needful funds are found. Wigan has set an example worthy of general imitation, and we offer those concerned in this happy procedure our warmest congratulations.

EPSOM COLLEGE: THE WAKLEY PRIZE.

ON June 16th the Council of Epsom College, on the occasion of their annual visit, awarded the prize for "Elocution" to the Senior Prefect, Mr. Colin Giffard, whose renderings of a portion of "Lear" previously "set," and of an extract from "The Spectator," which he had not previously seen, were equally excellent. To the same student was also adjudicated the "Wakley Prize." This prize is the result of a collection made by the friends of the late Thomas Wakley. The amount collected was invested and the dividends provide the funds for the prize in perpetuation of the memory of the Founder of THE LANCET. The prize is awarded to "the best fellow all round" by the votes of the boys in Upper and Middle School; on the present occasion the majority of votes gained was, we understand, the largest on record, whilst the endorsement of the staff was unanimous. The fact that a boy holding the

responsible post of Senior Prefect should have succeeded in winning so completely the approbation of the staff and the affection and confidence of his fellow-students implies the possession of a combination of qualities which we trust will stand him equally in good stead in his future career. Founder's Day will be held on Saturday, July 28th.

THE PATHOLOGICAL SOCIETY OF LONDON.

A NEW departure in the form of an extra meeting held in the Pathological Laboratory of the New Museums at Cambridge will bring the present session of the Pathological Society to a close. By the kind invitation of Professor G. Sims Woodhead the meeting will take place at 4 P.M. on Saturday, June 30th, at Cambridge. A list of the communications will be published in our Diary on Friday next. Members will be able to obtain dinner in hall at Trinity Hall at 6.30 P.M., so as to enable them to catch the 8.40 P.M. train back to town.

THE President and Council of the Medical Graduates' College and Polyclinic are issuing invitations for a conversazione to be held at the College, 22, Chenies-street, W.C., on Wednesday, July 4th. The reception by the President will take place at 8 P.M. and an address—subject, "The Teaching of Practical Medicine"—will be delivered by Professor Osler, F.R.S., of Baltimore, at 9 P.M. All inquiries should be addressed to the medical superintendent of the College, 22, Chenies-street, W.C.

THE Society of Arts Albert Medal for the present year has, with the approval of H.R.H. the Prince of Wales, president of the society, been awarded to Mr. Henry Wilde, F.R.S., "for the discovery and practical demonstration of the indefinite increase of the magnetic and electric forces from quantities indefinitely small." This principle is the one on which the invention of the modern dynamo machine is based and is employed in all modern dynamos.

THE Caroline Institute of Stockholm has just admitted a lady for the first time to the degree of Doctor of Medicine. Miss Anna Stecksén produced a thesis on the Blastomycetes of Curtis partly from studies under Dr. Roux in the Paris Pasteur Institute, and partly from work carried on in the bacteriological laboratory of the Caroline Institute.

THE governors and medical staff of Guy's Hospital are sending out invitations for a garden party to be held on Wednesday, July 4th, at 3 P.M., on the occasion of the distribution of the medals and prizes to the students by the Earl of Pembroke. The new laboratories, wards, museums, and college will be open from 3 to 5.30 P.M.

MR. C. A. BYNOE, concerning the justice of whose conviction for forgery in 1892 grave doubts have arisen, has applied unsuccessfully to the High Court for a rule *nisi* for a *mandamus* to compel the General Medical Council to hear the application that his name, which had been erased from the Medical Register, might be restored.

IT is an open secret that grave differences have arisen between the board of management and the medical staff of the National Hospital for the Paralysed and Epileptic, Queen-square. The medical staff have now drawn up a statement of their views which has been sent to the Governors of the hospital.

WE regret to learn the death of Mr. Thomas Jones, F.R.C.S. Eng., Professor of Surgery in Owens College, Manchester, and surgeon to the Manchester Royal Infirmary. Mr. Jones was surgeon in charge of the Welsh Hospital at the seat of war and his death is announced from Springfontein.

A TELEGRAM from Sir C. Bruce, Governor of Mauritius, to Mr. Chamberlain, received at the Colonial Office on June 15th, states that no cases of bubonic plague have been reported for the week ending June 14th.

THE annual distribution of prizes to the students of Charing-cross Hospital will take place on Tuesday, June 26th, at 3.30 P.M. The prizes will be distributed by Mr. H. Beerbohm Tree.

A TELEGRAM has been received at the Colonial Office, dated June 18th, stating that 74 cases of bubonic plague occurred in Ceylon last week with 64 deaths.

SIR WILLIAM MACCORMAC will receive the degrees of M.D., M.Ch. honoris causâ in the University of Dublin on Thursday, June 28th.

ROYAL ARMY MEDICAL CORPS SOUTH AFRICA FUND.

PRINCESS CHRISTIAN, the President of the Royal Army Medical Corps South Africa Fund, presided on June 19th at a meeting of the general committee of the Fund, held, by permission of Lady Broadbent, at 84, Brook-street, W. Her Royal Highness, who was attended by Miss Loch, was received by Sir William and Lady Broadbent, Sir Dyce and Lady Duckworth, and Surgeon-General H. S. Muir, Deputy Director-General of the Army Medical Department. Amongst those present were Miss Maxwell Müller, R.C., Lady Dyce Duckworth, Mrs. Anderson, Mrs. Berkeley Hill, Mrs. Ramsden, Mrs. Howard Tooth, Mrs. Jameson, Miss Quain, Mrs. Walsham, Mrs. Butlin, Lady Brunton, Mrs. Percy Kidd, Major and Miss Wilson, Mrs. Charters Symonds, Colonel and Mrs. Frank Howard, Mrs. Muir, Mrs. Thomson, Mrs. Barlow, Lady Savory, Mrs. Moore, Mrs. Hale White, Lady Russell Reynolds, Mrs. Church, Mrs. Pye-Smith, Mrs. Bradford, Mrs. Liveing, Lady Clark, Lady Fayrer, and Mrs. Charlton.

Mrs. CHARTERS SYMONDS (the honorary treasurer) in submitting her report, said: Your Royal Highness, ladies, and gentlemen,—As there may be no other opportunity of informing the committee and subscribers as to the distribution of the Fund, it may be advisable to enter into a few particulars. The total amount received to date is £2266 8*s*. 4*d*., which may be considered a successful result of our appeal. Messrs. Holt and Company have received £277 10*s*. 9*d*., and to this firm we are indebted for acting as our bankers. The committee formed in Birmingham have sent £225, and have also written to say that a further collection will be made if required. £50 have been received from the Leeds committee and £38 12*s*. 6*d*. have been received from Scarborough, while the Blackburn committee have contributed £80. The subscriptions sent direct to the treasurer amount to £1029 6*s*.; of this sum it may be added that the bulk was collected by the ladies of the committee and by members of the medical profession; a large sum also was raised by the Royal Army Medical Corps, due to the efforts of active and retired officers and to the wives of several gentlemen at present serving in South Africa. £29 were received from the officers and men of the Royal Army Medical Corps at Malta. We have expended £1495 11*s*. to date, including about £300 on flannel shirts and over £220 on tobacco. We have sent £200 to the principal medical officers in India, who purchased and despatched blankets and puttees to the Indian dhoolie-bearers now serving with the forces in South Africa. Major W. G. A. Bedford, R.A.M.C., secretary to the principal medical officer at Cape Town, has acknowledged the receipt of £200 which he will spend at his discretion and of which he will render an account to us. With regard to the auditing of the accounts Surgeon-General Muir has kindly offered to undertake the duty in

conjunction with some other officer in his department. We have in hand at present a balance of £770 of which probably £120 will be required for rent, packing expenses, and purchases up to the end of July. If we set aside another £50 for pipes and tobacco there will still be left a balance of £600; and one of our objects in meeting here to-day is to consider the best means for utilising this sum for the benefit of the corps whose splendid work in South Africa has been a striking feature throughout the whole campaign. I will leave it to Surgeon-General Muir, to whose courtesy and ready help we owe so much, to suggest the best way of dealing with this amount.

On the motion of Sir DYCE DUCKWORTH the report was adopted.

Surgeon-General H. S. MUIR then read the report of the Executive Committee. He said: Your Royal Highness, ladies and gentlemen,—The circulars which you have received have given particulars of what has been done, but a short recapitulation perhaps is desirable. Mrs. Charlton has been working at Netley, Mrs. Allin at Aldershot, and Mrs. Wilson and Mrs. Exham at Devonport, and several ladies of rank in the provinces have given their assistance. In January a letter was prepared for publication, when Mrs. Charters Symonds wrote to the Director-General of the Army Medical Department offering her kind assistance. This led to the formation of a central committee of ladies in London, and on Feb. 5th a meeting by the kind courtesy of Lady Duckworth was held at 11, Grafton-street, to organise and commence work. Your Royal Highness then graciously consented to be the honorary President. An executive committee was then appointed and an office was opened at 100, Victoria-street, Miss Maxwell Müller kindly undertaking the office of honorary secretary and Mrs. Charters Symonds that of honorary treasurer. Parcels of comforts were sent to the principal medical officer of each division and to all general hospitals for distribution. The work expanded rapidly; numerous gifts in kind began to arrive and the accommodation at Victoria-street proved insufficient for our needs and necessitated our finding the new offices in George-street. This change, however, entailed the loss of the services of Miss Maxwell Müller, who had devoted much time and energy to the work. Mrs. Muir then became honorary secretary, but the secretarial work had become so extensive that it was absolutely necessary to appoint a paid secretary and the executive committee were fortunate in obtaining the services of Miss Bollast. Parcels were now sent to the men at the base depôts, the advanced depôts, on the lines of communication, and to the hospital trains and hospital ships. The army had increased in numbers and new divisions were formed which necessitated the despatch of comforts to new detachments of the corps, which now included Militia and Volunteer Medical Staff Corps. Steps were taken to provide the Indian hospital attendants and dhoolie-bearers with blankets and puttees which were sent direct from Bombay. It was also considered advisable to commence sending a second consignment to the various divisions and hospitals. Upwards of 9000 parcels have now been despatched. The parcel for each man, as a rule, was made up of a flannel shirt, two pairs of socks, two handkerchiefs, a woollen helmet or cap, a muffler, a cholera belt, a pipe and tobacco, a cake of soap, a packet of note-paper, and a pencil. Occasionally some of the following articles were added: Testaments, towels, mittens, chocolate, compressed soup, lime-juice tablets, slippers, cigarettes, buttons, playing-cards, and bootlaces. About 100,000 articles have been despatched, and as a very large number of these were gifts in kind the committee wish to acknowledge these with many thanks. They numbered as follows: 2500 shirts, 3500 cholera belts, 14,000 caps, 3600 bootlaces, 6000 mufflers, 11,000 handkerchiefs, 12,500 pairs of socks, and 1200 pencils. I beg to mention that we are indebted to your Royal Highness for many of these articles. Many articles more suitable to hospital patients than for our purposes were sent to us, probably through misapprehension, but we did our best to forward them to hospitals, so that the generous donors may feel satisfied that the articles were duly used and appreciated. These articles include pyjamas, cushions, nightingales, bed-jackets, eau-de-Cologne, games, and magazines. The kindness of the following ladies must be acknowledged:—Lady Dyce Duckworth, Lady Lauder Brunton, Lady Broadbent, Mrs. Berkeley Hill, Mrs. Barlow, Lady Bertram, Mrs. Pye-Smith, Mrs. F. Taylor, Mrs. Morriston Davies, Mrs. Jameson, Mrs. Macpherson, Mrs. Johnston, Miss Bostock, Miss Wilson, Mrs. Dawson Williams, Mrs. Squire, Mrs. Greer, Miss Verona Brooke, Mrs. Oliver Barnett, Mrs. Clutton, Mrs. Bourke, Mrs. Garrett, Mrs. Steele Perkins, Mrs. Frank Howard, Mrs. Bradford, and Mrs. Forsyth. The packing of the thousands of articles which we have dispatched devolved upon a sub-committee, the members of which arranged amongst themselves as to their attendance daily. The amount of physical energy required to make up 9000 individual parcels has, I need hardly say, been very considerable, and the efforts of these ladies are worthy of the highest praise. I may add that two of the ladies mentioned voluntarily attended every day, wet or fine, and in this connexion I cannot refrain from mentioning the names of Mrs. Meredith and Miss Bowker. Our thanks are also due to the provincial committees who have done good work. Leeds, Birmingham, Liverpool, Scarborough, Blackpool, and Edinburgh have sent gifts both in money and in kind. The meeting has heard from our honorary treasurer that a balance of over £700 remains available. Subscriptions still come in from day to day, but we can hardly expect, unless we make special and earnest appeals, that any large amounts will be received henceforward. Judging from the course of events I think we may, perhaps, conclude that no such appeal will be necessary. At the same time it might be somewhat premature at present, for the reasons I shall now adduce, to declare the Fund closed. From some of the consignees we have heard of the actual receipt of our packages, but not from all. Now, that does not necessarily mean that the packages are absolutely lost, for it was only by the last mail that we heard of the arrival at Estcourt of the bales addressed to No. 7 General Hospital. We know that the traffic on the South African railways has been so congested that thousands and tens of thousands of packages of all sorts have been accumulated at wharves, railway-stations, and storehouses, and from what we learn there has no doubt been a certain amount of stealing. But the Royal Army Medical Corps are no worse off than others in this respect, and we know that hospital stores have been delayed by the more urgent necessity that food-supplies for the fighting line should have precedence. The executive committee therefore propose, with your sanction, to be guided by the information we obtain by successive mails and to send out supplies to those detachments which have been up to now by force of circumstances deprived of them. They consider, however, that it will not be necessary to keep the offices open after the end of July and to obviate the necessity of calling another meeting they propose to publish a report—probably the final one—at a date shortly afterwards, when they will be prepared to make a suggestion as to the disposal of any surplus that may then exist.

Sir WILLIAM BROADBENT moved the adoption of the report, which was agreed to.

Major WILSON moved a vote of thanks to the ladies and others who had given assistance. He said he was receiving now very pathetic letters asking what had become of the Queen's chocolate, and he need hardly assure Her Royal Highness that that matter was being most carefully looked after. It could no longer be said that the Royal Army Medical Corps, who were not a territorial corps, belonged to nobody, for the medical profession had made it their own. At present they had over 4000 men in South Africa, exclusive of the St. John Ambulance Brigade. Not many men had been killed in action, but many had died in hospital principally from the result of infection during attendance upon the sick.

The motion having been agreed to, Sir WILLIAM BROADBENT tendered the thanks of the meeting to Princess Christian for her presence. Princess CHRISTIAN bowed her acknowledgments and the proceedings terminated with a vote of thanks to Sir William and Lady Broadbent for the use of their house.

THE WAR IN SOUTH AFRICA.

ALTHOUGH there is a comparative lull in the military news from South Africa at the present moment all that has recently reached us from the seat of war is eminently satisfactory. Lord Roberts's enveloping and converging columns are slowly but surely sweeping all opposition before them. He has a very large force at his disposal,

but considering the enormous extent and nature of the country which has to be covered and conquered, and the exceptional character of the tactics employed by the Boers, Lord Roberts has not a man too many for his purpose. Whatever might have been the temporary success attributable to the exceptional nature of the methods of the Boers, regular and disciplined troops intelligently led with a definite strategical object in view are bound to succeed eventually in accomplishing it and this is what they are now doing.

According to a recent telegram from Lord Roberts 148 officers and 3039 men of the British prisoners in the hands of the Boers at Pretoria have been released and re-armed by us with weapons captured at that place. Of the above-named, 12 of the officers and 248 of the men are in hospital. About 900 prisoners still remain in the hands of the Boers, having been removed with Mr. Kruger when he left Pretoria on June 4th.

SIR WILLIAM MAC CORMAC AT THE SALTERS' COMPANY.

Sir William Mac Cormac, Bart., K.C.V.O., was admitted to the honorary freedom of the Salters' Company on Monday last, June 18th. After the proceedings a banquet was held at which Sir William Mac Cormac made the following interesting speech:—

WORSHIPFUL MASTER, WARDENS, AND CAPTAIN PERCIVAL CLARK,—I am exceedingly sensible and appreciative of the high honour that you, Sirs, and this worshipful and ancient Company, so well known for its benevolence, its charity, and its good works, have this day conferred upon me. When I first heard of your kind intentions in my regard I can assure you that the announcement afforded me the sincerest gratification. I regard it a precious privilege and pleasure that this ancient Company should consider me in some degree fit to follow in the footsteps of such men as Huxley and Hooker and Stokes and Fergusson, who were in their time made honorary freemen of this Company. And now it is time, I think, to express to Captain Percival Clark my sincere gratitude and cordial thanks for the manner in which he has proposed the toast of the new freeman. He has been too kind and too generous to me in what he has told you, especially in what he has said in respect of my going out to the seat of war. I have only done what everyone else has done—tried to help that country of which we are all so proud when she appeared to need our help. There is no particular merit in this—it is only doing one's duty; and when it was represented to me that I could help in South Africa by my advice and the experience I had gained in other fields, when I knew that that advice and assistance would be willingly accepted by the officers of the Royal Army Medical Corps, when I also felt that my position at the head of the surgical profession in this country would add weight to any opinions I might form,—it seemed right for me to go. I felt that if I could tell those at home (and I was happily able to tell them) that all was being done to help their dear ones who were either sick or wounded that human foresight or skill could effect, then I still further and very deeply felt that I ought not to hesitate. War is no doubt a very terrible thing, but national honour and national greatness must be maintained at whatever cost. I have the strongest possible conviction that this war was inevitable, and I am convinced that history will pronounce that our quarrel has been a just one. I have said, and now repeat, that every care has been taken for our sick and wounded. The provision made for them has been unexampled in the history of war and profuse in every way, and the difficulties of transport in this immense territory have been overcome in a manner which is absolutely admirable. We have the field hospitals accompanying the fighting lines and receiving and tending the wounded in a wonderfully short time after they are hurt. We have numerous hospitals along the great lines of communication and the necessary hospital trains, and we have the general hospitals at the base and the many volunteer hospitals which the generous impulses of our people have provided. Besides these we have a fleet of hospital ships equipped with every necessary and every luxury, and we have a large staff of Army Hospital Corps and civilian surgeons and many men and women nurses. I have seen all these organisations and the working of them and can speak without stint in their praise. To mention merely the labour which this entailed I may say that I travelled over 6500 miles. Up to a recent date (June 9th) the state of affairs was the following. There were in South Africa 855 medical men attending the troops—475 officers of the Royal Army Medical Corps and 380 civil surgeons. The female nurses numbered 666 and the male nurses numbered 5668. There were 27½ field hospitals, with 100 beds in each and accommodating 2750 patients; five stationary hospitals, each with 100 beds and accommodating 500 patients; and 14 general hospitals, with 540 beds in each and accommodating 7560 patients. There were also 10 voluntary hospitals, accommodating 1800 patients. About 20,000 beds in all have been available and all these hospitals have been considerably increased. 4500 special pattern beds and bedding have in addition been sent out, and 875 are in reserve. There are seven hospital trains, four of which are at Cape Town, one at East London, and two (including Princess Christian's train) in Natal. There are 10 hospital ships, with from 150 to 250 beds in each, or about 2000 beds altogether. Some 50 tons of purely medical material go out to the Cape every week, and medicines in compressed form and bandages have been sent by millions. These bandages, I may say, would stretch to the Cape and a good part of the way back again if placed end to end. Every soldier as a part of his kit took with him two blankets, and in addition the War Office have sent out 372,964 more. Up to June 9th there have been 841 officers wounded, of whom 63 have died, showing a mortality of 7·2 per cent. 10,564 men have been wounded, with 551 deaths, or a mortality of 5·2 per cent. In other words, 93 per cent. to 95 per cent. recovered. Between 15,000 and 16,000 invalids have been sent home in the ships. Extensive organisation at home was required to deal with so large a number of sick and wounded, but very many have arrived practically fit to return to duty or well enough to go on sick furlough shortly after admission to hospital. With the assistance of the Director-General, Surgeon-General Jameson, and the medical authorities at home the abundant supply by Government of everything that could be considered useful or desirable the organisation of this huge department and the distribution of its units over an immense territory to the places where they were wanted have been accomplished without a hitch and without drawback and to the complete satisfaction of those concerned. This has depended, in the first instance, on the consummate ability, resource, and capacity for organisation of the Principal Medical Officer, Surgeon-General W. D. Wilson, and in the next upon his very able subordinates. No words of mine are needful in his praise, as the mere statement of the extent of the organisation he controls is sufficient in itself to elicit our admiration and gratitude. Nothing is more remarkable than the way in which our soldiers have recovered from their injuries and been able, in a large proportion, to return to duty. Without going into details there were amongst the wounded many of the most severe forms of injuries. Bullets traversed the brain, the chest, the heart, the abdomen, the great joints, and the largest bones, and yet complete recovery in a very large proportion followed. Many explanations have been given of this. The wonderfully pure air of the veldt is a favourite suggestion with many and all admit that antiseptic methods count for much. I am myself convinced that the main factor is the small size and high velocity of the bullet which inflicts a very small and rapidly closing wound—a clean-cut wound rather than the tearing contused form of damage caused by the much heavier projectiles formerly in use. I do not think the climate has much to do with it, for in the American war in Cuba, although the troops were decimated with typhoid fever, yellow fever, and malaria besides, the wounds inflicted by the Mauser bullets which were there used were recovered from with the same facility and in exactly the same proportion as in South Africa. I trust that I have not wearied you and that you will forgive me for having talked so much about myself. Those who are indulgent and who remember on whose behalf the toast is given will, I feel sure, recognise the difficulty of altogether excluding the subject of it. As I have already said, what I did was done from a sense of duty, and if I may judge from many kind expressions which have reached me from many different sources—and not the least kind are those which have been addressed to me to-night—my action has been rewarded by a considerable measure of success. I have myself the consciousness that at all events I did my very utmost and my very best, and none can do more

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THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

Colonel A. T. Sloggett has just returned from a flying trip to Bloemfontein and he is very pleased to get back here. He

fully confirms the opinion I have already given that we are better off at this place from every point of view. The entire force under Lord Roberts has just quitted Bloemfontein and has left the town unoccupied save by a guard and the 4000 sick who are in hospital. Colonel Sloggett has not a good word to say for Bloemfontein as a site for a hospital. Dust-storms seem to be as bad there as they are at De Aar, for the ground has been trampled over for many weeks by tens of thousands of men.

We are still very full except in the two huts which, as I have already explained, we keep reserved for the Yeomanry. These are not more than half full, but almost every day a few yeomen come in. We find the patients generally prefer the tents to the huts, for, except when they are really gravely ill, they have a feeling of greater comfort and freedom when under canvas. Our field hospital has just passed up country and the *personnel* spent some hours with us before resuming their journey. We hope that they will be included in Lord Roberts's further advance.

We have managed to make quite a respectable cricket ground, the pitch of which is, of course, of matting. Fielding is possible for a few yards round the wickets, but beyond that it is very rough, for nothing has been done to the ground beyond removing boulders and karoo bushes, thus leaving an irregular and wholly un-grass-like surface. The Bedfordshire Regiment have been to play with us, and to-day a team of our men is going to De Aar to play the Civil and Military Club there. I am afraid they will not have much time, for the train which was to have taken them at 9 A.M. did not leave here till 1 P.M., and it is pitch-dark now by half-past five, sunset being at 5 o'clock and the twilight extremely short. We are still having lovely weather, about as hot in the sun as a really hot summer's day is in England, and the cold nights which set in a little while ago have ceased lately. For days together we do not see a cloud, unless, indeed, it be a cloud of locusts. These insects are always with us—sometimes a few and sometimes in large clouds, of which we have taken some excellent photographs. You will hardly believe me when I tell you that yesterday the ordinary railway-train was stopped by locusts, but it is a fact, nevertheless; for sitting on the metals, the warmth of which appears to be seductive to them, the locusts get crushed by the wheels and lubricate the surface to such a degree that the engine is unable to climb the steep incline. They settle on and around our camp—more around than on—and the other day they ate up all the little shoots of new grass and the green sprouts of the karoo bushes which have just been tempted to fresh growth by the recent rains.

The word "steal" apparently does not exist in the vocabulary of this country. Its place is always taken by "commandeer" unless a black man does it. Everybody seems to think that there is nothing wrong in "commandeering" everything he requires if he sees an opportunity, and if one man's bath towels or blankets have been "commandeered" by someone else he at once "commandeers" the first substitute for the missing articles which he comes across.

The other night a new hut which was to be filled the next day from a hospital train tempted us to push aside the 34 beds and have an impromptu dance. I think it did good to everybody who came and certainly it was greatly enjoyed by one or two local farmers and their wives and children. Wounded officers attended in their splints and bandages, and dancing was kept up until half-past ten.

The growth of the hospital goes on most satisfactorily. I think we shall be completely established by June 1st, that is to say, five months—and not six, as I stated erroneously in my last letter—from the day of the letter of Lady Georgiana Curzon and Lady Chesham which called the hospital into being.

Every Saturday our weekly convalescent train goes to Cape Town. Our specialists are often asked to give an opinion outside this hospital but they are always glad to get back again.

Deelfontein, May 7th.

I am glad to say that our hospital continues popular. The men as well as the officers say, "There never was such a place." We have had great advantages in the very fine equipment which the committee in London were able to provide us with and I think that if English people could see what a very great difference can be made in the efficiency and comfort of a military hospital by means of a little more money they would be quite willing to spend more on the medical department of the army. I hope that the war will do at least one good—that a larger sum will be voted every year for the Royal Army Medical Corps. If that were done probably it would be more easy to deal with outbreaks of infectious disease such as enteric fever, there would not be overcrowding in the hospitals, and there would be room for every sick soldier. If the presence of all the many voluntary hospitals out here does lead in the future to more money being spent on the Army Medical Department the subscribers to these voluntary hospitals will, indeed, feel that they have done a good work. With enough spent on a military hospital I think that results can be obtained as good as, or better than, in any London hospital, for not only will all the artificial aids to medical skill be present, but in this war at least a military hospital will have a great pull in the splendid climate and air of the Karoo. The things in regard to which we are worse off than in London are eggs, fresh fruit, and vegetables, but we get plenty of potatoes and onions.

To-day we have 74 yeomen in hospital. They are mostly down with sickness, but a few of them have been wounded. Among these are cases from the action near Warrenton in which the Yeomanry had their baptism of fire. I saw in one of the medical papers sent from England a suggestion that a light supper ought to be provided for men in military hospitals. I quite agree with this and it is easy to do it. We started the practice here, and I think that it is done in all the hospitals, for the interval between 5 o'clock P.M. and 7 the next morning is unduly long.

Pneumonia, as we have expected, is beginning to exert itself. Already it has carried off one of our cooks (Sergeant Phillips), who died on May 10th. He is a great loss, as he was a capital man and a hard worker, doing all the cooking of the nursing department. Several orderlies are also on the sick list, two of them from enteric fever. At present, I am glad to say, they are doing well. The first death we have had in the officers' ward occurred this week, when Lieutenant Cummings, R.A., died from enteric fever. His battery is at present at De Aar, so fortunately his brother officers were able to come over to the funeral.

A present of a plant for electric light installation has arrived, and as our bill for oil is very large we got the railway people to lend us one of their oil engines which they are not now using in the hope that we should be able to work the electric light with it and so save money. The railway people complied with our request, but on giving the engine a trial we found that the noise and smell made by it quite precluded its use near the hospital and the leakage of the electric current prohibited us from placing the engine further afield, so we have had to abandon the idea of the electric light.

Deelfontein, May 14th.

BULLET WOUNDS INVOLVING THE LUNG.

Mr. H. Temple Mursell, M.B., C.M., F.R.C.S. Edin., civil surgeon attached to the British Forces, South Africa, sends us the following interesting notes:—

A considerable number of cases of bullet wounds involving the lung have come under treatment during the war in South Africa. All those which have come within my own experience have been caused by the Mauser bullet. It has been frequently stated that the damage to the tissues inflicted by a small hard-cased bullet such as the Mauser, travelling at high velocity, is comparatively small, and within certain limits the statement appears to be correct. At the same time far more injury to the tissues is caused than would appear to be the case from the small size and innocent aspect of the wounds of entrance and exit. In those instances in which it has been necessary from any cause to follow up the track of such a bullet wound, the death of tissue around the track has been found to be much in excess of what might be anticipated. In muscular and fibrous tissues the necrosis is happily of an aseptic character in the vast majority of instances, but the resulting cylindrical cicatrix is of considerable extent and often produces more crippling than would be expected owing to the muscles and their sheaths becoming firmly bound down. In the lung a similar destruction of tissue might at first sight be predicted. But the small resistance of the lung tissue, its excellent blood-supply, and its great elasticity, apparently protect it from any serious or extensive injury in the majority of cases.

Further, although the wound from access of air and the consequent increased possibility of infection by organisms might reasonably be expected to become septic it seldom appears to do so. The immediate shock is rarely great, nor is it often that the immediate hæmorrhage is alarming. In several instances though blood was pouring from the mouth the man was able to walk up and report himself to his officer.

Hæmorrhage into the pleura in any quantity is comparatively rare, though a small amount is, in my experience, usual and is discoverable by the ordinary physical signs, but often needs careful auscultation and percussion to diagnose. The effused blood as a rule rapidly disappears and the wound in the lung as rapidly heals. In one only of the cases under my care has the intra-pleural hæmorrhage been alarming, and from its comparative rarity the case seems worthy of record.

Ten days after being wounded at Paardeberg Private P—— came under my care. He was admitted to hospital late at night in a very collapsed condition, having travelled a long distance. Beneath the left clavicle, at the junction of the middle and outer thirds, was the entrance wound of a Mauser bullet, and the exit wound was found between the ninth and tenth ribs posteriorly on the same side about two inches external to the outer edge of the erector spinæ. The left chest moved well on respiration and the percussion note was resonant except for obscure dulness at the base posteriorly. (The patient was too exhausted to try the effect of change of position.) There was absence of breath-sounds on the whole left chest except near the sternum. On the right side the breathing was harsh. On the left side with coin percussion the clanging sound was marked and audible without a stethoscope or application of the ear to the chest. Vocal resonance was in abeyance. The heart was pushed over to the right side till the apical impulse and point of greatest intensity of the first sound were one and a half inches to the right of the sternum. There were great loss of power and aching pain in the left arm and hand, but no loss of sensation and no swelling. Radial, brachial, and axillary pulses on the left side were imperceptible and the limb, though warm, was of lower temperature than its fellow. Apparently there was thrombosis of the subclavian artery in its third part, fair collateral circulation being established.

It was decided to aspirate the left chest, and this was done by means of an ordinary trocar and cannula, the trocar being inserted through the wound of exit of the bullet, between the ninth and tenth ribs posteriorly. Two and a half pints of fluid blood of dark colour and some air were removed. Chloroform was given as pus had been anticipated, the temperature having varied from 100° to 102° F. The relief to the breathing and to the circulation was great. The following day faint breath-sounds were audible over the left chest anteriorly and posteriorly except below the ninth rib, and the cardiac impulse and point of greatest intensity of the first sound were just at the right edge of the sternum. Four days later the physical signs remained the same, and there were much præcordial pain and dyspnœa. Aspiration was again resorted to in the same region with a Potain's aspirator, eight ounces of fluid blood and a large quantity of air being removed. The relief obtained was considerable, but the temperature remained febrile. Morphia was required nightly on account of præcordial pain. 14 days later, the symptoms being aggravated, chloroform was given and a portion of the seventh rib was resected in the posterior axillary line. The pleural cavity was found to be full of fibrinous strings and about eight ounces of fluid blood. A large-sized drainage-tube was inserted. From this time improvement was steadily maintained, except for a temporary relapse which was induced by the patient having to be moved from one ward to another. He was sent down to Cape Town convalescent two months after being wounded.

The conclusions to be drawn from the cases seen are:—

1. In the majority of cases relatively little immediate or remote damage results from Mauser bullet wounds of the lung.

2. The immediate hæmorrhage is usually small.

3. Intra-pleural hæmorrhage in small quantity is the rule; in large quantity comparatively rare.

4. In intra-pleural hæmorrhage of any large extent ultimate resection and drainage will in most cases be required.

5. The destruction of lung tissue is relatively small.

FIELD FORCE.—SERVICE ABROAD, SOUTH AFRICA.

Table showing the Personnel of Medical Units on the Lines of Communication.

Unit and place of mobilisation.	Names.	Remarks.
No. 13 General Hospital (Dépot R.A.M.C., Aldershot).	*Royal Army Medical Corps.* Major W. T. Swan (*a*). Lieutenant T. Biggam. " H. Richardson. " W. L. Baker. " B. R. Dinnis. " J. S. Twigg. " J. Powell. " R. L. Argles. " F. S. Walker. " W. Bennett. " P. G. Stock. *Civil Surgeons.* Mr. W. Dick. " T. H. Gardner. " E. L. Mansel. " V. E. J. McDonogh. " W. J. Moir. " W. J. Sweeny.	145 non-commissioned officers and men (including St. John Ambulance Brigade).

(*a*) Secretary and Registrar: to act as officer in charge of the unit till its arrival in Natal.

1. The Principal Medical Officer, Natal, will arrange for a Lieutenant-Colonel of the Royal Army Medical Corps in South Africa to be detailed as officer in charge of this unit.

2. The quartermaster and two warrant officers will join the unit on its arrival in South Africa.

3. 20 nursing sisters, Army Nursing Service Reserve, will be ordered to embark as early as possible after June 16th.

4. A superintendent or acting superintendent, Army Nursing Service, to be selected from the Army Nursing Service in South Africa, an extra nursing sister being included in the detail referred to in (3) to allow of the adjustment.

Medical Division, War Office, June 13th, 1900.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE Executive Committee of the Thirteenth International Congress of Medicine announce the following entertainments offered to members attending the Congress.

On the opening day of the Congress, August 2nd, Dr. Lannelongue, the President of the Council, will give an evening fête in the name of the Government of the Republic.

On August 3rd members will be invited to an evening fête by the President of the Congress.

On August 5th the President of the Republic will receive the members of the Congress in the Elysée.

On August 8th an evening fête will be held in the Palais du Sénat and the Gardens of the Luxembourg, where the members of the Congress will be entertained by the Bureau and the Organising Committees of the Congress. The Town Council of Paris is to be asked to give an entertainment.

Besides the above, sundry fêtes will be organised in the various sections, and it should be noted that to all these entertainments the wives, daughters, and sisters of members attending the Congress are invited. A ladies' committee has been organised for the reception of these ladies.

A NEW PUBLIC GARDEN IN THE BLACKFRIARS-ROAD.—The Bishop of Rochester on June 15th formally opened to the public the churchyard and burial ground of Christchurch, Blackfriars, which have been adapted for a public garden. Several years since a similar adaptation was considered and the Metropolitan Public Gardens Association was consulted on the question, with the result that as soon as the St. Saviour's District Board of Works had a vested interest in the churchyard and burial ground the association agreed that it would at its own cost lay out the ground for public recreation purposes. This generous promise has now been fulfilled.

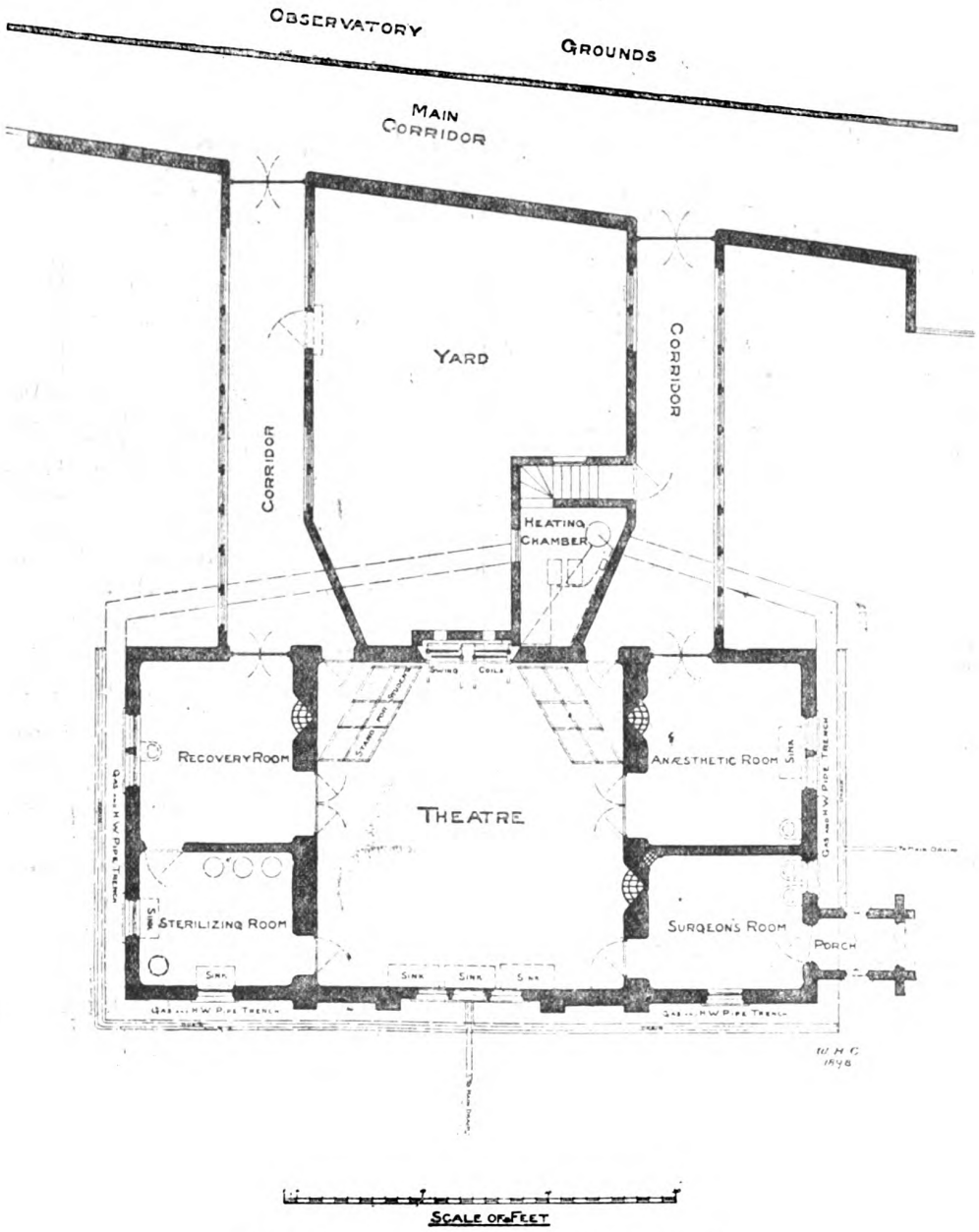
MEDICINE AT THE UNIVERSITY OF OXFORD.

THE ancient University of Oxford, although not possessing such a large and flourishing medical school as her sister Cambridge, has of late years been actively engaged in improving her facilities for giving instruction in the art and science of medicine. Among the outward and visible signs of progression two buildings stand prominently forth—namely, the new operating theatre of the Radcliffe Infirmary, which has been in working order for nearly two years, and the new laboratories for the study of pathology and the kindred sciences which are at present in course of erection.

THE NEW OPERATING THEATRE AT THE RADCLIFFE INFIRMARY.

To begin with the finished building. As will be seen by the plan (Fig. 1) the theatre is completely isolated upon three sides and only connected on the fourth to the other infirmary buildings by two corridors. The actual operating theatre occupies the middle of the building and on one side are an anæsthetic room and a surgeon's room, while on the other are a sterilising room and a recovery room. The walls of the theatre are panelled in white marble, while all the doors leading therefrom are of iron which is enamelled in white; there is an open fireplace and an electric exhaust fan in the roof. There are no shelves or brackets of any description on the walls, so that they can be washed down at any time by means of a hose. The warming is done by hot water coils which are heated

FIG. 1.



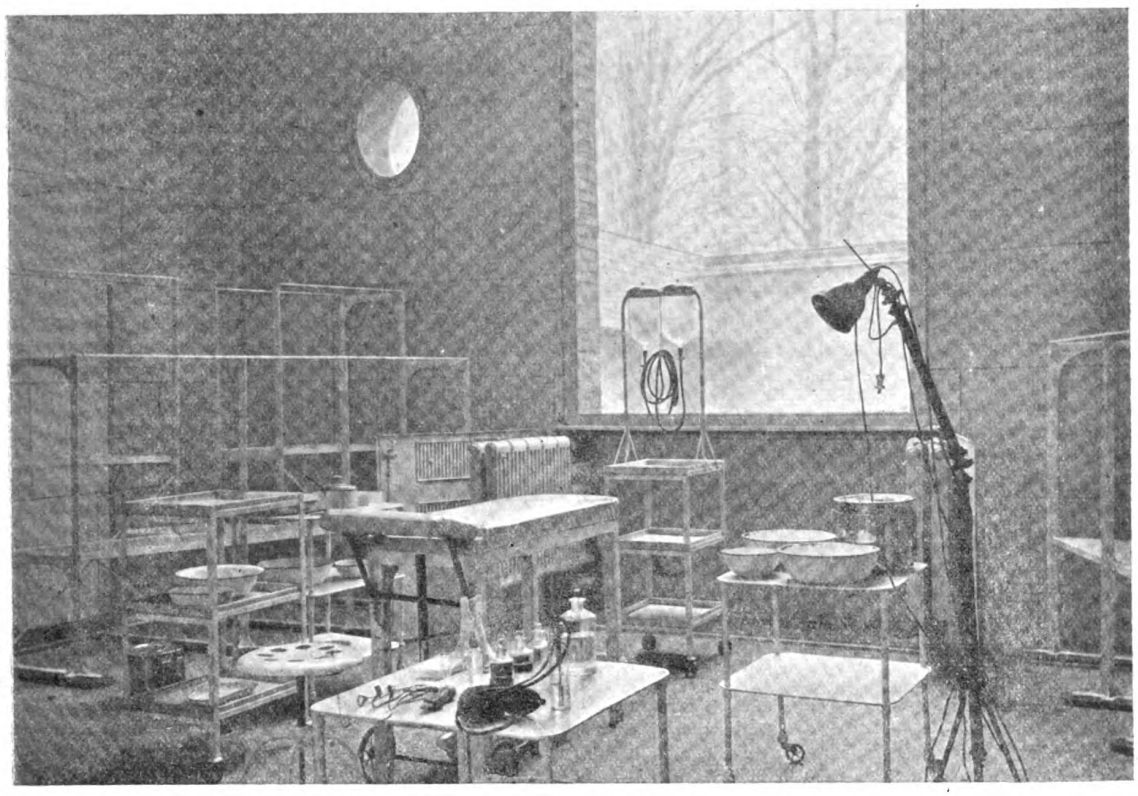
Radcliffe Infirmary, Oxford. Plan of the new Operating Teatre.

from below by gas stoves, and these coils can be, as is seen in Fig. 2, swung out from the wall so that both warming the air and removal of dust are greatly facilitated. Light is obtained from a large north window. By night, light is obtained from groups of electric lights situated in the roof above the glass ceiling, which are renewable from outside, and from a moveable standard lamp with a parabolic reflector.

The furniture is all made of iron enamelled white and includes a specially designed operating table together with the usual instrument cabinets, which are so low that the tops can be easily seen and dusted, lotion stands, surgeon's table with douche bottles, and tables for trays. These are all fitted with ball-bearing rubber wheels. Two enamelled iron stands are provided for the use of students and spectators. The anæsthetist's room is fitted as an x ray room. Current is supplied direct from the main and serves also to work a cautery and various electric lamps. The sterilising room contains two large sterilisers for the surgeons' coats and for dressings, instrument and water sterilisers, a boiler for trays and bowls, and a towel warmer. All the water-pipes are of copper and stand three inches clear of the walls. All cupboards are of enamelled iron and glass, and all sinks are of Twyford's porcelain and drain out into the open air and so into the gutter surrounding the theatre. The plug of the basins is a simple solid indiarubber ball. The floors are of mosaic and all angles are rounded. The total cost, exclusive of surgical appliances, was £3102 1*s.* 8*d.* One feature of the apparatus is an ingenious lift for patients when on the table which was devised by Mr. H. P. Symonds.

We think that the committee of management of the infirmary may well be congratulated on having obtained as perfect an operating theatre as is to be found up to the present time in any town in the kingdom. Mr. W. H. Castle of Oxford is the architect.

FIG. 2.

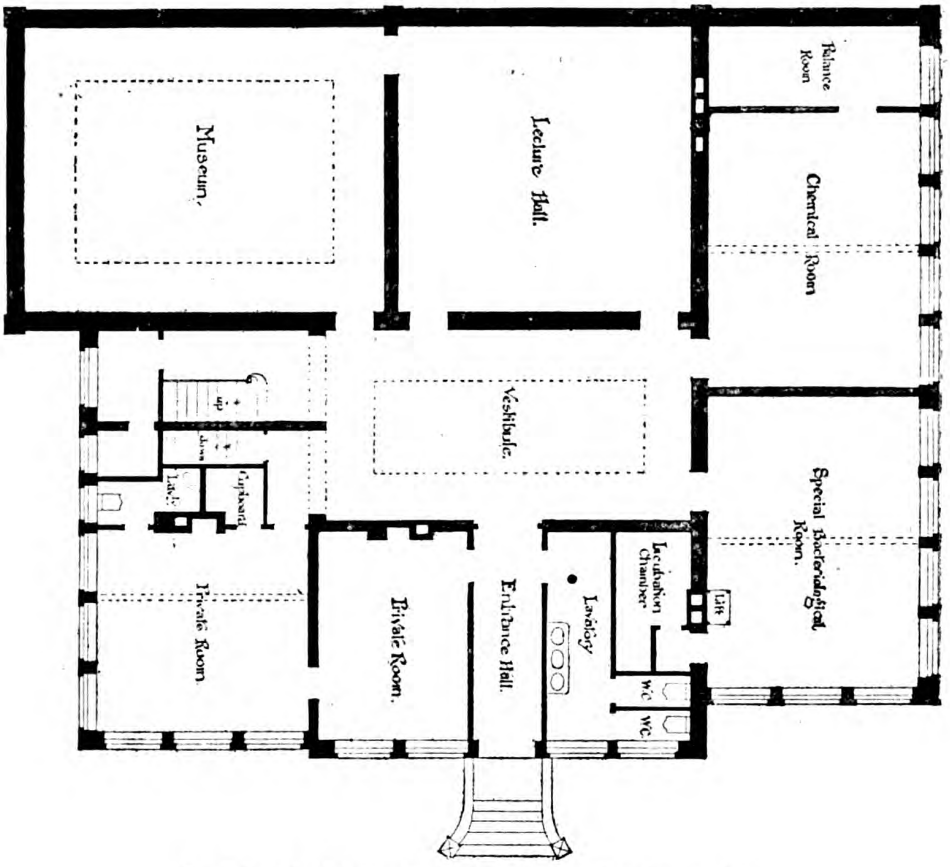


Interior of Operating Theatre, showing big north window, furniture, and heating coils.

THE NEW PATHOLOGICAL LABORATORIES.

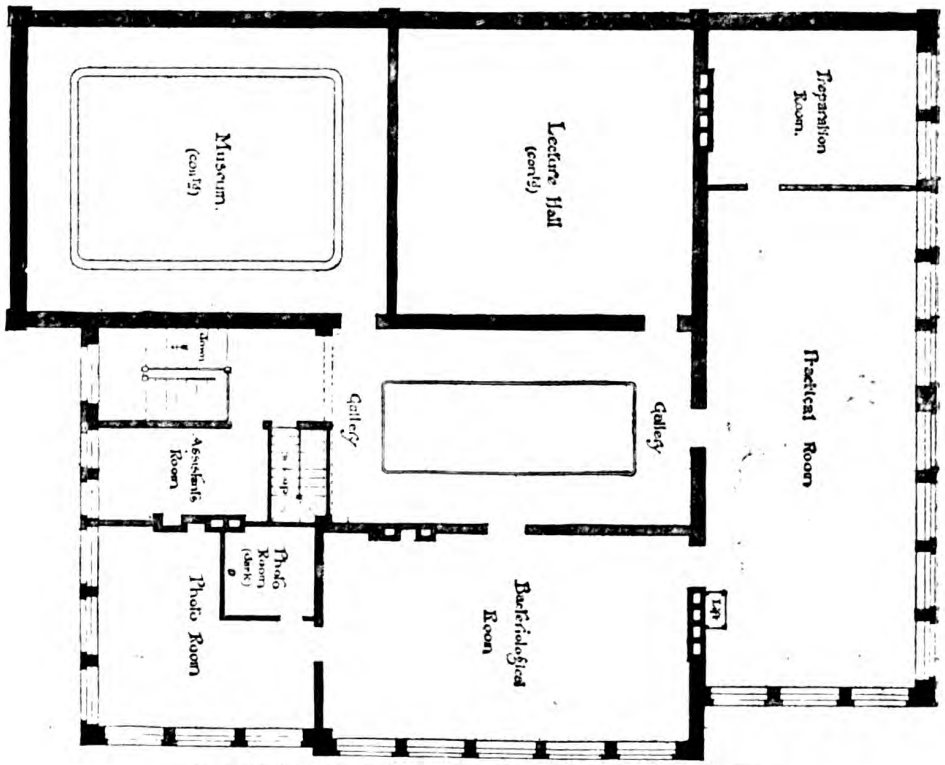
The existing accommodation for the teaching of pathology in the University of Oxford having been for some time recognised to be insufficient, about a year ago the generosity of an anonymous donor provided a sum of £5000 on condition that the University added an amount sufficient to provide for and maintain an adequate department. The University accordingly last summer added a further sum of £5000 to the gift and voted for a period of five years an annual grant of £250 for maintenance. Plans of a department, prepared by Mr. J. Augustus Souttar, of 41, Bishopsgate-street, E.C., were accepted and the erection of the building is now well advanced, its completion being expected about the beginning of 1901. The site for the department is within the grounds of the University Museum to the south of the department of human anatomy. It occupies a space 75 feet by 65 feet and to the north has a yard 60 feet by 30 feet. The front elevation, in which is the main entrance, is towards the east and nearly all the rooms are lighted either from this aspect or the north. The building is of a superior red brick with stone dressings and consists of a partially sunk basement and two floors. Entering by the main door (Fig. 3) access is given to a central hall from which or from its gallery all the rooms of the department open. Running up through both floors are a lecture room 25 feet square and 22 feet high and a museum 31 feet by 25 feet and of a similar height. Besides these on the ground floor are a research room for experimental pathology 25 feet by 18 feet, and another of similar size fitted up as a chemical research laboratory. To the former is attached an incubation room and to the latter a small balance room. On this floor there also are a private room for the head of the department, a private research laboratory, lavatory accommodation, &c. On the first floor (Fig. 4) there is a large room, 43 feet by 18 feet, for the teaching of pathological histology, and to this is attached a preparation room. There is also a class-room, 31 feet by 18 feet, for practical bacteriology, a photographic room, a demonstration room, &c. In the basement of the department are a private laboratory, a dark laboratory, a large preparation room for the routine pathological and bacteriological work of the department, store room, heating apparatus room, and workshop. The basement will also contain a refrigerating room, 10 feet square and 8 feet high, kept below zero by a Hall and Co.'s carbon dioxide freezing apparatus. Arrangements have been made by which the engine necessary for this apparatus shall be capable of also driving centrifuges or other machines.

FIG. 3.



New Pathological Laboratories, Oxford University. Plan of ground floor.

FIG. 4.



New Pathological Laboratories, Oxford University. Plan of upper floor.

REPORT OF THE EXECUTIVE COMMITTEE OF THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON

UPON THE MEMORIAL TO HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G., FROM THE COUNCIL OF THE METROPOLITAN RADICAL FEDERATION, DATED 17TH MARCH, 1900.

THE memorial (which incorporates an article in the *Contemporary Review* by the Hon. Stephen Coleridge) after stating that the Federation represents from 40,000 to 50,000 members of working men's Radical clubs and other Radical organisations in London, and that the mass of the population by reason of the dread of entering infirmaries, caused by the social ignominy that it incurs and by the social and political disqualifications that accompany it, are absolutely dependent on the London hospitals for the skilful treatment of their more serious diseases and accidents, sets forth two matters of complaint, which are summarised as "one of the gravest scandals of our time." They are as follows:—

1. A widely spread idea that there is too much a tendency now-a-days on the part of medical doctors and students attending the London Hospitals to regard the patients that come under their hands as so much material for experiment, and the memorial in this connexion says:—"It seems to be an axiomatic truth that if experiments must be made on a living subject, the proper subject must be the person of the patient himself." An inference is drawn that the popular suspicion is based on sufficient ground.

2. That grants of money from the general receipts of hospitals are devoted to medical schools; that since the inauguration of this Fund such grants have been increased; that certain hospitals in London in receipt of large sums of money from the Prince of Wales's Hospital Fund allocate considerable grants of money from their general receipts, among which the contributions from the Prince of Wales's Fund figure, to the medical schools and to the medical training of the students attending the schools of those hospitals. And in the said article the writer after referring to your Royal Highness's statement in 1897 that there was no intention of devoting any part of this Hospital Fund towards the support of the medical laboratories, says: "Upon the committee of the Prince of Wales's Hospital Fund, therefore, there lies the heavy responsibility of disregarding His Royal Highness's clearly expressed beneficent intentions."

With regard to the first allegation the Executive Committee, under whose direction the hospitals have been recently subjected with their own accord to careful and expert inspection, are deliberately of opinion that it is unfounded in fact. No particulars are given which can be dealt with by evidence in detail. The charge is general—founded on an alleged "widely spread idea" and on what "seems to be an axiomatic truth." The committee from their knowledge of the hospitals doubt, and have reason to doubt, that any such idea is at all widely spread, and they are sure that, whether widely spread or not, it is erroneous and does grave injustice both to the medical men and the students. The axiom appears to them questionable and the inference drawn from it unjustified. Upon this loose and somewhat scandalous charge against a great profession they do not consider they are called upon to say more.

The argument of the second allegation resolves itself into this. The Fund subscribes to a hospital, a complicated organisation the main object of which is surgical and medical aid to the poor. The hospital comprises a medical school. Therefore the Fund supports the medical school. The Executive Committee loyally adhered to your Royal Highness's statement in 1897 that there was no intention of devoting any part of the Fund towards the support of medical laboratories. The honorary secretary of the Metropolitan Radical Federation has already been informed by the Executive Committee of this Fund that no grant has been made from this Fund towards the support of medical laboratories either in the case of the Middlesex or any other hospital, and that all hospitals applying are considered according to their needs and merits as institutions for the relief of the suffering poor. The utmost that can be made of the charge is that some minute unascertained portion of a grant for general purposes may have percolated under the administration of the hospital concerned into a medical school or laboratory. But even this has been guarded against, and so far as the committee can ascertain no such percolation has actually occurred.

The awards made by this Fund to the hospitals have been made with certain conditions, following as nearly as possible the recommendations of the visitors who have inspected and reported upon them, and these awards and the objects for which they were made are stated in the annual reports of the Fund and have also been published in the public press. In no case can there be found in these reports an award given for a medical school or laboratory.

Nor can it be fairly said that the hospital authorities have in fact used any part of such grants for medical schools and laboratories. It is alleged that certain payments in connexion with the schools have been increased since this Fund was started, but even if this be so it by no means follows that such increases were made in consequence of the help given by this Fund to the hospitals in question. In three cases (Middlesex, London, and St. Mary's) out of the four quoted the receipts of these hospitals, excluding any grant from this Fund, were considerably over £40,000 more in 1897 than in 1896. These hospitals had, therefore, much greater resources out of which larger grants could have been made to the schools quite irrespective of any grants from this Fund. In the remaining case, that of Guy's Hospital, where £116 is mentioned as being paid for the school in 1896 and £595 in 1897, the hospital's receipts, including £8000 from this Fund, were less than those of 1896, thus giving a result antagonistic to the theory of greater funds greater help to the schools. There is no reason for supposing that Guy's, any more than the other three hospitals, used the contributions from this Fund, or any part of them, for the purposes of the medical school or the laboratory. It is to be observed that, accepting as correct the sum stated to have been for the benefit of the schools, they do not rise or fall in proportion to the grants from this Fund, and have from this point of view no co-relation with such grants; indeed, it is quite clear that the amounts paid in connexion with the schools, which bear only a very small proportion to the total annual expenditure of the hospitals, are determined by factors other than the receipts from the Fund. In none of the hospital accounts does it appear that any part of the grant from this Fund has been allocated to the schools. In the case of the Middlesex Hospital, which is given special prominence in the article, £600 is disbursed in 1897 in connexion with the school, forming part of a total annual expenditure of £30,000. The grant from this Fund in 1897 is quoted in the article as £1000, but as a matter of fact the amount was £2925. Looking at the varied items of receipts, it is not fair and reasonable to infer that because money from this Fund is included in such receipts any part of it must necessarily have been used for the school, especially when it is shown that among the other receipts there are annual dividends of £6615, of which £2076 are for the Cancer Fund. It would be more fair and reasonable to assume that a portion of such dividends is properly available for school purposes, and this presumption is borne out by a recent statement in the public press by Sir Ralph Thompson, who refers to some bequests to this hospital which are given not only for the cure and care of patients suffering from cancer, but also for the purpose of investigating and promoting a general knowledge of treating it.

In administering this Fund the committee have endeavoured in all cases to aid the hospitals in the manner best suited in the case of each hospital to benefit the sick and suffering poor of London, and they have no reason to believe that the eminent authorities who are associated with the large and important hospitals that have medical schools have done otherwise than act to the best of their ability in promoting the highest interests of the hospital patients.

THE THAMES CONSERVANCY.

THE general report of the Conservators of the river Thames for the year 1899 has recently been published. Of the public bodies which are engaged in work directly or indirectly bearing on the health of the people of London not one, perhaps, carries out the duties committed to it with more thoroughness and less ostentation than the Thames Conservancy Board. It is probably realised by few people that the purification of the river is only one amongst a number of important duties which the Conservators have to perform, a great part of their work being the protection of the navigation of the river, both above and below London.

The report, which is merely a brief summary of the work which has been done during the year, is divided into three parts, which deal respectively with the lower river, with the upper river, and with the prevention of pollutions. During last year the Conservators completed the deepening of the river channel from Blackwall to the Nore, and also carried out dredging operations between Crayford Ness and the Royal Albert Docks and also at Mucking Flats. A survey was carried out in the neighbourhood of Tilbury Docks, and the results of the investigation showed an improvement in the channel of the river at this point. Above London Bridge it is of interest to note that a survey has been completed as far as Vauxhall Bridge and that the result shows an improvement of from one to two feet in the depth of the river channel. The Conservators have made provision for the prevention of the discharge of refuse from the hoppers which are used for the conveyance of mud to the sea, the mooring-places and landing-places on the river have been maintained in order, and some additional moorings have been laid down. During the year 55 vessels were raised by the Conservators, and of these eight were steam-vessels and 47 sailing-vessels and barges. In the upper river above Staines dredging operations have been necessary to maintain the navigable channel, the tumbling-bay at Old Windsor weir has been extended on the Berkshire side and the crest of the existing tumbling-bay has been lowered, and the back-water below the weir has been deepened. A new weir and flood channel are in process of construction at Sonning.

We mention briefly the things which have been done on the river to give some idea of the enormous extent of the task carried out by the Thames Conservators. The most important part of their duties from a sanitary point of view is that which has to do with the prevention of pollution of the river in carrying out the extensive powers which were conferred under the Act of 1894 (57 & 58 Vict., cap. 187). The attention of the Conservators has been given chiefly to towns and large centres of population and to those places where sewage farms and works are situated. In all cases all the effluents have been frequently tested by the Conservators' analyst. During the year 1899 the pollutions from 17 towns and villages, containing together a population of over 36,000, were diverted from streams which were tributaries of the Thames. In those cases in which local authorities still cause pollution pressure has been continuously exercised and in most instances the sanitary authorities are taking measures to fulfil the requirements of the Conservators and have either submitted, or are preparing, drainage schemes for submission to the Local Government Board. Amongst other places, Witney, Thame, Aylesford, and Marlborough have commenced drainage works which will involve a considerable outlay on the part of each of those places. It was found necessary to institute legal proceedings in 14 cases in which the authorities did not comply with the requirements of the Conservators. As a result of these prosecutions four convictions were obtained, three cases were adjourned by the magistrates, and seven were withdrawn on the undertaking that the defendants would take immediate measures to carry out the necessary work. In the case of scattered farms, houses, and factories pollution has been diverted in no less than 197 instances. In regard to the pollution from houseboats and barges the powers of the Conservators have been carried into effect; these vessels have been watched by the inspector and no case of pollution has been discovered. This is a satisfactory improvement. It may be remembered that some years ago the condition of the river at Henley was most insanitary owing to the pollution from houseboats and THE LANCET at the time found it necessary to direct attention to the state of things which then existed.

The report on the flow of water in the Thames calls for notice. During the months of July, August, and September last the Conservators record that the average flow over Teddington weir was below the 200,000,000 gallons a day which they consider to be the minimum amount which should be left after the metropolitan water companies have drawn their supplies. In October the daily average rose to something over 250,000,000 gallons daily, in November to over 900,000,000 gallons, and in December it again fell to about 475,000,000 gallons daily. The fact that for three consecutive months during last year the daily average flow of water over Teddington weir was below that which is considered by the Conservators to be the minimum quantity which should flow down to the lower reaches of the river is a point of considerable importance. It emphasises the fact that too much water is already withdrawn from the Thames during periods of drought by the metropolitan water companies, and it is the strongest possible argument against allowing any further removal of water from the Thames during periods of drought. There is, of course, no doubt that if the whole of the natural flow of the Thames were allowed to pass down the river the expense of keeping open the navigable channels of the lower river would be considerably less than it is at present. The increase of outlay which is rendered necessary by the abstraction of so large a quantity of water for drinking purposes, therefore, causes an outlay in dredging which would not otherwise be needed. The flood-water which now passes down in large quantities thoroughly flushes out the lower river occasionally, but if this flood-water were taken by reservoirs in the Upper Thames it would necessarily follow that there would be a largely increased expense in dredging the lower river.

The work done by the Conservators for the purification of the upper river has been very thoroughly carried out and the improvement which has taken place in the purity of the water has been enormous. It must not be thought, however, that this purification of the upper river cleanses to any very marked extent the Thames in London. Unfortunately, during periods of drought by far the greater proportion of water which would naturally flow down through London is taken for drinking purposes and the water which is between the bridges is more affected by the state of the lower river than by that of the water which flows down from above.

THE ANNUAL DINNER OF THE INDIAN MEDICAL SERVICE.

UNDER the chairmanship of Sir TREVOR LAWRENCE, Bart., the officers of the Indian Medical Service held their annual dinner at the Hotel Cecil on June 14th. After the usual loyal toasts had been proposed and honoured that of the "Sister Services" was given by Surgeon-General C. SIBTHORPE, I.M.S. He mentioned in the course of his speech that a professor of one of the Scotch medical schools had decried their brother officers in the Army Medical Service. The professor thought that some of the officers had not as much experience as they ought to have and were not up to the standard, but he (Surgeon-General Sibthorpe) found that the standard of education was extremely high and he had never found them wanting in their professional work.

Sir HENRY NORBURY, K.C.B. (Director-General of the Medical Department of the Royal Navy), in responding to the toast, said that it was not often that the naval medical officers were associated with the Indian Medical Service, but it was not impossible that they might soon find themselves working together again as an outcome of what was then happening in China.

Surgeon-General JAMESON, C.B. (Director-General of the Army Medical Service), also replied to the toast of the "Sister Services." He said that they had at the present moment in South Africa no fewer than 8000 attendants belonging to the medical service for the care of the troops. He was happy to state that up to the present moment they had been able to meet every demand for *personnel* and *matériel* made on them. They had also made a new departure by employing in South Africa a large number of civilians in the bearer companies, thereby relieving a corresponding number of regular bearers who were more usefully employed in the field hospital. They had also taken into their service from time to time a considerable number of special bearers, which had proved a most useful plan. When Sir Redvers Buller left the railway and marched 30 miles to fight the battle of Spion Kop he engaged 1600 civilians that he picked up on the spot, and through their aid he was able before nightfall to remove every wounded man from the field of battle and to have them comfortably in hospital before breakfast time the next morning. They had now the intention at home of making some further arrangements for the care of the men invalided from the seat of war. This was rendered necessary because almost every case in which it was thought the voyage home would be beneficial was being returned to this country. They were receiving in England a very large number of these patients every week and that put their hospitals to a severe strain. They had not up to the present moment required to make use of the civil hospitals. Surgeon-General Jameson then referred

to the effect of inoculation for enteric fever. It was difficult, he said, at this period to get accurate statistics, and it was quite clear that a very large number of figures must be collected before a final opinion could be arrived at. Everyone, therefore, would recognise how difficult it was to form any sort of general conclusion. They had read a good deal in the daily papers about the enormous amount of enteric fever among the troops in South Africa, but he would remind them that it was not so bad as it was in the Afghan war.

The CHAIRMAN proposed the toast of "The Guests" and referred to the good feeling which existed between the civilians and the military medical men in South Africa. The toast was responded to by Dr. W. S. CHURCH, the President of the Royal College of Physicians of London, who said that the profession owed a debt of gratitude to the Indian Medical Service. The names of Manson and Ross were familiar to all in active work and medical men looked to that service for information in regard to diseases concerning which practical experience was not obtainable in England.

Dr. FREDERICK ROBERTS, the President of the Medical Society of London, proposed "The Indian Medical Service" and the toast was replied to by Surgeon-General Sir JOSEPH FAYRER, Bart., who referred to the very early days of the service and the influence of Broughton and of Hamilton.

The proceedings terminated with votes of thanks to the chairman and to Mr. Freyer, to whom, as secretary, the success of the dinner was largely due.

The following is a list of the names of the guests and members who were present:—

Guests.—Dr. Church, President of the Royal College of Physicians of London, Sir Henry Norbury, K.C.B., Surgeon-General J. Jameson, C.B., Dr. Pavy, President of the Royal Medical and Chirurgical Society, Dr. F. Roberts, President of the Medical Society of London, Surgeon-General T. Walsh, A.M.S., Mr. Austin Low, honorary treasurer. Dr. Dawson Williams, Editor of the *British Medical Journal*, and Mr. Thomas Wakley, jun., Joint Editor of THE LANCET.

Members. — Dr. W. S. Playfair. *Surgeon-Generals:* A. C. C. De Renzy, C.B.; Sir J. Fayrer, Bart., K.C.S.I., F.R.S., W. R. Hooper, C.S.I., W. R. Rice, C.S.I., C. Sibthorpe, C.B., and L. D. Spencer, C.B. *Colonels:* W. Cates, D. E. Hughes, J. C. Penny, D. O'C. Raye, W. H. Roberts, Sir George Thomson, K.C.B., B. Williamson, and W. A. S. Wynne. *Lieutenant-Colonels:* H. Atkins, F. C. Barker, W. R. Browne, W. H. Cadge, A. M. Crofts, C.I.E., A. Crombie, G. W. P. Dennys, P. J. Freyer, T. Grainger, J. Ince, D. F. Keegan, I. B. Lyon, C.I.E., G. Massy, T. Mulroney, G. Ranking, G. D. Riddell, J. Scully, T. Skardon, G. S. Sutherland, W. H. Thornhill, C. J. H. Warden, D. Warliker, A. H. Williams, and H. P. Yeld. *Majors:* W. Alpin, F. Carlea, R. H. Castor, J. W. Caldwell, F. C. Clarkson, F. J. Drury, E. Dobson, A. S. Faulkner, B. B. Grayfoot, and S. Hassan. *Captain:* J. Fisher.

ARMY MEDICAL REPORT FOR 1898.[1]

III. (CONCLUDING NOTICE.)[2]

IN concluding our remarks on enteric fever among the British troops serving in India and subtropical climates we may briefly advert to its relative prevalence among officers and women and children. The ratio of admissions for enteric fever to strength among officers serving in India was 40 per 1000 in 1898 (which is a rather higher ratio than that among the rank and file), while the death-rate was 8·08. The cases were distributed over as many as 33 stations. The admission rate among the women for enteric fever was 12·2 and the death-rate 4·81, and among the children (with an average strength of 5592) the admission rate was 7·0, and the mortality rate 0·54 per 1000. It would appear, therefore, that officers suffer about equally with the men from enteric fever, notwithstanding that the hygienic conditions under which they live are presumably better and their risk of contracting the disease through the medium of native bazaars, liquors, and drinks one would think less than among the men, while the consumption of water and milk among women and children would certainly not be less, but probably more, than among the men. The problem of determining what is the exact causation of enteric fever among the European residents in India is a very difficult one which has still to be satisfactorily worked out, especially when it is borne in mind that the amount of prevalence of this fever among the native troops, jail population, and the native population generally is apparently so insignificant as compared with what it is among the Europeans.

With regard to venereal disease in India it is still too early to form any reliable opinion as to the effect of the measures which have been recently adopted for its control; still, it is satisfactory to learn that the Principal Medical Officer reports that the admission rate for these diseases in 1898 shows 136·4 fewer admissions to hospital per 1000 than in 1897, nor is this to be accounted for by the employment of men on field service. The reduction is, in his opinion, attributable to the influence of other measures, such as the new cantonment rules, the putting of bazaars out of bounds, and the continuance of the treatment of men after their discharge from hospital instead of frequently re-admitting them into hospital for that purpose.

The number of surgical operations recorded for the year as having been performed among the European troops serving in India amounted altogether to 496, of which 476 were primary and 20 secondary. Death followed in 67 cases of the former and two of the latter. The majority of the operations were, however, of a minor character. It may be mentioned that of 104 cases of abscess of the liver operated upon in 1898 46 were successful, 57 ended fatally, and one was under treatment at the end of the year.

Turning to the appendix, which is the most interesting part of the volume to the professional reader, the report itself being more especially intended for the information of Parliament and lay readers, we find a good selection of papers of varying interest. The first is one upon the Progress of Hygiene for the Year 1899 by Colonel J. Lane Notter, Professor of Military Hygiene at the Netley Army Medical School. These reports are always useful and instructive because they give a short and condensed *résumé* of what has been going on in the way of sanitation and practical hygiene during the year. Under the heading of Literature, for example, Professor Notter very briefly describes and sums up the contents of a large number of books which have been published on the subject of hygiene during the year. This is followed by a section on the work of societies with a succinct account of the proceedings and the papers read at them, and by another section devoted to special points of hygiene. The article, as a whole, gives medical officers what they want to know and is, at the same time, calculated to save them a good deal of labour and the inconvenience and expense of having to procure and carry about with them a number of books instead of selecting such only as they really need or desire to have.

The article containing a list of operations performed at Netley during the year 1898–99, with a return of the wounded invalids and surgical cases treated in the Royal Victoria Hospital, accompanied by descriptive accounts, with notes and comments upon these cases, is a conjoint production by Colonel W. F. Stevenson, M.B. Dub., R.A.M.C., Professor of Military Surgery, and by Major W. Dick, M.B. Edin., R.A.M.C., the Assistant Professor of the Army Medical School, Netley, and it is well worth reading. Some of the cases and the operative procedures adopted are both interesting and instructive. Colonel K. McLeod, M.D. Edin., LL.D. Aberd., I.M.S., Professor of Clinical and Military Medicine at the same school, deals with the patients treated in the medical division of the hospital. One of the cases he describes is one of splenic anæmia which followed an attack of Mediterranean fever to which it was apparently a sequela; another is a case of syphilitic cachexia and paroxysmal hæmoglobinuria associated with Raynaud's disease. Surgeon-General W. Taylor, C.B., contributes a report of the Medical Transactions of the Nile Expeditionary Force to Khartoum in 1898. Enteric fever and dysentery prevailed to a considerable extent among the troops in the Soudan. The report gives a brief account of the number and character of the wounds received in action and some useful observations on the best type of building

[1] Army Medical Department. Report for the year 1898. With Appendix. Vol. xl. London: Printed for Her Majesty's Stationery Office by Harrison and Sons, St. Martin's-lane, Printers to Her Majesty. 1900. Price 2*s.* 6*d*

[2] The two previous notices were published in THE LANCET of May 12th, 1900, p. 1384, and June 9th, 1900, p. 1675, respectively.

for hospitals, the most serviceable unit for field hospitals and many points connected with medical administration in the field. There are several other papers connected with field operations in West Africa; an elaborate report on enteric fever in Pietermaritzburg; and one on the method of preparation and control of anti-venomous serum (antivenene), with experiments by Major D. Semple, M.D. R.U.I., R.A.M.C., Assistant Professor of Pathology at Netley, who, accompanied by Major R. W. S. Lyons, M.D. R.U.I., I.M.S., and Surgeon O. W. Andrews, M.B. Durh., R.N., proceeded to the Pasteur Institute at Lille and placed themselves under a course of instruction by Dr. A. Calmette and his assistant, M. Guérin. The experiments and observations were most carefully conducted and the report is compiled with much scientific detail. Major Semple has also another paper on matters that came under his observation at the Pasteur Institute in Paris.

ASYLUM REPORTS.

Surrey County Asylum, Brookwood (Annual Report for 1899).—The average number of patients resident in the asylum during the year amounted to 1080 and comprised 437 males and 643 females. The total cases admitted during the year were 260 patients, of whom 121 were males and 139 females. The greatest number resident on any one day was 1118, and the least was on the last day of the year—viz., 999. Mr. James E. Barton, the medical superintendent, states in his report that "for the greater part of the year the asylum continued in a very overcrowded state and sleeping accommodation had to be provided on the floor. ..... Considering the crowded state of the wards and dormitories the general health of the asylum has been good throughout the year. Diarrhœa was more or less prevalent and five cases of typhoid fever occurred, one of which ended fatally. Influenza was very rife and many of the patients and staff suffered. Considerable inconvenience was caused by many attendants and nurses being off duty for lengthened periods—the debility following the attack rendering leave of absence to recuperate necessary." For a short time during the summer much anxiety and inconvenience were caused by the deficiency of the water-supply. For two days in August the institution was practically without water and for some time the canal water had to be used for laundry and flushing purposes. Of the 260 patients who were admitted during the year 123 were brought from their own homes and 109 came from workhouses; 11 were transfers from other asylums; 45 were re-admissions and included a male criminal lunatic who on expiration of sentence was transferred from the private to the pauper class. "The general type of the admissions was very unsatisfactory; the majority suffered from chronic insanity and many were dangerous to themselves or to others. Hereditary predisposition or congenital defect existed in nearly 34 per cent. ..... In addition to hereditary and congenital defect the chief causes of insanity were previous attacks, mental worry, and alcoholic intemperance. In 10 cases the insanity followed an attack of influenza, the chief feature in these cases being depression, apathy, and debility." During the year 114 cases—viz., 45 males and 69 females—were discharged as recovered, or 10·5 per cent. of the average number resident. The deaths during the year numbered 100, a proportion of 9·25 per cent. on the average population. This is a fairly low rate considering the number of feeble old people in the asylum. 11 died within a month of admission. Post-mortem examinations were made in 70 cases. Of the deaths five were due to senile decay, six to influenza, seven to cardiac disease, 10 to general paralysis of the insane, 12 to apoplexy and organic brain disease, and 18 to pulmonary phthisis. Four females and three male patients sustained serious casualties, all being with one exception fractures caused by accidental falls or struggles with other patients. The new bathroom for the female division of the main building and the bathrooms and lavatories for the medical officers were completed during the year. Many changes have occurred in the asylum staff, several of the best attendants, who were army reservists, having left to rejoin their regiments. These were granted leave of absence, and their posts are kept open for them. The new drainage system has been completed, with the exception of connecting the asylum drains with the district council's sewers at Woking, which will shortly be done. The Lunacy Commissioners in their report draw attention to the overcrowded state of the asylum and suggest the provision of an incinerator for the destruction of rubbish, as such an addition to the works would be most useful for the destruction by fire of typhoid fever patients' excreta which are now buried after treatment with carbolic acid.

Leicestershire and Rutland Lunatic Asylum (Annual Report for 1899).—The population of the asylum during the year consisted of 493 patients, of whom 232 were males and 261 were females. The admissions for the year amounted to 90 patients, of whom 48 were males and 42 were females. 16 of these—viz., 11 males and five females—were re-admissions. Mr. Rothsay C. Stewart, the medical superintendent, states in his report that of the admissions 22 patients were known to have had previous attacks and hereditary tendencies to insanity were traced in 17 cases. The epileptics numbered 12 and the general paralytics numbered six among the admissions. "22 cases were between the ages of 65 and 84 and in my opinion a fair proportion of these were more fit for a workhouse than an asylum." During the year 29 patients were discharged as recovered, 15 of these being males and 14 being females, or a total of 5·8 per cent. of the average number resident. The total number of deaths during the year was 62 and comprised 32 males and 30 females, or 12·5 per cent. of the average number resident. Of the deaths two were attributed to influenza, three to pneumonia, one each to colitis and diarrhœa, three to epilepsy, five to general paralysis of the insane, seven to cerebral softening or hæmorrhage, eight to cardiac disease, 11 to senile decay, and 12 to pulmonary phthisis. The mortality from phthisis is the highest in the tables given regarding the causes of death. There were five accidents involving fractured bones, but none of them ended fatally. Two female patients, both married women, gave birth to children while in the asylum. One of these has since gone out as recovered. Two male patients escaped during the year, one being subsequently recaptured. During the month of April, 1899, there was a severe epidemic of influenza among the staff, especially on the female side. At the outbreak of the war several of the attendants who had received orders as reservists left to rejoin their regiments and the work on the male side has had to be carried out with much difficulty. "Their places are kept open for them in case they wish to rejoin us, and the committee passed a resolution to pay half the wages to the wife of every reservist so long as he was on active service." The site for a new asylum at Narborough, consisting of 182 acres, was visited in January, 1899, by the Commissioners in Lunacy, and they gave consent to its purchase under certain conditions. Arrangements have been made with the borough authorities for the purpose of securing an efficient water-supply to the new asylum, and two houses have been purchased which will serve as residences for some of the staff. The profit derived from the farm and garden amounted to £330 in round figures. The aggregated expenditure on building and repairs accounts for the year has been £1691. The Lunacy Commissioners in their report state that the case-books and medical records are admirably kept, the former being illustrated by excellent photographs of the patients taken on their admission and discharge.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Birmingham Urban District.—The estimated population of Birmingham for 1899 was 514,956, but Dr. Alfred Hill thinks that this may be some 22,000 too little. The marriage-rate for the year in question was 20·8 and the birth-rate 34·3 per 1000, only six of the great towns having a higher birth-rate than Birmingham. As regards death-rate Dr. Hill has recently adopted a system by which each death will, as far as is practicable, be referred to its own ward and locality, and by this means much more reliable data will be procured. For instance, during 1899 more than 1000 deaths were referred to the precise wards and streets from which the

deceased came instead of appearing as heretofore under the heading "Institutions." The general death-rate of the city after having been corrected in the above sense was for 1899 20·5 per 1000, and in reference to the relation between the insanitary conditions associated with poverty and the death-rate Dr. Hill furnishes the following very instructive figures:—

Proportion of houses at 3s. 6d. per week or less.	Death-rate per 1000.
None	17·1
From 0 to 25 per cent.	26·1
From 25 to 50 per cent.	32 7
Over 50 per cent.	37 6

When, too, this aspect of the question is examined in more detail it is found that the same general principles obtain. Although all these figures tend to show that poverty is *per se* a cause of high mortality Dr. Hill rightly points out that material improvement can be brought about by a rigorous supervision of the conditions under which the poor live; indeed, it may surely be laid down as one of the most important duties of the officers of sanitary authorities to help the poor who for many obvious reasons are unable with chances of much success to help themselves. In Birmingham the health visitors are able, it appears, to do most valuable work in this direction, and it must be a source of much satisfaction to Dr. Hill to be so well provided in this respect. As regards infantile mortality, the figures for 1899 are again high, no fewer than 193 infants out of every 1000 born having perished before the first anniversary of their birthday. There was an outbreak of diphtheria in connexion with certain schools during 1899 and as a result the schools had eventually to be closed on two occasions, the first closure having failed to check the outbreak. Enteric fever, too, became epidemic in the fourth quarter of last year, the number of cases, 417, being far in excess of those notified during the same quarter of recent years. Personal infection seems to have played a prominent part in the outbreak, no fewer than 72 cases being attributed to this agency. Moreover, unrecognised cases seem also to have been operative. So much was Dr. Hill impressed with the infectivity of enteric fever that he has since prevailed upon the Town Council to provide hospital accommodation for the isolation of cases of this disease. There can, we think, be little doubt that the element of direct infectivity has not even yet received due recognition at the hands of the medical profession as a whole. Diarrhœa and enteritis claimed as many as 1411 victims during the year, and Dr. Hill's investigations brought out the prominent part which filth and overcrowding bore in the causation of these diseases. There was also a far greater incidence of diarrhœa deaths in houses provided with "pan" closets than in those provided with water-closets. Notwithstanding this association we learn that but 199 pan privies were converted into water-closets during 1899, while there are some 31,000 of these unwholesome arrangements still existing in Birmingham. The medical officer of health suggests that with a view of bringing about improvement the council should bear a portion of the cost of replacing these structures. In his capacity of city analyst Dr. Hill reports that there is a steady decrease in the use of boric acid as a milk preservative, but that the use of formic aldehyde is steadily increasing. It is, too, of interest to note that the use of preservatives and the question of adulteration tend to go hand-in-hand. The amount of boric acid found ranged from 21 to 126 grains per gallon.

Edinburgh Sanitary District.—Sir Henry Littlejohn, the medical officer of health of this district, estimates its population to the middle of 1899 at 298,927, although, in common with all his colleagues, he is careful to point out that the possible revelations of the forthcoming census should not be lost sight of. The birth-rate was 27·49 and the general death-rate was 19·2 per 1000. There were three deaths from typhus fever, but these are to be regarded as a legacy from the 1898 outbreak. Accompanying Sir Henry Littlejohn's report are some capital charts illustrating the prevalence and mortality of different infectious diseases. As regards the local distribution of enteric fever and diphtheria, after discussing the incidence of each disease upon the Old and New Town respectively, he points out that on a basis of the statistics for 1898–99 "the chance of taking typhoid fever among every 10,000 of the population in the Old Town, New Town, and Southern districts may be expressed as about 13, six, and seven respectively. Whereas in regard to diphtheria the chances are, in the same order, six, 11, and 10," facts which illustrate, Sir Henry Littlejohn thinks, that in so far as Edinburgh is concerned "the class of property and of inhabitants in which diphtheria on the one hand and typhoid fever on the other are most prevalent is totally different." The question of milk as a source of infection is dealt with somewhat fully in the report before us by virtue of the fact that the circumstances connected with three outbreaks of scarlet fever and one of enteric fever were suspicious of milk-borne infection, although the evidence in certain of the cases was, as Sir Henry Littlejohn observes, insufficient for a definite conclusion to be arrived at. The responsibilities and difficulties of a medical officer of health in connexion with what may be milk-borne epidemics or outbreaks are well brought out by Sir Henry Littlejohn. The hardship associated with the stoppage of a supply cannot be lightly inflicted by a conscientious officer, and yet even the suspicion that the milk may be operative as a carrier of infection must cause him much anxiety. The common habit of milk vendors of mixing the milk derived from different farms and of purchasing an additional supply if their own runs out introduces many complications into etiological investigations which would otherwise be often relatively easy of solution.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7006 births and 4004 deaths were registered during the week ending June 16th. The annual rate of mortality in these towns, which had been 18·4, 17·7, and 16·8 per 1000 in the three preceding weeks, rose to 18·0 last week. In London the death-rate was 17·4 per 1000, while it averaged 18·4 in the 32 provincial towns. The lowest death-rates in these towns were 9·4 in Cardiff, 11·3 in Norwich, 12·0 in Nottingham, and 12·7 in Croydon; the highest rates were 22·0 in Huddersfield, 22·9 in Sheffield, 23·7 in Liverpool, 24·8 in Salford, and 25·2 in Manchester. The 4004 deaths in these towns included 427 which were referred to the principal zymotic diseases, against 423 and 386 in the two preceding weeks; of these 138 resulted from measles, 108 from whooping-cough, 65 from diphtheria, 61 from diarrhœa, 29 from "fever" (principally enteric), and 26 from scarlet fever. The lowest death-rates from these diseases last week occurred in Plymouth, Cardiff, Swansea, Leicester, Bradford, and Gateshead; and the highest rates in Derby, Manchester, Salford, Blackburn, Huddersfield, and Hull. The greatest proportional mortality from measles occurred in Huddersfield, Leeds, Hull, and Sunderland; from scarlet fever in Blackburn; from whooping-cough in Croydon, Wolverhampton, and Oldham; and from diarrhœa in Birkenhead, Burnley, and Huddersfield. The mortality from "fever" showed no marked excess in any of the large towns last week. The 65 deaths from diphtheria included 28 in London, nine in Sheffield, four in Manchester, and four in Leeds No fatal case of small-pox was registered last week in any of the 33 large towns. There were 15 small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday last, June 16th, against 5, 7, and 11 at the end of the three preceding weeks; eight new cases were admitted during the week, against four in each of the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1766, against 1784, 1760, and 1754 at the end of the three preceding weeks; 210 new cases were admitted during the week, against 216, 194, and 203 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 266 and 268 in the two preceding weeks, declined again to 257 last week, but were 29 above the corrected average. The causes of 43, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Birmingham, Bristol, Leeds, and in 15 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Salford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·6 and 18·3 per 1000 in the two preceding weeks, rose again to 19·9 per 1000 during the week

ending June 16th, and was 1·9 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·2 in Greenock and 17·9 in Leith to 21·9 in Aberdeen and 27·0 in Perth. The 616 deaths in these towns included 23 which were referred to measles, 22 to diarrhœa, 21 to whooping-cough, six to scarlet fever, four to diphtheria, and two to "fever." In all 78 deaths resulted from these principal zymotic diseases, against 57 and 73 in the two preceding weeks. These 78 deaths were equal to an annual rate of 2·5 per 1000, which was 0·6 per 1000 above the mean rate for the same period in the 33 large English towns. The fatal cases of whooping-cough, which had been 25 and 17 in the two preceding weeks, rose again to 21, of which 17 occurred in Glasgow. The deaths from measles, which had been 16 and 19 in the two preceding weeks, rose again last week to 23, and included 14 in Glasgow and four in Edinburgh. The fatal cases of diarrhœa, which had been 25 and 7 in the two preceding weeks, rose again last week to 22, of which 12 were registered in Glasgow and five in Dundee. The deaths from scarlet fever, which had been one and six in the two preceding weeks, were six again last week and included two in Edinburgh. The fatal cases of diphtheria, which had been five, four, and three in the three preceding weeks, rose again to four. The two deaths from "fever" showed a marked decline from the number in the preceding week and were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 94, 104, and 106 in the three preceding weeks, declined again to 101 last week, and were 14 above the number in the corresponding week of last year. The causes of 28, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·9 and 23·1 per 1000 in the two preceding weeks, rose to 23·8 during the week ending June 16th. During the past four weeks the death-rate in the city has averaged 23·5 per 1000, the rate during the same period being 16·7 in London and 18·6 in Edinburgh. The 160 deaths registered in Dublin during the week under notice were fifteen above the number in the preceding week, and included six which were referred to the principal zymotic diseases, against five, three, and 10; of these, two resulted from diphtheria, two from "fever," one from scarlet fever, one from diarrhœa, and not one from small-pox, measles, or whooping-cough. These six deaths were equal to an annual rate of 0·9 per 1000, the zymotic death-rate during the same period being 1·9 in London and in Edinburgh. The 160 deaths in Dublin last week included 26 of infants under one year of age and 36 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons were 13 more than the number recorded in the preceding week. Two inquest cases and one death from violence were registered; and the causes of nine, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Staff-Surgeon J. Bradley to the *Galatea*. Surgeons: J. A. Keogh to Hong-Kong Hospital; J. Mowat to the *Northampton* for the *Calliope;* and H. B. Hull to the *Vernon*, for the *Chasseur*.

ROYAL ARMY MEDICAL CORPS.

Captain H. W. Vaughan-Williams, attached to the 3rd Battalion Grenadier Guards in South Africa, is ordered home for duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

Captain W. W. Webb (retired) is granted the temporary rank of Major whilst acting as Secretary to the Army Medical School at Netley.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the Northumberland Fusiliers: Frederick William Wallace Whyte to be Surgeon-Lieutenant. 4th Volunteer Battalion the King's (Liverpool Regiment): Robert Fielding-Ould to be Surgeon-Lieutenant. 3rd Volunteer Battalion the East Surrey Regiment: Surgeon-Captain J. J. de Z. Marshall to be Surgeon-Major. 1st Bucks: Surgeon-Lieutenant F. J. Grindon to be Surgeon-Captain. 1st Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Captain W. H. Packer to be Surgeon-Major. 3rd London: George William O'Flaherty Clark to be Surgeon-Lieutenant. 1st Volunteer Battalion the Gordon Highlanders: Surgeon-Lieutenant-Colonel P. B. Smith resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on his retirement.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Surgeon-Captain W. Coates to be Surgeon-Major (in command) on increase of establishment.; Joseph Farrall Wright to be Surgeon-Lieutenant.

THE CRISIS IN CHINA.

At the time of our writing great anxiety most naturally exists as to the very serious state of affairs in China. It seems certain that the Taku forts, after having been bombarded by the warships of the Powers, have been captured, but it is not by any means clear what has become of the composite relief force which was despatched under the command of Admiral Seymour for the succour and protection of Europeans at Peking and elsewhere. We are all hoping to hear of its arrival at Peking or of its safety somewhere.

At the present time all the political interest of this country is focussed on the Foreign Office, War Office, and Admiralty, which must have their hands very full of work. It is extremely fortunate for all concerned that the enmity of the Chinese is of an indiscriminate character and directed against all foreigners alike, and that the Chinese forts fired upon the war ships of the international fleet without distinction, and, as a consequence, that the action taken had to be a conjoint one on the part of all the naval powers concerned. A large military force (of the native army mainly) is being sent from India to China. This will throw a great deal of work upon the medical services of that country and a large number of medical officers now serving in India will be required to embark with and accompany the troops ordered to China. The officers of both medical services have for a long time past found full occupation with the extra work they have been called upon to perform in connexion with plague, pestilence, famine, and war, which have filled pages in the mournful history of India of late years.

The following have been ordered to proceed with the force about to embark at Calcutta for service in China:—British field hospital, No. 22, Bombay. Native hospitals No. 39, Jalandhar; 42, Ambala; 43 and 44, Lucknow; and 47, Mhow. No. 4 field medical store depôt. Native general hospital of 200 beds from Calcutta. Lieutenant-Colonel Bookey, I.M.S., will be the principal medical officer.

TRANSVAAL WAR NOTES.

A military hospital capable of accommodating 500 invalids from South Africa is to be erected at Alton, Hants.

Lieutenant Martin, Lieutenant Scott, and Lieutenant Siberry, all of the R.A.M.C., are returning to England from South Africa invalided. Major Wills, Captain Erskine, and Lieutenant Morris, invalided, have arrived in England from South Africa.

The General of Communications at Cape Town reports the following officers discharged from hospital for duty for the week ending June 3rd:—Civil Surgeons Rook, Blackwood, Turton, and Roe.

The following steamships have arrived at Southampton and have brought invalids from South Africa who have been admitted to the Royal Victoria Hospital, Netley:—June 7th, the *Orient*, with six patients; June 10th, the *Orotava*, with 337 patients; June 15th, the *Simla*, with 268 patients; and June 18th, the *Custodian*, with 92 patients.

TRANSVAAL WAR CASUALTIES.

Civil Surgeon R. T. Fitzhugh died from enteric fever at the Imperial Yeomanry Hospital, Deelfontein, on June 15th.

Civil Surgeon E. Smith, attached to the R.A.M.C., died from enteric fever at the base hospital on June 16th.

Surgeon-Captain A. E. Vidler, Imperial Yeomanry, is reported missing.

Civil Surgeon H. D. Davies, attached to the Welsh Military Hospital, died at Springfontein on June 15th.

The death of Mr. Thomas Jones, F.R.C.S.Eng., chief of

the Welsh Military Hospital, is announced in a telegram from Springfontein.

We announced last week the death at Bloemfontein from enteric fever, on June 7th, of Civil Surgeon H. Bryant, attached to the Royal Army Medical Corps. Mr. Hugh Arnold Bryant, M.R.C.S. Eng., L.R.C.P. Lond., of Shaftesbury, was a son of Mr. Thomas Bryant, F.R.C.S., who, we know well, will receive the sincere sympathy of the profession in the great loss which he and his family have sustained.

The eightieth session of the Army Medical School, Netley, will terminate on June 30th. Owing to the war in South Africa there will be no public distribution of prizes.

Correspondence.

"Audi alteram partem."

THE METROPOLITAN HOSPITAL SUNDAY FUND.

To the Editors of THE LANCET.

SIRS,—The many appeals which have recently emanated from the Mansion House in respect either of the war or the famine in India are being so liberally and bountifully met that I gravely hesitate to make yet another call upon the never-failing generosity of the inhabitants of London. I feel sure, however, that in reminding the public that next Sunday is "Hospital Sunday," when for the twenty-eighth successive year collections will be made in every place of worship for the hospitals and dispensaries of this vast metropolis, they will admit that even the exigencies of the war should not divert them from rendering that annual help which has become so all-important a part of the incomes of the medical charities. While the war has drawn from the hospitals of London the ready services of medical men and nurses who have rendered devoted and invaluable aid in dealing with the sick and wounded at the front, it has materially prejudiced the institutions financially through the urgent competition of the multitude of appeals associated with the campaign.

But the progress of the war has effected no diminution of the numbers of sick poor for whom the hospitals of London labour unceasingly. Never was there a time in the history of the metropolis when there was greater need than now for the rendering of increased help towards the maintenance of these noble institutions, of whom some 200 owe their existence solely to the voluntary offerings of the benevolent public. When one reads that hundreds of beds are unused for want of funds and that last year the expenditure on the hospitals exceeded the income by nearly a quarter of a million sterling it seems time—even in a year of unparalleled stress and anxiety—to make a special effort in behalf of the medical charities of London. It is suggested that £100,000 might be raised this year for this object. Towards this Mr. George Herring has given £10,000 down and promised £10,000 more if £90,000 is raised. I trust that the generous public, by their contributions on Hospital Sunday will enable me to take advantage of this munificent offer.

I would add that, as usual, donations from those unable to attend a place of worship on Sunday may be sent to me at the Mansion House for addition to the Fund.

I am, Sirs, your obedient servant,

ALFRED J. NEWTON, Lord Mayor.

The Mansion House, London, June 19th, 1900.

À PROPOS DU RAPPORT DE LA COMMISSION DE "THE LANCET" SUR LA PULPE "VACCINALE" GLYCÉRINÉE.

To the Editors of THE LANCET.

MESSIEURS,—Je voulais répondre complétement au rapport de la Commission de THE LANCET chargée d'étudier la pureté de la pulpe vaccinale glycérinée du commerce; mais le Dr. Hime a éclairci plusieurs points dont je voulais m'occuper. Je me contenterai donc de traiter les côtés de la question non envisagés par mon confrère.

Qu'il me soit permis d'abord de faire une rectification bibliographique. Le rapport dit:—

To Copeman and to Chambon and St. Yves-Menard, working independently, apparently belongs the credit of determining that the addition of glycerine to vaccine lymph not only puts a stop to any multiplication of "extraneous" bacteria but actually in time kills non-spore-bearing organisms. ..... Independent testimony to this preservative and purifying action of glycerine has been offered by Leoni, Klein, Koch's German Commission, and other later observers, but little has been added to the results obtained by Copeman, working alone and with Blaxall, and by Chambon and St. Yves-Ménard working with Strauss."

Il y a là une grosse erreur. Le Professeur Leoni, alors directeur de l'Institut Vaccinal de l'Etat[1] à Rome, qui dans les lignes précédentes est désigné comme étant venu corroborer la découverte du Dr. Copeman d'une part et de MM. Strauss, Chambon, et St. Yves-Ménard, d'autre part, est précisément celui qui le premier a démontré la destruction des microbes se trouvant dans le vaccin par l'action de la glycérine, et a dit qu'au vieil adage, "Vaccin récent bon vaccin, vaccin vieux mauvais vaccin," il fallait substituer cet autre, "Vaccin récent mauvais vaccin, vaccin vieux bon vaccin."

Dans "The Milroy Lectures" publiées en 1898, que j'ai actuellement sous les yeux, le Dr. Copeman s'exprime ainsi: "In a paper presented to the International Congress of Hygiene held in London in 1891, and subsequently published in the Transactions of that Congress, I called attention to a special method for the bacteriological purification and preservation of vaccine lymph. This method consisted in the intimate admixture of a given amount of lymph, or rather vesicle pulp, with a sterilised 50 per cent. solution of chemically pure glycerine in distilled water, and in subsequent storage of the resultant emulsion in sealed capillary tubes for several weeks." Or les recherches du Professeur Leoni datent de 1889, et sa première publication sur ce sujet a été faite en 1890.[2]

Dans le travail presenté par Leoni au Congrès de Rome[3]—travail dont j'ai sous les yeux la traduction manuscrite, écrite de la main de Leoni lui-même—cet auteur dit: "En faisant des recherches sur les causes qui déterminaient les susdits accidents pathologiques signalés comme conséquences et complications des vaccinations, depuis l'an 1889 j'ai eu l'occasion de démontrer que ces accidents devaient être attribués à des micro-organismes pathogènes qui ordinairement contaminent le vaccin animal et en particulier le vaccin récent. ..... Les agents de la contamination s'épuisent dans le vaccin conservé pendant quelque temps dans la glycérine. Le vaccin conservé dans la glycérine pendant 1 à 4 mois après la récolte représente le type du vaccin pur, d'une virulence uniquement spécifique." Cette question de priorité a été portée devant l'Académie de Médecine de Paris par M. Hervieux, qui a proclamé que le Dr. Leoni avait avant tous autres découvert l'épuration de la pulpe vaccinale glycérinée par le vieillissement.

A la page 1235 de THE LANCET, 1re colonne, le rapport s'exprime comme suit:—

In one of the samples examined by us hairs of considerable length were found, which would indicate that the shaving had not been carried out sufficiently well in the first instance, and with shaving badly carried out thorough cleansing is impossible, the alternative interpretation of the presence of hairs being that they came from uncleansed portions of the animal and had—through inadvertence no doubt—been allowed to make their way into the pulp. The hairs in themselves are not harmful, but their presence indicates that certain precautions have not been taken.

La présence de poils dans la pulpe vaccinale n'indique pas que l'animal a été mal rasé; elle n'indique pas davantage que celui qui a récolté le vaccin ne s'est pas entouré de toutes les précautions nécessaires. La génisse la mieux rasée peut donner au préparateur de vaccin le plus soigneux une pulpe vaccinale remplie de poils. En effet, pendant les quatre,

[1] Cet institut a été supprimé depuis; le gouvernement italien estimant que l'institut de l'Etat nuisait aux instituts privés, et craignant en maintenant son institut d'arriver à voir disparaître ces établissements. L'avantage des instituts multiples se voit surtout lorsque se produit un affaiblissement momentané de la virulence vaccinale. Si dans une nation comme l'Angleterre par exemple il n'y avait qu'un institut d'Etat, et si pendant six mois—ce qui peut bien arriver—cet institut d'Etat ne récoltait que de la vaccine dépourvue de virulence (avec ou sans microbes) voici tout un pays privé des bienfaits de la vaccine pendant tout ce temps; tandis que s'il existe un certain nombre d'instituts, les particuliers ou l'Etat lui-même pourront en pareille occurrence recourir à les instituts. Or tous ceux qui s'occupent de la culture de la vaccine savent que, malgré toutes les précautions, il y a des moments où l'on n'obtient que du vaccin inefficace.

[2] Leoni: Revue d'Hygiène et de la Santé Publique, Août, 1890.

[3] Sur les Agents Spécifiques et Pathogènes du Vaccin, XIème Congrès International de Médecine, Rome, 1894.

cinq ou six jours que dure l'évolution des vésicules sur la génisse avant la récolte, les poils repoussent et quelquefois d'une façon très remarquable. Or la curette arrache une grande quantité de ces poils qui se trouvent ensuite dans la pulpe. Aucune précaution ne peut empêcher cela. Que l'on broie la pulpe avec le mortier, avec le broyeur du Dr. Chalybaüs ou avec n'importe quel autre instrument, les poils se retrouvent dans la pulpe préparée pour l'inoculation humaine.

Il y a cependant deux moyens d'enlever ces poils, celui qui consiste à les ôter un à un avec une pince; ce procédé est recommandé par le Professeur Layet[4] de Bordeaux. Il est peu pratique, car il demande un temps très long et pendant ce temps, malgré les précautions prises, les poussières de l'air peuvent tomber dans la pulpe et augmenter le nombre des microbes. Et parmi ces microbes il peut s'en trouver de nuisibles. Le second procédé consiste à tamiser la pulpe après trituration, sur un tamis métallique. C'est le procédé que j'emploie. La plus grande partie des poils reste sur le tamis, mais un certain nombre passent à travers et se retrouvent dans la pulpe. Beaucoup de tubes n'en contiennent pas, mais certains tubes peuvent en contenir plusieurs, très visibles, surtout si l'animal était de couleur foncée. Certains instituts, celui de Dresde par exemple, ne tamisent pas leur pulpe.

Je conclurai que tous ceux qui ont récolté ou vu récolter du vaccin savent qu'on recueille toujours des poils en même temps que la pulpe; que ces poils aseptisés autant que la couche épidermique constituant la pulpe vaccinale, ne présentent aucun inconvénient; que lorsqu'on récolte une très petite quantité de vaccin il est facile avec une pince stérilisée de retirer tous ou presque tous les poils; mais que lorsqu'on prépare de grandes quantités de pulpe la seule chose possible est de la tamiser après le broyage—le tamisage n'enlevant pas tous les poils—enfin qu'il serait plutôt nuisible d'exposer la pulpe vaccinale aux poussières de l'air pendant le long temps nécessaire pour débarrasser le vaccin de tous les poils. J'ajouterai enfin que j'ai en main quelques tubes provenant de l'Académie de Médecine de Paris, et que tous contiennent des poils.

A la page 1236, 1re colonne, le rapport dit:—

The presence of a small quantity of blood, therefore, is not considered to be of any importance except, as we have pointed out, that it indicates that perhaps more care might have been taken in the collection of the sample. It may, however, be pointed out that it has been proved by recent experiments that the presence of blood, even in small quantities, in vaccine lymph exerts a marked deteriorating influence. The lymph rapidly loses some of its potency, the activity falls more rapidly, and extraneous organisms develop more readily than in lymph so collected that it is not tinged with blood.

On emploie deux procédés, dans les instituts vaccinaux, pour la récolte de la pulpe. Le premier consiste à saisir la peau, au dessous de chaque pustule à l'aide d'une pince hémostatique et à gratter la pustule avec un instrument quelconque. Ce procédé ne donne que peu de sang et avec un bon outillage, avec des pinces de formes différentes, on peut avoir une pulpe complétement blanche. Mais il faut beaucoup de temps, et pendant ce temps le champ vaccinal préalablement aseptisé reçoit des poussières. On sait en chirurgie abdominale qu'une opération a d'autant plus de chances de donner un résultat favorable qu'elle a duré moins longtemps. Il en est de même pour la récolte du vaccin; la pulpe a d'autant moins de chance d'être souillée par les microbes de l'air que la durée du grattage est plus courte.

Dans le second procédé on gratte directement avec la curette. Il y a alors nécessairement du sang; plus ou moins suivant les animaux; suivant que la peau est plus ou moins congestionnée[5]; mais il y a toujours du sang si la récolte se fait sur l'animal vivant. A Cologne[6] la récolte se fait après la mort de l'animal, il n'y a pas de sang dans la pulpe par conséquent. On peut obtenir cependant du vaccin complétement blanc avec la curette sur l'animal vivant en grattant très vite et en ne revenant pas deux fois au même endroit; mais alors, ou bien on ne récolte ainsi qu'une partie du vaccin, le reste étant nécessairement mélangé de sang; ou bien on a une perte considérable. En résumé la curette permet d'aller très vite, ce qui, en dehors de l'économie de temps, évite en grande partie les souillures par les microbes de l'air; mais avec la curette on obtient le plus souvent un vaccin rosé ou rouge; c'est à dire un vaccin contenant du sang.

[4] Layet: Traité Pratique de la Vaccination Animale, Paris, 1889.

[5] Lorsque la peau est très congestionnée le vaccin est généralement moins virulent.

[6] Report to the Local Government Board on the preparation and storage of glycerinated calf vaccine lymph, with an introduction by the medical officer. London, 1897; p. 14.

Je dois dire ici que la grande majorité des instituts vaccinaux[7] récoltent avec la curette sur l'animal vivant sans se préoccuper de la présence du sang. J'ai pu m'en rendre compte dans les visites faites par moi à un grand nombre d'instituts vaccinaux en France et à l'étranger.

Le rapport prétend que le sang, même en petite quantité, exerce une action nuisible très manifeste sur le vaccin et lui fait perdre rapidement ses propriétés et que les microbes étrangers s'y développent plus volontiers. Je m'inscris absolument en faux contre cette assertion. La virulence se conserve aussi bien—je n'ose pas dire mieux—j'en ai plusieurs fois fait l'expérience, dans le vaccin contenant du sang que dans celui n'en contenant pas, et le nombre des colonies se développant après ensemencement n'est pas plus élevé. Mais pour faire l'expérience il ne faut pas comparer un vaccin quelconque ne contenant pas de sang avec un autre en contenant; l'un peut être vieux et l'autre jeune; l'un peut être concentré et l'autre dilué. Il faut comparer deux vaccins de semblable dilution provenant du même animal; c'est ce que j'ai fait.

Le Dr. Hime a dit que les expériences de la Commission ne prouvaient rien au point de vue scientifique; c'est un peu vrai. On a pris sur le marché différentes marques, sans s'inquiéter de l'âge du vaccin, sans s'inquiéter de son degré de dilution, et on a tiré des conclusions de l'examen de les vaccins. Le rapport dit, p. 1235:—

If the vaccine lymph has been carefully collected and glycerine has been allowed to act for a month the number of organisms growing in any of these media should be small. If the number growing is very large, that is, if it runs up to anything like 500 in the vaccine for a single inoculation, we suggest that the maker should be apprised of the fact that the glycerination is not being properly carried out and that any stock of lymph should be returned.

La dilution de la pulpe est variable suivant les instituts; les uns mettent: pulpe 1, glycérine 1; d'autres pulpe 1, glycérine 2; d'autres pulpe 1, glycérine ou eau glycérinée 4; d'autres pulpe 1, eau glycérinée 14 (Berlin)[8]; d'autres enfin pulpe 1, eau glycérinée 15 (Cologne).[9] Si on ensemence des boîtes de Petri avec la dilution à 1 pour 1, il naîtra nécessairement 15 fois plus de colonies que si on les ensemence avec la dilution à 1 pour 15. Si par exemple la première donne 500 colonies, la seconde donnera 15 fois moins ou $\frac{500}{15} = 33$ colonies environ. Or d'après le raisonnement de l'auteur du rapport de THE LANCET le premier tube serait mauvais et le second excellent; tandis que si les deux dilutions ont été faites avec une pulpe de virulence moyenne la première peut être très bonne et la seconde médiocre au point de vue des résultats cliniques. Je m'appuie pour dire cela sur des expériences personnelles publiées dans *La Gazette Médicale du Centre*. Dans les pulpes examinées par la Commission de THE LANCET, il y en a de dilutions très différentes, et il n'a pas été tenu compte de les différences. De même la Commission aurait pu s'enquérir de l'âge du vaccin qu'elle étudiait, cela aurait donné plus de valeur à ses études. La Commission aurait pu aussi—elle aurait dû même—si elle voulait établir une classification des vaccins d'après leur pauvreté en microbes, tenir compte de tous ses examens sur les vaccins de chaque provenance; elle n'aurait pas ainsi classé en tête une marque de vaccin, qui dans un examen antérieur présentait tellement de microbes qu'ils étaient incomptables. Il est vrai de dire que ce vaccin à microbes incomptables était peut-être excellent au point de vue de la virulence. Mais la Commission a négligé d'étudier la valeur réelle du vaccin.

Un autre point négligé par la Commission, c'est la présence dans les pulpes examinées des microbes spécifiques du vaccin, car, il faut bien le dire, s'il y a dans le vaccin des microbes indifférents ou nuisibles, il y en a aussi d'utiles; et tous les auteurs qui se sont occupés de cette question des microbes du vaccin savent qu'Antony a démontré qu'en ajoutant certains staphylocoques (micrococque porcelaine) à de la pulpe vaccinale on augmente sa virulence, tandis qu'on la diminue en ajoutant d'autres microbes, notamment certains bacilles. Le staphylocoque utile, d'après M. Antony[10] "donne naissance, sur agar, à des colonies aplaties, crémeuses, d'un blanc de porcelaine éclatant, tout à fait caractéristique,

[7] Voici ce qui se passe à Dresde: "The pulp is collected by scraping with a Wolkmann's spoon, but as Dr. Chalybäus goes over the same surface again and again a not inconsiderable amount of blood becomes mixed with the epithelial scrapings." (Report to the Local Government Board, &c., p. 12) A l'Académie de Médecine de Paris le vaccin contient du sang, comme le prouve sa couleur rouge.

[8] Report to the Local Government Board, &c., p. 10.

[9] Report, &c., p. 15.

[10] Hublé: Précis de la Vaccine et de la Vaccination Moderne, 1re partie, page 82, Paris, 1896.

pouvant atteindre un centimètre de diamètre, lorsqu'elles sont peu nombreuses et bien isolées. Sur gélatine ce coccus pousse lentement, les colonies n'apparaissent qu'au bout de 5 à 8 jours; la liquéfaction du milieu nutritif est trés lente et ne se produit parfois qu'après 15 jours de culture. Ce microcoque existe dans le vaccin vivant d'une façon constante." "Le microcoque porcelaine ne se rencontre pas sur l'animal avant la vaccination (Antony).[11] Il ne s'y rencontre pas avant qu'on ait pratiqué les inoculations. Il semble provenir *du vaccin uniquement;* car sauf le cas de pulpes glycérinées très anciennes, il se rencontre constamment dans cette matière virulente." "Au point de vue bactériologique un vaccin peut être réputé de qualité irréprochable lorsqu'on n'y trouve, après frottis de la pulpe sur un tube d'agar, que des colonies de coccus porcelaine." "Les principales espèces microbiennes étrangères qu'on y rencontre sont le *staphylocoque jaune*, qui s'y trouve en proportion le plus souvent infinie; la persistance de celui-ci en trop nombreuses colonies doit faire suspecter le vaccin conservé; quelques micro-organismes d'impureté (saprophytes) vulgaires, tels que le bacillus subtilis, le bacille de la pomme de terre, &c. Ces derniers produits si répandus dans les étables, existent dans le vaccin en faible proportion. Leur présence ne semble avoir aucune action défavorable sur l'évolution vaccinale (Antony)."

D'après les recherches d'Antony un seul microbe, parmi ceux qu'on trouve d'ordinaire, pouvait être nuisible, lorsqu'il existe en trop grande quantité; le staphylocoque jaune. D'après mon expérience personnelle ce sont les vaccins les plus riches en staphylocoques jaunes qui produisent sur l'enfant les vaccins suintant, empesant le linge et se couvrant de croûtes irrégulières, et la vaccine ulcéreuse. D'autres microbes nuisibles, pathogènes, peuvent aussi se rencontrer accidentellement. Aussi eut-il été plus utile de rechercher quelles étaient les bactéries contenues dans le vaccin, que de les compter: *non numeranda, sed ponderanda.*

J'ai dit qu'il y avait des microbes utiles dans le vaccin, je veux revenir sur cette question. Si Antony a augmenté la virulence du vaccin en ajoutant des micrococques porcelaines, Maljean[12] a été plus loin; il a obtenu sur les animaux des vésicules vaccinales en inoculant des cultures de ce microbe. Mon savant ami Boureau[13] et moi dans un certain nombre d'expériences avons obtenu des vésicules vaccinales, 1° en inoculant à des génisses tous les microbes du vaccin réunis; 2° en inoculant les micrococques porcelaines; et nous n'avons rien obtenu en inoculant isolément ou réunis les microbes autres que le micrococque porcelaine. Ce qui prouve une fois de plus que sans ce microbe il n'y a pas de vésicule vaccinale.

Un certain nombre d'auteurs avaient déjà avant Maljean obtenu les vésicules caractéristiques en inoculant des cultures de vaccin. Je citerai Quist[14] en 1883; Voigt[15] en 1885; Carmichael en 1887; Garré[16] en 1887; Grigorien en 1889; Voiton en 1890; Ruete[17] en 1891 et en 1893; Buttersack[18] en 1894; Martin et Ernst en 1895. J'ajouterai que le Dr. Copeman[19] avec le Dr. Blaxall ont eux-mêmes isolé un microbe, qui inoculé aux génisses donne des vésicules vaccinales typiques.

On m'objectera que des pulpes glycérinées vieillies, ne contenant plus de microbes, produisent par l'inoculation des vésicules vaccinales aussi bien que des pulpes fraiches, riches en microbes. A celui je répondrai que les pulpes très vieilles ne produisent que des résultats nuls ou incomplets; que presque toujours dans les pulpes qui restent actives on trouve des microbes et surtout le microcoque porcelaine; mais que, même si on n'arrivait pas à cultiver ce microbe sur les milieux de culture ordinaires cela ne prouverait pas son absence, mais simplement que l'influence de la glycérine et du temps l'a rendu inapte à se cultiver sur les milieux ordinaires, et que pour le cultiver il faut le faire passer à nouveau par l'animal vivant. De même certains produits, liquides ou solides, dans lesquels on ne peut déceler le bacille de la tuberculose, donnent naissance à la tuberculose lorsqu'on les inocule au cobaye.

Le Dr. Hime a insisté avec raison sur ce point que la virulence de la pulpe vaccinale a une plus grande importance que le nombre des microbes. Ce que l'on doit demander au vaccin c'est avant tout qu'il préserve de la variole. Du vaccin trop épuré peut ne produire aucune vésicule et exposer les personnes inoculées à une fausse sécurité. Si l'on inocule un enfant pour la première fois et si l'on n'obtient aucun résultat, on peut recommencer la vaccination jusqu'à ce qu'on ait obtenu des vésicules; mais si l'on revaccine un adolescent ou un adulte déjà inoculé, et si le vaccin ne réussit pas, on sera très porté à admettre que le sujet subit encore l'influence de l'inoculation antérieure; surtout si le même vaccin a donné des résultats chez l'enfant. Mais ce qui prouve que cet adulte resterait exposé à contracter la variole, c'est que si on le vaccine avec une pulpe fraiche très virulente l'inoculation produira des vésicules.

Je résume ma manière de voir en disant: dans les instituts vaccinaux l'inoculation des génisses, la récolte et la préparation du vaccin doivent être conduites avec l'asepsie la plus complète, les différentes opérations devront se faire dans le plus court espace de temps possible pour éviter les contaminations par les germes de l'air. Les étables devront être lavées très fréquemment avec des liquides antiseptiques[20] ou désinfectées avec des vapeurs de formol. Chaque récolte de pulpe vaccinale, après avoir été glycérinée, devra être soumise à l'examen bactériologique, mais bien plutôt pour déterminer les espèces microbiennes qu'elle contient que pour compter les colonies qu'elle peut produire.[21] Si cette pulpe contient des microbes nettement pathogènes comme le streptocoque de l'érysipèle, elle devra être détruite; si elle contient un grand nombre de staphylocoques jaunes elle ne devra être employée qu'après vieillissement et après s'être assuré cliniquement qu'elle produit de la vaccine normale et qu'elle a conservé une grande virulence.

L'essai clinique devra être considéré comme plus important encore que l'examen bactériologique, car seul il montre le degré de virulence du vaccin et la tendance des vésicules à donner des croûtes irrégulières et de la vaccine ulcéreuse. On ne devra employer qu'un vaccin d'une virulence parfaite.[22] Pour les inoculations d'enfants et en dehors des épidémies de variole on pourra préférer la pulpe vieillie donnant lieu à une aréole moins étendue et à une réaction inflammatoire moins grande; mais pour les revaccinations et surtout en temps d'épidémie il est indispensable d'employer une pulpe jeune très virulente, capable de donner presque autant de résultats pour les revaccinations que pour les vaccinations.

J'ajouterai qu'il est une chose qui pour moi n'est pas démontrée, à savoir qu'un vaccin peu virulent—ancien ou récent—donnant des vésicules peu nombreuses et peu développées protége autant de la variole qu'un vaccin récent très virulent, donnant des vésicules très développées à chaque inoculation, et produisant sur une inoculation par coupure dès le troisième jour une vésicule unique de la longueur de la coupure et à bords rectilignes.

Enfin pour terminer je ferai part à la Commission de THE LANCET d'une opinion devant peser d'un certain poids en la matière et se trouvant absolument en désaccord avec les idées émises par le rapporteur: je veux parler de l'opinion de l'Académie de Médecine de Paris. Je transcris ci-dessous la notice qui accompagne chaque envoi de tubes par l'Académie de Médecine.

"*Avis très important.* (*Le vaccin de génisse se conserve difficilement.*) Prière d'employer le vaccin en pulpe dans les dix jours qui suivent la réception, pour éviter les insuccès et l'altération possible de la pulpe, altération qui pourrait occasionner des accidents septicémiques."

(Signé) DOCTEUR EDMOND CHAUMIER.

[11] Antony: Recherches sur la Valeur Relative des Différentes Préparations Vaccinales, Archives de Médecine et de Pharmacie Militaires, 1893, tome xxii., p. 465 et suivantes.

[12] Maljean: Recherches sur les Microbes du Vaccin, Recueil de Médecine Militaire, et Gazette Hebdomadaire de Médecine et de Chirurgie, 1893.

[13] Boureau et Chaumier: Les Microbes du Vaccin, Congrès de Médecine de Nancy, 1896. Bulletin Médical, 1896; Gazette Médicale du Centre, 1896.

[14] Quist: Mémoire sur la Culture Artificielle du Vaccin; Petersburger Medicinische Wochenschrift, 1883, et Gazette Hebdomadaire de Médecine et de Chirurgie, Février, 1884.

[15] Voigt: Untersuchungen über die Wirkung der Vaccine Mikrococcen; Deutsche Medicinische Wochenschrift, 1885.

[16] Garré: Über Vaccine und Variola; Deutsche Medicinische Wochenschrift, 1887.

[17] Ruete: Cultures Pures de Vaccin de Génisse; Bulletin Médical, 1891, p. 498, et Société de Médecine de Hambourg, Mai, 1893.

[18] Buttersack: Les Microbes de la Variole et de la Vaccine. Berliner Klinische Wochenschrift, 1894, et Bulletin Médical, 1894.

[19] The Milroy Lectures, 1898.

[20] Chaumier: Congrès de Bordeaux de l'Association Française pour l'Avancement des Sciences.

[21] Toutes les récoltes de l'Institut Vaccinal de Tours sont soumises à l'analyse bactériologique par le Docteur Boureau, et ne sont utilisées qu'après cet examen et après l'épreuve clinique.

[22] Sur près de cent mille tubes faits chaque année à l'Institut Vaccinal de Tours, il n'y a pas plus d'une dizaine de tubes qui produisent pour des causes diverses des résultats nuls ou incomplets.

THE RELATIONSHIP OF MALARIA AND THE MOSQUITO.

To the Editors of THE LANCET.

SIRS,—I may have been reading papers recently, both medical and lay, incorrectly, but I have gathered from them one and all that the unequivocal dictum of those who have been investigating the etiology and prophylaxis of malaria is to the effect that (1) the mosquito is the alternative host with man of the malaria parasite; (2) that malaria is conveyed to man by the mosquito and in no other way; and that (3) as a logical consequence it is only necessary to take precautionary measures against the malaria-bearing mosquito to be rid of malaria. In the *British Medical Journal* of Feb. 10th Professor Grassi is reported to have given it definitely as his opinion, "No man, no malaria; *no mosquito, no malaria*"; and Professor Celli and other investigators appear to be of the same mind. In THE LANCET of May 12th (p. 1400) Major Ronald Ross, I.M.S., writes: "The mosquito theory scarcely stands in much need of further proof; it was established long ago. We already know that malarial fever is communicated by gnats." Dr. Patrick Manson in a lecture reported in THE LANCET of May 19th, p. 1419, also says: "..... There cannot be the slightest doubt that the mosquito acts the part of transmitting agent as well as definitive host of the malaria parasite." In the Report of the Malaria Expedition of the Liverpool School of Tropical Medicine are these lines:—

> To sum up, although some points of importance still require investigation it has been shown that certain species ot gnats are definite hosts of the hæmamœbidæ; that the parasites are conveyed from diseased to healthy vertebrates (intermediary hosts) by these insects; and that the definitive hosts of the human parasites are certain species of anopheles.

There seems to be such unanimity of opinion on the subject in the minds of these investigators that pamphlets have been issued with instructions to those inhabiting malarious districts as to the best methods of diagnosing the malaria-bearing species of mosquito, for capturing it and destroying its larvæ in more wholesale fashion and for avoiding its bite (would that it were possible!). These are the only precautions recommended. Nothing is said as to telluric, paludal, or atmospheric conditions except as they relate to the mosquito. It is the mosquito or nothing—*aut anopheles aut nullus*. That mosquitoes may frequently act as alternative or intermediary hosts with man of the malaria parasite seems now a well-established fact, but this is a widely different theory to the hard-and-fast doctrine that a species of "anopheles" is solely responsible for all malarial fevers in mankind. It is to this last dogma that I demur. The problem of malarial infection appears to me to be far too complex for so simple a solution and the question being of such great importance it is desirable to be fully satisfied with the new creed before abandoning the old.

As a sometime resident in different parts of South America, a country where neither malaria nor mosquitoes are entirely unknown, and as a native of the Fens where ague, twin brother of malaria, was common until a few decades ago, I find it difficult to believe that malaria is *only* acquired from a certain species of mosquito and that all telluric and atmospheric conditions are factors that may be safely disregarded. That I am not entirely alone in my doubts may be seen by reference to medical works of recent date, such as "Health Abroad," edited by Dr. E. Hobhouse, where other causes, such as a chill, a wetting, the turning over of virgin soil, exposure and fatigue in malarious districts, are credited with causing fever as well as direct infection from mosquitoes. Also in the *Times* of May 28th in an article "From the Vaal River to Pretoria" the writer speaks of Pretoria thus: "Its heavy drawback, indeed, is its periodical insalubrity. Whether owing to minute malaria in the soil, or to the unmentionable filthy habits of the genuine Boer, Pretoria is liable to epidemics of deadly jungle fever, as I learned to my bitter cost. The miasmas at sunset, attended by a bone-piercing cold, are especially dangerous." But it is now implied that the "miasma" is an obsolete myth. When I was in British Guiana the houses of sugar-planters and overseers were always built upon piles or pillars to raise the living rooms some 10 or 12 feet above the miasma which was supposed to rise after sunset and to be particularly dangerous as pregnant with the malaria poison. Most travellers in malarious districts prefer to sleep when camping out raised some distance above the ground and generally sling their hammocks so, while in the navy landing parties are instructed to make elevated platforms with boughs on which to sleep and are supplied with small axes for the purpose. Kingsley, in "Westward Ho," describes how immunity from fever was obtained when the men slept beyond the reach of the miasma. We are now told that the real reason of the danger of sleeping on or near the ground is that the mosquito is a low flyer and a night feeder. "The mosquito," it is said, "does not mount high in the air." My own personal and very painful experience does not confirm this statement. Mosquitoes were my constant companions to whatever height above the ground I ascended and were as unremitting in their attentions upon the first-floor as upon the ground floor and by day as well as by night. They may be observed upon ceilings, rafters, and roofs, and on the leaves of trees as well as near or on the earth or water. But it is solely upon this assertion that a popular and universal belief some centuries old is discredited and the mosquito theory brought in triumphant as amply explaining the miasma.

Then, again, in the same colony there was a very general and well-founded belief that young men freshly arrived from the temperate climates, although they would be bitten more voraciously than the older residents, yet were not very liable to malarial fever until they had resided about a year in the country. Yet on the mosquito theory one would think that these fresh arrivals bitten from head to foot and living amongst men constantly down with fever, would become infected within a week of their arrival on a plantation.

To break fresh earth and turn up virgin soil has long been known to be a prolific cause of malarial outbreaks. The workmen and soldiers employed by the French in road-making during their Madagascar campaign succumbed in large numbers to malaria. It was the same with the workmen on the Panama Canal and Colon Railway where every "sleeper" was said to have cost a life. The mortality from malarial fever during the construction of the Colombo and Candy Railway was also exceptionally high. But these facts, we are now informed, are explained by the formation of little pools and puddles as the workmen dig, in which "anopheles" lays its larvæ (*vide* p. 30 of the Report of the Malaria Expedition). "Faith," as Mark Twain's schoolboy said, "is believing what you know ain't so." In 1865 at Hong-Kong the 11th Regiment stationed there and engaged on guard duty while the Kairoon docks were being made suffered from a severe outbreak of malarial fever which was attributed to the turning up of the earth. Other troops stationed there while the new Murray barracks were being constructed were also the victims of a virulent epidemic of malaria. Deaths were so numerous that salutes ceased to be fired and bells to be tolled so depressing were they in their frequency. Also in the same place in 1891, 1892, and 1893 the Royal Engineers were engaged in excavations at the depth of from 12 to 15 feet for the emplacement of heavy guns and while engaged in this work were constantly the victims of malaria. At the time the turning up of the earth was considered to be the invariable cause of the epidemics; and it is a noteworthy fact in the last instance that the Argyll and Sutherland Highlanders also stationed there at the same time, who were not engaged in the excavation works, did not suffer similarly but enjoyed a comparative immunity. Moreover, the soil was a kind of decomposed granite, almost like sand. "*After heavy rain no water remained.*" I quote the words of my informant, an officer of the Engineers engaged on these works at the time.

It is very difficult in the face of facts like these and without further evidence to accept the "anopheles" theory and to discard telluric and atmospheric agencies. It is hard to believe that the mosquitoes would make a differential diagnosis between the Engineers and the Highlanders. Moreover, Hong-Kong is not a place particularly infested with mosquitoes. In the Ashanti expedition in 1873–74, in an area between Cape Coast Castle, Elmina, and Accra to Kumassi, about 120 miles inland, there was, I am informed by an officer who accompanied the expedition, "any amount of malarial fever but practically no mosquitoes," although in the regions to the right and left of this district mosquitoes abounded. The *Simoon* was the hospital ship to this expedition. Those who were first sent on board her derived much benefit, but in rather less than three months both the naval and the military officers condemned her and declared that malarial fever was endemic on board. Wounded men without fever would get fever from going on board. The *Simoon* was therefore sent away and the *Victor*

Emmanuel replaced her, but in this ship the same effects were not observed. If mosquitoes were the means of conveying infection in the first vessel from the fever-stricken to the free, why were they not also in the second?

That the whole question bristles with difficulties is exemplified, I think, by the following episode related to me by a naval officer who accompanied the expedition and subsequently commanded it. In the spring of 1876 a punitive expedition was sent up the Niger from H.M.S. *Active*. The party ascended the river in a steamer somewhat larger than an ordinary Dover and Calais boat. The expedition was away between six and eight weeks. There were a few mosquitoes, but they did not trouble much. Quinine and spirit were served out every morning and the men were particularly well fed and cared for, always sleeping under cover and rarely being ashore more than three or four hours at a time. There was practically no sick list except of the wounded and the men were very fit and well from first to last. The men returned to the *Active*. She steamed out to sea and within a week afterwards nearly all of those who had taken part in the expedition were down with fever of a severe type. About six died and many were invalided home. Yet the fever did not break out during the many weeks that the expeditionary force was up the river, but only afterwards when the ship was cruising about at sea and when improved conditions prevailed. Nor was the morning dose of quinine discontinued when these men returned to their ship. Quinine was regularly served out daily to the entire ship's company all the time the vessel was on the West Coast. Are we to believe that "anopheles" was directly responsible for this outbreak or for its spread if a single case had developed? Assuming, for the sake of argument, that there were mosquitoes on board and that they became infected from feeding on one or two cases and so infected others, still this would not explain why only the men of the expeditionary force were attacked and why the rest of the crew remained free, which was the case.

And what are we to say of the etiology of ague in the Fen districts of this country? Was that also conveyed to man only by gnat-bites? The gnats remain still in some numbers but ague has disappeared. The past generation suffered much from it. Tertian and quartan ague were then endemic in many districts, but with the better drainage of the Fens, with the dykes, pumps, and syphons of later years, it has gone for ever, as in many other parts of Europe. Is it at present so absolutely certain, as Professor Grassi maintains, that the malaria parasite cannot exist in some phase or other of its life's cycle in the soil or in water?

In many tropical regions malaria is most rife whenever heavy rains succeed a spell of dry weather or wherever rank vegetation is decomposing. And in newly taken up countries, such as Mashonaland and Rhodesia, as the long coarse grass gets eaten down and improved by stock malaria tends to be less prevalent. That these conditions are of importance solely because they affect the multiplication or diminution of a certain species of mosquito seems somewhat difficult of belief.

Up the river Parana in South America mosquitoes teem in their millions and billions and probably every branch of the family is there strongly represented—"anopheles," "culex," and all their near and distant relations. Sporadic cases of malaria, or "chuchu," as the natives call it, are not unknown, and in Tucuman, a province somewhat west of the main river, malaria is common—owing, Dr. G. H. Pennell thinks, to its being a large sugar-producing district *where the soil is much disturbed* in its cultivation. Yet the countries adjacent to the Parana are not malarious, although hundreds of square miles of swamp and forest line its banks and those of its innumerable tributaries. Paraguay, Entre Rios, and Uruguay are extremely healthy. Moreover, people in these countries are great travellers and on this account it is inconceivable to me, if the mosquito theory is a sound one, why the entire Parana region is not as fever-stricken as any on earth. As a logical sequence it should be. Mosquitoes are there, every tribe of them, and just an occasional case of malaria to initiate a devastating epidemic. Yet no region in the world is much healthier!

The fact that an off shore wind from a malarious coast will sometimes induce an outbreak of malarial fever amongst the crews of ships lying out in estuaries or even passing some 50 miles from land seems to prove conclusively that the atmosphere has some intimate connexion with the disease even if malaria is not airborne. The argument that such ships probably harbour mosquitoes which are the real cause of the outbreak hardly holds good because it is only the *land* breeze which does the mischief, and it is difficult to understand why the land breeze should suddenly stimulate "anopheles" to activity any more than a wind from another direction; whereas on the assumption that malarial fevers are intimately related in some way or another with paludal, miasmatic, telluric, or atmospheric conditions this fact is intelligible enough. This latter view is still held in the navy, for it is customary at certain times of the year in ships on the West Indian station for the petty officers to go round at night and see that the awnings are up to protect the men sleeping on deck from the land breeze and to prevent them throwing off their coverings as they feel tempted to do on sultry nights. If the mosquito theory is to hold sway this duty is evidently a work of supererogation and a farce.

When one considers the phases in the life-history of some of the larger organisms, such as the frog and butterfly, to mention no others, it seems conceivable that the hæmoplasmodium malariæ of man found also in "anopheles" may still exist elsewhere under some other form as yet unrecognised.

> There are more things in heaven and earth, Horatio,
> Than are dreamt of in our philosophy.

The only theory to my mind that at all fits the case in some of its bearings is that in certain regions of the earth the parasite of malaria, by whatever name it may be called, disguised under whatever form, or in whatever phase of its existence, is endemic and ubiquitous, just as the tubercle bacillus is in other parts, and either readily finds a habitat in the human body and there lies dormant or is prepared constantly for invasion if occasion offers. (That the parasite can remain quiescent within the body is evidenced by the long intervening periods that sometimes elapse between attacks of fever, often of many years.) We know that this is the case with many micro-organisms and that each of us carries, so to speak, a "viper in his bosom" in the shape of various bacteria, harmless so long as we keep in health, but ready to turn and injure us whenever they can overpower the protective phagocytes, the constabulary of our tissues.

I do not, however, venture to propound any theory of my own, but I would suggest from some of the foregoing considerations that the case for the mosquito being in all instances the direct and sole agent in the production and transmission of malaria has not been satisfactorily made out as yet and that it behoves us for awhile to suspend our judgment and not to abandon the precautions against malaria that the accumulated experience of generations and the dictates of common-sense have taught us in favour of one line of prophylactic treatment only, to say nothing of its feasibility—i.e., that of dealing with the mosquito. Another source of malarial infection has certainly been discovered, thanks to the untiring researches of the workers in this field, but that it is the only source of infection needs yet, I think, some further proof.

I am, Sirs, yours faithfully,

Charles-street, W., June 5th, 1900. J. H. DAUBER.

MONOGAMY IN ITS RELATION TO LONGEVITY AND THE DISEASES OF LATE LIFE.

To the Editors of THE LANCET.

SIRS,—In his interesting article on this subject in THE LANCET of June 9th Dr. Campbell seems to neglect the importance of longevity to the human race as a whole and to ignore the fact that death and renewal of individuals is of vast importance in the existence and advance of any race of beings. I question whether Nature's law is a tendency to death "soon after the cessation of reproductive life," but rather "as soon as the individual has ceased to be of use to the race." If the former were the law bees and other practically neuter beings could not exist, and it is difficult to see how women could be as long (or even longer) lived as men, for that they should inherit the length of years of their fathers, and so defeat the law, does not seem a satisfactory explanation. On the other hand, it is difficult to exaggerate the importance of woman's post-reproductive life to the race in the past and amongst the less civilised at the present day. During these years she provided food and raiment, nursed the sick not only administering but also preparing her various remedies, and by her skill and knowledge

was of more immediate importance to the well-being of the race than her youthful sister. Modern civilisation and invention have destroyed her usefulness, and it is possible, but scarcely probable, that the increase of carcinoma, which especially attacks women during these years, is Nature's first effort to remove these useless individuals!

Let me hasten to add, with Dr. Campbell, that I do not advocate any startling measure of reform for the employment of women, but if women in their youth could be taught some useful employment, they might spend these years to their own good and to the advantage of the race. His suggestion of a selection of parents has often been discussed before, and is a fascinating idea, but we have not, and probably never shall have, either the power or the skill to carry it out.

I am, Sirs, yours faithfully,

Ottery St. Mary, June 15th, 1900. CLAYTON JONES.

"THE RELATIVE VALUE OF SYMPTOMS IN ACUTE PERITONITIS."

To the Editors of THE LANCET.

SIRS,—I value very highly Mr. Mansell Moullin's appreciation of my article on "The Relative Value of Symptoms in Acute Peritonitis" and regret that he cannot agree with my main contention as to the necessary presence of true rigidity of the abdominal walls in that condition. May I point out that the position stated in my paper does not depend upon the three cases mentioned therein, these being only given as more or less typical, but upon more than 20 years' careful examination of hundreds of cases. On the other hand, Mr. Mansell Moullin brings forward one case which was not, so far as his communication goes, proved by post-mortem examination. This case was, he says, septic and may well have been one of septic intoxication or septic poisoning, in which the initial or repeated doses of poison totally preclude from the first all reactive or protective efforts on the part of the peritoneum, which I conceive are the essence of peritonitis. Peritonitis in these cases never occurs; it has never any chance of existence.

Mr. Mansell Moullin mentions abdominal cramp as a close imitation of the characteristic rigidity of acute peritonitis, and I quite admit this, but such cramp is, after all, only an imitation fairly easily detected, and one which, I am sure, would never deceive Mr. Mansell Moullin or any other abdominal surgeon whose sense of touch and whose patience were fully trained.

I confess that I cannot agree with, or even admire, the ingenuity of the logic which declares that our diagnosis will be the more reliable in proportion as we realise the total unreliability of the factors which constitute it. But, after all, this is a principle which can neither be proved nor disproved by the mere *ipse dixit* of any one man. If my surgical and gynæcological *confrères* would look for and record the presence or absence of this symptom in each case the question would soon be settled. In the meantime I can confidently recommend the test, whatever may be thought of the explanation, which I have ventured to propound.

I am, Sirs, yours faithfully,

Manchester, June 18th, 1900. E. STANMORE BISHOP.

To the Editors of THE LANCET.

SIRS,—Many will agree with Mr. Mansell Moullin that Mr. Stanmore Bishop's rigidity of the abdominal walls is not absolutely diagnostic of peritonitis and also is not essential; that a marked rigidity may be found in such cases as gastric ulcer or hysteria without peritonitis; and that rigidity may not be present during the first stage of shock in perforative peritonitis nor even at all during some cases of peritonitis due to perforation in typhoid fever.

Mr. Bishop omits in his catalogue the more important fact mentioned in Mr. Treves's graphic description, "abdominal respiration ceases." This is invariable even when rigidity is absent; if general peritonitis exists the whole abdomen is motionless during respiration except that a slight reversed motion may be caused in the upper part by dragging in of the abdominal wall by the exaggerated thoracic movement in inspiration. Abdominal respiration is not abolished by any of the colics or intestinal pains and its absence seems therefore a better sign to rely on than rigidity.

I am, Sirs, yours faithfully,

Brighton, June 18th. WALTER BROADBENT.

HORSE AMBULANCES.

To the Editors of THE LANCET.

SIRS,—The subject of the provision of a horse ambulance in towns having been raised in a recent issue of THE LANCET, may I relate to you what has been done in this direction in Oxford, which, so far as I know, is the only place where facilities of this kind are available? About 20 years ago a private subscription was got up and a horse ambulance purchased. It has been kept at one of the livery stables which has the advantage of a telephonic service and is thus in connexion with the hospitals and with the Acland Nursing Home. Anyone can have the use of it for about an ordinary cab-fare. Three years ago, the first ambulance having become somewhat worn out, a second horse ambulance was obtained, also by private subscription, and is in constant use. A nurse and medical man can travel with it when necessary. It is also used for local military purposes in connexion with the Oxfordshire Yeomanry.

I am, Sirs, yours faithfully,

Oxford, June 19th, 1900. HORATIO P. SYMONDS.

To the Editors of THE LANCET.

SIRS,—I notice that the subject of public ambulances has been mentioned more than once in THE LANCET recently. May I be permitted to point out to you that we have had such a one in Oldham for about two years or more. It was presented to the town, is kept at the fire-station, horsed by the fire brigade horses, and worked by the firemen, all of whom hold St. John Ambulance certificates. It turns out within one minute of receiving a call. One evening during the severe weather last winter in a blinding snowstorm there were no less than five calls for its services.

I am, Sirs, yours faithfully,

Oldham, June 20th, 1900. EDWARD KERSHAW.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending May 5th are as follows: remaining at the beginning of the week, 75; admitted, 38; died, 10; discharged, 4; remaining at the end of the week, 99. The total cases are now 193 and the total deaths are 63; the number discharged recovered is 31. Total "contacts," 1130; "contacts" remaining, 235; cases among "contacts," 7. It is doubtless understood that the "cases among contacts" are those of persons who fell ill at the isolation ground, having been removed there merely as housemates of the primary patient; it must not be supposed that in any case there was good reason to think that the infection had been received by direct communication from the primary patient. Thus, as regards the first four contact cases mentioned at the beginning of March (D——), the infection was clearly received about the same time in the same place; in the second instance the second patient fell ill immediately after his removal; and in the third and fourth cases now added illness began 24 and 48 hours after removal respectively. The true history of the infection of five of the eight members of the D—— family seems now to have been got from the father since his recovery. It was at first thought that the four children had been in the habit of playing on a very extensive rubbish heap to which wastes continued to be removed by the city council long after the wharves from which much of it was taken had become a manifest centre of infection. Subsequently it appeared probable that the children never had been on this heap at all. Lastly, D——, after his recovery, said that a certain little outhouse in the yard attached to his cottage, which was used to hold both dirty linen and discarded bits of carpet, &c., was a place in which the younger children played; that as soon as the youngest child had been removed to the hospital where he died he cleaned out this place and found under the clothes and rags four dead rats. It has been noted already that these premises were full of fleas in extraordinary number and that the children were covered with their punctures from head to foot; it is now to be observed that the only members of the family attacked were the younger children and their father who cleaned out the place in which they often played.

Thus it seems that evidence of infectiousness is as much

wanting at this date as it was earlier in the epidemic. From this point of view, however, the following occurrence has more interest. A girl was taken from a cottage, occupied by a small family, all of whom were removed as contacts; after five days' detention, during which the cottage was disinfected and cleansed, the family returned. The patient had but a moderate illness and an inguinal bubo which did not suppurate; she was discharged at the end of 23 days in very good health and rejoined her family. Ten days later a little boy was attacked with plague. As far as can be learned he must have received the infection in the cottage from which he had not been away, and there is no doubt at all as to the disinfection and destruction of the original patient's personal clothing, all other material in the cottage having been disinfected by steam or otherwise and having been used by the family (including the second patient) during all of the 33 days between the removal of the girl and the attack of the boy, except the first five of them. The cottage was very well kept and stood in a good street in a poor neighbourhood; it was properly connected with the sewers and with the water-service. But it was a survival from older days; it was built of weatherboard, the joists almost touched the earth, and the floors were rotten and shaky. Rats had been present before removal of the first case, but in no great number, and it was said that none at all had been seen since the family had returned. The locality was within a few hundred yards of the rubbish-tip already mentioned. The floors have not yet been torn up, but this will be done, and half a dozen similar cottages in the street will be presented to the local authority as unfit for habitation.

The past week has yielded more cases by nine than any previous week, and it is now evident that the localities in which the infection is present extend to a much greater distance from the primary infected area than hitherto. Nevertheless, a large proportion of cases can be connected with that area by employment within it, although the number occurring in rather distant neighbourhoods, whose infection cannot at all be accounted for on that hypothesis, steadily increases. Plague rats have now been found in many different neighbourhoods also, but the connexion between them and new cases has not been as thoroughly examined as it was hoped would be the case, the scarcity of rat-catchers or the disinclination of any there may be to continue their business at this critical juncture being surprising.

The bacteriologist to the Health Department (Dr. Frank Tidswell) has observed the bacillus in the intestinal contents of a flea taken from a plague rat. Simond is doubtless right in saying that fleas taken by him from rats in India were grey; whether there be any flea peculiar to the rat here and distinguishable by others than entomologists from ordinary kinds is an unanswered question. All that can be said is that those so far examined have presented the usual appearances, being from reddish-brown to blackish-brown in colour, and of all sizes up to that of the monster popularly associated with dogs. Valerio-Galli's remarks on this topic[1] are hardly convincing and in one respect at least unphilosophical; his rat-fleas would not bite him; but that proves nothing, for no flea whatever will bite the present writer, and many other people doubtless, nor does Netter[2] for a similar reason contribute anything of importance to the subject. There is hope for some, therefore, that they may escape infection by fleas even without the aid of the neat velvet bracelets and anklets containing formic aldehyde in some form, which an ingenious French manufacturer has put upon the Paris market.

The specimen of Yersin-Roux serum referred to in my last letter turns out to have been forwarded in response to the well-meant interference of the Consul-General for France. The Pasteur Institute had already sent to the Agent-General at London four litres for transmission to the Government and they are expected to arrive very soon. Other consignments of the ten litres asked for are to follow. Everyone was puzzled by the occurrence thus explained, our French fellow citizens who are cordially liked and deservedly esteemed not less than others. Nor was it seriously supposed that the directorate of the Pasteur Institute would disregard the cry of their fellow men in distress without mention of some necessity by which they were compelled.

[1] Archiv für Bakteriologie.
[2] La Peste et son Microbe, p. 73.

The Government has undertaken resumption of the line of wharves so often referred to in this connexion, and of property at the back of them, with a view to reconstruction; the expenditure will be between £3,000,000 and £4,000,000 sterling. Quarantining and cleansing of successive areas still continue. It is noteworthy that only one of the men engaged on this work has taken the disease; the number employed has usually, or on an average, probably been 1500, but it has run up to near 3000, and in several weeks has been 2000.

May 7th.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

SURGICAL INSTRUMENTS AND FURNITURE.

GROUP III. is devoted to letters, science, and the arts, and Class 16 within this group is entitled Medicine and Surgery. This class situated at the extreme end of the westerly wing of the main building on the Champ de Mars and close to the Eiffel Tower. On entering at this point and turning to the left the word "Surgery" is written upon one of the partitions; but on passing within I was at once assailed by anxious inquiries as to my eyesight, and one eager exhibitor was particularly desirous that I should try a pair of pebble spectacles. Gently releasing myself from these allurements I was next subjected to suggestions that I really ought to provide myself with some elegant opera-glasses; but I pushed towards a row of trumpet-mouthed phonographs which, though they sang or spoke, yet did not urge me to buy. Now I came upon a discreetly walled-off partition so built that the passing crowds could not see what might be exhibited within. Doubtless this was an arrangement to prevent nervous persons from being shocked by coming suddenly upon some sinister anatomical model or specimen. Making a mental note of this delicate discretion, I braced up my nerves and entered the compartment, quite prepared to see loathsome models of lupus or some other repugnant malady. To my surprise I found myself in a delightful oasis of theatrical scenery. On all sides there were small stages about two feet square, brilliantly lighted from within, and on each stage one of the most elaborate and romantic scenes from a well-known play or opera. It was very pretty, very interesting, very ingenious, and made me feel quite sorry that I was not a theatrical critic. There was, however, not even any indication as to how these model stages were warmed or ventilated, so I had no pretext whatsoever for remaining in this charming little exhibit; and then it occurred to me that, as Class 16 was undoubtedly in this part of the building, it must be in the large gallery above and not on the ground floor. Having ascended the nearest flight of stairs I found myself at once face to face with a life-size model of an individual, perfect in every respect, excepting that he had no skin and therefore exhibited his muscles, nerves, and the like. There was no walling off here, no discreet curtain, which only those who were interested in such subjects might remove. The anatomical wax models are fully exposed and no one passing near can avoid seeing them, but they are not numerous. Close by, and labeled "Microphotography of the Broca Hospital, gynæcological service of Dr. Pozzi," is a large collection of coloured photographic enlargements of microbes. There is here the subject-matter of a useful study, and this exhibit will not fail to attract considerable attention among practitioners who treat more especially the diseases of women.

Close by are numerous exhibits connected with the treatment of various diseases, such as, for instance, the Maison Puy-Laurent for bandages, trusses, &c. This firm has a contrivance by which the pad of a truss is replaced by an india-rubber bag. When in proper position the rubber bag can be filled by a funnel with liquid plaster which, drying in from 10 to 15 minutes, constitutes a very exact model of the shape and size of the pad required. M. A. Maugeon, M. E. Morin, and M. C. Regnier, all of Paris, exhibit suspenders, bandages, stockings for varicose veins, corsets, and orthopædic apparatus, &c. Messrs. Mantelet et Fils have seamless elastic stockings and M. Abrioux has orthopædic boots and shoes. M. A. Bruyge makes wooden legs and other artificial

limbs, and M. F. Lacroix makes ventilated orthopædic supports, &c. M. L. Gaillard has a very large assortment of sounds, bougies, and cannulæ that can be easily sterilised; while Messrs. Bühler et Cie have some small flexible metal tubing through which gas, water, or vapour can be passed under pressure. This tubing can be bent round and round so as to form a cone or cap that may be placed on the head of a patient and when fed with a cold current of water would replace an ice-bag. In the same manner the tubing may be twisted round a limb and applied for many and various purposes.

Amid many other exhibits of this character the firm of Messrs. Flicoteaux, Borne, and Boutet show an operating-room and all the appropriate furniture. On an enamelled hardware slab or table four thick glass basins are placed. Above, suspended to the wall, four glass reservoirs provide water for these basins which flows from a small nickel tube and the water is turned on by placing the foot on a lever below. In the centre of the table there is a trapped drain-pipe to carry away the dirty water. It all appears to be quite aseptic; but on passing my hand underneath this washstand I found that it was only the upper outer surface that had been enamelled and that dust was adhering to the hardware which underneath had been left in a rough and unglazed condition. How far this is porous I cannot say, but all who have had experience in testing drain-pipes are aware that hardware is porous and does absorb water. If enamelling is necessary above where dirt can be seen and washed away, it is still more necessary underneath where dirt and dust cannot be seen. The operating-table close by is probably the simplest table in the Exhibition. It consists of a small slab of opaline—i.e., a mixture of glass and porcelain. By a wheel and crank it can be lifted or made to slant, but to hold the limbs in a bent position attachments have to be affixed to this one rigid slab. Simplicity of structure and the aseptic nature of the material used is about all that can be said in favour of this operating table. But the same firm exhibits a stretcher on wheels, designed by Dr. Monprofit, and so contrived that the patient can be replaced in his bed without being lifted off the stretcher. The patient lies on two thin slabs of enamelled metal held close together by an iron frame. This can be lifted off the wheels and placed on the bed. The frame is then unscrewed and the slabs, thus released, can on each side be easily drawn away from underneath the patient. Messrs. Flicoteaux, Borne, and Boutet have supplied many well-known hospitals with their various products.

M. S. Favre of Paris, exhibits a new pocket bistoury. It is in a small case, only three inches long, containing a handle and six different sorts of blades. He also shows sterilisers in which ebullition is produced very rapidly.

M. R. Mathieu of Paris has several interesting exhibits, and notably the Déchery cautery. This is composed entirely of metal. The hollow handle is charged with ether. A little spirit lamp is fitted to the case which contains the cautery. When warmed over this lamp the platinum point becomes red hot in two minutes and remains in that condition while the supply of ether lasts. There are also some very ingenious crushing clamps and clamps for seizing, without injuring, the intestines. For the latter purpose there is on one side a metal oval-shaped ring covered over with an indiarubber glove-finger. Opposite a small rod is also covered with indiarubber. The handle, like that of a pair of scissors, brings this rod against the soft centre of the indiarubber covering on the oval side. Thus the pressure of metal against metal is avoided. This firm has distinguished itself in the manufacture of dynamometers. For the most part they have the shape of a vesica about five inches long by two and a half inches in the centre or broadest part. It can therefore be conveniently held in the centre of the hand and squeezed. The novelty consists of clockwork in the centre which records the number of seconds the pressure continues and gives a loud tick when the muscular effort ceases to produce any further result. A handle records on a dial and in grammes what that pressure has been. By passing a finger from each hand inside the extremities of the oval or vesica the power of pulling asunder can then be tested, the result being similarly recorded. To other dynamometers a vesica is attached, large enough to be placed under the arm or between the legs, and the power of squeezing the legs together or of pressing the arm against the side can be ascertained. Thus four different tests can be made with the one instrument. This is often necessary. By holding the dynamometer in one hand and squeezing I found that the representative of the firm who showed me these instruments was very much stronger than I am. But when I took the instrument with both hands and tried to pull it asunder it was demonstrated that my pull was stronger than his. Thus one single test would have conveyed a totally false impression of our respective strengths. These instruments cost from 35 francs to 150 francs. Colonel de Rochas, Director of the Polytechnic Military School, in his "*Exteriorisation de Motricité*," remarks that persons holding Eusepia Pallidino's hands generally complained of great exhaustion at the end of 20 to 30 minutes. This led him to employ a dynamometer of this description, and he thus discovered that after experiments during which remarkable phenomena are said to have been produced the persons present had between them lost enough strength to make up the strength of an average adult. There is also a dynamometer made for the purpose of estimating with great precision the amount of pressure necessary to reduce hernia. Finally, it may be noted that this firm also manufactures the apparatus used for straightening malformations due to Pott's disease or spinal curvatures, and which is employed at the celebrated hospital of Berck-sur-Mer.

Unfortunately for these exhibitors they are very badly situated. The Exhibition is so large, people are so soon tired that many have not the courage to go up to the galleries. When, however, they do ascend to these upper regions they soon discover that they are much nearer to the glass roof of the great gallery and therefore feel the heat much more intensely. In fact, the atmosphere is that of a hothouse. The ventilating fans that are exhibited and stand idle in their particular section might here be put to a very useful practical test. Downstairs in the British section, I found but one exhibitor of hospital furniture and surgical instruments. This was the firm of Messrs. Down Brothers, and they have manufactured a new operating table expressly for the Exhibition. The table is on wheels, or rather on large improved casters that are on ball bearings like those used for bicycles. Therefore the table, in spite of its great weight and the weight of the patient who may be on it can be moved about with the utmost facility and with hardly any effort. Similar casters are used for all the other furniture and are particularly useful for the very heavy instrument cabinets. These, in consequence of their weight, are apt to be left indefinitely in their position against a wall. Consequently the space behind does not get cleaned. But now there will be no excuse for not washing and dusting behind as well as in front of all such furniture, since it is so easily moved. With regard to the operating table, if it is convenient on certain occasions that it should be moved without effort, it is essential that during an operation it should be absolutely steady. Consequently there is a lever arrangement by which the casters are raised and the table then rests on broad, flat feet and a very strong push will not move it. The next point is that due account has been taken of the fact that operating surgeons, like other mortals, vary in stature. The table is so built that its general level can be raised or lowered for a distance of nine inches so as to suit each individual operator, whether tall or short. The surface is of perforated nickel-plated metal. Underneath this there is a metal trough bed draining in the centre. The head, trunk, and limbs of the patient can be raised or lowered and put in any position. There is also a rest that can be attached to any side of the table, to support a leg or an arm or to serve as an instrument tray. The framework of the table is made of tubes, through which hot water can be made to circulate. The attachments are so arranged that the whole or only a part of the table can be heated, and if any portion of the body is raised so are the hot-water tubes; therefore the patient is not removed from the heat-giving surfaces. There is an extra trough for douching in lithotomy, &c., and this can be added to either end of the table. All the joints are of gun-metal, this, with nickel and glass, being the only materials employed for the operating room furniture. Where a glass shelf is used the corners are rounded off, so that everything is easily cleaned. The screw portion for raising the operating table is covered over, so that dust cannot lodge in the indentures. The framework of all the furniture is of drawn metal and there is no soldering, so that it cannot come to pieces. A large glass cabinet contains many beautiful instruments, notably a new cutting forceps for the resection of

ribs, the blade pressing down on a slot which is open in the centre. Then there are Beter's bone forceps. When the bone is properly gripped the forceps can be fixed by means of a screw contrivance in the handle. The operator's hands are then free to apply the sutures, &c. The lithotrite suggested by Mr. H. M. N. Milton of Cairo may also be seen here. It is so arranged that the crushed stone can be evacuated through the handle without withdrawing the instrument. The entire exhibit takes the form of a model operating theatre. The floor is of mosaic set in hard cement on a metal base and the walls are of glazed tiles fixed also in cement. Many other interesting objects are to be seen here, making altogether a very complete surgical exhibit.

Of course there is much more appertaining to Class 16 shown elsewhere, both in the French section and among the exhibits of other nationalities, but a description of what has been omitted must now be deferred to another occasion.

Paris, June 18th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Home for Epileptics, Maghull.

THE annual meeting in connexion with the "Home for Epileptics" at Maghull, near Liverpool, took place on June 16th, under the presidency of the Lord Mayor. There were 120 patients in the institution at the beginning of 1889. During the year 20 patients were discharged, 4 had died, and 27 were admitted, leaving 123 inmates at the end of 1899. Arrangements had been made with the Education Department for carrying on during the past winter an evening continuation school and also for giving technical instruction to such patients as were capable of receiving it. The school had proved a great success and the managers are in hopes of receiving a Government grant towards the expenses. The plan of remunerating patients able and willing to undertake fixed duties had proved satisfactory, and in many instances the remuneration received had been equivalent to the value of their maintenance, the cost of rent and nursing being provided partly by payments of friends and partly by donations. To enable them to carry out the project the committee are desirous of a sum of £750 to meet the initial expenses of buildings, implements, and stock, and a guarantee fund of £250 a year for five years towards rent and nursing. It would be possible to purchase a suitable farm in the neighbourhood of the present "home" if a sum of £5000 could be raised for that object. In order to bring about a better social classification of the patients it had been decided to acquire a portion of the park land adjoining the "home" and to erect a suitable building, with nurses and servants, and for this purpose the committee had appealed for £3500. The finances were in general in a satisfactory condition. The medical records of the home showed a decided improvement in very unpromising cases. The institution at Maghull, which mainly owes its origin, among others, to Dr. William Alexander of the Royal Southern Hospital and the Workhouse Hospital, was established 11 years ago and was the first of its kind in the kingdom. The Lord Mayor said that a portion of the Manchester money of the David Lewis Trust was to be devoted to the establishment of a similar home near Manchester. The Lord Mayor promised to give a donation of £50 to the Maghull Home.

Hospital Saturday Fund: Ladies' Street Collection.

The annual street collection made by ladies on behalf of the Hospital Saturday Fund took place on June 9th. The collection realised £837 10*s.* 11*d.*, which is about equal to the sum collected last year.

Death of Mr. Alfred Fisher, M.R.C.S. Eng., L.R.C.P. Edin.

Much regret is felt at the death of Mr. Alfred Fisher, which took place on June 17th from pneumonia after a very short illness. Up to the last few days he had been apparently in robust health, but he was taken suddenly ill during the night of June 14th. Mr. Fisher, who was only 37 years of age, was formerly house surgeon at the Northern Hospital. He was of an extremely affable disposition and much sympathy is felt for his widow and child.

The Health of St. Helens in 1899.

The annual report on the health of the borough of St. Helens, by Dr. Drew Harris, the medical officer of health, stated that the birth-rate for 1899 was 35·97 per 1000 of the population, or 2·52 per 1000 lower than the preceding year. The death-rate was 19·16 per 1000, or 0·27 per 1000 above the previous year, and 2·2 per 1000 below the average of the preceding 10 years. It was the lowest death-rate except two on record for the borough. A satisfactory feature of the report was the great saving of infant life during the year which had been brought about by the expenditure of time and money which the Health Committee had devoted to the subject. The rate of mortality among infants during the year was 157 as against 172 in the preceding year, and a mean rate of 172 in the last 10 years. The rate for England and Wales last year was 163. This was the first occasion upon which the infant mortality rate in St. Helens had been lower than that of England and Wales. In the early part of the year a list of all the births registered in the borough was obtained from the registrar in order that the female sanitary inspector might visit the parents and leave instructions as to feeding. A depôt upon the model of that at Fécamp and at Havre was opened later in the year for the supply of sterilised humanised milk, which had proved a great boon to the infants of the poorer class. The death-rate from typhoid fever was 0·49 per 1000, or 0·03 below the mean for the previous 10 years. The number of cases notified was 221, but the mortality was relatively smaller than in the previous year. The estimated population was 86,588; the total births were 3115, and the deaths were 1700.

June 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Medical Association and the Superannuation of Medical Officers.

A DEPUTATION consisting of Sir Thornley Stoker and other members of the Irish Medical Association, waited on Mr. John Redmond, M.P., at the Imperial Hotel, Dublin, on June 18th with respect to the superannuation of medical officers. Dr. Joseph Smyth of Naas stated the case on behalf of the Irish Poor-law medical officers with much ability. He remarked that the Superannuation Bill now advocated by the Association provided that the allowance should be paid not from the rates but out of the contributions made by the medical officers themselves. Mr. Redmond, in replying to the deputation, said that the objects of the Association met with his entire sympathy and he promised, moreover, that when the Bill came before Parliament the support of the Irish national party might be relied upon.

The British Association.

On June 13th a public meeting summoned by the Lord Mayor in response to a numerously signed requisition was held in the council chamber of the town-hall, when, on the motion of the Earl of Shaftesbury, D.L., seconded by the President of Queen's College, it was decided to renew the invitation to the British Association to visit Belfast in 1902. A representative deputation was appointed to present this invitation at the forthcoming meeting of the Association in Bradford. The last meeting in Belfast was in 1874 when the President (Professor Tyndall) and Professor Huxley gave their famous addresses.

Londonderry City and County Infirmary.

A special meeting of the committee of management of the Londonderry City and County Infirmary is to be held next week to consider the question of the proposed rearrangement of the medical staff. Previously to the death of Sir W. Miller, there was only one extern medical officer, but a sub-committee who were appointed to consider the future management of the institution have after careful consideration and after having received suggestions from the medical men of the city and county of Londonderry recommended that there should be an honorary visiting staff and a resident surgeon. They also advise that the resident surgeon should have full charge of the management and administration of the infirmary as directed by the committee of management and give assistance to the visiting staff in all cases. They recommend that the extern staff should consist of two physicians, two surgeons, and one anæsthetist.

The Belfast Hospital for Sick Children.

Dr. Brian O'Brien has been appointed assistant surgeon to the Belfast Hospital for Sick Children in place of Dr. James Lynass, resigned.

June 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Experimental Treatment of Tuberculosis by means of Raw Meat and Meat Juice.

M. Richet and M. Héricourt, pursuing the line of research which they have already undertaken and which I mentioned in a previous letter, communicated to the Society of Biology at the meeting held on June 2nd the latest results which they have obtained. They inoculated a certain number of dogs with tuberculosis and separated them into three groups. The dogs composing the first group were fed upon ordinary food and died at the end of three or four weeks. Those in the second group were fed upon cooked meat and lived very little longer than did those in the first group. Those in the third group were fed solely upon raw meat and remained in perfectly good health at the end of six months from the beginning of the experiment. The curative influence which a raw meat diet possesses over tuberculosis experimentally produced in dogs is thus established, for it is almost unknown for a tuberculous dog living under ordinary conditions to last for more than three months. Raw meat juice appears to have the same action as that of raw meat. M. Richet and M. Héricourt have also ascertained that this effect of raw meat has a prophylactic as well as a curative action. Two dogs which had been fed for many months upon raw meat and meat juice were inoculated and are alive at the present moment despite the fact that after the inoculation they were taken off the special diet and put upon ordinary diet. Control dogs inoculated at the same time, but which had not been prepared by being fed upon the special diet beforehand, are dead long ago. The two observers have also investigated the dose necessary to obtain success. One dog received a daily dose of raw meat in the proportion of five grammes per kilogramme of body weight. Another received 12 grammes per kilo., a third 32 grammes per kilo., and a fourth 64 grammes per kilo. The first dog died while the three others remained well. M. Richet and M. Héricourt therefore consider that to preserve a dog from the effects of an inoculation of tubercle it must be given a minimal dose of from 10 to 12 grammes per kilo. of body-weight every day. The active principle is evidently a soluble substance, for if the meat is chopped up and pressed to deprive it of its juice, a second pressing after moistening with water produces an absolutely inactive fluid, even after the meat has been allowed to soak for 24 hours. These facts confirm the results formerly obtained by Malassez and Vignal who laid stress upon the importance of muscular "opotherapy" in tuberculosis. They had noticed that tubercle never developed in muscles and concluded that meat juice contained some plasma inimical to the evolution of tubercle.

The Increase in the Paris Supply of Drinking Water.

The supply of water from the springs of Loing and Lunain, works for which have been in progress for many years, are now complete. The aqueduct is 100 kilometres in length, the quantity of water delivered is ample, and the works cost 24,000,000 francs. By this means even during great spells of heat Paris will have a plentiful supply of drinking water, and the fears which have been entertained of a water famine during the Exhibition are shown to be unfounded.

The Small-pox Epidemic at Lyons.

The epidemic of small-pox at Lyons still continues. The populace is very averse to revaccination, and to lessen the necessity for the workman losing half a day's work by having to attend at the vaccination station the public vaccinators are offering vaccination at workmen's houses, going from door to door to try to persuade the people to profit by revaccination. M. Roux and M. Pic have tried this plan in the working-class quarter, but have been met everywhere by formal refusals. Out of 700 hands employed by one firm only 10 have consented to be revaccinated and that only by a medical man specially supplied by the head of the firm. M. Rafin, acting in similar circumstances, has only been able to revaccinate 20 out of 300 hands. He considers that the dry sweeping (*balayage à sec*) of staircases which is the custom in Lyons is a fruitful cause of the dissemination of infectious diseases and M. Delore makes the same remark in so far as regards the custom of beating carpets in courtyards.

The Geographical Distribution of Goitre in France.

At a recent meeting of the Academy of Medicine M. Poncet of Lyons communicated to the Academy the results of some statistics drawn up by M. L. Mayet relative to the distribution of goitre in various districts of France. The figures on which the statistics were based were taken from the returns furnished by provincial councils of the physical examination of recruits enrolled each year. These documents, which cover the period 1887–1896, have enabled M. Mayet to divide the departments of France into six groups classified according to the number of cases of goitre per every 1000 conscripts. The classification shows plainly that goitre is not distributed in a haphazard way, for the departments most effected are grouped in blocks occupying the regions of the Alps, the Pyrenees, the Central Plateau, the Jura, and the Vosges. The departments of the Aisne and the Orne alone show up as black spots in otherwise unaffected districts. M. Mayet has compared these figures with others for past periods, the one from 1816 to 1825 and another from 1836 to 1845. He concludes from these that the distribution of goitre is still much the same as before but that its amount has diminished, especially within the last 50 years. The number of those affected with goitre in France has diminished but it is not known exactly in what proportion. M. Mayet considers that probably the total number of goitrous people is between 375,000 and 400,000.

June 19th.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the Congregation on June 14th the following degrees were conferred:—

Degree of Doctor of Medicine.—J. W. Cornwall, Trinity; and W. E. Alston, Clare.

Degree of Bachelor of Medicine.—E. W. Hedley, King's; and R. S. Trevor, Clare.

Degree of Bachelor of Medicine and Bachelor of Surgery.—W. S. Darby, Trinity; J. H. Tallent, St. John's; G. F. Lobb, Caius; S. P. Pollard, Caius; J. W. Malim, Christ's; T. Burfield, Emmanuel; and D. G. Hall, Emmanuel.

Degree of Bachelor of Surgery.—L. J. Paton, Caius.

At the examinations for medical and surgical degrees, Easter term, the following candidates were successful in the subjects indicated:—

FIRST EXAMINATION.

Part I., Chemistry and Physics.—W. A. Alexander and E. E. Atkin, Caius; R. L. Barwick, Christ's; H. Beckton, M.A., Clare; A. E. Bellars, Magdalene; P. Black, Caius; C. W. Bowle, Trinity; R. Burgess, Caius; G. G. Butler, Emmanuel; D. V. Cow, Trinity; F. D. Crew, Emmanuel; J. N. F. Fergusson, St. John's; A. C. D. Firth, Trinity; R. L. Gamlen, Caius; H. P. B. Gough and G. F. Greenwood, Sidney Sussex; J. M. P. Grell, H. Selwyn; H. S. Hall, Pembroke; G. S. Haynes, King's; A. W. Hayward, St. John's; R. A. P. Hill, Caius; W. H. Hodgson and R. Hoisington, Christ's; C. W. Hutt, Trinity; T. A. Jones, Caius; W. D. Keyworth, H. Selwyn; F. P. Luard, Downing; A. Morris, A. H. Owen, and M. Phillips, Caius; W. O. Pitt, Emmanuel; S. B. Priston, St. John's; A. C. H. Rothera, Emmanuel; C. E. F. Salt, Pembroke; F. S. Scruby, H. Selwyn; E. F. Skinner, Corpus Christi; P. H. Smith, Pembroke; P. L. Stallard, Caius; B. S. Taylor, M.A., Clare; R. S. Taylor, Downing; H. A. R. E. Unwin, H. Selwyn; J. A. Venning, Trinity; G. L. Webb, Caius; C. W. H. Weekes, H. B. Weir, and W. de L. Winter, Trinity; and H. N. Wyman, Caius.

Part II., Elementary Biology.—W. A. Alexander and E. E. Atkin, Caius; J. B. Banister, Jesus; E. Beaton, Caius; H. Beckton, M.A., Clare; A. E. Bellars, Magdalene; T. R. H. Blake, Pembroke; C. W. Bowle, Trinity; W. T. Briscoe, H. Selwyn; G. G. Butler, Emmanuel; A. F. Comyn, Pembroke; A. I. Cooke and H. B. Corry, Caius; D. V. Cow, Trinity; E. A. Crossley, Clare; R. Davies-Colley, Emmanuel; E. F. de Clermont, King's; A. N. Dickson, Downing; J. N. F. Fergusson, St. John's; A. C. D. Firth, Trinity; R. L. Gamlen, Caius; L. H. Gob, Emmanuel; G. W. Goodhart, Trinity; H. P. B. Gough, Sidney Sussex; W. B. Gourlay, Trinity; W. B. Grandage, Clare; H. T. Gray, Trinity; G. F. Greenwood, Sidney Sussex; J. M. P. Grell, H. Selwyn; H. S. Hall, Pembroke; Eric F. Harrison, Trinity; G. S. Haynes, King's; A. W. Hayward, St. John's; R. A. P. Hill, Caius; R. B. Hoisington, Christ's; C. W. Hutt, Trinity; R. S. Jenkins, St. John's; T. A. Jones, Caius; W. D. Keyworth, H. Selwyn; B. T. Lang, Trinity; H. M. J. F. de P. P. Leite, Caius; C. Lillingston, Pembroke; J. W. Linnell, St. John's; F. P. Luard, Downing; S. G. MacDonald, St. John's; J. McIntyre, King's; A. W. Moore, Emmanuel; A. R. Moore, B.A., and H. F. G. Noyes, Caius; G. G. Packe, Trinity; F. W. M. Palmer, B.A., Jesus; W. O. Pitt, Emmanuel; H. W. Pocock, Caius; S. B. Priston, St. John's; E. S. Purkis, H. Selwyn; A. C. H. Rothera, Emmanuel; D. W. Roy, Sidney Sussex; F. S. Scruby, H. Selwyn; R. B. S. Sewell, Christ's; P. H. Smith, Pembroke; P. L. Stallard, C. Strickland, and A. C. H. Suhr, Caius; D. W. Tacey, B.A., Christ's; R. S. Taylor, Downing; H. A. R. E. Unwin, H. Selwyn; B. Wallis, Trinity; G. H. H. Waylen, King's; G. L. Webb, Caius; H. B. Weir, Trinity; W. P. Williams, Downing; W. de L. Winter and J. L. Wood, Trinity; L. Worrall, B.A., Christ's; and H. N. Wyman, Caius.

SECOND EXAMINATION.

Part I., Pharmaceutical Chemistry.—L. J. Austin, Sidney Sussex; A. L. Baly, Emmanuel; A. S. B. Bankart, Trinity; J. D. Barris, Caius; E. Bell, Clare; G. L. Cox, Christ's; L. G. Davies, Trinity

T. Drysdale, Jesus; N. C. Fletcher, B.A., Queens'; R. E. French, King's; F. M. Gardner-Medwin, B.A., Trinity; T. R. Glynn, Clare; R. E. G. Gray, Pembroke; S. A. Henry, Trinity; R. F. V. Hodge, Emmanuel; W. G. Howartb, King's; E. C. Hughes, Clare; C. L. Isaac, B.A., St. John's; C. King, Trinity; H. E. Kitchen, B.A., Sidney Sussex; R. Leslie, B.A., Pembroke; S. M. Mackenzie, Trinity; E. H. Mayhew, Emmanuel; J. B. Mennell, Pembroke; S. H. Nixon, Emmanuel; W. H. Rayner, Trinity; W. H. Robinson, Downing; F. F. Shout, Caius; G. C. E. Simpson, St. John's; P. S. Stephens, Trinity; W. H. E. Stewart, Caius; and F. P. Young, Christ's.

Part II. Human Anatomy and Physiology.—H. Ackroyd, B.A., Caius; A. E. Barclay, B.A., Christ's; H. N. Burroughes, B.A., Trinity; H. J. Cardew, B.A., Clare; R. A. Clapham, B.A., Emmanuel; J. G. Cooper, Trinity; J. S. Cooper, B.A., Jesus; W. B Crowfoot, B.A., Emmanuel; C. W. Cunnington, B.A., Non-Collegiate; W. F. L. Day, B.A., and J. H. Donnell, B.A., Caius. T. R. Elliott, Trinity; R. B. Etherington Smith, B.A., Trinity; J. E. Frere, B.A., Pembroke; F. Gayner, B.A., King's; H. U. Gould, B.A., Trinity; G. W. Greene, B.A., Downing; C. F. Hardie, B.A., Queen's; P. Hardy, B.A., Trinity Hall; E. T. Harris, B.A., Christ's; N. G. Harry, B.A., Jesus; A. W. Harvey, B.A., St. John's; H. G. L. Haynes, Downing; W. H. Hills, B.A., Pembroke; B. Hudson, B.A., Clare; J. Lambert, Downing; P. W. Leathart, B.A., Clare; W. E. Lee, B.A., and R. C. Mott, B.A., Trinity; C. M. Murray, B.A., Pembroke; P. K. Muspratt, B.A., Christ's; G. B. Norman, St. John's; P. N. Panton, B.A., Trinity; O. V. Payne, St. John's; J. S. Pearson, B.A., Trinity; H. I. Pinches, B.A., Sidney Sussex; C. A. W. Pope, B.A., Trinity; G. R. Rickett, B.A., King's; R. H. Robbins, B.A., Trinity; J. N. Robins, B.A., and T. Sanders, B.A., Christ's; H. C. Sidgwick, B.A., and J. G. Slade, B.A., Clare; T. D. Smith, B.A., Jesus; L. E. Wigram, B.A., Trinity; and S. L. O. Young, B.A., Christ's.

VICTORIA UNIVERSITY.—The Council has decided on the award of the following degrees, which will be conferred by the Chancellor, Earl Spencer, K.G., on June 30th, at the Free Trade Hall, Manchester:—

Degree of Doctor of Science.—H. T. Ashton, W. H. Bentley, F. W. Gamble, and George Wilson, Owens.

Degree of Doctor of Medicine.—Hubert Armstrong, University, and Alfred Greenwood, J. A. MacLaren, W. A. Newall, and F. W. Stansfield, Owens.

FOREIGN UNIVERSITY INTELLIGENCE. — *Baltimore (Johns Hopkins University):* Dr. F. S. Cullen and Dr. W. W. Russell have been appointed Professors of Gynæcology.—*Berlin:* Dr. Albert Eulenburg has been promoted to an Extraordinary Professorship. He was formerly Professor of Pharmacology in the University of Greifswald.—*Bologna:* Dr. Serafino Patellani of Parma has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Chicago (Rush Medical College):* Dr. Henry Favill has been appointed Professor of Therapeutics.—*Genoa:* Dr. Angelo Becco of Rome has been recognised as *privat-docent* of Topographical Anatomy and Operative Medicine, and Dr. Rocco Iemma of Naples has been recognised as *privat-docent* of Pædiatry.—*Göttingen:* Dr. A. Cramer has been appointed to the chair of Psychiatry.—*Gratz:* Dr. Alois Birnbacher, Extraordinary Professor of Ophthalmology, has been promoted to an Ordinary Professorship.—*Halle:* Dr. Schick has been recognised as *privat-docent* of Ophthalmology.—*Heidelberg:* Dr. Göppert has been appointed Extraordinary Professor of Anatomy.—*Innsbruck:* A new chemical and pharmacological institute has just been erected.—Dr. Stephan Bernheimer of Vienna has been appointed Professor of Ophthalmology.—*Kiel:* Dr. Paul Sick has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Oscar Samter, *privat-docent* of Surgery, has been promoted to a professorship.—*Naples:* Dr. Tommaso Guido and Dr. Ettore Somma have been recognised as *privat-docenten* of Pædiatry, and Dr. Giovanni Graziani has been recognised as *privat-docent* of Medical Pathology.—*Padua:* Dr. Arslan of Turin has been recognised as *privat-docent* of Otolaryngology.—*Palermo:* Dr. Fortunato of Genoa has been recognised as *privat-docent* of Ophthalmology.—*Prague (Bohemian University):* Dr. Kunta has been promoted to an Extraordinary Professorship of Pathological Anatomy; Dr. Carl Kuffner has been appointed Professor of Psychiatry and Neuro-pathology; and Dr. Jaroslav Bukovsky has been recognised as *privat-docent* of Dermatology and Syphilis.—*Rostock:* Dr. Ehrlich has been recognised as *privat-docent* of Surgery and Dr. Scheven as *privat-docent* of Medicine.—*St. Petersburg (Military Medical Academy):* Dr. Gerver has been recognised as *privat-docent* of Neurology and Psychiatry.—*Strasburg:* Dr. Hans Landolt has been recognised as *privat-docent* of Ophthalmology and Dr. Albrecht Funka as *privat-docent* of Midwifery and Gynæcology.—*Vienna:* Dr. A. Elzholz has has been recognised as *privat-docent* of Psychiatry and Neurology.—*Würzburg:* Professor Hess of Marburg has been appointed to the chair of Ophthalmology vacated by the migration of Professor von Michel to Berlin.—*Zürich:* Dr. Paul Ernst of Heidelberg has been appointed Professor of Pathology and General Anatomy.

THE WELLCOME CHEMICAL RESEARCH LABORATORIES.—These recently completed laboratories were opened for inspection on June 18th. The building, which is situated at No. 6, King-street, Snow-hill, is in the Venetian style of architecture, and consists of four storeys. On the first, second, and third floors are located the different laboratories completely equipped for their purposes while the director of the laboratories, has his library and office on the ground floor. The proprietors would appear to have spared no trouble or expense in making the laboratories complete.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Karl Lange, Professor of Pathological Anatomy in the University of Copenhagen, in his sixty-seventh year. He was editor of the Danish medical journal, *Hospitals Tidende.*—Dr. Friedrich Brosin, a well-known Dresden gynæcologist, whilst touring in Saxon Switzerland. He was only 42 years of age.—Dr. Carter Gray, formerly Professor of Neurology in the Long Island College Hospital, Brooklyn.—Dr. Frothingham, late Professor of Ophthalmology in the Ann Arbor University of Michigan.—Dr. Wilhelm Kühne, the well-known Heidelberg Professor of Physiology.

MAIDENHEAD COTTAGE HOSPITAL.—At a special general meeting of the supporters of this hospital, held at the Town Hall on June 15th, a question of revising the rule as to payment by, or on behalf of, patients was considered in consequence of the generous gift of Mr. W. W. Astor of £10,000 to the institution. After some discussion it was decided that "patients may be admitted to the hospital free of charge, but none shall be admitted without security from some substantial person for payment of the expenses of burial in case of death or of removal, except in cases of sudden emergency. In the case of domestic servants in active service or persons in good circumstances the house secretary may make such charge as he deem proper, not exceeding 10*s.* 6*d.* weekly."

THE SCATTERGOOD TESTIMONIAL AND YORKSHIRE COLLEGE, LEEDS.—In May last, at a meeting held in the Philosophical Hall, it was decided to raise funds for a testimonial to Mr. Thomas Scattergood, M.R.C.S. Eng., in recognition of his long and appreciated services to the medical department of Yorkshire College and that it should take the form of a portrait to hang in the medical school. Sir George Reid, president of the Royal Scottish Academy, was the artist selected to paint the portrait, and although it was not finished before Mr. Scattergood's death the likeness is a good one. On June 11th Mr. A. G. Luton, chairman of the council of the college, made the presentation, on behalf of the subscribers, to the family, and Mr. A. K. Scattergood on their behalf afterwards handed the portrait back, to be hung in the medical school. Miss Scattergood was at the same time the recipient of an inlaid wood and silver tea tray as a souvenir, and each member of the family received a bound copy of the resolutions passed by the council and the medical board which testified the esteem in which the late Mr. Scattergood was held by his colleagues. The cash surplus which remains is to be appropriated to founding a prize in the medical school to be called the "Scattergood Prize."

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Midwives Bill.

THE report stage of the Midwives Bill is down for Wednesday, June 27th—the last Wednesday reserved for the consideration of Bills introduced by private Members. It is doubtful, however, whether it will be reached on that occasion, as there are other Bills in front of it. So far the Government has made no promise of facilities for the measure and, indeed, it is understood that objection is taken to certain of its provisions by the Government.

Registered Companies and Medical Practice.

There is a Bill before Parliament this session, introduced into the House of Commons by the President of the Board of Trade, for the

amendment of the law with regard to registered companies. It deals with such large general questions as the issue of prospectuses and the liabilities of promoters and directors, but in addition it contains a clause of special interest to medical men—a clause declaring that it shall not be lawful for companies to carry on the practice of medicine. It is to be feared, however, that the Bill will not become law during the present session. It has not yet been read a second time and so far the Government has been unable to name a probable date for the second reading.

HOUSE OF COMMONS.

THURSDAY, JUNE 14TH.

The Teaching of Infants.

Sir JOHN GORST, Vice-President of the Board of Education, reviewed at this sitting of the House the elementary education system of the country. He dealt at length with the abandonment of individual examination and the introduction of the block system, with the increased duties and powers now devolving upon inspectors in consequence of this change, with the need for more and better facilities for the training of teachers, and with the teaching of infants. In this last connexion, he said, we begin our attempts at education a great deal too soon, just as we leave off a great deal too soon. The child was cooped up in school as soon as he was three years old when he had much better be playing about in the lanes or fields. He had a quantity of information crammed into him which his little brain was quite incapable of assimilating and he was taken out of school at 11 or 12 years to labour for the rest of his life. Infants' schools were, in the phrase of one of the inspectors, storage places for babies. They were instituted not so much for the benefit of the children as to enable the mothers to have leisure to go to work. If the State chose to establish nurseries of this kind they should make them nurseries, and they should assimilate the teachers, of the youngest children at all events, to nurses. He should say that the age of six years was quite early enough to attempt to exercise the human brain and that between six and eight years the kindergarten system of teaching was the only one which was really suitable. On the subject of the feeding of children Sir John Gorst said: It is the general opinion that this is a matter which should be left altogether to private charity, and that the school authorities should not deal with it. I got into a great scrape last year by enumerating some opinions that it was the duty of the school authorities to see that the children were fed before they were taught. I am quite willing to agree that children should be fed by charitable agencies if they can be, but it seems to me that if you compel children to go to school and compel them to receive instruction, then you have the obligation thrown upon you to make some provision by which those children shall be sent to school in a fit state. This is not a private duty thrown on the parent, it is a public duty which the State has a right to insist on being fulfilled; and, if proper laws are made and a proper administration of the law is carried into effect, I believe the cases in which children would be sent to school unfed and unfitted to receive instruction would be extremely rare. One or two examples made of negligent parents would prevent the recurrence of the offence. It is not the poor parent—it is very seldom extreme poverty which causes the trouble as to underfed children. It is generally idleness, or drunkenness, or carelessness on the part of the parents which is at the bottom of the mischief, or it is greediness for the small earnings of the children. It is not, I say, the poor, but the negligent, parent who is the real offender. I believe that posterity will view with surprise and wonder the state of affairs in this matter, and will marvel how this generation was so stupid as to tolerate it.

FRIDAY, JUNE 15TH.

Experiments on Living Animals.

Mr. JESSE COLLINGS, Under Secretary of State for Home Affairs, moved for a return giving certain information with reference to experiments made on living animals during 1899 under Home Office licences.—Mr. JOHN ELLIS complained of the motion not having been made earlier in the session and the return prepared and presented at a period of the session which left Members interested in this subject opportunity for discussion.—Mr. COLLINGS said that although the formal motion was on this occasion somewhat late the return itself was practically ready and would be presented in the course of a week or ten days. In another session, if he had the opportunity, he would endeavour to have the return prepared earlier.—The motion was then agreed to.

Famine and Cholera in India.

Lord GEORGE HAMILTON, replying to questions on this subject, said: The total number of persons on relief works in India, according to the latest accounts, is 5,802,000. The famine was caused by the failure of last autumn's rains and has therefore lasted about seven months. It is absolutely impossible at present to form even an approximate estimate of the number of deaths which it has caused directly or indirectly. In some parts of India, where famine has been aggravated by cholera and small-pox, the mortality, I fear, has been very heavy; in other large districts where the famine is equally severe, but has not been associated with wholesale epidemic disease, the efforts of the Government of India and its organisation of relief have been so successful that the death-rate is hardly above normal. The total number of reported plague deaths from 1896, when the epidemic began, down to last April was 358,685—that is to say, about one death per annum to every 3000 living inhabitants of India. At the present moment the plague mortality in Bombay is lower than at any period in the three preceding years.—Mr. WILLIAM REDMOND asked the noble lord if his attention had been called to the report of Dr. Kloptsch, administrator of the fund raised in New York for the relief of distress in India, and whether he had any information to the effect, as stated in the report, that vultures, dogs, and jackals had been found devouring human bodies left unburied; and whether, in view of the suffering caused by famine and plague throughout India at present, the Government would recommend at once the appointment of a Royal Commission to inquire into the best and speediest method of dealing with the state of affairs now existing in Her Majesty's Indian Empire.—Lord GEORGE HAMILTON: I have seen the telegram of Dr. Kloptsch and have read similar statements in one or two of the numerous reports that have reached me. These statements only apply to the districts, limited in number, I am glad to say, where cholera and small-pox have attacked the famine camps, thus forming a combination which for the moment baffles any administrative palliation. A Commission of great weight and authority was appointed in 1897 to report on the best method of dealing with famine in India, and its suggestions, which were published in 1898 after a most elaborate and searching inquiry, have been of great value; another similar Commission was appointed in 1898 to deal with the plague, and has produced a very important and exhaustive report, part of which only has yet been published. I do not therefore propose at present to advise the appointment of a Royal Commission, though it may hereafter be advisable, when the present epidemics are over, to utilise the experience gained by making it the subject of further reports.—Mr. WILLIAM REDMOND suggested that the Government should at once raise money to relieve the distress.—Lord GEORGE HAMILTON: It is not a question of money. The only method by which you can deal with the enormous number of people who are suffering from hunger over great areas is to aggregate them in camps on healthy sites. Unfortunately, in the west of India there has been no rain for the last seven months and the difficulty is not so much the scarcity of food as the purity of the water. If cholera attacks in its worst form one of the camps it so terrifies the people that they fly in all directions, carrying with them the germs of disease and dying by the roadsides and in the ditches. And the difficulty does not end there even, because not only does the panic affect the people who are congregated in the camps, but it affects the hospital assistants, camp followers, and camp scavengers. I believe that on more than one occasion the European officer after a panic has found himself with but few assistants in the presence of the dead and dying, all the rest having fled. It is due to such a state of things, and not to a lack of money, that the difficulty arises.

The Deaths from Heat at Aldershot.

Mr. GEORGE WYNDHAM made a long statement with reference to this subject. The essential parts were as follows, viz.:—On Monday, June 11th, a field day was ordered at Aldershot and a total of 18,002 men came on parade. The general order in force on all such occasions is that the men are to get their breakfast before starting and that they are to be provided with light refreshments at some time during the day. The method of carrying out that order is left to the regimental authorities. The breakfast consists of bread and tea and there is no reason to believe that any regiment failed to get breakfast before starting. The light refreshment may consist of sandwiches, but the most popular thing with the men is bread-and-cheese. The men dine on their return to camp and very much prefer these arrangements to carrying an emergency ration which would not be palatable unless a prolonged halt were made for cooking it. The light refreshment of sandwiches or bread-and-cheese may either be served out to the men before they start for them to carry in their haversacks or it may be arranged that a canteen cart shall meet the regiment at some specified point. That is a matter entirely for regimental arrangement and one upon which it would be injudicious to lay down uniform regulations. On Monday morning when the troops started there was, the general commanding states, no exceptional heat; on the contrary, he expected rain. But about 10 o'clock great heat began to be felt and as it continued the "Halt" was sounded at 10.30 and the "Cease fire" at 11.15. It was then directed that the men should be marched back as easily as possible and with such periods of rest as their officers commanding might think desirable. During the march back the severe heat was very much felt; a large number of men fell out; 28 men were received in hospital suffering severely from the effects of the sun, of whom four have died; and 29 men suffered slightly. With the exception of the four men the other patients have made rapid recoveries. The whole distance covered by the troops was at the outside about 14 miles and in many cases less. On the question of head-dress, in most regiments the head-dress worn was the field cap. This cap was designed to afford greater protection than the glengarry, which it has superseded in the great majority of our regiments. The problem of designing an ideal field cap is not an easy one. The cap must be sufficiently light and compact to be carried conveniently in the breast or haversack of the soldier when wearing his helmet; and it is also impossible to ignore altogether the soldier's view of what constitutes a smart head-dress. Before this melancholy occurrence the adjutant-general was at work on a sunshade to be attached to the field cap. But the best course is undoubtedly that all men in possession of helmets should wear them in summer-time, whatever the forecast of the weather, and that men, principally in the Royal Reserves, who are still, owing to the exigencies of the war, unprovided with helmets, should not be allowed to undergo severe exertion at a distance from their barracks. The Commander-in-Chief has notified to the general officer commanding, Aldershot, his regret that this course was not adopted, and has directed that it shall be followed in future. Amid much that is regrettable I am glad to know that 14 medical men and an ambulance were in attendance to mitigate the sufferings to which the troops were exposed by a sudden and unforeseen rise of temperature.—Mr. BARTLEY asked whether the head-dress worn on this occasion was not the same as that worn during the manœuvres in 1898, when there were 61 cases of sunstroke.—Mr. WYNDHAM said that in the majority of cases the field cap was in use in 1898.—Mr. BARTLEY inquired whether some promise was not held out in 1898 that there would be a reform in the head-dress.—Mr. WYNDHAM replied that there had been some discussion and that attempts had been made to improve the head-dress. He still held that the better solution was to wear the proper head-dress (the helmet) and not attempt to use the field cap for purposes for which it was not intended.—Sir J. KENNAWAY asked whether he understood aright that the helmet was in future to be universally worn during manœuvres.—Mr. WYNDHAM replied that the Commander-in-Chief had issued instructions that in summer, whatever the weather, the helmet was to be worn, and that troops unprovided with helmets were not to take part in exhausting operations.

MONDAY, JUNE 18TH.

The Deaths from Heat at Aldershot.

On this subject Mr. WYNDHAM read the following report from the general officer commanding at Aldershot—viz., "With reference to your telegram of June 16th, 1900, I have the honour to report as follows: (1) Reports received from commanding officers state that all men had breakfasts before starting for the field day on the 11th inst.;

(2) light refreshments were actually supplied and carried by every unit some in the haversack, but in the majority of cases in transport carts; (3) the only units that did not receive their refreshments on the 'cease fire' sounding were the 5th Worcester Regiment and the 4th Royal Inniskilling Fusiliers. In the case of the 5th Worcestershire Regiment the officer commanding reports that the cart conveying the refreshments went astray during the operations. As regards the 4th Royal Inniskilling Fusiliers, the commanding officer reports that a contractor had undertaken to supply the battalion with bread and cheese. At the hour of the departure of the battalion he failed to appear. A mule cart was then loaded with the refreshments, but, owing to the driver not being acquainted with the locality in which the operations took place, the cart unfortunately did not turn up."

TUESDAY, JUNE 19TH.

Disease and Famine in India.

Mr. MACLEAN asked the Secretary of State for India whether medical authorities in India had condemned the practice of collecting together people seeking famine relief in large camps which were specially liable to attacks of epidemic disease, instead of distributing them near their own homes; whether Mr. Monteath, chief secretary to Government, had reported that it was undoubtedly true that there was not sufficient establishment in India to deal adequately with the demands for relief, and that it was not supposed that the rules and orders of Government were perfectly carried out; and, whether the India Office still considered that the resources of India were sufficient to deal with the famine.—Lord GEORGE HAMILTON replied: I am not aware that the opinion of medical authorities in India is against large relief works. It is, of course obvious that there are some disadvantages in collecting the sufferers from famine in large camps, but the system is on the whole working well and appears to be the only one under which relief on a large scale can be effectively supervised. I have no knowledge of any such report as that which is attributed in the question to a secretary of the Bombay Government. I have reason to believe that although there must be much misery and distress connected with so unparalleled a drought the resources of the India Government as matters now stand are equal to the task undertaken by that Government in respect of the famine.

THE PROPOSED EXEMPTION OF HOSPITALS FROM LOCAL RATES.

The Select Committee of the House of Commons appointed to inquire into the proposed exemption of hospitals from local rates held its first meeting for the examination of witnesses on June 19th. Mr. T. W. Russell, Parliamentary Secretary to the Local Government Board, presided.

Mr. A. D. ADRIAN, legal adviser to the Local Government Board, was the first witness examined. He furnished the Committee with a long statement of the history of the question and the development of the law by means of various judicial decisions. The earliest record he produced was a report of a case decided in the first year of the reign of Queen Anne in which hospitals were held to be liable for rates like other classes of property. In 1760 what was known as the St. Luke's Hospital case was decided by the King's Bench on appeal from Quarter Sessions, the effect of it being that the trustees of the hospital could not be rated as occupiers. On this occasion, however, Lord Mansfield said the judgment carried no general consequences, and each case must be decided upon its merits. Mr. Adrian cited the facts and judgments in relation to the St. Bartholomew's Hospital case nine years later, the York Lunatic Asylum case in 1832, the Bethlehem Hospital case in 1847, and other cases in which hospitals had derived advantage by exemption from rates. He explained, however, that the principles upon which those decisions were founded had no general application. From 1847 onwards there had been frequent decisions in a divergent direction by which property used for charitable and public purposes was held to be liable to rating. Notable among these decisions were that given in the House of Lords in 1865 in the Mersey Docks case, the Ilkley Hospital case in the same year, and the decision in 1875 which declared the Governors of St. Thomas's Hospital liable for rates. The decision against the London County Council in respect of the Erith outfall works in 1893 further defined the interpretation of beneficial occupation, and the general deduction from the judgments given was that local authorities were bound to assess these instititutions in substantial amount. The exemptions from rating included Crown property, parks, some barracks, post-offices, county buildings, churches and chapels, buildings of literary, scientific, and artistic societies, reformatory schools, voluntary schools, volunteer stores, lighthouses, &c., and Sunday schools and ragged schools, at the option of the rating authority. The London Hospital was exempt from rates by virtue of a local Act, the Whitechapel Act.

Before the committee adjourned they took some evidence from Mr. BURT, chairman of the Central Hospital Board, who supported the claim of the hospitals for exemption.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ABBOTT, T. E., L.S.A. Lond., has been appointed Vaccinator for the Registration District of Lyell, Tasmania.

ANDERSON, G. M., M.B., Ch.M. Aberd., has been appointed Vaccinator for the Health Districts of Franklin, South Franklin, and Port Cygnet, Tasmania.

ANDERSON, J. F., L.R.C.P., L.R.C.S. Edin., has been appointed Vaccinator for the Municipal District of Longford, Tasmania.

BLOMFIELD, A. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the North Peckham Sanitary District of the Parish of St. Giles, Camberwell, vice S. C. Phillips, deceased.

BUTCHART, J. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccinator for the Municipal District of Oatlands, Tasmania.

CLARKE, A. H., L.R.C.P. Lond., M.R.C.S.., has been appointed Vaccinator for the Registration District of Hobart, and the towns of Bellerive and Beltana, Tasmania.

CLARKE, H. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Capel Sanitary District of the Dorking Union, vice J. L. Jardine, resigned.

COLLIER, JAMES, M.D., B.C. Lond., M.R.C.P., has been appointed Pathologist to the National Hospital for the Paralysed and Epileptic, Queen-square, London, vice F. E. Batten.

COLTS, P. C., L.R.C.P. Lond., M.R.C.S., has been appointed Senior House Physician to King's College Hospital, Lincoln's Inn-fields, London.

CROWTHER, E. L., M.D. Aberd., M.R.C.S., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

DAMMAN, G. W., M.B., Ch.B. Melb., has been appointed Vaccinator for the Municipal District of Deloraine, Tasmania.

DAVIS, R. H. D., M.R.C.S. Irel., has been appointed Vaccinator for the Registration District of Sheffield, Tasmania.

DEPREE, SIDNEY S., M.B., Ch.B., has been appointed Senior House Surgeon to the Bootle Borough Hospital, Liverpool.

DE RENZI, HENRY CARTER CASHIOT, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Wellington Hospital, New Zealand.

EDWARDS, C. W., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Temple Coombe Sanitary District of the Wincanton Union, vice E. O. Scallon, resigned.

EVERINGTON, H. D., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Resident Medical Officer to the Royal Hospital for Children and Women, Waterloo Bridge-road, London, S.E.

FAULKNER, W. C., M.B., Ch.M. Edin., has been appointed Vaccinator for the Registration District of Waratah, Tasmania.

FENN, C. E., M.B. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at King's College Hospital, Lincoln's Inn-fields, London.

GIBLIN, W. W., L.R.C.P. Lond., M.R.C.S., has been appointed Vaccinator for the Registration District of Hobart, Tasmania,

GOULDEN, H. E., L.R.C.P. Lond., M.R.C.S., D.P.H. Cantab., has been appointed Medical Officer for the Fifth Sanitary District of the Honiton Union, vice H. Steven, resigned.

GRAHAM, A. W., M.B. Lond., M.R.C.S., has been appointed Vaccinator for the Health Districts of Beaconsfield and Dalrymple, Tasmania.

GUTTERIDGE, M. W., M.B., Ch.M. Edin., M.R.C.S., has been appointed Vaccinator for the City of Launceston, Tasmania.

HAINES, H. G., F.R.C.S. Edin, has been appointed Vaccinator for the Municipal District of Longford, Tasmania.

HAINES, WHEELER, B.Sc. Lond., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Senior Assistant Medical Officer to the North Riding Asylum, Clifton, York.

HAMILTON, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccinator for the town of Queenstown, Tasmania.

HARDY, J. A., L.R.C.P. Edin., M.R.C.S., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

HERN, WILLIAM, M.R.C.S., L.D.S., has been appointed Dental Surgeon to the Middlesex Hospital, vice Storer Bennett.

HOLMES, L. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccinator for the Registration District of Launceston, Tasmania.

HOSKINS, T., L.R.C.P. Edin., L.R.C.S. Irel., has been appointed Vaccinator for the Municipal District of Fingal, Tasmania.

HUDSON, J. S., M.R.C.S., L.R.C.P., has been appointed Pathologist to the Infirmary for Consumption, Margaret-street, Cavendish-square, London, W., and Richmond Home, Worthing.

HUNTER, DAVID, M.A., M.B. B.C. Cantab., L.S.A. Lond., has been appointed Medical Superintendent of the New West Ham Borough Asylum at Chadwell Heath.

IRELAND, E. W. J., M.B., Ch.M. Edin., has been appointed Vaccinator for the City of Hobart, Tasmania.

JACKSON, A. G., M.D. Brux., L.R.C.P., L.R.C.S. Edin., has been appointed Vaccinator for the Municipal District of Russell, Tasmania.

JEFFRISS, F. B., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Physician to King's College Hospital, Lincoln's Inn-fields, London.

JOYCE, C., M.B. Melb., has been appointed Vaccinator for the Municipal Districts of George Town and Westbury, Tasmania.

KENNEDY, JOHN, M.D. Irel., has been appointed Vaccinator for the Registration District of Zeehan, Tasmania.

LUKE, THOMAS D., M.B., B.Ch., has been appointed Anæsthetist to the Edinburgh Deaconess Hospital.

MACKENZIE, J. H., L.R.C.S. Edin., has been appointed Vaccinator for the Registration District of Strahan, Tasmania.

MASON, JOHN B., L.R.C.P. Edin., M.R.C.S., has been appointed Vaccinator for the Municipal District of Longford, Tasmania.

MUIR, JAMES M. M., M.B., Ch.M. Glasg., has been appointed Vaccinator for the Registration District of Wynyard, Tasmania.

NOONAN, PATRICK, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccinator for the Municipal Districts of Hamilton and Bothwell, Tasmania.

OWENS, EDWARD M., L.R.C.P. Edin., M.R.C.S., has been appointed Vaccinator for the Registration District of Emu Bay, Tasmania.

PARDEY, J. McI., M.B., Ch.B. Irel., has been appointed Vaccinator for the Registration District of Launceston, Tasmania.

PARSONS, A. R. C., L.R.C.P. Lond., M.R.C.S., has been appointed Junior House Physician to King's College Hospital, Lincoln's Inn-fields, London.

PEDLEY, G. ASTON, L.S.A., L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., has been appointed Dental Surgeon to the Tonbridge Grammar School.

PENNY, HENRY J., L.K.Q.C.P. Irel., L.R.C.S., has been appointed Vaccinator for the Municipal Districts of New Norfolk, Tasmania.

ROBERTS, C. HUBERT, M.D. Lond., F.R.C.S. Eng., M.R.C.P., has been appointed Physician to In-patients at the Samaritan Hospital for Women, London, N.W.

ROBERTS, G. A., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at King's College Hospital, Lincoln's Inn-fields, London.

ROBINSON, DOUGLAS A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccinator for the Municipal District of Deloraine, Tasmania.

ROCKETT, P. J. A., M.B., Ch.B. Melb., has been appointed Vaccinator for the Health Districts of Gormanston and Mount Lyell, Tasmania.

SAUNDERS, E. M., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Accoucheur to King's College Hospital, Lincoln's Inn-fields, London.

SCOTT, R. G., M.B., Ch.M. Edin., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

SHARP, H. C., M.B., B.C. Camb., has been appointed Medical Officer of Health for the City of Truro, vice E. Sharp, resigned.

SMITH, R., F.R.C.S. Edin., has been appointed Vaccinator for the Registration District of Tasman's Peninsula, Tasmania.

SPARKES, W. M., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at King's College Hospital, Lincoln's Inn-fields, London.

SPROTT, GREGORY, M.B., Ch.M. Glasg., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

TOFFT, W. H., M.B., Ch.M. Edin., has been appointed Vaccinator for the Municipal Districts of Campbell Town and Ross, Tasmania.

TWENTYMAN, T. M., L.S.A., has been appointed House Accoucheur to King's College Hospital, Lincoln's Inn-fields, London.

UNSWORTH, J. W., M.B., Ch.B. Vict., has been appointed Medical Officer of Health for the Blackrod Urban Sanitary District.

WALCH, C. N. C., M.B. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

WATSON, G. G., M.B., Ch.M. Edin., has been appointed Vaccinator for the Registration District of Emu Bay, Tasmania.

WILSON, J. M., M.D. Glasg., D.P.H. Camb., has been appointed Medical Officer of Health for the Wheatley Urban Sanitary District.

WOLFHAGEN, JOHN E., M.B., Ch.M. Edin., has been appointed Vaccinator for the Registration District of Hobart, Tasmania.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum with board and residence.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board), or £80 with board.

BRIXTON DISPENSARY, Water-lane, S.W.—Locum Tenens for three weeks. Terms £3 3*s.* per week.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—Assistant to the Bacteriologist. Salary £120 a year. Applications to the Clerk of the Joint Committee, Glamorgan County Offices, Cardiff.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer for twelve months. Salary £60 per annum.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer for these hospitals, unmarried. Salary £100 per annum, with board, washing, and lodging at the hospital. Applications to be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the Town Clerk, Municipal Offices, Liverpool.

CITY ORTHOPEDIC HOSPITAL, Hatton-garden, London.—Physician.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £100, rising to £120 per annum, with board, furnished apartments, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for one year, unmarried. Salary £60, with board, lodging, and washing.

ESSEX AND COLCHESTER HOSPITAL, Colchester.—Resident House Surgeon. Salary £100 per annum, with board and washing.

HAMPSTEAD HOSPITAL, Parliament-hill, N.W.—Resident Medical Officer for six months. Salary at the rate of £120 per annum, with rooms, coals, and gas.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer. Salary £100 per annum, rising £20 annually to £200, with board, lodging, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25. Also Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London.—Two House Surgeons to Out-patients, non-resident, for six months. Salary 25 guineas each and lunch at the hospital.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon, Salary £60 per annum, with board, residence, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

LIVERPOOL STANLEY HOSPITAL.—Honorary Physician.

METROPOLITAN ASYLUMS BOARD.—A Fourth Assistant Medical Officer at the Asylum, at Darenth, near Dartford, Kent, unmarried. Salary £150 per annum, rising to £170, with board, lodging, attendance, and washing, subject to the provisions of the Poor Law Officers' Superannuation Act, 1896.

MIDDLESEX HOSPITAL, W.—Assistant Dental Surgeon.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Registrar. Annual honorarium 50 guineas.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer, unmarried. Salary £125, rising £10 annually to £175, with board, furnished apartments, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—A Senior and a Junior House Surgeon for one year. Salary £85 and £70 per annum respectively, with board, residence, and washing. Also Locum Tenens, for at least one month. Terms 4 guineas per week, with board and residence.

PARISH OF BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer for the Workhouse Infirmary, for one year. Salary £100 per annum, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Applications to the Clerk to the Guardians, Parish Offices, Edmund-street, Birmingham.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising by five equal annual additions to £150 per annum, with furnished apartments in the Asylum, with board and washing.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 a year, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—House Surgeon for twelve months. Salary £80, and board, lodging, and washing. No stimulants.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £80 per annum, with board, residence, laundry, &c.

ST. MUNGO'S COLLEGE, GLASGOW, FACULTY OF MEDICINE.—Bellahouston Chair of Anatomy. Emoluments £300 per annum.

SALISBURY GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and washing.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, with residence, board, and washing provided.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon for two years, unmarried. Salary £100 per annum, with board, lodging, and washing.

SUSSEX COUNTY HOSPITAL, Brighton.—House Surgeon, unmarried. Salary £140 per annum, with board and residence in the hospital and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £80, with board, lodging, and washing.

UNIVERSITY OF ABERDEEN.—Examiners.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the Hospital.

WEST DERBY UNION.—Resident Assistant Medical Officer (unmarried) at the Mill-road Infirmary, Everton, Liverpool, for one year. Salary £100 per annum, with rations. Subject to statutory deduction. Applications to the Clerk to the Guardians, Brougham-terrace, Liverpool.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Honorary Physician. Also House Surgeon, resident and unmarried. Salary £75 per annum, with board and residence and 10s. a month for washing.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing. Also Assistant House Surgeon, for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

GOLDNEY.—On June 15th, at Richmond, Surrey, the wife of Thos. W. Goldney, M.R.C.S., of a daughter.

PROBYN-WILLIAMS.—On June 16th, at Welbeck-street, Cavendish-square, W., the wife of R. J. Probyn-Williams, M.D., of a son.

RUBEL.—On June 19th, at The Red House, River, near Dover, the wife of John L. Rubel, M.R.C.S., L.R.C.P., of a daughter.

SPRIGGE.—On June 19th, at Essex Villas, Kensington, the wife of S. Squire Sprigge, M.B., B.C. Cantab., of a daughter.

WARRINGTON.—On June 15th, at 69, Rodney-street, the wife of W. B. Warrington, M.D., M.R.C.P. Lond., of a daughter.

MARRIAGES.

BOND—IMRIE.—On June 16th, at Shortlands, Kent, Louisa, only daughter of the late Lancelot Dashwood, of Overstrand, Norfolk, and widow of the late Rev. T. Nairne Imrie, Rector of Holy Trinity, Dunfermline, Fife, to T. Bond, F.R.C.S., Consulting Surgeon to Westminster Hospital.

CORY—REEVE.—On June 12th, at the Parish Church, Tenterden, Charles George Cory, M.R.C.S., L.R.C.P., of Soham, Cambs, to Mabel Emily Hartridge Reeve, only child of the late Walter Reeve, Esq., of Peasmarsh, Sussex.

M'DONNELL—THOMPSON.—On June 15th, W. Campbell M'Donnell, M.R.C.S., L.R.C.P. Lond., 10, Park-lane, Stoke Newington, N., to Grace Thompson, L.O.S., lately of 23, Stoke Newington-road.

ROWLAND—TRUELL.—On June 14th, at the parish church, Wall, Lichfield, Frank Mortimer Rowland, M.D., B.A., of Lichfield, to Cornelia Isabel, second daughter of the Rev. W. H. A. Truell, Vicar of Wall.

STUART—DUTTON.—On June 14th, at St. Bartholomew's, Sydenham, Walter Lea Stuart, M.R.C.S., L.R.C.P. Lond., sixth surviving son of the late J. E. Stuart, of Fairview, Hampstead, to Katharine Eleanor, younger daughter of the late Rev. A. Dutton, formerly Vicar of West Hyde, Rickmansworth, Herts.

WOODHOUSE—NELSON.—On June 13th, at Esher Parish Church, Cecil Woodhouse, M.B., B.C. Cantab., of Homeside, Esher, to Norah Nelson, widow of the late Edward A. Nelson, and only daughter of Grinham Keen, Chadworth Cottage, Esher.

DEATHS.

ARGLES.—On June 14th, at Oxford-terrace, Hyde-park, W., suddenly, Robert Argles, L.R.C.P., aged 60.

BRYANT.—On June 7th, at Bloemfontein, South Africa, Hugh A. Bryant, aged 33, M.R.C.S., L.R.C.P., Civil Surgeon, Royal Army Medical Corps, and late of Shaftesbury.

DAVIES.—On June 15th, at Springfontein, South Africa, Herbert Davies, M.B., Ch.B. Vict., a Surgeon of the Welsh Military Hospital, son of Henry Davies, Carus Lodge, near Lancaster.

EMBLETON.—On June 18th, at Swanage, of apoplexy, Dennis Cawood Embleton, M.D., M.R.C.S., L.R.C.P., of St. Wilfrids, Bournemouth, aged 46.

GILLSON.—On June 2nd, William Edward Gillson, L.R.C.P. Lond., M.R.C.S., of Huntingdon-street, Barnsbury, in his 42nd year.

JONES.—On June 18th, at Springfontein, South Africa, Professor Thomas Jones, F.R.C.S.

JOHNSON.—On June 17th, at Beaconsfield, Bucks, Francis Johnson, M.R.C.S., L.K.Q.C.P.I., aged 50 years.

NEWTON.—On June 20th, at Trevor Dene, Penarth, Georgina, the wife of Charles John Newton, Surgeon, age 48 years.

WHEATLEY.—On the 14th inst. at the Grange, Loughton, William Henry Wheatley, L.D.S. (Lond. and Glasgow), aged 46 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A SEVENTEENTH-CENTURY PHYSICIAN ON THE CONTAGIOUSNESS OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—I have been surprised to find among the many authors quoted on the subject of the question of the contagiousness of phthisis and its treatment by the open-air method almost no mention of an English physician, Richard Morton, M.D., sometime Fellow of the College of Physicians, who flourished in London at the end of the seventeenth century and a copy of the second English (posthumous) edition, dated 1720, of whose book entitled "Phthisiologia or a Treatise of Consumptions, wherein the Difference, Nature, Causes, Signs, and Cure of all sorts of Consumptions are explained," has been long in my possession. In the preface the Latin edition (1689 quoted in the *British Medical Journal* of June 16th by Dr. Osler) is said to be already scarce and an apology is made for issuing it in the vulgar tongue. In the second book wherein the author treats "of an original consumption of the Lungs, he says that is original "which from the very beginning depends on an ill Disposition and an Exulceration of the Lungs." Among the causes he gives "Sixthly, Also a foggy and thick Air, and that which is filled with the Smoak of Coals, does extremely promote a Consumption ..... by stuffing and weakning the Lungs, that serve for Respiration, which are the Seat and Theatre of this Distemper." "Ninthly. This Disease is also propagated by *Infection*. For this Distemper (as I have observed by frequent Experience) *like a Contagious Fever does infect those that lie with the sick Person with a certain Taint.*" With regard to prevention he remarks: "Let the patient enjoy an open, fresh, kindly Air, and such as is free from the Smoak of Coals which may not only cherish the animal Spirits and comfort the Nervous Parts, and consequently restore the weak appetite, but likewise procure Quiet (at least in some measure) to the Lungs. But" (and I commend this to the *extreme* advocates of the "open-air" system of cure) "there must be great Care taken that he does not get new Cold. For the Body being in such a manner filled with a Load of Humours, every new Catarrh or Cold tends to a Consumption, and from hence come all our Sorrows." In respect of prognosis again Dr. Morton states "a consumption that is *got by Infection* but especially whenever that *Infection* is derived from one that has an acute and malignant consumption is, when all other circumstances are alike, more difficult to cure and for the most part more acute and fatal than other Consumptions." And again: "A Consumption in the Autumn, or Winter, though it may be relieved by a careful Management and the convenient Use of Medicines, yet it can never be perfectly cured without the benefit of the Spring and of the approaching Sun. For as the vesciculous Substance of the Lungs is almost continually penetrated by the Air, and by the Decree of Nature is blown up in the farthest corners of it by the continual succession of new Air, that is driven in and out by Respiration, so the present State of the Air must necessarily be of very great Moment, seeing it may either hinder or promote the cure of this Distemper, as it is found to be wholesomely dry and warm, or unwholesome, by being cold and cloudy. So that the due Constitution of the Air contributes not only to the Preservation of the Lungs when they are out of order, but also to their cure, more than the most pompous Heap of Medicines, which cannot be conveyed into the Blood and the Part affected so continually or in the same quantity as the Air is. And therefore 'tis usually in vain to expect the Cure of a Consumption in the winter time, and in autumn, to wit, while the State of the Air being cold, thick, and moist, and consequently unwholesome, does continually promote the Distemper more than a Store even of the most proper Medicines can stop and check it, when the Edge of the most powerful Remedies is taken off and their Efficacy weakened in this manner by the extremely incommodious State of the Air."

"History 3. Mr. Luff, the son of that Reverend Divine which I have already mentioned, living in Milk-street, after he had married a Virgin that was consumptive (and, as I remember, dyed within a Year after She was married, with an universal Colliquation and the other symptoms of a fatal Consumption of the Lungs) a few Months after her Death fell into a consumption (as I judged) *by Contagion.* To which fatal Disease an Haemoptoë prepared the way with which he was suddenly taken at Exeter, and that in the Winter time, and he lost a great deal of Blood. But as soon as his spitting of blood was stopt by Phlebotomy, a Milk Diet, and Incrassating Medicines and he had recovered his strength in some measure, being dismist by his Country Physician, within a fortnight (which was much sooner than was fit), he came to London on Horseback, and presently sent for me. But alas! how much was he changed from what he was before! I found the poor Patient very Feverish, and always coughing, and extremely wasted with a Colliquation that was now begun, and troubled with a Streightness and Pains in his Breast. I found it to be a mixt Fever, partly Peripneumonick, from a new Inflammation of some of the Tubercles, partly putrid, from the purulency of other Glandules, which had begun so soon to be ulcerated. I judged the Distemper to be a very acute Consumption of the Lungs from a spitting of blood which *as it was contracted by Infection*, as it was rendered

more hasty and violent by his ill Government in his Journey and his return into our Air that is filled with the Smoak of Coals. The violence of the Pain and Fever requiring it, I presently ordered a Vein to be opened, but I took away but a little Blood, because of the Consumption and Colliquation that was upon him. Then I endeavoured at least to stave off this hasty Ruin for some time with temperate Juleps and Opiates and all sorts of convenient Pectoral Medicines, Blisters, and a due management in all things. But all these things were to no purpose; for within three or four weeks he departed this Life, with all the Symptoms of a very acute Consumption of the Lungs."

There can be no more definite statements as to the contagiousness of consumption and the advisability of its open-air treatment than those contained in the above extracts, and I trust, Sirs, that you will, for the credit of English medicine, assist me to restore to his well-deserved niche in the Temple of Fame this ancient worthy. His whole work, although, of course, including much that is archaic, and sometimes even to our ideas offensive, in the way of treatment, teems with useful suggestions and is full of learned observations, the fruit of his close study of older writers, particularly Hippocrates, and of careful clinical and pathological work on his own part.

I am, Sirs, yours faithfully,

WM. J. TOWNSEND BARKER, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Cantab., L.S.A.,
Formerly Physicians' Assistant, Bristol General Hospital.

Fulham, S.W., June 18th, 1900.

A MEDICAL TRIBUTE TO GENERAL BADEN-POWELL.

A LEAMINGTON paper publishes some verses written by Mr. Montagu Lomax and headed "To B.-P." We quote a few stanzas.

Oom Paul he spake in council, all his bravest in a ring,
"We have laid our plans of conquest—who will capture Mafeking?"
And the wily Cronje answered, as he stroked his grizzled cheek,
"Just a clump of wooden shanties; I can take it in a week."

* * * * *

And day by day their guns belched forth a storm of shot and shell,
And night by night the peaceful sky was lit with fires of hell;
But you didn't seem to mind it, though *your* guns were only toys,
And you signall'd, "Arn't you coming? You can't frighten us with noise!"

Then they called a solemn conclave, bearded cheek and sullen brow,
And they said, "These *verdomm'd rooineks* should have given in by now";
And they penned a wrathful missive: "We concede an hour's grace
Surrender at discretion, or we blow you into space!"

But they little knew the spirit of the man to whom they spoke,
With his air of gay *bonhomie*, and his heart of British oak;
"I have mined the chief approaches," so you wrote politely back,
"Towns don't fall by being looked at—won't you try a front attack?"

* * * * *

And week by week, and month by month, the weary siege went on,
And pestilence and famine thinn'd your numbers one by one;
But you only sat the tighter, took a hole up in your belt,
And looked for help, so slow to come, across the burning veldt.

But you never failed in courage, never lost your cheery tone,
And when the days were darkest you ran the show alone,
For you plann'd bazaars and concerts, wrote them comic songs to sing,
Then sent out fresh despatches: "All well—at Mafeking."

* * * * *

And when the help, so long delayed, so longed for, came at last,
And the pulses of an Empire's heart were beating loud and fast,
Amid all the songs and tumult that made each bosom swell,
Was the note of deep thanksgiving, "All's well, thank God, all's well!"

* * * * *

There are leagues and leagues of banners, from every roof they wave,
The grand old flag of England you fought so well to save;
And from Sydney to Vancouver the rocking belfries ring
The fame of Baden-Powell and glorious Mafeking.

Leamington Spa, May 21st. MONTAGU LOMAX.

ACCIDENTAL VACCINATION OF A WOMAN BY HER CHILD.

To the Editors of THE LANCET.

SIRS,—The following case is, I think, worthy of notice. Four weeks ago I was sent for to see a woman supposed to be suffering from erysipelas. When I arrived there I found the submaxillary lymphatic glands enlarged and a slight swelling of the left cheek. The lower lip was also swollen and had a large and a small vesicle near the junction of skin and mucous membrane about its centre. About 10 days previously I had vaccinated her child, and I extracted from her the information that the baby had scratched her lip and that she had accidentally rubbed the vaccination pad with some discharge on it on her mouth whilst dressing it. Under the treatment of a mild antiseptic mouth wash, painting the enlarged glands with tincture of iodine, and the administration of an aperient mixture the symptoms subsided, leaving two small cicatrices.

I am, Sirs, yours faithfully,

A. R. HENCHLEY, L.R.C.P., L.R.C.S. Edin.,
L.F.P.S. Glasg.

Blagdon, near Bristol.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—The report in THE LANCET of June 9th at page 1656 shows that chloroform administered by the towel or Simpson's method to the same patient and by the same administrator on two occasions, varies absolutely in the result produced—one administration all but kills the patient by respiratory paralysis, the other answers perfectly and everything goes well. Here we have actually demonstrated the uncertainty of the towel or rule-of-thumb method. The cause is evidently the utter uncertainty of the dosage afforded.

I venture to submit that this report of these two administrations justifies another protest against this mode of administration and, indeed, against any mode which does not register the amount of chloroform used and also enable the administrator to know how much chloroform vapour is passing into each inspiration. These essential requistes cannot be claimed for any rule-of-thumb method. This has been clearly shown lately by letters which have appeared, and especially by those of Dr. James Edmunds, in recent numbers of THE LANCET.

I should not presume to engage in the discussion of this question of the administration of chloroform did I not do so from personal experience, and I confess that I have learnt much from this practical method of gaining knowledge and thus putting myself in the place of my patient. In fact, Sirs, I venture to think that all those who administer anæsthetics should have personal knowledge of its effect on themselves, and I have been not a little surprised to hear how learnedly some discourse on the subject without ever having experienced its effects. I have therefore administered it to myself and have had it administered to me by Dr. Edmunds with the Krohne inhaler on the method described by him in THE LANCET.

On each occasion full surgical anæsthesia was gradually and comfortably induced—without an iota of coughing, discomfort, or resistance, and without any after discomfort. On one of these occasions we were honoured by the presence of Dr. Alexander Haig and Dr. Stretch Dowse, and "pipe-smoking anæsthesia" was, I am informed, fully induced, yet the chloroform used from the graduated bottle was only 35 minims and the time of induction was seven minutes.

It would give me great pleasure at any meeting of medical men to submit myself to chloroform again in the same way for the purpose of a demonstration. I think, Sirs, you will agree with me that it is as desirable as it is imperative in the face of so many deaths occurring under chloroform that the important question of the safest mode of administration be at once calmly and quietly considered and discussed, and the best system be recognised and adopted by all anæsthetists. I should consider the sacrifice of my life a small matter to attain this object.

I am, Sirs, yours faithfully,

C. J. HARRIS, M.R.C.S. Eng., &c.

Kilburn Priory, N.W., June 14th, 1900.

Income Tax.—Our correspondent might make a return based on his own estimated income for the ensuing year; but no doubt the surveyor for the district, if the return were lower than that of his predecessor, would assess him on the average of the returns made for the past three years. We should try the first course.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 21st, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
June 15	29·97	S.W.	0·09	114	70	57	60	63	Cloudy
" 16	30·05	S.W.	...	110	71	57	60	64	Cloudy
" 17	30·05	S.W.	...	109	75	61	61	66	Cloudy
" 18	30·08	S.W.	...	120	78	56	57	63	Fine
" 19	29·94	S.W.	...	120	77	60	60	66	Fine
" 20	29·74	S.W.	0·07	121	74	57	58	62	Cloudy
" 21	29·77	S.W.	0·05	79	61	55	56	61	Raining

During the week marked copies of the following newspapers have been received: *East Daily Press (Norwich), Leicester Daily Post, Daily News, Norfolk Weekly Standard, Bradford Observer, Leeds Mercury, Dundee Advertiser, East Anglian Daily Times, Blackburn Daily Telegraph, Ealing Gazette, Midland Free Press, Bexhill Chronicle, Scotsman, Birmingham Daily Post, Western Mail, Gazette (Middlesbrough), Folkestone Herald, Eastern Morning News (Hull), York Daily Herald, Times of India, Pioneer Mail, Citizen, Montrose Standard, Sun (London), South Wales Daily News, Manchester Guardian, Builder, Architect, Yorkshire Post, Bristol Mercury, Hertfordshire Mercury, Liverpool Daily Post, Mining Journal, Brighton Gazette, Reading Mercury, Bromley Chronicle, South-Eastern Gazette, West Sussex Gazette, Local Government Chronicle, Surrey Advertiser, Local Government Journal, Western Morning News, Londonderry Sentinel, Carpenter and Builder, Notes and Queries, Tewkesbury Record, West Bromwich News, Cambrian News, Chicago Daily Tribune, South Durham Mercury Weston-super-Mare Gazette, Ayrshire Post, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (30th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Diagnosis and Prognosis in Chronic Deafness. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Edwards: Urinary Cases.

TUESDAY (26th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. W. Mott: The Degeneration of the Neurone. (Croonian Lecture.) Lecture III. Syllabus:—The Chemistry of Degeneration.—The Marchi Method and its Chemical Explanation.—The Decomposition of Myelin in Degeneration.—The Production of Cholin in the Blood and Cerebro-spinal Fluid, especially in Relation to General Paralysis.—The Chemical and Physiological Properties of Cholin.—Degeneration and Auto-intoxication.—The Influence of Nucleo-proteid in the Cerebro-spinal Fluid in Rapid Wasting Diseases of the Brain.—Chronic Toxic Condition of the Blood, with especial reference to the Influence of Alcohol and Syphilis in the Production of General Paralysis and Tabes.—Some Facts concerning the Pathology of General Paralysis.—The Close Relationship of the Two Diseases Considered Etiologically and Pathologically.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Sharkey: Consultation. (Medical.)

WEDNESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. W. A. Jacobson: Consultation. (Surgical.)

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. W. Edmunds: Clinical Demonstration of Selected Surgical Cases. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Fowler: Thoracic Aneurysm.

MASON UNIVERSITY COLLEGE, BIRMINGHAM (Medical Lecture Theatre of the College).—4 P.M. Dr. O. J. Kauffmann: The Commoner Neuroses of Childhood, their Pathology and Treatment. (Ingleby Lecture.)

THURSDAY (28th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. W. Mott: The Degeneration of the Neurone. (Croonian Lecture.) Lecture IV. Syllabus:—Primary Degeneration.—The Arguments in Favour of General Paralysis being a Primary Degeneration with Secondary Inflammatory Changes.—Primary Degeneration may Affect the Afferent System as in Tabes, the Efferent System as in Amyotrophic Lateral Sclerosis, or both Afferent and Efferent Systems as in Combined Sclerosis.—Observations upon Multiple Polyneuritis due to Alcoholism.—The Effect of Stress in the Production of Degeneration.—The Important Influence of Heredity in Nervous Diseases.—The Influence of Alcohol, Syphilis, and Tuberculosis upon the Germinal Plasm, and the Effects upon the Offspring in the Production of (*a*) Premature Decay of the Neurone, (*b*) Arrest of Development of the Neurone.—Juvenile General Paralysis Studied in 30 Cases.—Congenital Imbecility and Epilepsy from 40 Cases.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Mr. J. Startin: Interesting Clinical Cases (illustrations by lantern slides).

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Edwards: Urinary Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. W. Hunter: Pathological Demonstration. (Post-graduate Course.)

FRIDAY (29th).—MEDICAL GRADUATES COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Ear.)

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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The Croonian Lectures

ON

THE DEGENERATION OF THE NEURONE.

Delivered before the Royal College of Physicians of London on June 19th, 21st, 26th, and 28th, 1900,

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

LECTURE II.[1]

Delivered on June 21st, 1900.

MR. PRESIDENT AND GENTLEMEN,—In my last lecture I briefly referred to the present position of the neurone theory. I gave some examples of its practical application and I dwelt at some length upon a method which has been used for studying the bio-chemical changes which occur in the protoplasm of the nerve-cell. Moreover, I pointed out the important evidence afforded by the development of the myelin sheath in proving correlation of structure and function, and that the formation of myelin depends upon three fundamental biological principles: 1. An acquired inherent tendency the result of evolutional differentiation of structure and function, for certain systems, groups, and communities of neurones at successive periods of time to ensheathe their axis-cylinders with an insulating and protecting structure—the myelin sheath which in the case of the peripheral nerves is contained within and partially formed by a chain of tubular mesoblastic cells. 2. Phylogenetically and ontogenetically stimulus from without is the determining factor in the bio-chemical change associated with the deposition of myelin. 3. Absence of stimulus as occurs from long disuse occasions a regressive metamorphosis back to the embryonic type.

THE EFFECTS OF INJURY OF THE NEURONE.

Section of the axis-cylinder or destruction of the nerve-cell (speaking collectively), whether produced by direct trauma or by morbid processes occurring in the vascular and supporting structures of the nervous system, causes a simultaneous death-change of a characteristic chemical nature affecting the myelin sheath and axon extending from the point of injury to its terminal fibrils. This is Wallerian degeneration, or secondary degeneration of Waller and Türck. Ranvier showed that the sheath of Schwann consists of a series of tubular mesoblastic cells wrapped round the axon and that when a nerve is cut there is degeneration of the myelin and axon above the lesion as far as the next node. Each internode, therefore, represents a cell, and the fact that the degeneration does not extend upwards beyond the node allows the presumption that these tubular cells have some metabolic interaction with the contained axon and its surrounding myelin. But whatever that reciprocal metabolic interaction of the axon and its ensheathing structures may be, secondary Wallerian degeneration conclusively proves that it is controlled and determined by the nerve-cell and its contained nucleus; indeed, it is possible to conceive that the metabolic activity of the nucleus is the mainspring of this trophic influence, by the production of some bio-chemical or bio-physical stimulus which pervades the whole complex neurone even to its far distant prolongations. The Nissl method has shown that section of an axon causes changes in the nucleus and cell protoplasm. These may be temporary and recoverable or permanent and irrecoverable. The result apparently depends very much upon the degree and extent of the injury. When a peripheral nerve-fibre is cut through the trophic influence of the cell is removed from the axon and myelin sheath which it generated. These die; not so, however, the independent tubular cells of the sheath of Schwann, for these, soon after the death-change has commenced in the myelin, show signs of active proliferation. Whether, as some authorities would have us believe, they can lead to regeneration of the nerve, or whether, as seems much more probable, they prepare the way for the down-growing axon, I shall not here enter into, but that they have an important function in regeneration is undoubted, seeing that regeneration in the central nervous system, where the sheath of Schwann is absent, does not occur. Tuckett has shown that when a non-medullated sympathetic nerve is cut the nuclei and sheath-like structures remain unaltered, while the axon alone degenerates; it could thus appear that the degenerating myelin may act as a formative stimulus causing nuclear mitosis and cellular proliferation.

THE EFFECTS OF INJURY OF A NERVE UPON THE CELLS OF ORIGIN.

Only since the introduction of the Nissl method of staining has it become known that changes occur in the ganglion cells almost immediately after section of the nerve. Nissl, who first studied this, called it "*primäre Reizung*"; and Marinesco, who has made a special study of this subject, has shown that section of the hypoglossal nerve on one side is followed by three stages of change in the corresponding nucleus of origin. The hypoglossal nucleus is especially favourable for the study of this question, the nerve being purely motor. From the close proximity of the two nuclei comparative observations of the nuclei of the two sides make very evident changes, which occur as the result of section of the nerve on one side.

Marinesco divides these changes which occur in the nucleus into three phases. The *reaction* phase occurs during the first month and is characterised by a dissolution of the chromatophil elements and a displacement of the nucleus towards the periphery of the cell. This change has also been recognised by many other observers—namely, Nissl, Ballet et Dutil, Lugaro, Flatau, van Gehuchten, Sano, Erlanger, and others. The condition is not necessarily one of degeneration, as I shall show later. It is important to bear this in mind, for a similar condition may be found affecting the anterior horn cells in peripheral neuritis, where disease has led to a destruction of the axis-cylinder process. In the *reparation* phase the cell body increases in volume, the nucleus resumes its original position, and the cell shows a distinct pyknomorphic condition (abundance of stainable substance). About 90 days after the injury the process of reparation has proceeded so far that the nuclear group of the injured side is only distinguished from the uninjured side by the increase in size of the cells and their processes. A little later the cells return to their normal appearance, in point of time corresponding to the regeneration of the nerve. We may consider this cell-hypertrophy as

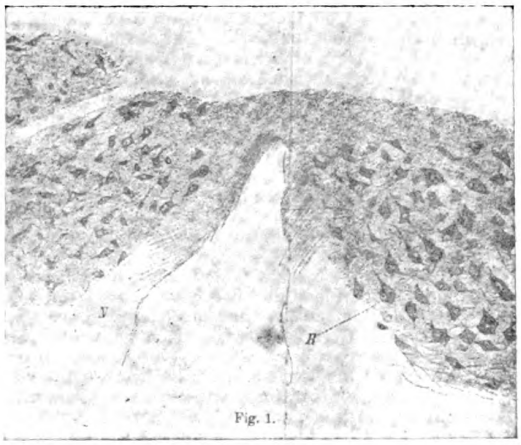


Fig. 1.

Hypoglossal nuclei of two sides. R indicates the swollen cells of the nucleus on the side of section during the phase of reparation. N indicates the normal side. (After Marinesco.)

evidence of the increased physiological activity necessary for regeneration. If now the hypoglossal nerve be torn out according to the method of von Gudden, or if a large piece of the nerve be resected, or any other condition arise so severe that the regeneration process in the nerve is prevented, then the reaction phase proceeds rapidly, and instead of a reparation phase of hypertrophy the cells undergo atrophy and a *degenerative* phase ensues. The accompanying diagram shows the changes in the cells of the hypoglossal

[1] Lecture I. was published in THE LANCET of June 23rd, 1900, p. 1779.

nucleus which result from section of the nerve in which regeneration is possible; it differs from tearing out the hypoglossal nerve in which regeneration is impossible. In the former case the return of the cells to normal is coincident with regeneration and return of function; in the latter the degeneration and subsequent atrophy of the cell group are brought about by such an injury as to render repair impossible and resembles therefore the effects of amputation of a limb. Recently Schäfer has shown that hemi-section of the spinal cord produces chromolytic changes in the cells of Clarke's column and subsequent atrophy, substantiating thereby the theory that these cells give origin to the dorsal and ventral cerebellar tracts, and Lloyd, a pupil of his, has also shown that the cells of Deiter's nucleus undergo similar changes, thus tending to support the observations of Risien Russell, Ferrier, and Turner, that the cells of this nucleus give origin to descending fibres in the antero-lateral region. We can thus see that this method has proved of the greatest value in determining the cells of origin of tracts of fibres. Some observers, Bregmann and Darkschewitz, have even found, after tearing out cranial nerves, a degeneration recognisable by the Marchi method and demonstrating the course of the nerve in the medulla or pons by the black-stained myelin. By the kindness of Mr. Victor Horsley I have the opportunity of exhibiting a lantern slide of the medulla showing degeneration back to the nucleus after an injury made just at the point of emergence of the nerve.

Marinesco, in his admirable work on the effects of amputation, describes slow progressive changes in the myelin sheath and says the normal refraction of the fat disappears, the colour reaction of the same tends to disappear, and following the changes in the myelin there is a change in the axis-cylinder. In addition, there appears a considerable nuclear proliferation of the sheath when the myelin has disappeared, the atrophied fibres bearing resemblance to non-medullated fibres. A recent observation by Noll, which I shall refer to later, showed that the protagon diminished in the central stump of a nerve after section, though, of course, not to such an extent as in the peripheral.

Barker, after referring to the above experiments, as well as to the studies of von Gudden and his pupils and the observations upon the nervous system following amputations, remarks: "We have seen that these observations have, partially at least, annulled the validity of Waller's doctrine of the trophic relations of the nerve cells, for after injury to an axon, in addition to the degeneration in the axon, peripheral to the lesion there are demonstrable alterations into the cyto-proximal end of the axon, and especially in the cell body of the neurone itself." The changes which occur after the amputation of limbs are probably, however, due to regressive atrophy from lack of stimulus from the structures over which the neurones presided. The changes which occur in the cells of origin of a nerve after section undoubtedly prove that the whole neurone has suffered by the injury, but there is no evidence to show that a degeneration occurs (in the sense of the chemical change to be referred to later), except in the peripheral portions of the cut nerve and in the central portion as far up as the next node of Ranvier, unless the injury is so severe as to cause such a shock to the neurone that it dies as a whole.

DISEASES OF THE NERVOUS SYSTEM AS DISTINGUISHED FROM DISEASES WITHIN THE NERVOUS SYSTEM.

The histological elements which make up the nervous system may be divided into two groups: (1) the nervous units or neurones; and (2) the supporting, protecting, and nutrient tissues. Organic diseases may start in a primary degeneration of the nervous units or neurones, or the neurones may be affected secondarily by diseases starting in the supporting, protecting, and nutrient tissues. Such are essentially diseases *within* the nervous system and include diseases of the blood-vessels, lymphatics, membranes, and special nerve connective tissue (neuroglia). These give rise to secondary degeneration, either by direct injury, inflammatory compression, or by cutting off the blood-supply.

The causes of pathological processes occurring in the nervous system may be considered under two headings—(1) external, and (2) internal; but it may be remarked that in all cases except direct injury the two groups are more or less combined. The external causes depend upon the condition of the blood and lymph by which the neurones are nourished and the excess or deficiency of normal stimulation or existence of abnormal stimulation. The internal causes depend upon the inherent vitality of the neurones themselves. In considering, therefore, the causes of degeneration of the neurone it will be necessary to point out the result of (1) failure of the blood-supply; (2) toxic conditions of the blood; (3) the effect of excess or deficiency of stimulation; and (4) inherited defects in the nervous system as a whole or in some particular groups or systems of neurones. To do this, however, in a satisfactory manner would necessitate my referring in a very superficial manner to all the diseases affecting the nervous system. I shall therefore limit myself especially to personal observations relating to some few causes of the degeneration of the neurone in each of those groups which I have studied.

Degeneration of the neurone may be studied by changes in (1) the nerve cell and (2) the axon and its sheath. By the neurone theory degeneration of the former must be associated with changes in the latter. We have also reasons for believing that degeneration primarily affecting the axon and its sheath must be associated with functional, if not degenerative, changes in the trophic and genetic centre of the nerve cell.

EFFECTS OF TEMPORARY OR PERMANENT FAILURE OF THE BLOOD-SUPPLY UPON THE NEURONE.

The effects produced by complete anæmia for varying periods of time upon the nervous elements of the spinal cord have been the subject of numerous experimental inquiries, but I am unaware of any systematic series of observations upon the effects produced by ligation of the cerebral arteries. Many clinical facts show that this is a subject worthy of attention, for the sudden loss of consciousness which results from syncope is explained by a failure of activity on the part of the nervous elements of the cortex cerebri, in consequence of default in the circulation in the hemispheres. Again, the sudden loss of consciousness in epilepsy, followed immediately by tonic spasms and then clonic spasms, has recently found a possible explanation in the series of very valuable experimental observations by Dr. Leonard Hill. He has found that artificial cerebral anæmia in cats or monkeys produced by ligation of the four cerebral arteries produces tonic spasm. If absinthe be injected, instead of causing clonic spasm it increases the tonic spasm. Then, if the clamp or ligature be loosened on a carotid so that blood flows back to the hemisphere clonic spasms almost immediately occur. This will again give place to tonic spasm on closing the artery; and again on removing the clamp, allowing the blood to flow to the hemisphere, the clonic spasms supervene. He has, moreover, shown that if all four arteries in an animal be ligatured, in the dog recovery takes place; the explanation is that collateral circulation is restored soon enough to prevent destructive changes occurring in the nervous elements. With two carotids and two vertebrals tied the dogs are for some days paretic and demented—very much in the condition of the dogs which Goltz showed after having removed the cerebral hemispheres; however, as Sir Astley Cooper and other observers have shown, these animals recover completely. Dr. Hill has been good enough to send me portions of the brains of 12 such animals operated upon, which after ligation of the four arteries were allowed to live for varying periods of time. I have examined the nervous elements with a view of determining the condition of the nerve-cells when the dog is in a state of paresis and dementia and when it has recovered so completely as to pass for a normal animal. The methods which I have adopted have been for this and all other experiments and observations referred to—the Nissl method, the Marchi, the Marchi-Pal, and rapid Golgi methods of staining. The changes observed in the brain by the Nissl method are shown in the accompanying photo-micrographs of the sections. (*Vide* Figs. 2, 4, and 5.) Before, however, speaking of the pathological changes I will again call your attention to the appearances of the pyramidal cells of the cortex, medulla, and spinal cord of a normal animal when examined by this method, for it is the most reliable we have at present for studying pathological changes by comparing the appearances presented with the normal cells. (*Vide* Figs. 1 and 3.) You will observe that, first of all, the cells have changed their shape; they are swollen up, their edges have not straight or incurved sides, but are curved outwards; the nuclei are swollen and often eccentric, and in some few of the cells may actually be extruded. When this has happened of course the cell has practically been destroyed and with it the nerve-fibre which contains its axis-cylinder projection. Another obvious sign of change, although not necessarily a destructive change, is the appearance presented by the chromophilous substance. It no longer presents those

definite figures which have received the name of Nissl bodies. Sometimes it appears as a fine dust, sometimes arranged in long threads separated from one another. One of the earliest changes to be observed is the absence or diminution of the chromophilous substance of the dendrons; moreover, the edges of the cells and the processes present a ragged instead of a clear-cut outline. Generally speaking, the changes in the chromophilous substance only do not denote destruction, but should the swelling be so great as to produce an extrusion of the nucleus the cell must necessarily die; and we can, if the animal be kept alive over 10 days, determine how many psycho-motor cells have been destroyed by the temporary anæmia occasioned by the ligation of the arteries. We can do this by examining sections of the pons, medulla, and spinal cord by the Marchi method. The number of black degenerated fibres will indicate the number of pyramidal motor neurones which have perished as a result of the anæmia. These are usually comparatively few. We may consequently say that mere swelling of the cells with very marked chromolytic changes does not mean more than functional disturbance. Mere hydration—for thus I explain the swelling—without dislocation of the nucleus from the cell, even though the chromolytic changes are very intense, does not mean death of the neurone. This is an important fact in view of the association of pathological symptoms with changes in the nerve-cell. Such microscopical changes are for the most part illustrated in the Supplement by Figs. 2, 4, 5, and 12. I would add in connexion with this series of experiments that the tangential fibres were found in most cases intact in animals that had completely recovered. We must suppose, therefore, that collateral circulation in dogs is restored very shortly after ligation of four arteries. The experiments of Ehrlich and Brieger in 1884 proved that anæmia of the lower portion of the spinal cord could be produced by ligature of the abdominal aorta, and that if the circulation was cut off for not longer than from a quarter of an hour to three-quarters of an hour only a temporary paralysis of the hinder extremities resulted, but if for one hour permanent paralysis and destruction of the nervous elements were invariably the result. Numbers of other experimenters have produced anæmia of the lumbar spinal cord by this method; and Sarbo has given a full account of the changes which occur in the cells as a result of complete anæmia lasting for from one hour to one and a half hours after ligation. The changes which he describes as occurring in the motor cells of the spinal cord as the result of complete occlusion of the circulation coincide very closely with the changes which I shall describe in other animals, especially monkeys and cats, also in dogs, which have died as a result of ligation of cerebral arteries, and in which collateral circulation was not soon enough established to prevent destructive changes. Sarbo found that ligature of the aorta for one hour in the rabbit caused a cell degeneration which was manifested by a granular destruction of the stainable substance of the cell protoplasm and a progressive homogeneous atrophic process affecting the cell nucleus. The appearances presented by the degenerating cells depended upon the time which was allowed to elapse between the ligation of the aorta and the killing of the animal—the longer the time the more evident was the cell destruction. He found no vascular changes indicating inflammations and no hæmorrhages.

The subject of cerebral anæmia is of clinical importance, as it is well known that in man ligature of a carotid for aneurysm has been followed by hemiplegia, and I have examined the brain in one such case. Dr. Hill sent me a piece of the cortex from similar situations in both hemispheres and asked me to decide by microscopical examination upon which side the patient was paralysed. This I correctly determined by the difference in the appearance of the cells of the two sides. We can understand, also, how *temporary* loss of motor or psychical function—e.g., transitory aphasia, monoplegia, hemiparesis, stupor, and dementia, or even hemiplegia—may occur in syphilitic disease of the arteries; for if collateral circulation be restored within an hour or so after the blocking of the artery, providing a thrombus does not spread to the small branches the circulation may be restored in the part and function may return in the course of a few hours or days.

In connexion with the experimental anæmia of the spinal cord produced by clamping the abdominal arteries it is of interest to note two points. The exogenous fibres of the posterior columns, together with the pyramidal tracts—tracts the fibres of which have their trophic and genetic centres respectively in the spinal ganglia and the cerebral cortex—do not undergo degeneration, whereas tracts which have for their trophic and genetic centres cells in the grey matter of the spinal cord undergo degeneration. Munzer and Wiener's experiments showed this, and recently I had the opportunity of examining a case of acute anterior poliomyelitis in an infant 14 days after the onset of the disease. In this case also the degeneration was limited entirely to those tracts the fibres of which arise from cells in the spinal cord, and I cannot help thinking that this case was of vascular origin—possibly spasm of the large artery which comes in to supply the lower end of the spinal cord. Ballet and Dutil found from their experiments that complete anæmia of the lower end of the spinal cord for a few minutes (by clamping the aorta) produced chromolytic changes in the anterior horn-cells. I have also found that swelling of the cells previously described, with chromolytic appearances, may come on within less than 10 minutes after ligation of the four cerebral arteries, for occasionally one of Dr. Hill's dogs or cats has died from the effect of the anæsthetic very shortly after the four arteries have been ligatured. It may be said that this was due to the anæsthetic. It was not, however, so, for occasionally I have had the opportunity of examining the brain tissues of animals which have died from the anæsthetic before any of the arteries were tied, and these showed no changes. (*Vide* Fig. 3, Supplement.) We may therefore consider that the changes noted are due to the cessation of the circulation. Dr. Hill has shown that the cortex of these animals is readily excitable, and in some cases even hyper-excitable to, electrical stimulations, epilepsy being produced. Consequently, this change in the appearance of the cells can be associated with increased electrical excitability, or, perhaps more likely increased tendency of stimulus to spread—a fact of considerable importance when put beside another fact—viz., that I have found in status epilepticus the cells presenting in many instances this swollen dropsical appearance, with marked changes in the chromo-philous substance. (*Vide* Fig. 13.) In general paralysis of the insane epileptiform seizures are of frequent occurrence, and when they do occur in the progress of the disease I have found invariably that in proportion to their frequency and severity there is a large number of recent degenerated fibres in the pyramidal systems. Consequently, we may assume that epileptiform seizures in this disease are associated with death of the cortical pyramidal motor neurones, due in some instances (I believe in great measure) to vascular disturbance of the cortex. (*Vide* Fig. 9.) The disease itself is, I consider, primarily a progressive decay of the nervous elements, but owing to the establishment of a vicious circle numbers of neurones are destroyed by circulatory disturbances.

I will now pass on to the effects of *experimental anæmia*, produced by ligature of arteries in which collateral circulation was not restored soon enough to prevent destructive changes in the nerve-cells. If cats or monkeys have all four arteries ligatured, or if, instead of ligaturing both vertebrals and both carotids in dogs, a subclavian be tied instead of one of the vertebrals, a sufficient collateral circulation cannot be restored soon enough and the animal dies in a period varying from a quarter of an hour to 24 hours. The time variation no doubt depends upon the effect produced upon the medulla by the anæmia. The changes observed in the cells of animals which have thus lived some hours are different entirely to those which have been previously described. There is not merely a physical change due to hydration; this may or may not be present, for sometimes the cells are not swollen, but are even shrunken. The staining reaction is also different, showing a bio-chemical as well as a biophysical change; sometimes the whole cell stains uniformly but not with a brilliant colouration. (*Vide* Fig. 7.) If a double stain has been used, for example, methyl-blue and saffranine, the whole cell may be stained a uniform dull purple, the processes, as well as the body of the cell, having a homogeneous instead of a differentiated reaction to the dyes—a condition which is similar to that met with in hyperpyrexia and to the appearances described by Sarbo in the motor-spinal neurones of the lumbar-sacral region after clamping the abdominal aorta. These animals prior to death, according to Dr. Hill's notes, generally had epileptiform convulsions. One animal, a monkey, presented the most instructive changes, because after ligature of both carotids and one vertebral it was paretic and demented, took no notice of anything, and behaved exactly like an

animal with its higher cortical centres destroyed, which indeed they were. It was killed on the fifth day and examination of the brain of this animal exhibited the following changes, which are shown in the accompanying photo-micrographs. The nerve-cells and all their processes were uniformly stained a diffuse dull purple and were readily discerned on account of the dilatation of the lymph space in which the neurone lies; scattered through the protoplasm of the cells was a fine dust of coloured particles; the apical processes of the cells were either destroyed or twisted like corkscrews; in many the dendrites had disappeared, but in some of the cells the axis-cylinder could be traced with unusual distinctness, probably due to some swelling; and one cell was observed which is of interest because the axis-cylinder process could be traced some distance, giving off lateral twigs that seemed to merge into a general network, supporting, therefore, the diffuse nerve network theory of Golgi. (*Vide* Fig. 6.) Many of the cells were swollen up, as Fig. 8 shows, and others were shrunken. Some could be seen with phagocytes sticking to them and devouring the dead cells. Although one observed these very marked changes in the cells by the Nissl and Weigert iron methods, yet by the chrome-silver method the cells appeared normal, showing the gemmules on their processes with unusual distinctness (*vide* photo-micrographs 10 and 11). The brains of other animals, dogs and cats, were examined by similar methods with the same results. It may be that the chrome silver only stained those cells which had not undergone disorganisation; but none of the cells when examined by the methods I have alluded to exhibited normal appearances as regards their bio-chemical condition nor was the animal physiologically normal. I have therefore come to the conclusion that the rapid silver method of Golgi which stains only a few cells, although undoubtedly of the greatest value for anatomical purposes, yet for acute pathological findings is unreliable. Many of the statements which are made with regard to the effects of drugs, anæsthetics, and acute disease, as represented by the appearances of the gemmules on the processes of the cells, as made evident by the chrome-silver method, are therefore open to serious objections. It is very probable that the method of Cox might be found of value in determining changes in the cells of the cortex in chronic disease and possibly also in acute disease. I have not mentioned that in most of these brains experimented on a striking naked-eye feature was the distension of the veins of the cortex with blood, and frequently there was sub-pial hæmorrhage; also the peri-vascular lymphatics were usually distended with fluid. No doubt, both the increase of blood in the superficial veins, the increase of fluid in the peri-vascular lymphatics, and the general œdema of the brain itself were proportional and compensatory to the diminution of the arterial blood. The arteries were generally empty, likewise the capillaries. In some cases the peri-vascular lymphatics and membranes were the seat of a marked cellular infiltration resembling the condition found in general paralysis. Collateral circulation to the medulla, by which the respiratory centre is kept going, is essential to life. Such collateral circulation when established—and if the animal lives it must have been established—would be accompanied by blood-supply to the choroid plexus, and the cerebro-spinal fluid, which functions as the lymph of the brain, would consequently be secreted in abundance and soon compensate for the diminution caused by the failure of the arterial circulation. Thus the increase of cerebro-spinal fluid would account for the œdema of the brain, the dropsical condition of the cells, and the dilatation of the peri-vascular lymphatics.

Some experiments which I made five years ago with Professor C. S. Sherrington, and which we have never found opportunity to continue and develop, are, I think, of sufficient importance to mention with this subject of anæmia. We found that compression of the spinal cord in the dorsal region, even enough to produce indentation, would not stop the passage of impulses generated by faradaic excitation of the cerebral cortex to the lower spinal motor neurones. In two animals—monkeys—upon compression with an eye removed from a rat immediately after death, fixed at the end of a glass tube attached to a horizontal lever in such a way that compression of the cord could be made by this living tissue and the pressure measured by means of a sliding weight, we found that *extremely light pressure* upon the lumbar spinal cord was sufficient to abolish conduction in from one minute to one and a half minutes after the pressure was applied, and upon removing the pressure conduction in a minute or two returned because faradaic excitation of the cortex was responded to by an appropriate muscular contraction. The experiment was repeated a considerable number of times and I have no doubt that in these two animals we managed to produce an anæmia of the grey matter of the lumbo-sacral spinal cord by compression of the large artery that comes in about the third lumbar root, causing a physiological block in the synapsis formed by the terminal arborisations of the axons of the cortical pyramidal neurones with the dendrons of the spinal motor neurones.

EFFECTS OF HÆMORRHAGE.

Large quantities of blood may be lost to the body from hæmorrhage without producing any appreciable changes in the nervous elements. Voss has performed a number of experiments on animals, endeavouring to produce degeneration of the spinal cord by injections of pyridine sufficient to produce a severe anæmia, but without result. Likewise, numbers of cases of pernicious anæmia, leucocythæmia, and exhausting blood disease are not found associated with any noticeable change in the neurones. I have examined the nervous system in several cases of pernicious anæmia (in one of which the corpuscles had sunk to 500,000 per cubic millimetre), in cases of very severe anæmia from hæmorrhage and exhausting disease, and leucocythæmia (in which the red corpuscles were reduced to one-fourth and in which the whole of the brain and vessels showed congestive stasis and hæmorrhages), and yet the nerve-cells of these cases of extreme anæmia showed little or no bio-chemical change, the Nissl granules appearing quite normal (*vide* Fig. 1). Nor did sections of the nervous system in these cases show any degenerative changes by the Marchi method. It is, therefore, more than probable that those cases of combined sclerosis of the spinal cord, sometimes met with in pernicious anæmia but more often accompanied by grave anæmia, are due to some other cause than the deficiency of red corpuscles. Probably in the blood there is some neuro-toxin which produces this primary systemic degeneration of neurones with long axis-cylinder projections, forming the long tracts in the spinal cord; or it possibly may be that those individuals who suffer from this nervous affection have an inherent defective vitality or lowered durability of the nervous system which, in combination with the defect of the blood-supply in quantity and quality, leads to degeneration. The fact that inanition, even extreme inanition, produces little or no loss of weight in the nervous system and hardly any changes of importance in the microscopical appearances of the nervous elements is of considerable importance, for it seems to show that the metabolic exchange which goes on in the nervous system is either especially protected by the metabolism of the whole body being subservient to it, or that however important the metabolic exchange in the nervous system may be, in amount it is not considerable. Those primary wasting diseases affecting systems, communities, and groups of neurones, associated one with another by functional relationship rather than by anatomical or vascular supply, insidious in origin and progressive in course, cannot be essentially due to anything else than a metabolic failure on the part of the neurones themselves (which, after all, are but complex differentiated cells) to assimilate from the blood the necessary materials to maintain their specific vital energy. They die in a manner the reverse of their evolution, the most distant parts of the tree—namely, the terminal twigs (collaterals)—being the first to go, then the branches, and last of all the trophic and genetic centre itself, the cell body and its nucleus.

Dr. Watson in my laboratory has carefully compared the sections of these experimental anæmic brains with a large number of sections of general paralysis. He has made drawings of cells which he considered presented similar appearances in the two conditions and the result of his observations appears to show that whilst a large number of the cells exhibit changes indicating chronic atrophy, a considerable number of cells in general paralysis present acute destructive changes similar to those met with in cases of experimental anæmia from arterial occlusion, but they are scattered about in small foci. Arteries in this disease are seldom occluded, whereas congestive stasis in the arterioles, capillaries, and veins, even thrombosis in the latter, is common; and we may consider that the destruction of the nervous tissue of the cortex may be accelerated by inflammatory stasis. It is curious how general it is to find the brain atrophy in this disease limited particularly to the

frontal and central convolutions, whereas the occipital and temporal lobes escape in great measure. Over the atrophied regions the pia-arachnoid membrane is thickened and adherent. Many observers, including Flechsig and Mickle, consider that the region of atrophy corresponds particularly with the area of distribution of the internal carotid arteries. I think, however, the area of atrophy and pia-arachnoid thickening more closely corresponds with the distribution of veins which open into the longitudinal sinus, and from a large number of observations made by myself and my assistants I have come to the conclusion that venous congestive stasis in that portion of the brain plays an important part in the symptomatology and pathology of general paralysis. I shall, however, have occasion to refer to this more fully later.

Mendel and many authorities believe that general paralysis is a primary inflammatory condition of the vessels and meninges with secondary destruction of the nervous elements. In 1884 Mendel, who believed that the necessary factors were (1) diseased walls of vessels allowing transudation of plasma and leucocytes, and (2) hyperæmia of the brain, claimed to have produced this condition artificially by rotating dogs upon a table with the heads outwards. Fürstner repeated these experiments over a considerable period of time, causing degenerative changes in the cortex, with secondary descending changes in the cord. There are many reasons, however, which will be alluded to later, for considering general paralysis to be a primary progressive decay of the nervous elements with secondary changes in the vessels and membranes.

ALTERED STATES OF THE BLOOD; HYPERPYREXIA.

The study of the lesions of nervous centres due to hyperpyrexia is of great interest from a theoretical as well as from a practical point of view—from the former because the exact knowledge of the nature of the lesion might be able to throw some light upon the nature of the pathological process and the clinical symptoms which accompany hyperpyrexia; from the latter because it would indicate the direction of treatment. Goldscheider and Flatau, who for the first time described lesions of the nerve cells in the rabbit caused by experimental hyperthermia, came to the following conclusions:—1. If the temperature remained about 106·7° F. the cells of the spinal cord examined by Nissl's method presented no appreciable modifications. 2. If the temperature exceeded 109·5° F. the lesions of the nerve-cells of the spinal cord were very definite, extending throughout the whole of the grey matter. 3. The duration of the experimental hyperthermia they showed to be a very important factor in the production of the lesions, for if the animal be kept for some hours between 107° and 108° F. the same effect on the nerve-cells is produced as occurs in a much more rapid manner when the temperature is raised to 109·5° F.—viz., swelling of the cell and its processes; diffuse staining of the whole neurone with disintegration of the chromophilous substance; and around the nucleus the chromophilous elements still persisting to some extent as if the outer portions of the cell were more affected than the central. The nucleus has an irregular and often an angular appearance.

Marinesco has also done some valuable work on this subject; he found that if artificial hyperthermia in animals be produced, so that the temperature is raised to 116·6° F. in the rectum, the animal died in 30 minutes with characteristic changes in the nerve-cells. He also remarked that these changes occur at a lower temperature when the duration is increased. In five cases of hyperpyrexia occurring in the human subject which I have examined, and in which the temperature reached 109° F. or more, I have found the same bio-chemical change revealed by the Nissl method in all the cells of the central nervous system. I have, however, met with cases of status epilepticus in which the temperature was from 107° to 107·5° F. for a short time without showing this change. Again, I have seen in one case a moderate degree of chromolysis and diffuse staining in prolonged pyrexia varying from 103° to 106·5° F. This was in a case of typhoid fever, and it might very well be that the change was due to the influence of the toxin. In fact, in most of the human cases the changes could be ascribed to the conditions which produced the fever and not to the influence of the increased temperature of the blood. Some of the cases which I have examined, however, were sudden—e.g., one was probable sunstroke, another was a case of hæmorrhage into the spinal canal and the base of the brain in general paralysis, and another was a case of Congo sickness. The photo-micrograph (Fig. 14) shows three anterior horn cells from the last case. You will observe the diffuse staining of the processes and of the body of the cell. Another case of Congo sickness in which the temperature never went above 103° F. showed no change in the Nissl granules and the cells presented a fairly normal appearance. I have examined the nerve-cells in many cases of septic poisoning and other diseases, but I have never seen this change unless there was either hyperpyrexia or prolonged high fever (*vide* Fig. 1, Supplement). The fact that experimental hyperthermia in animals produces this bio-chemical change in the protoplasm of the cell indicates that it is the altered temperature of the blood which is the cause in the human subject of these changes. Another point is that if the sections are stained with methylene blue and saffranine the protoplasm is stained a uniform dull purple instead of being differentiated. Now we have seen that the healthy cell shows a differentiation of staining; the Nissl granules which have been shown to be a nucleo-albumin are no longer visible in hyperpyrexia; and there is no longer the differentiation of a stainable and an unstainable substance with basic dyes. There must, therefore, have been produced by the fever a profound modification of the protoplasm of the cell. There are two points to be considered in this—viz.: (1) the fact that a temperature of 109·5° F. can bring about rapidly this coagulation process and death of the protoplasm, also that it affects first and most markedly the periphery of the cell; and (2) that prolonged high temperature of from 107° to 108° F. will produce this same coagulation process.

Halliburton has shown that there are three proteids in nervous matter—viz.: (1) a neuroglobulin which is coagulated at 116·6° F. (47° C.); (2) a nucleo-proteid which is coagulated at 132·8° F. (56° C.); and (3) a neuroglobulin which is precipitated at 167° F. (75° C.)—and that these three bodies can be separated out by fractional coagulation. We see, then, how it is that Marinesco found that animals in which the temperature is raised to 116·6° F. (47° C.) died almost immediately with changes in the cells indicating coagulation in the protoplasm. No doubt this neuroglobulin is precipitated at once, and it occurred to me that if a solution of neuroglobulin were subjected to long heating it would coagulate at a much lower temperature. I mentioned the matter to Dr. W. D. Halliburton who was of the same opinion, and we have therefore made experiments on this subject, and we find that prolonged heating for four hours, for example, will cause coagulation of the neuroglobulin at a temperature of between 107·6° and 109·4° F. (42° to 43° C.). Moreover, Dr. T. G. Brodie and Dr. Richardson have shown that in frog's muscle the tissue loses its irritability at that temperature at which coagulation is induced first in one of its constituent proteids. We have thus a chemical explanation of the cause of death of the protoplasm, also of the changes manifested by it as regards staining.

Goldscheider and Marinesco have shown experimentally that a certain degree of this coagulation change may take place without death of the cells; for if they produce artificially hyperthermia in animals for only a short time and then kill them they find a commencement of this coagulation process to have taken place. But these animals would have lived had they not been killed for the purpose of examination, consequently we may suppose that a certain degree of bio-chemical change, associated with coagulation of neuroglobulin, may take place without destroying the protoplasm to such a degree as to render it incapable of recovery. I think this entirely coincides with and explains the remission of symptoms, the return of consciousness, and the recovery which often takes place in some forms of hyperpyrexia when the cold bath method is resorted to without delay.

It is a matter of speculation whether structures later developed and functionally more highly differentiated, as the cells of the cerebral cortex, are more highly susceptible to fever and succumb more readily under it. Possibly high temperature of the surrounding blood and lymph is more readily felt by the small cells of the superficial layers of the cortex on account of the increased surface exposed and delirium followed by coma may be the result of this, although the vital centres in the medulla may still be able to perform their functions.

The diffuse staining of the cells indicates a diffusion of the nucleo-proteid through the substance of the cell body and its processes. We may suppose, therefore, that the

essential achromatic fibrillary substance is killed and that the nucleo-proteid which is normally contained in the reticulum of the cell in solution has soaked into the achromatic substance and given the protoplasm the uniform staining which, when once general, is quite characteristic of hyperpyrexial death, as I have been able to verify in several instances. These facts, pointing to an actual bio-chemical change involving the death of the protoplasm when the temperature remains for some hours above 109° F., support Dr. Osler's view that cases of paradoxical temperature occurring in women and termed "hysterical hyperpyrexia" are frauds as a rule, although he states that other cases have to be accepted, the explanation of which is impossible under known rules—in fact, it is quite conclusive that temperature above 114° F. is incompatible with life, even for a short time.

TOXIC CONDITIONS OF THE BLOOD AND LYMPH.

The primary degenerative changes occurring in the neurone are usually the result of poisonous conditions of the blood and lymph. The poisons may be produced: (1) within the body by perverted functions of the organs or tissues (auto-intoxication); (2) by the action of micro-organisms upon the living fluids and tissues of the body whereby various toxic substances are produced, either locally or generally, and by their escape into the blood cause degenerative changes; and (3) the poisonous substance may be introduced into the body from without. Just as we know that various alkaloids used in medicine have a specific affinity for particular portions of the nervous and muscular systems, so we find that certain poisons which produce degeneration and disease have a special selective influence. We know that strychnine, for example, has a special selective influence upon the spinal cord, increasing reflex excitability. Goldscheider and Flatau have shown that strychnine poisoning produces changes in the motor anterior horn cells closely corresponding to those observed in tetanus poisoning; these changes may be observed as commencing three minutes after injection of the poison if a sufficient dose be given. As in tetanus poisoning there is no close relationship between the morphological change and the degree of functional disturbance. These observers have also shown that acute cell changes occur as a result of malonitril poisoning ($NC—CH_2—CN$). Injection of hyposulphite of soda neutralises the toxic effects of this poison and prevents the changes in the nerve-cells. Experiment has shown that curare poisons the motor end plates, and recently, in an interesting communication, Dr. Augustus Waller showed how a very slight difference—a molecule of water—will alter the action of an alkaloid. Thus he has shown that veratrin has a special selective toxic action upon muscle, while proto-veratrin acts upon nerve. These facts, together with others which I will cite in connexion with degenerative changes produced by the selective action of poisons in the production of disease, indicate a special chemical affinity of certain protoplasmic structures for certain particular poisons; and the corollary is that probably the protoplasm of every nerve structure having a different function varies to some slight degree. There is a difference which is not to be detected by chemical methods, but the varieties of which are clearly shown by the difference in their physiological reaction to an altered environment. Perhaps one of the most striking demonstrations of this selective affinity of protoplasm for particular chemical compounds is shown by the intra-vitam methylene blue method introduced by Professor Ehrlich, and which in the hands of many investigators has produced such marvellous revelations into the minute structure of the nervous system. Ehrlich found that only those aniline dyes which contained sulphur in their composition were suitable for yielding the reaction. Examples of the special selective influence of the various poisons which produce disease are very numerous. There is a whole class of poisons which affect especially the peripheral nerves; and it is a debateable point whether in peripheral neuritis the whole neurone suffers, or whether the changes which have been found in the cells of origin of the peripheral nerves and in the spinal cord and ganglia are due primarily to the action of poison or whether they are secondary to the destructive effects of the poison upon the outgrowths of the cells—viz., the axis-cylinder processes of the peripheral nerves. Again, there are a number of poisons—diphtheria, botulismus, &c.—in which the fatty degeneration of the muscle is far in excess of what could be reasonably attributed to the changes found in the nerves. Probably the vulnerable point of the neuro-muscular mechanism is at the junction of the nerve with the muscle. Comparative studies, however, which would show degenerative changes in the motor end plates are extremely difficult, and it is rather by inference than direct observation that we must believe the poison to act upon this structure.

The effects of a poison in producing degenerative changes may be immediate or remote, even distantly remote. Thus some poisons on entering the system may produce sudden, or almost sudden, effects—viz., strychnine or absinthe. Others produce more or less remote effects—viz., rabies, tetanus, or diphtheria; others produce distantly remote effects, as syphilis.

Again, many poisons in order to be effective must accumulate in the system—viz., the mineral poisons, lead, and arsenic. Dixon Mann states that it has been shown that lead exists in the brain in appreciable quantities in encephalitis saturnina.

SELECTIVE INFLUENCE OF POISONS.

The most remarkable example of selective influence which I can cite is tetanus. The bacilli are found only in the wound—they must, therefore, be comparatively few in number, yet they elaborate a virulent poison which affects particular groups of neurones. The fact that lockjaw in man nearly always occurs first shows that the poison selects the motor nucleus of the fifth nerve. This, however, is not the case in animals when poisoned by the tetanus toxin. We do not know whether this selection is due to some anatomical condition which favours the absorption of the poison or whether it is the result of a bio-chemical affinity of that particular group of neurones for the poison. It is remarkable that experiment has shown that the tetanus toxin if mixed with an emulsion of nervous matter before injection into an animal loses its toxicity, showing thereby its affinity for nervous matter. Goldscheider and Flatau, who have studied the changes in the nerve-cells of animals that have been injected with the tetanus toxin, describe conditions which they consider characteristic of the action of this particular poison. Examination of the cells of the anterior horns of the spinal cord shows enlargement and pallor of the nucleus, swelling and crumbling of the Nissl bodies, and fine granular disintegration of the Nissl bodies associated with swelling of the whole cell.

Marinesco maintains that in nerve-cells subjected to the action of the tetanus toxin two independent phenomena can be distinguished, one the result of the chemical combination of the poison with the cellular protoplasm and the other the wearing out of the cell from excessive functional activity. He agrees with the conclusion of Goldscheider that there is a chemical transformation exalting the excitability of the motor neurones. There is a general consensus of opinion among authors who have worked at this subject, including those named, that the injection of tetanus antitoxin retarded these cell changes and caused a more rapid return to normal. It is only right to say that Courmon, Doyen, and Pairot, from experimental results of their own, deny that tetanus toxin produces any alteration in the cells of the anterior horns, and certainly specimens of the medulla and pons from two cases of tetanus in the human subject which I have had the opportunity of examining showed no certain noteworthy change.

Another poison, probably of microbial origin, rabies, has a special selective influence upon the medulla, although the whole nervous system is charged with the poison, pointing, therefore, to the fact that there is some special affinity of the neurones in the medulla for the poison. I have had the opportunity (through the kindness of Dr. Herbert Durham) of examining the medulla of a child who died from hydrophobia in Guy's Hospital six weeks after having been bitten by a mad dog. The greater number of the cells of the motor nuclei of the medulla showed marked degenerative changes, indicating a slow process of coagulation necrosis—viz., uniform diffuse staining with absence of Nissl granules; there was also a great deal of nuclear proliferation in the glia substance, denoting an irritative as well as a degenerative process. Dr. Herbert Durham was also kind enough to give me the nervous systems of three animals which had been poisoned with the toxin of "bacillus botulinus"—first described by Ermenghen who discovered the organism in unsound meat and fish eaten by people who had died with a characteristic group of symptoms. Such a condition in this country would probably have been called "ptomaine poisoning." The changes which I have

found in the nerve-cells are similar to those described by Marinesco who has specially studied this subject. There is a marked chromolytic change, some cells being much more affected than others (*vide* photo-micrograph, Fig. 16). The poison is extremely virulent and if a minute dose is given so that the animal does not die before the end of a week or so the changes in the nerve-cells are not more marked than in an animal which dies within 24 hours. The most noteworthy change, however, which I have found in an animal which survived eight days was the extreme fatty degeneration of the heart and striped muscles of the body (*vide* photo-micrograph, Fig. 17). The liver also had undergone extreme fatty degeneration. Seeing that the peripheral nerves showed no degenerative changes one may conclude that the poison acted more particularly upon the muscle or the nerve endings in muscle. As I have already had occasion to point out chromolytic changes of themselves do not indicate death of the nerve-cell but rather functional depression. Seeing that there were no changes in the peripheral nerves or in the cord observable by the Marchi method it is probable that the changes in the nerve-cells were mostly related to functional depression rather than actual destruction, and might have arisen from circulatory failure in the central nervous system due to paralysis of the heart. Marinesco noticed that the chromatolysis generally occurred first at the periphery of the cells; as the morbid process advanced there was destruction of the achromatic fibrils and formation of vacuoles. I have not observed vacuolisation, only extreme chromatolysis. Kempner and Pollak have found similar changes in the nerve-cells, and have further observed the slow restoration of the cells to normal under the action of specific antitoxin. Somewhat similar changes have been described by several authorities in the anterior horn-cells of the spinal cord and medulla of animals injected with diphtheria toxin. Dr. Sidney Martin separated the chemical toxin of diphtheria and produced by its injection into animals marked fatty degeneration of the muscles which he attributed to an associated change in the nerves. In four cases of diphtheritic paralysis in man which I have examined I was able to find fatty degeneration of the heart muscle in all; in only one case could I find Wallerian degeneration of the peripheral nerves, and in only this one case could I find any chromolytic changes in the motor-cells of the medulla.

Abrin and ricin-toxic proteid bodies.—Dr. Sidney Martin long ago showed that the seeds of jequirity contained a proteid body which if injected into an animal profoundly modified the blood and caused its death. This body, abrin, together with a similar body, ricin, obtained from castor-oil seeds, were made the subject of a most valuable research by Ehrlich. Very small quantities of these poisons injected into animals cause profound modifications in the appearance of the nerve-cells. The Nissl bodies disappear, the cells are stained uniformly, and show a fine-coloured dust all through the protoplasm of the cell and processes. All the nerve-cells are affected, and the cause of these altered appearances would indicate a changed condition of the blood and lymph rather than a selective influence of the cells for the poison. I have examined the nervous systems of two guinea-pigs which Dr. Durham kindly sent me. One animal died 45 hours after the injection of 0·2 milligramme of abrin globulin and all the cells showed the appearances described (*vide* photo-micrograph, Fig. 15). The other animal had been immunised and then in the course of a week received an amount equal to 60 fatal doses without succumbing; the nervous structures in this animal showed far less change—most of the cells exhibited Nissl granules although many showed more or less advanced chromolysis. Berkeley has studied the changes produced in the nerve-cells by ricin.

Absinthe.—Dr. Leonard Hill, while making his experiments upon the cerebral circulation, had occasion to inject animals with absinthe. He sent me the nervous tissues of these animals and I was greatly surprised to find that changes were discoverable in the cortical pyramidal cells of animals which had died in fits within 10 minutes of the injection of five minims of the poison. The cells were, however, not all equally affected, some groups of cells showed marked chromolytic change, while others showed no change. Animals that had lived two hours after the injection of a smaller dose (two minims) likewise showed unequal effects.

The cortical pyramidal cells were, however, always more affected than the motor cells of the anterior horns of the medulla and spinal cord; and one therefore naturally asks, Can we account for this by supposing that the cells have each a specific vital resistance? That this may be so is perfectly clear from the fact that such poisons as abrin, botulin, ricin, &c., produce when injected much more marked effects on some cells of the same function than on others. In the case of absinthe it must be remembered that we have to do with an oily fluid, and it is possible that really the fits may have been due to irritation caused by minute capillary emboli of an acrid and poisonous nature becoming lodged in the minute vessels of the cerebral cortex. The capillaries in the cortex are extremely small and would favour such lodgment. Such an explanation seems possible, for if absinthe be injected subcutaneously, even in large quantities, fits are not produced (Hill). I am also indebted to Mr. Victor Horsley for the nervous system of a cat which had received two minims of absinthe intravenously injected. The animal had three fits and survived two hours. The changes in the motor cells of the brain and cord corresponded to those above described.

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DESCRIPTION OF PHOTO-MICROGRAPHS OF SUPPLEMENT.

1. Normal pyramidal Bett's cell, cortex cerebri, stained by the Nissl method. The preparation was made from the brain of a man who died from an obscure septic affection after eight weeks' illness. Towards the end of life he suffered from severe hæmorrhages, producing the most extreme anæmia, the blood containing a large number of nucleated corpuscles. There was a remittent pyrexia during the whole period; the fever, however, never surmounted 103·5° F. The body was extremely emaciated at death. He remained conscious to the end, and it is interesting that this combination of factors was insufficient to produce bio-chemical changes in the nerve cells. Magnification 700 diameters.

2. Section of the cortex cerebri of a dog after ligation of both carotids and both vertebrals. Magnification 250 diameters.

3. Section of the cortex of a cat that died under the influence of an anæsthetic prior to ligation of arteries. Normal appearance of the cortical pyramidal cells stained by the Nissl method. Magnification 300 diameters.

4. Pyramidal cell of a dog after ligation of two carotids, one vertebral and one subclavian. Great swelling of the nucleus, advanced chromatolysis most marked at the periphery of the cell. Magnification 700 diameters.

5. Pyramidal cell of a dog after ligation of arteries, showing extreme chromatolysis with commencing extrusion of the nucleus. Magnification 700 diameters.

6. Axis-cylinder process from a large pyramidal cell, the lymph space around which is distended, and showing the collateral side branches apparently forming a diffuse nerve network. Magnification 1000 diameters.

7. Pyramidal cell with diffuse staining from a cat after ligation of four cerebral arteries. Magnification 500 diameters.

8. Pyramidal cell from a monkey five days after ligature of two carotids and one vertebral, showing swelling in the pyramidal cell with diffuse homogeneous staining owing to the stainable substance being scattered through the protoplasm of the cell as a fine dust.

9. Section of the cortex of a case of general paralysis, showing acute cell changes. Magnification 250 diameters.

10. Cell of Purkinje from the cerebellum of a dog 12 days after

ligation of four arteries, showing absolutely normal appearances. Magnification 150 diameters.

11. Pyramidal cell from the cortex of a monkey, five days after ligation of two carotid arteries and one vertebral artery. Stained by the rapid Golgi method, showing gemmules on the dendrons and all the external appearances of a normal cell. Magnification 150 diameters.

12. Section of the pyramidal tract of the spinal cord of a monkey 10 days after ligation of two carotids and one vertebral. A few scattered degenerated fibres are revealed by the Marchi method. These were more numerous on the side opposite to the hemisphere on which the vertebral was ligatured, but altogether they were not more than 60 in number, so that only an inconsiderable number of the psycho-motor cells had perished as a result of the anæmia. This quite conforms with the fact that the animal had returned to the normal physiological condition when it was killed with chloroform. Dogs with four arteries ligatured and kept alive over 10 days frequently showed that a certain number of the psycho-motor neurones had perished, but the numbers were inconsiderable.

13. Swollen œdematous cell from the top of the ascending frontal convolution with diffuse staining and absence of Nissl granules from a case of status epilepticus. Magnification 700 diameters.

14. Section of the spinal cord of a case of Congo sickness with hyperpyrexia in which the temperature reached 109° F. prior to death. The whole of the cells throughout the central nervous system showed a diffuse homogeneous dull staining. The Nissl granules had entirely disappeared from the processes and the body of the cell and the stainable substance had a fine dust-like appearance. The processes are unusually distinct on account of the diffuse staining, the nucleus is clear and swollen, faintly stained, and the nucleolus is deeply stained. Magnification 400 diameters.

15. Anterior horn cell of the spinal cord from a guinea-pig which died 45 hours after injection of 0·2 milligramme of abrus globulin. Magnification 400 diameters.

16. A section of the anterior horn of the spinal cord of a rabbit 21 hours after injection of 0·01 cubic centimetre of botulismus toxin, which killed the animal. The whole of the cells throughout the central nervous system showed more or less a marked chromolytic change, as indicated in the photo-micrograph. Magnification 250 diameters.

17. Section of the diaphragm of a guinea-pig which died on the eighth day after injection of 0·0005 cubic centimetre of botulismus toxin containing 2 per cent of solids. The muscle was stained by the Marchi method and shows that quite one half of the fibres have undergone acute fatty degeneration. The dense black masses are fat cells; the degenerated muscle fibres are indicated by the diffuse black staining. The musculi papillaries of the heart showed even more marked fatty degeneration.

Figs. 1, 2, 3, 4, 5, 7, 8, 9, 13, 14, 15, 16 are photo-micrographs of preparations stained by the Nissl method. Fig. 6 was stained by the Weigert iron method. Figs. 10 and 11 were stained by the rapid Golgi method. Figs. 12 and 17 were stained by the Marchi method.

The Cavendish Lecture

ON

THE APPLICATION OF PATHOLOGY TO SURGERY.

Delivered before the West London Medico-Chirurgical Society on June 22nd, 1900,

BY HENRY T. BUTLIN, F.R.C.S. ENG., D.C.L. DURH.,

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[MR. BUTLIN commenced by saying that the subject of his present lecture had been in his thoughts for many years but had had to be put aside owing to the pressure of other work. He described how he had searched the records of ancient surgery in a vain endeavour to ascertain whether any of the early and firmly established operations had been initiated from a study of the pathology of the disease. First of all there was the science of pathology and what surgical inventions did come about were the result of combined observations of many men or at least of more than one. Down to the end of the eighteenth century there was but one surgical operation founded on pathology and invented and put to the test by the surgeon who had studied the pathology. This was the Hunterian operation for the cure of aneurysm. Mr. Butlin continued:—]

In spite of Hunter's example there are very few surgical inventions during the first half of the nineteenth century which can be shown to be founded on the principles of pathology. One of the best examples is the introduction of subcutaneous surgery by Stromeyer, on the foundation of experiments and observations made by Hunter half a century previously. The idea had occurred to Delpech, but he does not appear to have carried it out, and Astley Cooper had divided the palmar fascia for the relief of Dupuytren's contraction. So that here we have once more an illustration of the influence of several minds in the invention of a new method of treatment. The idea occurs to Delpech, and he suggests it; Cooper applies it in a certain limited sense; Stromeyer puts together the pathology, the suggestion, and the limited application, and introduces to the world an admirable invention. I confess to a great sense of disappointment at the fruitless result of my research. Nor was I more fortunate in finding examples of the first two relations of pathology to surgery; and I could now more easily understand how, 35 years ago, men who were disinclined to the study of pathology could make an excellent case in defence of the view that pathology is of no use in surgery.

In the early years of the second half of the nineteenth century there was little change in the relation of pathology to surgery. There was little teaching of pathology, and it would then have seemed very improbable that a new system of surgery would shortly be founded on pathology. I have elsewhere sketched the condition of the study of pathology about the year 1850,[1] especially in Great Britain, and have shown how small a hold it had yet taken on the minds of teachers or students. Yet there were even then signs of approaching change, and the most advanced and enlightened teachers were beginning to found their teaching of medicine and surgery on a more scientific basis. I have little doubt that this was part of a general movement in favour of scientific training which began about the fifties and early sixties, which questioned the propriety of the old methods of general education and desired to see them replaced either in whole or in part by science teaching, and which has since found its expression in technical and science schools, in laboratories, in science scholarships and prizes. The art of medicine could scarcely fail to feel the influence of this general movement, but the new leaven would probably have been very slowly infused into the teaching of our profession had not an event occurred which revolutionised the practice of surgery and did more in a few years to lay the foundation of surgery on pathology than had been done in as many previous centuries. In the years 1867 and 1868 there appeared in THE LANCET and *British Medical Journal* the first papers by Professor Lister on the subject of antiseptics, and his is the next great example, after Hunter's, of the discovery of a pathology and the invention of a treatment by one and the same individual. My own recollection of its early application in London is almost ludicrous. In 1868 I was house surgeon to Mr. Paget (afterwards Sir James Paget). We happened to have in the wards a man, about 40 years of age, with caries of the spine and a large abscess in the back. The results of the treatment of such cases were in those days lamentable and the man was left for some days in bed untreated. But one afternoon Mr. Paget came down and said he would try a new method of opening and treating the abscess which had been suggested by a surgeon in Edinburgh called Lister. A few days later we opened the abscess under the direction of Mr. Paget through a piece of lint soaked in some antiseptic, and then applied a little mass of antiseptic putty about half the size of my fist over the opening and a piece of sheet-lead upon the putty. That day and the following days the dressings frequently slipped down and were found half a foot or more below the wound. And in the course of a few days the cavity of the abscess became septic and the patient died, as many of those who were suffering from similar conditions did in those days.

I need not describe in detail the discovery of the causes of sepsis or the invention of the earlier antiseptic methods; the failures and successes, the opponents and partisans, and the long series of years before the principles of antiseptic surgery were generally accepted. All these things have been described again and again and are common property. I have to do with the effect of the general acceptance of Lister's discoveries on the application of pathology to surgery. The relation of micro-organisms to sepsis naturally led to the suspicion that micro-organisms might be connected with diseases other than sepsis, and this suspicion was quite justified, for it was soon amply proved by Pasteur for some of the diseases of animals. From the investigations which were undertaken in connexion with this subject the vast branch of bacteriology grew up, and as parents sometimes derive new lustre from the achievements of their offspring so did the parent-science of pathology become

[1] Address on the Jubilee of the Pathological Society of London, Oct. 20th, 1896, Transactions of the Pathological Society, vol. xlviii.

the object of greater consideration and of renewed study. At the present moment the value of pathology to surgery is no longer in question. The applications of pathology which have been made during the last 15 years have been so numerous and so important that from an absolute disbelief in the practical value of pathology we are veering round to an implicit trust in pathological foundation. As soon as the cause and nature of a disease have been discovered an appropriate treatment is looked for as a natural and immediate consequence, and if it is not forthcoming disappointment is experienced both within and outside the ranks of our profession. As such disappointments may occur with some frequency during the next few years and confidence in the use of pathology may thus be weakened—which would be very undesirable—it may be well to review for a moment the means which are now at our disposal for the application of pathology to surgery, whether those means can be improved, and how the improvement should be made.

In the first instance, there are now research laboratories in different parts of the kingdom and a good deal of money is annually expended on research. Some of this money is found by universities and colleges, some of it by scientific bodies, societies, and associations. In my former capacity of treasurer of the British Medical Association it was a great pleasure to me to see so much money devoted every year to research, but I am bound to admit that it was not always voted with alacrity. The objects of the various researches often appeared to the members of the Association to have no practical bearing, and it was suggested from time to time that the funds had better have been applied to medical defence and other material purposes. Of course, it is always difficult to appreciate the value of researches in pure science which appear at the moment to be of no more use, or likely to be of greater use, than the researches of the professors of Gulliver's University of Lagado. And I sometimes wondered myself whether the objects of research might not have been selected with a more direct view to their utility. I was, however, easily consoled by the recollection of the marvellous application of Faraday's discoveries of the relation of magnetism to electricity.[2] No discoveries could have appeared at the time and for many years after they were made less likely to have a great practical bearing. They seemed to belong to the realms of the purest science. Who would have dreamed that at this moment they would be applied to telegraphy, to lighting, to the movement of vehicles, and largely to the use of electricity in medicine? In the face of this brilliant example we have no right to assume that discoveries in pathology which appear futile or of purely speculative interest may not at some future time acquire an extraordinary practical importance.

This factor of *time* is in itself of large importance. It would not be easy to determine with precision the length of time which has elapsed between the invention of certain operations and their habitual performance. In the past this length of time must have been inordinately drawn out, even to centuries. Take once more the example of the operation for the relief of strangulated hernia. Invented in the second half of the sixteenth century, it had become a recognised operation in France in the eighteenth century, and Petit had invented and regularly practised the operation without opening the sac in suitable cases. But it appears to have been much longer in gaining a firm foothold in this country. Pott, writing some time after Petit, is well acquainted with the anatomy of hernia and with the fact that the peritoneum is not ruptured in the descent of the hernia; he is as well versed in the pathology of strangulation as Petit, and both surgeons describe it clearly and quite differently from the great surgeons 200 years before. Pott describes the operation for the relief of strangulation [3] and how the intestine and omentum should be dealt with according to their condition; but he would not resort to the operation until such means as bleeding, clysters, purgatives, and manipulation had been tried and failed. About the same time as Pott wrote Hey began to practise in Leeds,[4] where the operation for strangulated hernia had never been performed. By 1814 Hey appears to have operated on five patients and two of them had survived. To us the percentage of cures may seem very small, but in truth it was 40 per cent., and for a condition which unrelieved leads to death in almost 100 per cent. of the cases. Think what an equal success for all cases of irreducible strangulated hernia during centuries would have meant and how the principle of early resort to operation would have vastly improved the percentage of cures and have perhaps wiped out the name of *miserere mei*.

In these days the news of successful treatment travels fast—so fast, indeed, that a new method is sometimes accepted and adopted before it has been proved by the inventor. Such is the progressive spirit of the age and so abundant and so excellent are the media of communication. Of course, these are great advantages, but there is still no trace of any distinct organisation for the application of pathology to surgery. Indeed, in some respects things are likely to be worse than they were some 20 years ago. As pathology becomes more specialised the surgeon and the pathologist must necessarily be more widely separated; and although the surgeon may make great use of the pathologist in his wards they are no longer one and the same person. Problems in pathology and in the relation of pathology to surgery will arise in the minds of men who have not the time or the knowledge to work them out and who know not how or by what means to get them worked out. On the other hand, those who work at research may know nothing of the questions which occupy the minds of surgeons. On this account many problems quite worth the working may be wholly neglected or their study long deferred. If we are to remedy these defects it can only be by some more perfect organisation, such as may perhaps be supplied by my science of applied pathology. Great attention has been devoted to pure pathology and pains have been taken to educate and train discoverers. Laboratories for research are provided for them; materials and instruments are furnished; directors of distinguished ability and of approved skill in research are appointed. In consequence the work of discovery proceeds amain. The more original and the abler workers choose their own subjects of research and make their discoveries in their own way and in their own time; those who are not so original and able are assisted in their researches by the directors.

But while our schools for discoverers are good and are improving we have no school for inventors, for the men who are to make the applications of pathology in the future. It is on that account I venture to urge the importance of the science of applied pathology which may prove a fitting school for inventors as the science of pure pathology is for discoverers. I confess when it dawned upon me that my proposition would lead to a deliberate proposal to breed inventors I was at first appalled at the daring of the suggestion. Discoverers can, I know, be made, not all equally good or equally able, and great discoverers are rare and priceless. But still, discoverers can be made, and we only discuss the proper means of making them and of making them well and quickly. But what of the inventor? Is it possible to make him too? Is he not, as he was formerly thought to be, heaven-born, a direct offshoot of divine intelligence, though often poorly equipped for the struggle of life and too often destined to fall a prey to the greedy maw of the seeker after wealth? Will mere training and education suffice to produce a mind which is not of earthly origin? In order to solve this question I thought it well to make some inquiry into the lives of inventors, and as our profession can boast but few I was thrown back on the lives of general inventors, with the following result. In the first place, there can be no doubt that many men never would have invented had it not been for a chance (not always a happy chance so far as the inventor was concerned) and therefore might never have been known to the world as inventors. The overturning of a spinning-wheel suggested to James Hargreaves the idea of the spinning-jenny. The idea seems to have entered his mind like an inspiration, just as Paré said that his brain had received the inspiration of the use of ligatures to bleeding vessels. The attention of Cartwright, the country clergyman, was directed to the invention of the power-loom by an after-dinner conversation, and, without any knowledge of weaving and without ever having seen a loom at work and without any correct notion of the principle or mode of its construction, he is said to have evolved out of purely mental processes the idea of the power-loom. There must be many such men as Hargreaves and Cartwright of natural inventive genius which has never been roused into action by accident or education and who live their lives through to the end without even themselves being conscious of their talent. In medicine and surgery there are

[2] Faraday as a Discoverer, by John Tyndall, London, 1870

[3] The Chirurgical Works of Percivall Pott. A new edition. London, 1779.

[4] Hey began to practise in Leeds in 1759.

also undoubtedly such men and if we are to use them we must discover and develop them.

In the second place, when once the inventor has been awakened to the knowledge of his talent for inventing he seems not only to like to employ it, but to be possessed by a resistless impulse to invent. This has been shown in the lives of many inventors. And in the curious account I have of Cartwright the book[5] says: "It would seem that the faculty of invention once aroused, its appetite for exercise is constant and insatiable. ..... An inventor he was, and an inventor he must continue till his eye was glazed and his brain numbed in death. ..... Wool-combing machines, bread and biscuit-baking machines, rope-making machines, ploughs and wheel carriages, fire preventatives, were in turn invented or improved by him."

In the third place, your inventor may invent better and with greater success if his mind has been trained in scientific pursuits. I think one of the best illustrations of this is to be found in the history of the invention of the miners' lamp. By a curious chance the safety lamp was invented during the year 1815 by two men, working apart, neither of them knowing that the other was engaged on the invention, and each working out his invention from a wholly different point of view. Both Humphry Davy and George Stephenson were highly endowed by nature. Both possessed the inventive faculty—Stephenson in a very high degree. But while Stephenson was what may be termed a natural mechanical and inventive genius, his education had, owing to his circumstances, been wholly neglected and he had only such knowledge as he had been able to gather together in a long struggle against adversity. Humphry Davy, on the other hand, was a highly educated man of science, but his inventive ability was decidedly lower than that of Stephenson. The safety lamps produced by these two men resembled each other in many respects, and a comparison of them in our Museum of Inventions at South Kensington shows how little difference there is between them. Yet one of them was invented on chemical and the other on mechanical principles. Davy,[6] at the request of certain gentlemen, undertook to try to invent a lamp for the safety of the men employed in the coal-pits. He commenced his labour by an exhaustive study of the chemical properties of fire-damp (light carburetted hydrogen), the circumstances under which it exploded, and the proportions of air mixed with it which rendered it peculiarly dangerous. By a series of admirably devised experiments, he discovered that the surfaces of small tubes prevented the explosion of the fire-damp and that this depended on the cooling power of the tubes, and he finally found that the greatest hindrance to the inflammation of the gas was afforded by a large number of small tubes or apertures, such as is represented by the numerous tiny openings through a fine wire gauze. Such a covering rendered unnecessary the use of glass or any other fusible or brittle substance, in itself no small recommendation. Stephenson tells his own story[7] of the manner in which he came to his invention. He says he knew nothing of chemistry at the time he was engaged in setting up some machinery in a coalpit. In the intervals of work he amused himself with lighting one of the "blowers" in the pit. Holding his candle to the windward of the flame he observed that it changed its colour. Two candles, drawing the flame towards them at a greater velocity, changed its colour still more and caused it to grow duller, and when a number of candles were employed the "blower" ceased to burn. Stephenson rightly attributed this effect to the velocity of the current caused by the heat of the candles to the windward of the "blower,"[8] and came to the conclusion that if he could produce a current through tubes in a lamp equal in velocity to the current he saw passing along the roof of the pit-gallery he would be able to make a lamp which might be carried into an explosive mixture without exploding externally. Repeated observation and experiment finally taught him that numerous tiny apertures afforded better protection than a small number of long and deep tubes, and his third lamp was made by surrounding the flame with a metal plate, perforated by a vast number of tiny holes, so that it differed little from a wire gauze of the same material. Stephenson was so confident of the efficiency of his lamp that he tested it, at the risk of his own life, by entering a coal-pit which had been first rendered as foul as possible by preventing the escape of the fire-damp. Davy's lamp was much more generally used than Stephenson's, but Stephenson's lamp was used for very many years in the Killingworth Pit where he had been colliery-engineer-wright at the time of its invention.

At the first sight it might seem that Stephenson's successful invention is but another proof that your inventor is born, not made; for here is a man without scientific knowledge, and without even ordinary education, who invents a lamp almost precisely similar to, and as good against explosions as, that of the philosopher and scientist, Sir Humphry Davy. But, in truth, Davy's proved to be the better lamp. Not only was it lighter and more portable than Stephenson's, but it possessed the great advantage that it was not extinguished in thick fire-damp. Further, the experiments and observations of Davy in the course of his research served to render the world richer in the accurate knowledge which it afforded of the nature and chemical properties of fire-damp. If Davy's invention had proved a failure his work as a discoverer of the nature and properties of fire-damp would have far more than repaid the time and labour expended on the attempt to invent.

Again, Davy's invention proves that it is possible to invent "to order," for he deliberately set himself to invent the lamp at the request of a committee of gentlemen interested in the coal-mines. I do not know whether we shall ever attain to that with our inventors of surgical methods. Yet a similar instance of a successful investigation and of the invention of a method of treatment, or rather of prevention, at the request of persons interested, may be found in the history of the discovery and prevention of silkworm disease by Pasteur.

Here, then, are found four important indications for the making and perfecting of inventors: that there are certainly many more inventors in the world than the world suspects, but their peculiar talent must be discovered; that when it is discovered they can scarcely help inventing; that scientific training, so far from impairing their inventive powers, will almost certainly improve them; and that men with the proper talent and opportunity may invent "to order." Further, it may be assumed that no man would be likely to make a specific invention unless he were acquainted with the need for such an invention. From these indications it would seem that if we are to make surgical inventors we must look for inventive minds among our students and young qualified men; that these men must be well versed in surgical methods at present in use; that they must be thoroughly educated in science and in the methods of science, especially in experimental methods. They must also be well instructed in pathology and acquainted with new discoveries in pathology which may be of use in surgery, and they must either have the opportunity of testing their inventions or of observing and directing the trial of them. They must therefore have free access to the hospital wards and be in frequent or constant communication with them; they must have laboratory accommodation and must be in touch with those men who are engaged in pathological research.

If these conditions are to be fulfilled in such a town as London we shall require two species of pathological laboratory for research. The one, for research in pure pathology without any reference to its application, may be of vast size and thoroughly equipped for workers, and need not be attached, so far as its site is concerned, to any hospital. The other, for research in applied pathology, the laboratory for inventors, must needs be attached to the hospital; and those who work in it should have the freest access to the wards, even if they are not in charge of special wards, and should have every opportunity of observing what is done there and in the operating-rooms. In order that they may be thoroughly instructed in the science of pathology they should be taken from among the workers in the laboratory of pure pathology and should be selected on account of their special aptitude for the work of research and for the originality which they have exhibited. They leave the school of discoverers and the science of pure pathology for the school of inventors and the science of applied pathology. At the time when the idea of a school of applied pathology first presented itself to my mind the sketch I have made would have appeared to be the dream of an enthusiast. But now so far from being a dream

[5] Triumphs of Invention and Discovery in Art and Science, London, 1881.

[6] The Collected Works of Sir Humphry Davy, Bart., LL.D., F.R.S., vol. vi., London, 1840.

[7] Evidence before the Committee of the House of Commons in 1833. Smiles's Life of George Stephenson, fourth edition, 1857.

[8] The rushing of the fire-damp from fissures in the strata of coal is called a "blower."

it is in some respects actually approaching realisation. There are in this town at the present moment laboratories where researches in pathology are constantly carried out, and some of these laboratories are quite separate from, and independent of, the hospitals. There is an institution of preventive medicine where pure and applied pathology are studied, but this is also separate from the hospitals. During the last few years several of the hospitals have founded professorships of pathology and have appointed to them men who devote to the science of pathology, not merely the time they can spare from some other pursuit, but their whole time. These men are constantly in touch with the work of the wards and furnish the greatest assistance to it by bacteriological and histological examinations. Speaking of my own hospital, the assistance rendered to the work of the wards by Dr. Andrewes and his predecessor Dr. Kanthack has been of inestimable value. Indeed, it is difficult to understand how we could have performed our work efficiently before the institution of the pathological laboratory.

[Mr. Butlin concluded by saying that although much had been done much remained to be done. He compared, somewhat to the disfavour of the latter, the sums of money spent in Germany on chemical research connected with the colour industry and that spent upon the same object in England. A similar kind of thing is, he said, wanted for the furtherance of medicine and surgery—in fine, a "direct and organised scheme for research and the application of pathology to our art."]

The Ingleby Lectures

ON

THE COMMONER NEUROSES OF CHILDHOOD, THEIR PATHOLOGY AND TREATMENT.

Delivered at the Mason University College, Birmingham,

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LECTURE I.[1]

Delivered on June 27th.

MR. DEAN AND GENTLEMEN,—I desire to draw your attention to a large class of sufferers whose ailments inflict much distress on themselves and much anxiety on their friends and parents. The diseases with which I propose to deal are the so-called functional nervous disorders or neuroses of children, as distinguished from those diseases of the nervous system in which distinct and easily recognised changes can be found post mortem to account for the symptoms during life. I have thought it more interesting to treat in these lectures of a group of maladies of common occurrence, one or other of which must almost daily come under the observation of each of us, than to deal with rare and exceptional ailments, and I have been confirmed in my choice by the conviction that much is still to be learnt regarding the nature and causation of these neuroses, and much in regard to their correct and complete diagnosis, and that something still remains to be done in the way of treating them successfully, to which end a true appreciation of their nature is the first essential step.

The disorders with which I propose to deal are the following: (1) chorea; (2) saltatory or salaam spasm; (3) tetany; (4) night terrors and dreaming; (5) nocturnal enuresis; (6) migraine and allied conditions; and (7) epilepsy. Dissimilar though these diseases may at first sight appear yet they have several points in common. Thus they occur with greatest frequency in childhood, some, as chorea and nocturnal enuresis, being almost limited to that period of life as regards their onset. Further, they are more frequent in the female sex, and where this appears not to hold true entirely, as in migraine and epilepsy, it is nevertheless the fact that females are more disposed to be the sufferers during the time of adolescence. Lastly, I think that I shall be able to show that they have still more points in common, particularly in the matter of causation.

1. *Chorea.*—This is so common a disorder that I will not waste your time with a description of its characters But I would like to draw attention to the different kinds of chorea which we encounter in practice. The following list comprises all the forms commonly connoted under the term chorea: (1) senile chorea; (2) hereditary chorea of middle adult life; (3) post-hemiplegic chorea; (4) chorea of pregnancy; (5) fright chorea; (6) hysterical and imitation chorea; (7) electrical chorea of Dubini; and (8) rheumatic chorea and those choreas arising from scarlet fever, malaria, and possibly from other infective conditions. With the exception of post-hemiplegic and senile chorea all these are genuine functional nervous disorders. It is of course true that minute changes have been discovered in the brain in cases which have ended fatally. These microscopic changes, however, are not sufficient to remove the disease from the list of neuroses, nor have they as yet been made out with sufficient constancy to warrant the inference that they are the actual direct cause of the choreic movements. It will be noticed in looking at this list that, putting out of consideration for the moment the first three, we have to deal with two broad classes of chorea. The first of these is psychical in its causation, at least as far as the exciting cause is concerned; the second class is clearly of quite different origin—namely, toxic. In the latter No. 7 and No. 8 are comprised; in the former No. 5 and No. 6; and No. 4 may belong to either the psychical or the toxæmic class.

A good deal of doubt has been expressed by different observers upon the alleged production of chorea by fright, chiefly on the ground that fright is very often asserted to have set up the disease in a child when closer investigation shows the cause of the fright to have been very slight. It must, however, be borne in mind that what may seem to a healthy adult to be a small or negligible cause for shock or fear may to the child have been a very great cause; or, to express it otherwise, what does not suffice to frighten an adult may produce very real terror in a child. There are, I imagine, few medical men of any experience who would not admit that fright is capable of producing genuine chorea, in the same way as we all know that it may, in certain conditions, set up paralysis agitans, dementia, genuine epilepsy, profound shock, and even death. However we may try to explain the manner in which fright acts, we are constrained to allow that it may result in these severe nervous disturbances, and more, that it may lead to disease which has a distinct anatomical lesion. Thus, for instance, Dr. Allbutt has described a case of chlorosis in which the anæmic condition was set up by great terror. Certainly the patient had on a previous occasion suffered from the same complaint, so that we must admit in this particular instance the presence of a strong predisposition. Now the question naturally arises whether fright or any other strong mental impression can create chorea in a child without there being any predisposition produced either by an hereditary, weak, and unresisting nervous system, or by a toxæmic condition which, though not obtrusive up to the time, has been quietly damaging the nervous centres for a period preceding the exciting cause. The evidence on this point is not sufficiently conclusive to warrant a categorical answer to the question, but I think that every now and again we meet with clear evidence that sharp mental impressions may set up chorea in children in whom nothing has before existed to make us suspect a disordered or hereditarily weak nervous system. In the majority of fright choreas, however, the evidence is very strong that an inherited or acquired predisposition is present. Apart from the agency of mental shock we have, however, the agency of toxæmia, and this cause furnishes a greater number of instances of chorea than does mental disturbance. A majority of the cases of chorea which are met with in this country show a history of some rheumatic affection, either pronounced, sharp, and severe, or insidious and lingering, and at other times so slightly pronounced as to answer to the name of "growing pains." A small number of the sufferers give strong evidence that scarlet fever was the source of the blood intoxication. In a certain proportion of the cases we can trace neither of these maladies nor any

[1] Lecture II. will be delivered on July 4th, 1900.

other infective disease, and the cause of the toxæmia remains undiscovered.

I would now like to bring to your notice a fact which has often arrested my attention in the out-patient room, when watching children suffering from chorea. This is the evidence of disordered digestion which we may observe in a considerable proportion of these patients. That sufferers from this disease are usually small, ill-clad, and ill-fed is generally admitted. Over and above this we may, however, see that they often have furred tongues and, what is very unusual in healthy children, distinct vascular stigmata on the cheeks. Inquiry will in the cases presenting these two signs nearly always elicit a story of indigestion and often of constipation. A considerable number of choreas have come under my notice presenting these appearances and giving a history of digestive disturbances. These facts naturally suggest the question whether disorder of digestion may not stand in some causal relation with chorea, and impossible as it is to prove such a causal nexus, there are nevertheless some points which, I believe, support the suggestion. Thus many of these patients showed in a marked degree the presence of indican in the urine, proving that a good deal of putrefactive material was absorbed from the bowel and passed through the liver into the general blood-stream, to be finally removed by the kidneys, but only after it had circulated through the tissues. It is true that in some cases presenting the same signs of indigestion no indicanuria can be found, but this is not surprising when we remember that profound digestive disturbances may exist without indican being discoverable in the urine. The positive evidence afforded by this body is valuable as an index of absorption; the negative evidence furnished by its absence proves nothing. I shall return later, in dealing with the general pathological aspect of these disorders, to the questions of indican and of absorption by the intestine of anomalous by-products of digestion; meanwhile there certainly is no improbability that chorea should be caused by a toxæmia due to putrefactive changes in the alimentary canal. The modern and most widely accepted explanation of the chorea which follows on acute rheumatism is that the phenomena of the disease are due to a toxic body contained in the blood and that this harmful material is a product of bacterial life. Now the putrefactive processes which occur in the intestine are likewise the work of bacteria, and there is every *à priori* reason to believe that the metabolic products of these microbes will act harmfully on the nerve centres if they be brought into intimate contact with them by the circulating blood.

Another consideration which has some interest is suggested by this—namely, the possible connexion between rheumatic fever and self-infection from the gastro-intestinal tract. It is true that we can generally trace the occurrence of a sore-throat at the commencement of an attack of rheumatic fever, but not always. When we can trace the inflammation of the tonsils or faucial regions we assume that the germs or their toxic products have gained access to the blood by way of these inflamed areas. But, as I have just remarked, this channel of infection not infrequently fails us. May it not be that in some instances rheumatic fever is set up by bacteria from the intestine effecting an entrance into the blood? The suggestion has a good deal of likelihood on its side, especially when we consider that there are several different clinical types of rheumatic fever and that in the endocarditic and articular lesions of this disease several distinct kinds of bacteria have been discovered. However this may be, I have seen so much clinically of chorea combined with evidences of digestive disorder, as to make me believe that it is, in a considerable proportion of the total cases, set up by auto-intoxication from the intestine, and therefore further investigation in this direction seems to me to be desirable; and I feel convinced that any observer who will watch cases of chorea, bearing this point in mind, will soon be struck by the frequency with which confirmatory evidence will meet him. Accordingly I would wish to insert in the list of cases of chorea another heading—namely, "gastro-intestinal self-intoxications." I am not able to give statistics from any considerable number of choreas to show what proportion of them may with probability be assigned to gastro-intestinal self-intoxication. Some years ago, however, before my attention was directed to the importance of this cause, I found that out of 24 successive cases of chorea six gave a clear and undeniable history of the first attack being set up by fright or other mental shock; one was due to scarlet fever, one to typhoid fever, and one resulted from injury—namely, a sprained ankle. (This last case may perhaps be classified with the choreas produced by shock.) Eight cases showed evidence of endocarditis or rheumatic fever, or gave a history of the latter, and in seven cases no cause whatever could be elicited by inquiry or by auscultation of the heart. I now think it highly probable, in the light of more recent experience and further inquiry, that this group of patients owed their disease to toxæmia from disordered digestion.

2. *Saltatory spasm.*—Closely allied with chorea is the curious nervous disorder which has been termed "saltatory spasm," or "jumping spasm," or "salaam spasm," from the jumping or curtseying movements which characterise it. The movements vary a little in different cases, justifying now the one name and now the other. The gap between the common clinical picture of chorea and the rare one of saltatory spasm is bridged over by certain cases of so-called "hysterical chorea," as I will endeavour to show by citing an instance in point. Saltatory spasm is so rare in England that it hardly comes under the designation of a common neurosis and it is introduced here mainly on account of its relationship with chorea. The only cases which have come under my personal notice are two, one in a woman, aged 33 years, and the other in a girl, aged 14 years, and since the disorder is so scarce I may shortly describe them.

CASE 1.—A girl, aged 14 years, who had not begun to menstruate and who presented no appearance of sexual maturity, had suffered for four days from the spasms now to be described. At irregular intervals, which, however, rarely exceeded 30 seconds, there was a sudden contraction of the flexors of the hips and of the knees. The contractions were of only momentary duration and instantly relaxed, but were often repeated so frequently as three times in five seconds. After such rapidly following movements there would be an interval of quiet, lasting perhaps half a minute, and this went on all day long and only ceased during sleep when the muscles were completely at rest. The spasms were equally marked whether she stood or lay down; but their intensity varied, so that the effect on the body was not always quite the same. Generally the effect would be a bending of the trunk on the thighs like a sudden and rapid bow; but on more forcible contraction of the muscles concerned the heels would be raised off the ground and brought down again sharply with a stamp; and on occasions the feet would both leave the ground completely for an instant and a distinct jump was the result. At much longer intervals a spasm would affect the arms, the elbows being bent and the arms being folded across the chest by the action of the larger pectoral muscles. The more highly specialised limb muscles were free and so was the face. The glutei and extensors of the hips contracted, but apparently only in re-establishing the balance of the body after the disturbing effect of the flexor spasm. There were no sensory symptoms and the patient controlled the sphincters perfectly. Her mental state was curious. She answered rationally and even cleverly, spoke clearly and without any hesitation, and sang nicely with a good voice and particularly correct intonation when asked to do so. Occasionally, however, that is, several times in the day, she would suddenly and without any apparent reason—for instance, while she was being examined in the out-patient room—burst forth into song, a thing which, her mother said, had occurred only since the onset of the present illness. At intervals, too, she would break into a fit of loud laughter without rhyme or reason, but she did not have attacks of crying. She ate and slept well and had a rosy, healthy, clean complexion, and was well built and well nourished. The history of the onset of this illness is interesting and ran as follows. The girl was in good health until three weeks before her admission to the hospital. At that time she had a sudden fright and instantly screamed loudly, but then walked home and appeared to her mother to be in her usual health. On the day following the fright it was noticed that she was nervous and quiet, but her quietness was interrupted by loud fits of laughter, the reason for which could not be ascertained, and when anyone approached her she was liable to scream loudly. In this nervous and depressed condition, with the occasional outbursts just described, she continued until four days before admission, when the spasms made their first appearance. The little girl was naturally very intelligent, industrious, and quiet, and was her mother's right hand in the housework. She

had previously to her present illness always enjoyed good health. The family history showed no special neurotic tendency. In hospital, kept quiet behind a screen, she soon recovered complete health, and though I have not seen her since I have every reason to believe that she had no recurrence for at least a considerable time. A point of great interest in this spasm is the affection of the arms associated with that of the legs. It will be noticed that the form which it took was that of folding the upper limbs across the chest very much as the motion of humility, which is associated with the bowing of the trunk on the thighs in the performance of an oriental salaam. In fact, but for the rapidity and jerkiness of the contractions they completely justified the appellation of "salaam spasm." Again, it is interesting to note the complete escape of the more highly specialised limb muscles as well as of the facial muscles; in fact, the muscular groups affected were those most elementary in development and least specialised in action. It would be easy to call the condition which I have described one of "hysterical spasm" in view of its mode of origin, and I have no doubt that by some it would be so named. But, on the other hand, we know that typical choreas are often set up in precisely the same way and I do not feel inclined to describe this case as "hysterical spasm" any more than I would describe a chorea due to fright as "hysterical chorea."

CASE 2.—The other instance of this affection, as I have mentioned, occurred in a woman, aged 36 years, unmarried, and small, badly nourished, and wizened in appearance. In her the muscles of the lower limbs alone were spasmodically affected, the arms and face escaping completely. The effect when the patient was standing was exactly the same as I have described in the case of the little girl. When the patient lay in bed, the psoas contraction tended more to arch the lumbar part of the spine into a position of momentary opisthotonos, the thighs becoming the fixed points from which the muscles acted, and the same was noticed when she assumed the sitting position. When I saw her the spasm had lasted some months, but she could give no clear history of the onset, which appeared to have been gradual. The case came to my notice long before disturbance of the digestive functions in connexion with these disorders had aroused my interest and I am therefore unable to say whether any of the former were present. The malady proved very intractable and after two months of treatment the spasm was practically undiminished.

These two cases are typical of saltatory spasm. It is plain that the mode of causation, in the first at least, was the same as in so many cases of chorea. In fact, it seems to me merely an accident that this little girl was attacked with the peculiar spasm described and not with ordinary choreic movements, and one would not be surprised, were the saltatory form commoner, to see it produced by precisely the same causes which give rise to chorea.

CASE 3.—In order to show the close clinical connexion existing between chorea and salaam spasm I will mention a case which was recently under my care at the Queen's Hospital, Birmingham. A single woman, aged 21 years, was admitted suffering from choreic movements affecting all the four limbs, the muscles of the neck, and, to a smaller extent, those of the face. The movements had the character of sudden sharp contractions followed by momentary relaxation—in fact, they resembled nothing so much as the contractions produced by the sudden application and withdrawal of a faradaic current at frequent but slightly irregular intervals. The contractions of the neck closely resembled those of spasmodic torticollis. All these movements continued during sleep. The patient was fairly developed, well nourished, and in good condition. The complexion was good with the exception of a few venous stigmata on the cheeks. Her digestion was, according to her own statement, in good order, but her bowels during her sojourn in hospital required constant attention. There was no endocarditis and no history of rheumatism or of former chorea could be obtained. The onset of her illness was as follows. Six months before her appearance at the hospital, while she was in good health, she had been bitten by a dog. She was not much hurt but greatly frightened and she ran away. For some hours after the fright she continued to tremble, and for a few days continued in a very nervous state. Three or four days after the injury her back suddenly began to arch spasmodically and intermittently, especially when she lay in bed, and for a fortnight these spasms continued to spread so as to involve the limbs; but they were at the time of admission to hospital slightly subsiding. With the patient standing up no arching of the back could be seen, but there was distinctly every now and then a flexion of the trunk on the thighs of the same kind, but of much smaller degree than in the two cases of saltatory spasm just mentioned, and the muscles producing this movement could be both seen and felt to contract. The patient also had retention of urine during her stay in the hospital. From this symptom she had suffered once before during an attack of influenza long antecedent to the present illness. She was but little benefited by a stay of seven weeks during which everything I could devise was tried, and now she is still suffering in exactly the same manner and also has attacks of retention of urine from time to time. The urinary difficulty of this patient is well worth noting; it varied between retention, which would trouble her for days together, and true suppression. Thus, after she had been an in-patient for about three weeks the quantity of urine, which up to that time had ranged within normal limits, suddenly fell to four ounces in the day, and she suffered from severe headache. Only a few drachms of urine could be evacuated by the catheter and there was no palpable enlargement of either kidney. The condition passed off with diuresis. More often than this, however, there was mere retention of urine easily relieved by the catheter. Now this case, on the face of it, is one of hysterical chorea with hysterical anuria, and the character of the movements, their rhythm, and the history of the onset all support the diagnosis of hysteria. Moreover, the family history showed a predisposition to nervous disorder. The refractory character of this illness is likewise in keeping with what is remarked by Charcot on the intractability of certain hysterical affections. Yet the spasmodic movements continued undiminished while the patient was asleep, which proves that they were independent of any active encouragement on the part of the sufferer and that the disease was as genuine a chorea as is any chorea the onset of which is determined by mental shock. I have quoted the case at length in order to show how close is the connexion between ordinary chorea and so-called hysterical chorea, and to demonstrate the clinical and etiological relationship between chorea and saltatory spasm, which latter was very closely approached in the present instance. This patient showed no indicanuria, but the venous stigmata on the cheeks, coupled with the stubborn condition of the bowels, gave good ground for suspecting a chronic auto-intoxication, and in the absence of the same it is quite possible that the original fright might have produced nothing more than a temporary shock.

3. *Tetany*.—This disease should rather be considered as a symptom, for although we do meet with patients in whom the spasm of tetany so predominates that all other signs of illness are overshadowed by it, yet such cases are rare. On the other hand, tetany is not so rare as one symptom forming part of a clinical picture in which the other symptoms and signs are of equal prominence. It is unnecessary here to describe the character of the contractures. The trunk muscles and those of the face generally escape, and it is only in very rare cases that the muscles of respiration are affected. The disease is most often met with in children, but it occurs also in women and is, among adults, limited, so far as I have seen, to the female sex. The causes commonly assigned are the following: (1) catching cold; (2) rickets; (3) acute infectious diseases, such as typhoid fever and small-pox; (4) intestinal affections, as diarrhœa; (5) prolonged suckling and over-lactation; (6) pregnancy; and (7) Weiss has pointed out a peculiarly frequent sequence of tetany after extirpation of the thyroid gland. Sometimes tetany has been reported as occurring epidemically, but it is doubtful whether in these cases the spasm was not due to imitation.

CASE 4.—With a view to show the connexion of tetany with another class of disease only indirectly referred to in the above list of causes I would quote the case of a nurse who came under my observation some time ago. She was a strong and healthy woman, but had caught cold and become hoarse a few days before I first saw her for violent suffocative spasm with much cyanosis. After the spasm she looked quite well and her healthy colour returned, but she was completely aphonic. A subsequent laryngeal spasm which I saw was accompanied by typical tetany-contractions of the hands and of the right foot, the left remaining free. The limbs affected were blue and cold, but recovered their natural colour and temperature when the dyspnœa ceased.

The suffocation was apparently caused by an adductor spasm in the larynx exactly similar to that which is so familiar in children as laryngismus stridulus. For five or six days these attacks recurred both by day and night. During the whole of this time she had a moderate continued fever which ended gradually by lysis. The spasm in the hands, which occasionally came on in slight degree without the dyspnœic attacks, was invariably preceded by a sensation of numbness and tingling which gave her warning of its approach. After leaving her sick room this patient was weak, pale, and tottery, as though she had undergone a long and severe illness. Throughout, the lungs had presented no physical signs of disease. Here, then, was a typical case of tetany associated with laryngitis from cold and adductor spasm of the larynx, a symptom-complex which brings this instance of the disease very near indeed to those tetanies which occur in rickety children in whom both laryngismus stridulus and catarrhal laryngitis with stridulous spasm are exceedingly common.

CASE 5.—Another case of this malady which was recently under my care is also worth noticing. An infant, aged one year, was admitted for well-marked, though not very severe, tetany. He was well nourished but showed distinct marks of rickets. In three days, the spasms having subsided, he was sent home. Ten days later he was re-admitted for a recurrence of tetany. The stools were now loose and contained some orange-peel and other undigested food; they were greenish, mixed with mucus, and very offensive. The tetany now persisted for 11 days, being nearly always present in some degree, but generally appearing to cause no pain; the exacerbations, however, were painful. On the eighth day he developed a laryngeal cough but had no laryngismus. Throughout there was an absence of fever and gradually the child regained his normal health. In this case we have a combination of the symptom of tetany with several of its recognised causes—namely, gastro-intestinal disturbances, clearly provoked by unsuitable and indigestible food, as shown by the stools, rickets, and most likely considerable laryngeal inflammation. I have never seen tetany occurring even in a rickety child without distinct catarrh of either the respiratory or the digestive mucosa, and it seems to me that not the rickety nutritional trouble but these catarrhs are the cause of the spasm, by inducing a toxæmia or a reflex irritation. We have seen that such inflammations can lead to tetany in the absence of rickets, and the truth is probably that both the latter disease and the tetany are common results of the catarrhal conditions. It appears more usual for such results to follow disease of the intestinal than of the respiratory mucous membrane.

Tetany is one of the diseases in which Albu has succeeded in isolating from the urine a toxic substance. In the light of other researches this result is not so important as might at first sight appear; I shall return to this subject when reviewing the general pathology of these neuroses. Meanwhile we find in the occurrence of tetany in conjunction with extirpation of the thyroid and with laryngeal inflammation a suggestion that reflex irritation may have a share in leading to the spasmodic symptom. So also it might be thought that in the case of the little patient last quoted the spasms were set up reflexly by irritation of the intestinal nerves, and apart from any absorption of toxic material from the lumen of the intestine. It must be admitted that it is very difficult to distinguish between nervous symptoms set up by a toxæmia and those caused by the peripheral irritation of correlated nerve fibres. There appears to me to be only one point which may help one at the bedside to determine whether the nervous symptoms in any particular case are toxæmic or reflex. It is this: when we produce a reflex act by mildly stimulating the skin, as, for instance, in eliciting the plantar or cremasteric or epigastric reflexes, the first response is always in muscles which lie near to the stimulated cutaneous area. Thus in the case of the plantar reflex, in health, flexion of the toes is the first muscular action, and only as the stimulus is increasing do other muscles respond. On the other hand, when a toxæmic state is the cause of the muscular symptoms the poisonous material will be equally distributed in the blood-stream, and it will act with greatest effect on that part of the nervous system which is most susceptible to the toxic influence, or, what is probably the same thing, that part, for the structural elements of which the poison has the strongest affinity. Hence the seat of the muscular contraction will in this case be determined by the tenderest part of the central nervous system and we may, as I shall have occasion to show later, have such a phenomenon as unilateral epileptic convulsions arising from gastro-intestinal self-intoxication. From the phenomenon of tetany, as well as from the evidence that the disease is always preceded by conditions liable to produce toxic or infective states of the blood, we should be inclined to say that the spasms are produced by toxic rather than by reflex mechanism. A co-existence of the two agencies is not, however, entirely excluded.

4. *Night-terror.*—The next disorder which I wish to discuss is night-terror—nightmare and troubling dreams generally. Children are comparatively rarely brought for advice for these symptoms alone, but their frequency is very great in conjunction with other conditions—notably with disturbances of digestion. Probably the dreams are a good deal more troublesome to the little sufferer than the child can express, for it is only when the fifth or sixth year has been reached that a child will complain of its dreams. In younger infants the evidence of suffering must be derived from screaming, or, in lesser degrees, from restlessness, muttering, and broken sleep. One may say that dreams and nightmare arise from the following causes: (1) primary mental or emotional excitement which prevents the occurrence of that necessary anæmia of the brain in which alone sound sleep is possible; (2) pain, palpitation, visceral uneasiness, &c., producing a consciousness of the physical sensation and thus preventing sound sleep; and (3) blood-states which irritate the nervous centres. In the first class of cases the patient, generally an adolescent or adult, will recognise what is troubling him. It rarely happens that the sensation is one of mere restlessness without a definable cause for the same. The second group of causes requires no comment; it is, of course, equally liable to operate in children and in adults. The third group of causes prevents sleep by producing a sense of restlessness without pain, and an excited state of the consciousness, in which deep sleep is impossible, and in which confused thought goes on, and any impression made on the half-slumbering senses will render the sufferer partly conscious of the same. Most of us engaged in the practice of medicine are familiar with the phenomenon which may be called "red dreaming." In this condition the sufferer sees the object of his dream coloured a vivid red and bloodshed forms a common subject of these sleep-hallucinations. It is not infrequently a salient complaint in the tangled complex of symptoms which a so-called "hysterical" woman lays before us. All the instances of this kind with which I have become acquainted have occurred in people whose digestive processes were out of order. It is safe to say that a large number of dreams, more particularly those of an acutely distressing or alarming character, and especially the dreams of children, are due to a toxæmic state; and it is to be noted that, apart from the delirium of fever, these dreams occur frequently in children who are to all appearances fairly healthy or who are, at all events, not suffering from pronounced disease and who can usually follow the daily round of school-life. If we inquire what kind of digestive disturbances are the most fertile in producing dreams we shall often find that a faulty diet is to blame. Referring, again, for an example to the red dreams just mentioned my own experience shows them to be frequently due to a single excess of meat accompanied perhaps by a simultaneous overloading of the stomach. It may be, therefore, that such dreaming is caused by reflex irritation of the brain-centres or of the nervous apparatus which governs the supply of blood to these centres. On the other hand, it is also possible that the importation of an excessive amount of the digestive products of a meat meal acts as an irritant to the brain-cells directly and without the mediation of the vaso-motor mechanism. However we may choose to explain the connexion we must admit it from clinical observation, for it is proved not only by the frequency of the joint occurrence but also by the effect of treatment which removes the gastro-intestinal cause. It is true that success does not always follow immediately upon correction of the dietary error, and two reasons are accountable for this failure. The first is that, though unsuitable feeding is often the primary cause and is easily put right, yet the faulty diet may have produced a state of intestinal catarrh and this may in itself be sufficient to perpetuate the nervous symptoms, and will therefore require appropriate treatment. The second reason is that frequent recurrence of the nervous effect may establish a morbid habit in the nerve-cells which is in itself a difficulty even after the primary cause of the disturbance has been successfully removed.

Although, as I have insisted, improper feeding is the most frequent primary cause of children's disturbed sleep and dreaming, yet the same symptom is met with in patients in whom the diet is everything that could be wished. In such cases we shall usually find the presence of gastro-intestinal catarrh, shown by a coated tongue or painful digestion, and it is often the remnant of an attack of measles, whooping-cough, or other infectious disease the acme of which is passed. In other cases the dreaming is the only marked symptom of an unrecognised febrile process, either tailing off from some previous disease, or arising insidiously without marked symptoms, or, though much more rarely, representing the gradual onset of a general disease such as acute rheumatism of the creeping insidious type. It is therefore advisable to take the temperature, at all events in the evening, in patients in whom dietary or digestive faults fail to account for the disturbed sleep. In adults dreaming is frequently set up by a toxæmic condition which arises, not from self-intoxication from the intestine, but from the inefficiency of the kidneys, the result either of actual disease or of the state of renal inadequacy described by Sir Andrew Clark; and in children the same condition will at times be found both in cases where albuminuria and the presence of renal débris reveal structural disease of the kidneys, and in others where these glands are merely enfeebled by the demands to which a previous infective condition has subjected them.

The number of instances in which I have found distressing dreams combined with the signs of digestive toxæmia, to which reference has been made under chorea, is considerable. Yet in laying stress on what I believe to be the most frequent and important cause of nightmare—viz., gastro-intestinal disorder—I would not underrate the importance of primary emotional excitement and of pain, and of unrevealed fever in producing the same effect. In order to treat a child successfully for this distressing condition it will be found necessary to discover fully the cause of the disturbance and to deal with this in the first instance. Further details on the treatment will be included in the review of the therapeutic measures which are applicable to these neuroses generally.

5. *Nocturnal enuresis.*—This condition is, I suppose, still regarded by some as an independent disease and is treated as such. I wish to show in these remarks that that is not really the view which should be taken of this common and annoying symptom. Mothers and fathers are accustomed to regard enuresis as a bad habit—and such undoubtedly it may become—but it is never a habit contracted from either mere wilfulness, or from imitation, or for the sake of producing a pleasurable sensation, and the only habit which can be considered as applying to enuresis is one of easy excitability of the cord-centres which control the muscles of the bladder. Punishment is clearly out of place in the treatment of a habit of this kind. For the first factor of nocturnal enuresis we must, however, look elsewhere, and I think that the primary causes may be fairly stated as follows: (1) disease of the bladder or urinary passages, as, for instance, stone; (2) irritation of the rectum, as from worms; (3) excessive secretion of urine; (4) excessive irritability of the spinal centres concerned in micturition; or (5) excessively irritating quality of the urine. Although it is convenient to separate the fourth and fifth causes, and although, in fact, each of them may be singly operative in causing nocturnal enuresis, yet these two factors will, as a rule, be found acting conjointly. Excessive irritability of the spinal centres there always must be, to lead to the untimely discharge of urine during sleep, but this probably never occurs (except in gross disease of the spinal cord with which we are not here concerned) without a condition of urine which must be considered as abnormal. If we exclude those cases in which there is an excessive formation of urine and those in which there is actual organic disease of the urinary passages, we shall find that the urine of children suffering from enuresis is generally sharply acid, often, in addition, rich in urates, more rarely depositing uric acid; sometimes an excess of oxalate of lime will be found. Such urines are scanty and concentrated rather than copious, and they indicate an error of the metabolic processes which may depend upon disease or diathesis, or upon faulty diet. In conformity with these points we generally observe that enuresis first comes on either after an illness or after a change of diet, or when, in the absence of definite illness, the child has been in depressed health. The state of the urine is, in fact, the index of a disordered metabolism. How the disorder comes about is shown to us by the forerunners of the enuresis, though it must be admitted that the history is often difficult to obtain. We may safely assert that the disturbance of the assimilative and disassimilative processes is never primary, but that it is invariably the result of an altered state of the blood, which in turn has its cause in the presence of toxic substances, the proceeds of microbial action or the derivatives of a faulty diet. In a few instances nocturnal enuresis results from the direct excretion of pathogenic bacteria by way of the urine. Charged with considerable quantities of living bacteria and their derivatives, the urine naturally has an action upon the walls of the bladder irritating beyond the normal, and the result is that during the time when voluntary control is smallest the spinal centres are apt to respond vigorously to the extraordinary irritation. I have lately seen a case in which this occurred.

CASE 6.—After a prolonged pneumonia the urine of a little boy contained large quantities of bacteria, and simultaneously he had great frequency of micturition with loss of control over the bladder. This led to an enuresis which was certainly not limited to the night, but which continued night and day; but it was merely an exaggeration of nocturnal enuresis.

The same tendency to frequent micturition may be discerned in a minor degree in a good many adults after the termination of pneumonia or other bacterial disease such as enteric fever. There can, however, be no doubt that the majority of instances of nocturnal enuresis are associated with no very noticeable disturbance of the general health and hence the enuresis is made the chief complaint, and, I repeat, where no recent illness can be traced there we shall nearly always find error of diet or disease of the digestive tract. Unsuitable diet plays so important a rôle that to illustrate it I will mention a case which has recently come before me.

CASE 7.—A little girl, aged three years, suffered from nocturnal enuresis together with frequent micturition during the day. The urine was said to be not excessive in quantity, it had a high colour and density and a strong smell, somewhat resembling that of meat extract. There was a little inflammation about the external genitals. The child's sleep was broken, she was nervous, and she had a trick of pulling faces, the movements coming sometimes near to those of chorea. Beyond this her appearance was that of health. She suffered, however, from itching and showed isolated spots of urticarial erythema. All these symptoms had come on from the time when she was first given meat; up to nearly her third year she had never tasted this article of food and had enjoyed excellent health. Withdrawal of meat from her dietary was immediately followed by moderation, though not by complete cessation, of the symptoms; but a fortnight after the beginning of this treatment a single meat-meal, which by the way consisted of rabbit, was followed by enuresis in the same night.

DIFFERENTIATION IN DIABETES.

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(*Continued from p. 1789.*)

IN the "*alimentary*" form of diabetes we have only the ill effects of the sugar in the system to deal with. There is not the liability to the supervention of the fatal coma that there is in the other form where toxic products are developed from the process of tissue breaking-down going on. In proportion to the amount of sugar in the system, which is indicated by the quantity appearing in the urine, so do we find the intensity of the symptoms. With only a little sugar reaching the system and passing into the urine there is but little deviation from the natural state, and nothing wrong as regards the state of health may be perceptible. When the circumstances are such, however, that more sugar finds its way into the circulation the deviatio from the natural state becomes, proportionately to the quantity, increased and there is a corresponding manifestation of disordered health. That it is the passage of sugar

through the system that is the source of the troubles met with in connexion with the disease is shown by the immediate amelioration that takes place on causing the passage of sugar to cease simply by recourse to an appropriate diet. Let a case be taken in which from some circumstance or other the complaint has been allowed to run on uncontrolled till an urgent state has been produced. The patient is now placed upon a diet preventing, by the exclusion of carbohydrate matter, sugar reaching the system as before. A change of a most marked kind immediately sets in. All the symptoms subside and the health becomes restored and may afterwards be indefinitely maintained so long as the condition does not advance beyond the "*alimentary*" form. Thus in these cases as long as there is only the "*alimentary*" type of condition to deal with the state of the patient depends upon the management adopted. With a diet properly adjusted to meet the precise extent of impaired assimilative power existing there is virtually nothing in operation to produce abnormality. It is true, looked at in its entirety, that we have not a perfectly normal state before us. The power of properly disposing of carbohydrate matter is lacking, but if the demand is not made for the exercise of the absent power nothing abnormal is observable. It is only when the demand is made and not responded to that evil consequences arise; and it is to the presence of sugar *per se* in the system that the result is due.

To set things really right the restoration of the defective assimilative power is wanted. This, whilst often in a certain class of case to a considerable extent attainable, is not so much at our command as could be desired. The prevention, however, of the baneful effects of the sugar arising from unassimilated carbohydrate matter stands upon a different footing and in the "*alimentary*" case can be reckoned upon as attainable. But everything depends upon the concurrent compliance of the patient with the required attention to the necessary management. If this is not loyally rendered serious consequences are sure to follow. Sooner or later the toxic influence of sugar in pronounced quantity reaching the system will assert itself and produce characteristic troubles of various kinds attended with a general decline of power, all of which might have been averted—I am speaking of a case controllable by diet—by keeping the sugar under. The contrast in the progress of patients where the sugar is kept under and where it is not is very marked. In the one there is nothing to interfere with the maintenance of health whilst in the other health and strength fail till by some concurrent ailment the patient is carried off.

Any number of cases might be brought forward in illustration of what I have stated. I will content myself with citing the following case, in which one of the most common of the baneful effects of sugar in the system—viz., peripheral neuritis—was encountered in a very severe form. The patient first consulted me in the autumn of 1895. He was then 51 years of age and had been the subject of diabetes for a year and a half. He was on a partially restricted diet and his urine contained 55·54 per 1000 of sugar. In four days, under the altered treatment adopted, including the restricted diet, the sugar had fallen to 16·66 per 1000 in the urine passed at night and 12·50 in that passed in the morning. Three weeks later the sugar had disappeared. A month after this three ounces of ordinary wheaten bread per diem were allowed without bringing back the sugar. About six weeks later he was taking six ounces per diem and passing no sugar. Six months elapsed, the patient had dropped his treatment and the urine had returned to the state it was in when I originally saw him. The date now reached was July, 1897. Restriction of diet immediately altered the condition and throughout 1898 a fairly satisfactory state was maintained. On Nov. 15th, 1899, the patient was brought to me in a deplorable plight. His urine contained 68·40 per 1000 of sugar, and he was suffering from urgent thirst and the other ordinary accompaniments of diabetes. His legs were affected with peripheral neuritis. The pain in them prevented his obtaining sleep at night, and there was such hyperæsthesia that he could not allow one to rest upon the other or find an easy position for them in bed. There was the usual loss of knee-jerk and from the ataxic state existing he could not walk alone. The condition soon yielded to treatment, the sugar becoming at once reduced to only a small amount without being completely lost. On Feb. 1st he was free from trouble in his legs and the sugar then stood at 9·30 per 1000 in the night specimen and traces in that of the morning. On Feb. 21st the report was a trace of sugar in both night and morning specimens of urine.

It is the passage of a case from the "*alimentary*" into the "*composite*" form which gives a serious aspect to the outlook. The liability to the occurrence of this transit varies with the associated circumstances. Age, as is well known, constitutes an important factor in connexion with the matter. Our prognosis has to be founded upon the knowledge supplied by experience of the progress observed in association with the particular collateral circumstances existing. We may have to deal with the disease, at the time being in the alimentary form, in an elderly and in a young subject. Experience tells us that the issues to be looked for are respectively very different.

In the young subject marked progressiveness constitutes the great feature noticeable, and it is this which gives the formidable character to the complaint that it possesses at this period of life. Treatment which at an early stage of the case proved readily efficacious in subduing the symptoms in the course of time loses its effect, and advance having been made to sugar being drawn from the tissues the urine can no longer be brought into a sugar-free state. The rate of progress varies in individual cases: the younger and more sensitive the subject the more likely is the advance to be rapid. The worst subjects for the complaint are those of a highly-strung nerve organisation, those who are disposed to worry over or meet with friction the ordinary events of life, and those who without such a nature are placed in a position to involve exposure to mental disquietude. A deviation from the ordinary progress sometimes presents itself in cases with a hereditary history. As a rule, these cases show no difference from those without such a history, but I can say from experience that now and then instances present themselves where even setting in at childhood the complaint may run on for several years without making any serious progress. It seems as if a flaw in the chemistry of life had been handed down which takes a long time in attaining full development. Amongst members of the Jewish race the complaint is not only particularly common but heredity is very conspicuous. As a counterbalance I consider it may be said that the progressive tendency is not so pronounced as amongst other people. Above middle age a marked diminution of the progressive tendency is noticeable, and thus an opportunity is afforded for a success in treatment not attainable in young subjects. In many cases if taken early—and this I am under the impression is a point of considerable significance—the assimilative power may become so far restored as to permit of an ordinary diet being taken without being attended with the passage of sugar.

A patient whom I saw for the first time in September, 1896, stands as a striking example of this result. He was then 57 years of age, and about three months previously had been sharply attacked with thirst, polyuria, and wasting. Diabetes was recognised, and under an altered diet the urgency of his symptoms became subdued. When I saw him he was on a partially restricted diet, and his urine contained 35·71 per 1000 of sugar. Codeina was ordered in conjunction with the fully restricted diabetic diet. In two days the sugar had fallen to 10·2 per 1000 and three days later it had disappeared. He increased in weight and in every way improved till towards the middle of November, when somewhat suddenly a fall in weight set in with a feeling of prostration like that which he had experienced at the beginning. He was under the apprehension that a relapse had occurred. His urine was in a sugar-free state, and I have mentioned that under such circumstances the symptoms presented indicate returning assimilative power and want of carbohydrate. Three ounces of ordinary bread per diem were allowed and improvement immediately followed. At the end of November the amount of bread was raised to 4½ ounces. On Dec. 23rd the weight was again falling and weakness was complained of. The condition was satisfactorily met by increasing the bread to 6 ounces. In the early part of February, 1897, the bread was raised to 7½ ounces. At the end of July a satisfactory state existed. In the entry for Sept. 24th, just after my return from the vacation, it is stated that through passing more urine and losing weight the patient feared there might be a return of sugar and that he had on his own account reduced the bread with the effect of producing a marked loss of weight. The allowance was raised to 9 ounces and recovery of weight took place. In October the bread was increased to 10½ ounces, and in December to 12 ounces. A steady rise in weight had now set in and was afterwards continued. I see it noted that

between Oct. 21st and Nov. 11th there was a gain of 3 lb., between Nov. 11th and Dec. 9th 8 lb., from this to Jan. 6th, 1898, 5 lb., then to Feb. 3rd 3¼ lb., March 10th 3½ lb., May 3rd 7 lb., and June 14th another 7 lb. The patient was now taking starchy food in the form of potatoes in addition to his bread, and in December, when he had put on 8 lb. more weight, it was considered advisable to draw in somewhat as he was becoming too corpulent. He is a thorough disciplinarian with a strong desire to do everything to maintain his health. I last saw him in December, 1899, when he was in a good firm condition and passing urine free from sugar.

From time to time cases of this kind present themselves but more frequently the restoration of assimilative power advances to a more limited extent and then remains stationary. Variation in the point attained exists, and in the position thus to be dealt with starchy food within the limit of assimilative power regained does not throw sugar into the urine, whilst beyond the limit it does. Such a state of things may go on without any appreciable alteration for months and years, the urine all the while constituting a tell-tale of when the food taken has exceeded the tolerating power.

Extending our survey, cases are come across in which in the course of time the tendency for the assimilative power to grow weaker shows itself, but in these cases the rate of progress is not to be compared with that typically belonging to the disease in young subjects. It is observed that food which at one time failed to give rise to the passage of sugar at a later period does so, and that after the lapse, it may be of many years, the complaint passes from the "*alimentary*" into the "*composite*" form. The following is a case in point.

A patient whom I first saw in 1885, and who was then 48 years of age, had no difficulty by moderate attention to diet in keeping his urine free from sugar. In the early "nineties" considerably stricter attention, which was not steadily given, was needed for the purpose. So the case has run on, the urine being sometimes for a while kept free from sugar and at other times not. According to the latest evidence recorded the sugar has ceased to be removable from the urine by diet. In April last the urine upon a strict diabetic diet contained upwards of 30 per 1000 of sugar and gave an indication of the presence of both diacetic and oxybutyric acids. The case, therefore, has now passed from the "*alimentary*" into the "*composite*" type of the disease.

In concluding what I have to say upon this part of my subject I consider that I cannot lay too much stress upon the importance as a measure of treatment of exerting our endeavours in the first place to put, and afterwards steadily to maintain, the urine in a sugar-free state, but whilst accomplishing this object no further curtailment of carbohydrate food should be made than is found to be necessary for the purpose. My experience decidedly leads me to say that without a removal of the sugar, whereby the aid of a natural state of system is supplied, no restoration of assimilative power is likely to occur. Freedom from mental strain and friction is a great adjuvant in treatment.

THE "COMPOSITE" FORM OF DIABETES.

In this form of diabetes we have a twofold source for the sugar—the carbohydrate of the food and a morbid breaking down of tissue. Through this latter process being attended with the formation of supplementary products which pass with the sugar into the urine means are afforded for recognising the condition. We are placed, also, in a position to check the account given by a patient. If there is no indication of the presence of oxybutyric acid revealed by the results supplied on estimating the sugar by cupric oxide reduction and by the polarimeter, or of that of diacetic acid by the ferric chloride test, it may be concluded that the sugar existing in the urine has been derived from ingested carbohydrate of some kind or other. If it be asserted that none has been taken, error, wherever it may lie, must exist in the statement. If it should happen that deception is attempted to be practised it is the patient who will have to bear the self-inflicted harm, but it must not be lost sight of that carbohydrate may easily in an accidental way be unconsciously taken, and sometimes the source of delusion is the diabetic food consumed in the place of ordinary bread which wrongfully fails to represent what is professed.

Oxybutyric acid requires careful manipulation and an experienced worker for its reliable employment as a source of information, but much advantage is gained from the knowledge which it supplies. In the first place its presence means a more or less advanced stage of the tissue breaking-down process, and thereby a nearer approximation to the liability to the supervention of diabetic coma, than does that of diacetic acid; and in the next its amount can be definitely read off, through which again information is supplied bearing on the prospect in relation to coma. As has been mentioned it is through its left-handed rotatory power that its determination is effected. When present with dextrose the neutralising effect which it produces on the dextro-rotatory reading that would be given by this body reduces the figures obtained and thus throws them below those given by cupric oxide reduction. Further, when the dextrose is fermented away with yeast the urine is left with the levo-rotatory activity belonging to the oxybutyric acid present.

I have in an earlier part of this communication spoken of the Gerhardt, or ferric chloride, test, which is the test employed for diacetic acid. The amount of the principle present is judged of by the intensity of the colour produced and it is convenient in recording it to represent it by one, two, or three + signs. From the record before me of about 250 observations I can personally testify to the value of the information that is afforded by the method of examination to which allusion has been made. Naunyn and some other authorities have published results which agree with mine. We must not look too rigorously for uniformity in all cases in the results obtained. Discrepancies here and there occur, as yet without apparent reason, in the difference between cupric oxide reduction and optical activity compared with the optical activity after fermentation. It has been suggested (Külz and others) that a certain amount of levulose is sometimes present with the dextrose, and other conjectures have been put forward. Upon this point of detail there is room for further inquiry, but taking the series of results as they stand linked together in a given case they speak in a manner that cannot be mistaken. For the purpose of illustration I will take some representative examples from my collection and give them in a tabulated form.

"ALIMENTARY."

Dextrose per 1000.		Optical activity after fermentation.	Ferric chloride reaction.
By CuO reduction.	By polariscope.		
54·7	55·7	Nil.	Nil.
26 0	25·5	Nil.	Nil.
50·0	50·8	Nil.	Nil.
77·7	77·3	Nil.	Nil.
76·4	76·0	Nil.	Nil.
20·8	21 6	Nil.	Nil.
19·2	19 6	Nil.	Nil.
14·0	13·1	Nil.	Nil.

"COMPOSITE."

Dextrose per 1000.		Levo-rotation after fermentation. Dextrose value per 1000.	Ferric chloride reaction.
By CuO reduction.	By polariscope.		
35·7	30·1	5·4	+ +
52 0	44 9	3·9	+ + +
22 6	14·5	6·8	+ + +
54·7	49·1	5·1	+ + +
72·0	62·2	4·7	+ +
30 6	23·7	7·5	+ + +
17 2	13 7	3·6	+ +
31·5	27·8	3·6	+ +
27 0	1·3	5·5	+ +
56·2	49·0	7·2	+ + +
33·7	27·8	3·9	+ +
36·0	30·2	5·0	+ + +
12·1	5·0	5·0	+ +
16·3	10·8	4·7	+ +
19·2	13·6	7·2	+ + +

It is, as I have already stated, the passage of the case from the "*alimentary*" into the "*composite*" type that supplies the bad foreboding. Many cases run on for years without the transition occurring and if the sugar is properly kept down no harm arises. A patient consulted me in February, 1886. He was then 51 years of age and had been the subject of diabetes for one and a half years. His symptoms were severe and his urine contained 50 per 1000 of sugar. In a specimen of urine recently examined sugar was present but oxybutyric and diacetic acids were absent. Length of time, however, in the "*alimentary*" form affords no guarantee against the passage of the case into the "*composite*," but my experience would lead me to say that the more completely the elimination of sugar is kept under the less likely is the transit to occur. The case cited above of the patient whom I first saw in 1885 serves as an illustration applicable here. After running on for about 15 years in the "*alimentary*" form progress has recently been made into the "*composite*" form. In December last there was a slight amount of diacetic acid present without any oxybutyric acid. In April considerable quantities of both existed.

As an example of rapid development of the "*composite*" form (and I do not know that it may not in some cases set in with the onset of the disease) I may refer to the case of a female patient, aged 18 years, of a very sensitive organisation whose first symptoms of diabetes occurred in November and who was brought to me in February with urine containing much sugar associated with large quantities of oxybutyric and diacetic acids.

When the abnormal tissue breaking down, which is attended with the production of sugar and the associated products that have been referred to, sets in it is obvious that a serious aggravation of the previous condition becomes established. Under the morbid influence in operation the tissues melt down into unexhausted products which escape as waste with the urine. No wonder under these circumstances that the weight should cease to be maintained. A sensibly advancing fall is noticeable and when the patient survives for some time without being carried off by coma or otherwise, marasmus may progress till reduction almost to the semblance of a skeleton is attained.

The diabetic coma to which the patient in the "*composite*" form of diabetes so frequently succumbs is the result of a true autotoxicosis. The term "acetonæmia" has been applied to the condition from the idea formerly entertained that acetone was the toxic agent. If there is a pronouncement, however, that can with confidence be made it is that the term, as in the parallel instance of "uræmia," is an entire misnomer. From the evidence in our possession neither acetone, diacetic acid, nor β-oxybutyric acid can be looked to as possessing the toxicity needed to account for the coma. A proposition has recently been put forward which has the appearance of being entitled to our weighty consideration. Sternberg [1] has suggested that it is to β-amido-butyric acid, a probable precursor of oxybutyric acid in the acetone series of products, that diabetic coma is attributable. The view is supported by the fact that after the experimental introduction of the β-amido-butyric acid into the circulation exactly the same train of symptoms, even to the "air-hunger" kind of breathing, follows that is met with in diabetic coma. Grube [2] has repeated these experiments and obtained completely confirmatory results.

That a within developed toxic agent is the source of the coma is strikingly exemplified by the effect of a measure of treatment that has been upon occasions resorted to. By the intravenous injection of large quantities of various saline solutions patients have been restored from a comatose to a conscious state. Unfortunately the effect has only been temporary. The toxic agent, it may be assumed, has for the time been washed out of the system, but owing to the genetic action going on has soon reaccumulated.

The reaction with the ferric chloride is not necessarily to be taken as indicative of a bad foreboding. There are circumstances under which diacetic acid is only temporarily present and it is only when persistently in some quantity present that it is to be concluded that a grave condition has been reached. With starvation and an excessive amount of proteid food, apart from diabetes, ferric chloride may be found to give a reaction and the reaction may appear for a time when a diabetic patient is first put upon the restricted diet to disappear subsequently when the system has adapted itself to the altered food. I have seen this sometimes occur. In the experimental pancreatic diabetes the sugar is accompanied by diacetic acid and its associates, and such is also the case in phloridzin glycosuria when fasting is conjoined. Under these several circumstances a supply of carbohydrate matter contributes to the removal or reduction of the principles. Fat also appears [3] to act in a similar way. It seems as if the carbohydrate and fat groupings within the proteid molecule saved the nucleus of the molecule, and that when these are absent the molecule itself undergoes destruction. Placed in such an extremity, with the dangers of Scylla and Charybdis before us, we may consider it wise to steer a middle course in relation to food.

Grosvenor-street, W.

[1] Zeitschrift für Klinische Medicin, 1899, vol. xxxviii., p. 65.
[2] THE LANCET, March 10th, 1900, p. 706.

[3] Geelmuyden: Zeitschrift für Physiologische Chemie, 1899, vol. xxvi., p. 381.

THE PRIMARY DISORDERS OF GROWTH.

BY HASTINGS GILFORD, F.R.C.S. ENG.

(*Continued from p. 1648.*)

THE method which has been adopted to show the class unity of the various diseases which have been mentioned may be termed the synthetical method, for it consists in the construction of the class from its elements. The propositions which are embodied may be "proved" by the converse or analytical method—i.e., by taking individual diseases and showing how each one answers to certain tests which are common to the class. Many of the diseases under consideration are so unlike one another that it at first seems almost impossible that they can have similar bases. This may be said, for example, of such divergent diseases as local giantism of the extremities, primary Bright's disease of the kidneys, pernicious anæmia, and Addison's disease. But there are other diseases of the group which connect these together and make it easier to grasp their essential identity. Thus, while it requires some effort of the imagination to see the connexion between, say, a giant extremity and a large white kidney, it is but a step between the giant hand and the giant breast. Further, the process which gives rise to the giant breast is evidently of the same nature as that which produces the giant thyroid of goitre. The latter, it is true, contains, as a rule, large numbers of cysts; but that is a detail which results, not from any difference in the nature of the disease, but from peculiarities in the structure of the gland itself. From the fibrous or cystic thyroid to the fibrous, large white, or cystic kidney is but another step, and so the connexion between the giant hand and the giant kidney is completed. After the same fashion it can be shown that there are all stages between the purely fibrous adrenal body and that which is composed almost solely of tubercle-like cells or is unquestionably tuberculous. Moreover, that the process which leads to destruction of the adrenal body in Addison's disease is essentially of the same nature as that which gives rise to cirrhosis of the liver or to primary Bright's disease of the kidney is also indicated by the occurrence of cases in which adjacent parts of the liver and kidney are implicated by contact with diseased adrenals. Under this circumstance a local change is set up in these organs which is exactly the same as that which takes place in cirrhosis and in Bright's disease respectively.[1] But the primary nature of the lesion of Addison's disease and its identity with the fibrous degenerations of the lungs, spinal cord, liver, and kidneys have been already dealt with by Sir Samuel Wilks.[2]

In the course of the study of these primary disorders of growth it soon becomes evident that there are certain rules or postulates which bind them together and which greatly help in their elucidation. Some of these are so important and so absolute that they almost deserve the more dignified name of laws. Of these, two of the most important are that "any organ or part which is capable of growth is

[1] Professor Burdon Sanderson, Transactions of the Pathological Society of London, vol. xx., p. 38.
[2] THE LANCET, June 13th, 1885, p. 1101.

subject to the primary disorders of growth" and "the greater the fluctuations of natural growth the greater is the liability to disorders of growth." A good example of the operation of the latter rule is to be found in the female breast, which is both subject to many changes of growth in health and is also, perhaps, of all organs the one which is most liable to the primary growth diseases, from a simple hypertrophy to the ultimate descent into cancer. A good instance of the application of the first of the two rules is to be found in the growth diseases of the blood. It is, I suppose, certain that the blood must be regarded as a fluid tissue, one of whose functions is to act as a medium; and being a tissue and capable of growth we know that, like all other tissues, it must also be liable to the disorders of growth. Only two of these need now be referred to. One is hypoplasia, or pernicious anæmia, the other is degenerative hyperplasia or leukæmia. In pernicious anæmia the cells of higher type (red discs) are alone diseased, the less differentiated white cells not being affected. The explanation of the course of events in pernicious anæmia may be put briefly as follows. In health there is provision both for the destruction of imperfect or used-up red discs and also for the making of new discs to take their place. Red bone marrow is the chief source of the new blood, while the blood itself, and after it the liver, kidneys, and spleen, are the organs which are most concerned in the scavenging process of blood destruction. In pernicious anæmia there is a perversion of the natural processes of blood growth which leads to the appearance of a number of badly formed or embryonic discs, instead of well-made, healthy discs. But the blood destroyers cannot distinguish between these defective discs and those which are used up in the normal wear and tear of the body; they therefore ruthlessly break up and destroy in the blood all the imperfect cells as rapidly as they can. But increased destruction of red discs leads to their increased formation and a spurious hypertrophy of the red marrow takes place in consequence. In this way the vicious circle of bad workmanship, increased waste, and increased output is completed. A similar process goes on in connexion with the white cells in leukæmia, though it is varied in accordance with the variation in the nature of the tissue which is affected. The leukæmias are obviously the degenerative hyperplasias of the blood. Their clinical history is in the main that of other forms of primary degenerative disease. They are sporadic, idiopathic, progressive but liable to periods of amendment, pernicious, and incurable. They are distinguished by increase of cells of low type (leucocytes) and decrease of cells of higher type (red discs). Running with this is spurious hypertrophy of one or other of those organs (the lymph glands, the spleen, &c.) which are concerned in the making of leucocytes, corresponding with the pseudo-hypertrophy of the red marrow in pernicious anæmia. This morbid process may be of mild degree, lasting for years, or it may run a fiercer course, cutting short the life of the individual within a few weeks, and being in all important respects indistinguishable from a sarcomatosis. But whether it lasts for a long or a short period it is equally a vice of growth, essential in nature, dependent upon no tangible cause, but due to a radical retroversion of tissue to a condition of savage independence.

Having glanced at some of the less evident forms of primary growth disorders it will now be best to choose some one organ and pursue its disorders through their various forms. Perhaps one of the best that can be chosen for such a purpose is the skeleton.

THE PRIMARY GROWTH DISORDERS OF THE SKELETON.

A. *Hypoplasia of the skeleton.*[3]—This is a disease which has not hitherto been systematically described, though it sometimes shows itself in very marked forms. Its features are as conspicuous and as clearly defined as are those of rickets or cretinism. Two of the best known instances are those of Charles Stratton (Tom Thumb) and his wife (see Fig. 1). There is a skeleton of another in the museum of the Royal College of Surgeons of Edinburgh, and of another in the museum of the Royal College of Surgeons of England. The principal features of the disease are as follows. It is prone to occur in more than one member of the same family. It is a form of dwarfism, and its peculiarities will perhaps be best understood by comparing it with other kinds of dwarfism and especially with rickets. It is distinguished from all other forms by marked delay in the rate both of growth and development of the bones while the intelligence is not affected. Most other kinds of dwarfism are due to defects of growth only, and in all of them bone growth is more affected than bone development. The subjects of hypoplasia probably never attain their normal stature, though growth continues until long after it has usually ceased. It is probable that the soft tissues of those affected with this disease follow a rule, which may be termed that of adaptation of growth, to distinguish it from that which is known as correlation of growth, which has not quite the same meaning. A good example is afforded by rickety dwarfs, in whose case the growth of the muscles and other soft parts does not continue to any extent after the bones have ceased to grow, but becomes adapted to the requirements of the stunted and deformed skeleton. Adaptation of growth is still better shown in this hypoplasia of the bones, where it is even more perfect than it is in rickets, for the rickety dwarf has muscles which are often in excess of his needs, and is, therefore, too strong for his size and of a thick-set and clumsy appearance. Hypoplasia, moreover, differs from rickets in that while in rickets the adaptation is one of growth only, in hypoplasia of bone it affects development as well. Rickety dwarfs pass through the various stages of life like men and women of common stature, whereas in these other dwarfs the appearance of youth, manhood, and maturity are greatly delayed or do not appear at all. The growth and development of the bones are delayed, not arrested, and the growth and development of the soft parts follow suit. Immaturity of the bones is associated with immaturity of the rest of the body. This is shown especially in the face and in the general proportions of the figure. Adult dwarfs of this type may have the faces and proportions of young children. They have, as a rule, broad faces, snub noses, large broad heads, and short limbs. Puberty may not come on until after the age of 30 years, or it may not appear at all. At the same time this immaturity is one of appearance only, for these dwarfs, as a rule, die as soon as, or sooner than, ordinary individuals. There are, however, some notable exceptions.

Associations.—It is probable that, like other primary growth disorders, hypoplasia of the skeleton is prone to be associated with defects or excesses of other parts. Very few cases of this disease are recorded, but among them is one in which such an association is mentioned. Mr. Hutchinson[4] has described a case of dwarfism in which there was marked immaturity of appearance and which to all appearance was an example of this same disease. This man was affected with another growth anomaly in the shape of hyperplasia of the gums. One case is reported in which the hypoplasia seems to have taken on degenerative characters. This case is described by Dr. Paltauf in his monograph on Dwarfism (p. 41). Together with marked delay of ossification there was osteomalacia which was the cause of death. There was also cirrhosis of the liver.

B. *Hypertrophy of the skeleton.*—While hypoplasia occurs as a form of dwarfism hypertrophy is only found among those who are tall or gigantic. It is not yet possible to say where giantism of this type ends and acromegaly begins, or what is the exact relation between the two. Some writers hold that giantism is always due to acromegaly, but this opinion has not as yet been substantiated. On the contrary, there seems good evidence for the view that there are cases of giantism which are quite unconnected with acromegaly. There are instances on record of giants who have differed from the acromegalic in having lived to the average duration of life, in the enjoyment of good health and in the possession of offspring. A good example of this form of giantism is furnished by the celebrated Mongolian giant Chang. Though it is not stated that he had children Frank Buckland[5] and others who saw him say that he showed no signs of disease and was of good intelligence, strong, and healthy. He himself stated that his brothers were giants. He is said to have died at the age of 47 years. Captain Bates, who was 7 feet 2½ inches (2·19 metres) in height, and Mrs. Bates, who was 7 feet 5½ inches (2·27 metres), were also good examples of the same condition. The Austrian Winkelmeyer who was described by Virchow[6] was another. (See Fig. 2.)

In hypertrophy of the skeleton adaptation of growth is, as a rule, obviously defective, the growth of bone being often

[3] It is impossible to do justice to this subject within the limits of this article. All that is intended is to show that there is such a condition as primary hypoplasia of the skeleton.

[4] Edinburgh Medical Journal, New Series, vol. i., No. 2, p. 117.

[5] Curiosities of Natural History, 4th S., p. 10.

[6] Zeitschrift für Ethnologie. 1885, S. 469.

conspicuously in advance of that of the soft parts. Those affected with this disease are therefore inclined to be disproportionately tall, thin, weak, and shambling in gait. Doubtless the chief, if not the only, reason why adaptation is so imperfect in giants is because in their case the disease shows itself at a later age and so much more rapidly than is the case with hypoplasia. The latter commences in childhood and continues through the rest of life, whereas giantism begins, as a rule, at or near puberty and is completed at the ordinary period of cessation of bone growth. The one runs its course slowly and so gives time for the growth of the soft parts to be accommodated to the growth of the bones; the other is so rapid in its course that the growth of the soft tissues is soon left hopelessly in the rear. Hypertrophy of the skeleton, like hypertrophy of other organs, is often by no means well defined, but merges imperceptibly in different cases into normal growth. The bones of giants are often decidedly coarse in texture, but there seems to be no evidence that the process ever goes so far as to become degenerative and to lapse into osteitis deformans.

Heredity; associated disorders.—Perhaps the best instance of the hereditary transmission of giantism on record is that of Captain Bates and Mrs. Bates,[7] whose first child weighed no less than 22¾ lb. (10·77 kilogrammes) at birth. Instances of giantism occurring as a family disease are also recorded. Giantism is so rare that the association with it of other growth disorders has much significance. One of the earliest cases is mentioned in the Bible. It is there said that Goliath of Gath had a brother who was a giant and that he had a son of "great stature" who had on every hand six fingers and on every foot six toes.[8] An instance of the family association of giantism with superfluous digits is also recorded by Mr. R. C. Lucas[9] who, in giving a genealogical tree of a family liable to the latter disorder, put at the head a great-great-grandmother who possessed no deformity but whose son was said to have been exhibited as a giant and who had a daughter with six toes on each foot. The second child of the latter had six toes on each foot and grew to be a man of over six feet in height. Several other children and grandchildren had webbed supernumerary digits and two were

FIG. 1.



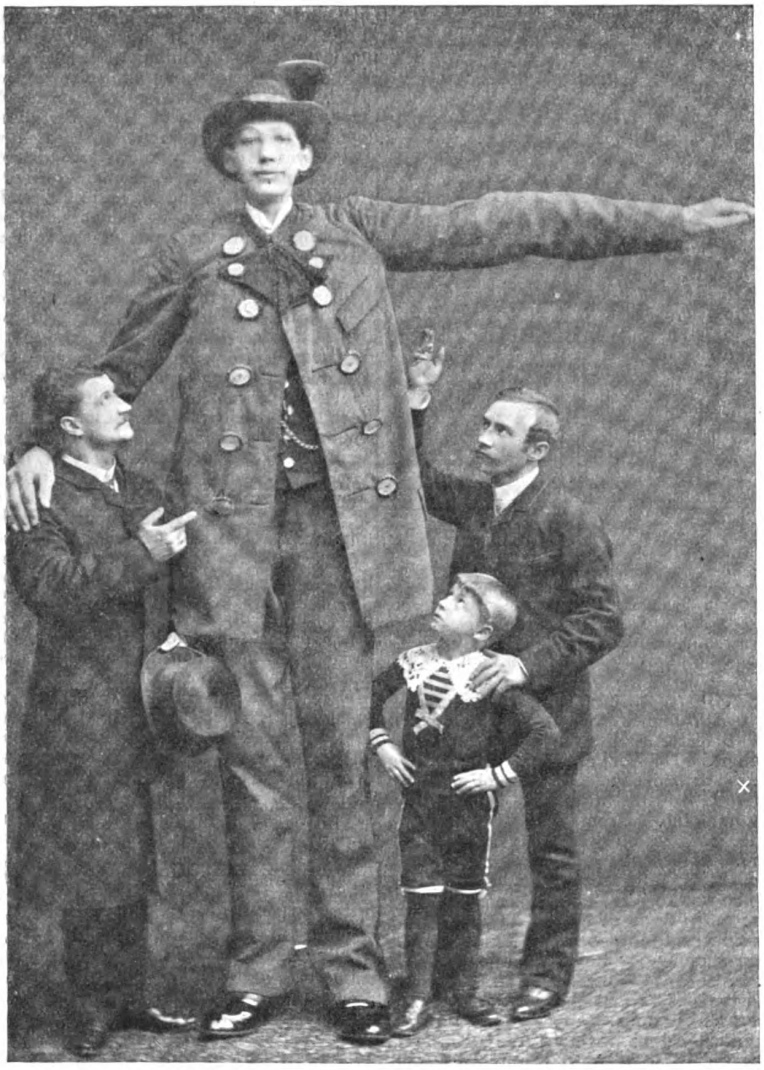
Hypoplasia of the skeleton. "General and Mrs. Tom Thumb." The faces and general proportions show stereotyped infantile characters. X marks 25 inches, showing that these dwarfs were 25 inches (0·635 m.) high.—(From a photograph by the London Stereoscopic and Photographic Company, Limited.)

[7] New York Medical Record, March 22nd, 1899.
[8] 2 Samuel, xxi. 20, and 1 Chronicles, xx. 6.
[9] Guy's Hospital Reports, S. 3, vol. xxv.

afflicted with hare lips. We also read of a German giantess[10] who lived in the reign of Queen Anne and had neither hands nor feet. In the same book is an account of a male patient who possessed marked feminine characters, and another instance of this association is related by Dr. Hallopean.[11]

C. Degenerative hypoplasia of the skeleton.—Perhaps the most conspicuous feature of this complaint is unusual fragility of the bones. It is, in fact, one of those diseases which are grouped together under the loose name of fragilitas ossium. Many instances of undue brittleness of the bones are caused by the presence of new growths or are the result of long disuse or have some other known origin. But among them we also find some which are dependent upon no ascertainable cause but seem to arise spontaneously in bones which are affected with a special dyscrasia. It is these that are now referred to as instances of degenerative hypoplasia or metaplasia of bone. Some of them approach osteitis deformans in their symptoms and appearance, while others more closely resemble osteomalacia. It is probable that the degeneration sometimes starts in the substance of the shafts and gives rise to the one disease, and sometimes in the marrow and gives rise to the other. A good instance of the osteomalacic form of degenerative bone hypoplasia is furnished by Mr. Clinton T. Dent.[12] In this case the disease first showed itself by fracture of a bone at the age of four months. Bending of bones then took place, and at the age of 29 years, when the account was written, the case differed in no essential particular from one of osteomalacia. Numerous fractures had occurred, there was extreme softening of the bones, with characteristic deformity, and the only distinction from osteomalacia that was of any consequence consisted in the shafts being smaller instead of bigger than usual. The skiagram which illustrates the paper shows that while the epiphyseal ends of the long bones were very large, the diaphyses were even smaller than they are in health, thus reversing the relative proportions of these parts as they occur in ordinary cases of osteomalacia. But after all this is only to be expected in a condition of hypoplasia. In this

FIG. 2.



Hypertrophy of the skeleton (Winkelmeyer). Giantism probably not associated with acromegaly. The growth of the soft parts is not well adapted to the increased growth of the bones. X marks 25 inches. The central figure is 7 feet 6 inches (2·28 m.) high, so that the figures of "General and Mrs. Tom Thumb" would reach about to the giant's knee had they been drawn to the same scale.—(From a photograph by the London Stereoscopic and Photographic Company, Limited.)

[10] Gould and Pyle: Anomalies and Curiosities of Medicine, p. 330.

[11] La Semaine Médicale, 1899, No. 7, p. 53.

[12] Transactions of the Medical Society of London, vol. xx., 1897, p. 339.

connexion the following case is most instructive, for it not only serves to indicate that there is a relation between the idiopathic form of osteopsathyrosis, and osteomalacia and osteitis deformans, but it also helps to show the position of osteopsathyrosis as a growth disorder.

FIG. 3.



Degenerative hypoplasia (or metaplasia) of the skeleton. The chief features of this case are curvature, fragility, bending, tumour formation, and congenital dislocations of the radii.

The patient (see Fig. 3) was an unmarried woman, aged 38 years, who was 4 feet 7 inches (1·67 metres) in height, whose father was tall (6 feet 2 inches), and whose mother was of ordinary height. Neither she nor her parents had ever had syphilis or rickets. Her troubles began when she was just able to run alone, at which time she broke her right humerus. From this time onwards the story of her life is the story of a succession of fractures and tumours. At the age of six years she broke the left humerus and shortly afterwards both bones of the right forearm; when she was 16 years old both bones of the right leg were broken; and at the age of 33 years the left tibia. When she was 36 years old she broke two ribs while coughing, one of them snapping while I was in the act of binding up the other. At about the fifteenth year of her age the right leg became curved without apparent cause, and when she was 16 years old a tumour appeared on the left femur and grew so quickly that within three months it extended from the top of the bone to the bottom, and gradually hardened. While lying in bed because of this swelling the left leg became bent as the right had been. At the age of 34 years a small, hard tumour of the size of a hazel nut appeared above the right external malleolus, and in her thirty-seventh year another—of the same nature, but of larger size (as big as an orange)—sprang from the right humerus. Finally, a much smaller and more diffuse swelling appeared on the projecting part of the left tibia.

The general health of this patient is excellent and there are no evidences of either rickets or syphilis. There is a congenital forward dislocation of each elbow limiting pronation of the forearm, and, to a less degree, supination as well. There appears to be no cup to the head of the radius and the shaft of that bone is longer than usual. The shaft of the ulna is bent near its upper extremity. The tumours are apparently composed of bone and cartilage.

Mr. J. Hutchinson[13] has drawn my attention to a case under his care which bears a remarkable likeness to the one which I have just described. This patient, who was a girl aged 10½ years, showed the following lesions—viz.: (1) fractures of the right forearm (three times), the left forearm (twice), the right leg (three times), and the right thigh (all these fractures united without leaving any very evident traces); (2) absence of the external condyle of each humerus so that the finger could be placed on the upper end of each radius; (3) bending of each ulna in its upper third and of each humerus; and (4) formation of tumours of the lower half of the right femur and also of the middle of the left femur. The former subsequently disappeared but the latter had not gone when the account was written.

The various lesions which characterise these two cases may be summed up under four headings: (1) congenital malformations; (2) unusual fragility of bone; (3) bending of bones owing to abnormal softness; and (4) tumour formation. Now I think there can be no doubt that these two cases are examples of the same disease. It also seems certain that this common disease of which they are representatives is closely related to osteomalacia and osteitis deformans. All three are characterised by fragility of bones, by softening and bending, and by a tendency to be associated with the formation of tumours. They therefore show a resemblance in three out of the four main features of the above two cases.

It would be by no means difficult to bring forward a series of cases to show that there is an unbroken connexion between the various forms of primary (idiopathic) bone disease. Idiopathic osteopsathyrosis might in this way be shown to merge on the one hand into osteitis deformans and on the other into osteomalacia. The widespread, but slighter, cell insubordination of osteitis deformans might next be seen giving rise to those local cell riots which we call tumours, fibrous, cartilaginous, or bony. Finally, as the expression of the loss of every vestige of restraint, would come the periosteal sarcomata. Or, beginning again at osteopsathyrosis and tracing it on to osteomalacia, we should next arrive at the innocent myelomata and end at the malignant endosteal sarcomata. Some good instances of these two series of changes may be found in von Recklinghausen's contribution to Virchow's Festschrift.[14] In one of his cases (that of a patient, aged 66 years) there were: (1) bending of the bones, (2) irregular thickening, and (3) formation of tumours, cystic, bony, and fibrous, among them being a spindle-shaped swelling of the upper part of the diaphysis of each femur. Though the anamnesis was very defective von Recklinghausen considered the disease to be osteitis deformans of very long standing, commencing, indeed, in all probability within the first ten years of life. Hence the first onset of the osteitis deformans came within the age which is favoured by osteopsathyrosis. He alludes to a case recorded by Virchow of "diffuse deforming osteitis with tumours and cysts," and he himself gives other cases of a similar nature. Some of these were allied rather to osteomalacia than to osteitis deformans. Thus in one, which occurred in a woman, aged 55 years, there was pronounced bone softening together with cystic growths. Von Recklinghausen himself considered it to be a case of modified osteomalacia. In another were cysts, numerous fractures, and a very thick calvarium. In yet another there was "fibrous osteitis," together with multiple sarcomata, and many fractures. His opinion was that in this last case the bone softening was primary and the sarcomata secondary. He then mentions a case recorded by Hirschberg of a similar nature, which also was considered by that observer to be primarily one of osteomalacia, the disease favouring the formation of cysts and sarcomata, and giving rise to fractures. Mr. John Langton[15] has also recorded an instance of the association of idiopathic fragility of bones with the formation of tumours. In this case the first fracture occurred at the age of 11 years and was followed 17 years afterwards by the breaking down of the union of this first fracture and the growth in the bone of a spindle-celled sarcoma. It seems clear from these and other cases that there is no dividing line between osteopsathyrosis, osteomalacia, and osteitis deformans. They run one into the other, have a similar clinical basis, and,

[13] Archives of Surgery, vol. ix.
[14] Fibrous and Deforming Osteitis, Osteomalacia, and Osteoplastic Carcinoma in their Comparative Relations, 1891.
[15] Transactions of the Clinical Society of London, vol. xxix., p. 36.

making allowances for differences of tissue or age, show similar anatomical changes.

We now have to ask ourselves—(1) What is the cause of the association of these diseases with tumours? and (2) why are the two cases of osteopsathyrosis first mentioned associated with congenital malformations? The answer to the first question is almost implied in what has already been said. There is every reason to suppose that all three diseases are degenerative affections of bone or marrow and that, like other degenerative diseases of growth, they constitute favourable soil for the growth of tumours. In this respect they resemble the degenerative hyperplasias of the epithelial layers of the tongue, and similar degenerative overgrowths of the thyroid gland, the stomach, the prostate, and other organs. The answer to the second question arises out of the answer to the first. Their association with congenital deformities is best explained on the ground that these deformities are themselves primary growth disorders of a similar nature, though occurring at an earlier age. Primary excesses and defects of growth are in all probability of similar nature at whatever age they occur, and however differently they may manifest themselves, whether they occur as clefts or atrophies in fœtal life, as defects or excesses at any age, or as those localised outbursts which we call tumours.

Anatomy.—In the account of the histological features of this disease which are given by Professor Hamilton[16] it is evident that up to a certain point the minute anatomy is the same as that of osteitis deformans and of osteomalacia. The structural resemblances of these two latter diseases will be dealt with later. Professor Hamilton, who quotes Langendorff and Mommsen, and gives two good plates, says that there is "dilatation of the Haversian canals which are in part transformed into medullary spaces. The cement lines (von Ebner) which intervene and map out the borders of the Haversian systems have almost vanished. The borders of the trabeculæ of bone stain red with carmine, probably owing to their being deprived of their calcic salts." The bone marrow is red and hyperæmic, full of cells and poor in fat. It resembles fœtal marrow (Virchow). Giant cells are present in the dilated Haversian canals. Cyst-like cavities are also found. Parts of the trabeculæ may be purely fibrous. All this might be said of either osteitis deformans or osteomalacia. The only real differences between them are that osteopsathyrosis is the more chronic and tends to affect both marrow and bone indiscriminately. Whereas in the other two diseases the process is more active; the changes are more pronounced and tend to affect one tissue (marrow or bone) much more than the other.

D. Degenerative hyperplasia of the skeleton.—This is of two kinds, according to whether it begins in the bone marrow (osteomalacia) or in the shafts of the bones (osteitis deformans). The differences between them are not radical or essential but are due to differences of tissue, age, sex, and function alone. The evidence of their essential identity runs through their whole clinical history and morbid anatomy. Their relation one to the other and their true pathology may be demonstrated, therefore, by passing in review their main clinical and structural features.

1. Osteomalacia and osteitis deformans have the same clinical basis. Both are sporadic, though osteomalacia, like other primary growth disorders, is much more prevalent in some districts than in others. Both make their appearance without any evident cause and both destroy the functions of the part they affect. Both run a course which is progressive but at the same time not altogether even, for it is broken up, as a rule, by intervals of quiescence or of actual betterment. These intervals are sometimes so conspicuous as to lead to the hope that the disease has ceased and whatever drug is in use when the amendment takes place usually receives the credit. But almost invariably a time comes, sooner or later, when the disease makes further headway, and though improvement may again take place, yet the end is nearly always the same. The prognosis is unfavourable. Both diseases are, in short, sporadic, idiopathic, pernicious, progressive though irregular in course, and medicinally incurable. The diseases resemble each other also in certain minor details. Thus both may begin in one bone and may be confined to that bone; both are, as a rule, imperfectly symmetrical; both are attended with similar aching pains, both affect the shafts of the bones more than the ends, and in both the disease has no direct influence on other organs. They are local disorders. Both are distinguished by bending of the bones, both by fragility, though this is more pronounced in osteomalacia than in osteitis deformans.

2. The two diseases are anatomically similar. The appearances which may be seen in the marrow of a bone affected with osteomalacia may be summed up in four words. They consist of atrophy, overgrowth, regeneration, and degeneration. The atrophy affects cells of higher type, especially the bone corpuscles, which may be seen to be decidedly shrunken in that part of the shaft which borders on the marrow. The overgrowth is chiefly of the marrow, which undergoes immense increase in volume, but is also, to some extent, of the lymphoid tissue which runs up the Haversian canals. Degeneration is well seen on the outskirts of the diseased area where the marrow touches the shaft of the bone. It first shows itself as decalcification. This is, as a rule, attributed to the action of some acid, such as lactic or carbonic; but there appears to be no evidence whatever that any such cause is at work. It is far more likely that it is a vital and not a mechanical or chemical process, and that it is brought about in the first place by the pressure of the increasing marrow on the bone. It resembles, in fact, the decalcification which is produced by aneurysms when they impinge on bones, but is perhaps more obvious in these cases of osteomalacia because of the inherent tendency of the bone to degenerate. There seems no reason to doubt that the overgrowth of the marrow is under this circumstance amply sufficient to account for this decalcification, for it is not at all unusual to find the marrow in a malacic bone taking up more room than the marrow and bone together of the healthy bone. It has been noticed that in some cases, if not in all, the decalcified layer is not immediately absorbed, but after the removal of the bone salts splits up into fibres, and so, roughly speaking, reverses the order of its development. It recedes step by step from a calcified, organised, connective tissue into a decalcified, unorganised mass, as primitive as the embryonic tissue from which it started. But along with this widespread overgrowth and degeneration there is an equally widespread attempt at repair. Most of the swelling of the marrow is, in fact, due to growth of embryonic material, consisting principally of round cells with little or no intervening fibres. But the fresh growth is itself stricken with the same blight as the tissue which it is apparently intended to repair. It is quite unable to mature so as to serve any useful purpose, and in course of time it also succumbs to degeneration. Granular and fatty changes take place in the cells until they disappear in a structureless débris. Or fatty degeneration may continue until there is ultimately nothing left in the marrow cavity but oil, which pours out when the bone is cut into.

In osteitis deformans similar changes take place, modified, however, by the difference of the tissue involved. Here also we have atrophy, overgrowth, regeneration, and degeneration. There are atrophy of the more highly developed cells of the bone, overgrowth of the more lowly calcified connective tissue of the lamellæ, and the interstitial growth of fresh deposits of badly formed material. There is overgrowth also of the lymphoid tissue of the Haversian canals, with degeneration into cells which resemble those met with in inflammation. This widening of the canals and their occupation by embryonic tissue correspond with the similar changes which take place in osteomalacia. While osteomalacia is distinguished by false hypertrophy of the marrow, in osteitis deformans there is false hypertrophy of the periosteum, leading to the deposit of new bone; but the new material which is so laid down is, as in similar hyperplasia of other organs, not only redundant, but of bad workmanship. It is imperfect bone, resembling that which is found in the fœtus, and corresponds again with the embryonic tissue of the marrow of osteomalacia.

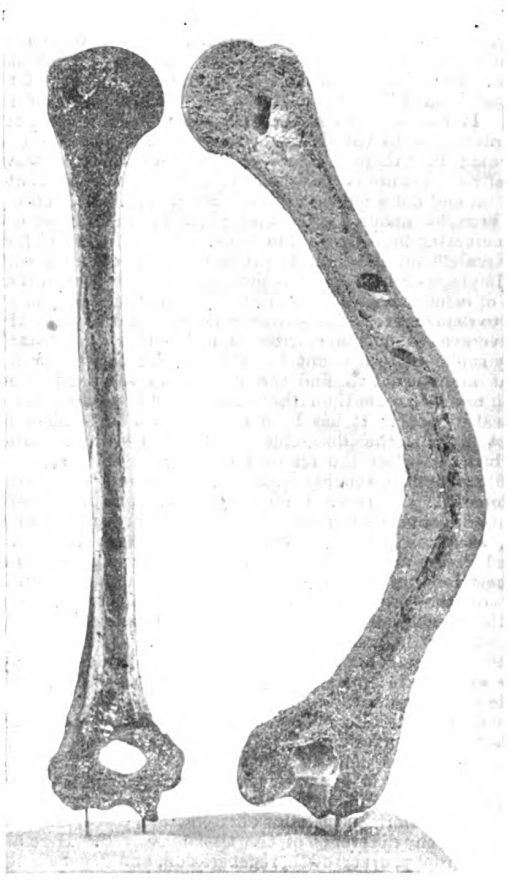
3. There is reason to believe that the two diseases may occur together. Some of the cases of osteitis deformans and osteomalacia which are reported in the medical journals present features which are characteristic of both diseases. This has already been alluded to when we were dealing with the subject of degenerative hypoplasia of the skeleton. One of these cases is described as an instance of arrested osteitis deformans and another as osteitis deformans affecting a single bone. One has been described by Mr. J. R. Lunn,[17] who says of it that "from the microscopical appearance it appears to be a case of osteomalacia occurring in a single bone of an

[16] Text book of Pathology, vol. ii., part ii., p. 837.

[17] Transactions of the Pathological Society of London, vol. xxxviii., p. 266.

old man" (the patient was 86 years of age). "On first examining the case it seemed to be one of senile atrophy with curvature." Now this specimen is preserved in the Hunterian Museum (No. 1241, E.), and I have to thank the Council of the Royal College of Surgeons of England for permission to reproduce a photograph of it (see Fig. 4). It is

FIG. 4.



Degenerative hyperplasia of bone and marrow. Section of humerus (on the right) showing changes characteristic of both osteitis deformans and osteomalacia compared with section of healthy humerus (on the left).

put on the same shelf with specimens of osteitis deformans. In the description of it, which appears in the catalogue over the names of Mr. Lunn and Mr. Shattock, it is said: "This specimen appears to be allied to cases of osteitis deformans affecting only one bone." It will be noticed that there is very little thickening except at the curve, but the bone has the coarse gritty look of the bone of osteitis deformans, while, on the other hand, there is an aggressive growth of the marrow causing absorption of the cancellous tissue at the upper end. The appearance of this specimen as a whole is certainly not that which is characteristic of osteitis deformans, and neither does it much resemble that which is ordinarily seen in osteomalacia, but it is equally true that in just those respects in which it differs from one disease it approaches the other in character. A better example of mixed osteitis deformans and osteomalacia it would be difficult to imagine. The specimen is such a good one that I was very rightly not permitted to obtain a piece for further microscopical examination. But I think there can be very little doubt that it is an example of a mixture of osteitis deformans and osteomalacia.

When the membrane bones of the skull are affected in osteomalacia they may closely resemble the appearance which is produced by osteitis deformans. This is well shown in a specimen of osteomalacia of Dr. J. F. Goodhart's which is preserved in Guy's Hospital Museum. The calvarium in this case is coarse, granular, devoid of diploë, and deeply scored by the trenches which have been made by the blood-vessels. The sutures are obliterated and were the bone only a little thicker and more compact it could not be distinguished from the skullcap of osteitis deformans.

These are instances of the conjunction of the two diseases. There are other specimens in the London museums which appear to show a similar mixture.

4. Both diseases are allied to inflammation. Both may apparently start as the result of injury, such as a kick on the shin. In osteitis deformans especially the anatomical changes are remarkably like those met with in inflammation, and where the disease is confined to one bone it may be very difficult, or even impossible, to distinguish it from a diffuse osteitis and periostitis due to syphilis, or, possibly, to injury. But as a rule the wide and regular distribution of the disease in osteitis deformans, the progress from bone to bone and from one part of the body to another, the absence of definite cause, the absence of fever, the selection of a special age for its occurrence, the tendency to heredity, the progressive but interrupted course, and the uselessness of the iodides and of surgical treatment suffice to distinguish between them. Lastly, and of most importance, there is one fact which by itself is sufficient to distinguish between the two, and that is the absence of motive. Inflammation must in all cases have some cause, for in this is the essence of an inflammation. Inflammation is the manifestation of the resistance of the organism to injury. Yet no one has found any fungus or other foreign body to account for osteitis deformans, and from what we know of the disease it is most unlikely that such will ever be discovered.

What has been said of osteitis deformans may also be said in effect of osteomalacia. It, too, is like an inflammation, but is in some respects very different and falls short also in the one essential of motive. It may be started by inflammation and may become the seat of inflammation, but is yet not in itself inflammation.

5. Both are allied to, and may become the seat of, tumours. Perhaps no diseases are so difficult to distinguish from one another as osteomalacia and some tumours of bone marrow. Indeed, in some instances of widely disseminated cancer of the marrow it may be impossible to say during life whether the primary disease is an endosteal sarcoma or whether it is due to osteomalacia. Their origin, history, symptoms, and course may be almost identical. Sarcomatous marrow may also closely resemble the marrow of osteomalacia in structure. In fact, healthy red marrow is so like sarcoma tissue that a widespread degeneration of red marrow into round-celled sarcomata does not leave much room for such an intermediate stage as that of osteomalacia. There can be no wonder that the two are occasionally mistaken for one another. The same happens sometimes with the corresponding diseases of other lymphoid structures, such as the lymphatic glands. It may be impossible to say in a given case whether the disease is Hodgkin's disease or a sarcomatous growth. A localised idiopathic swelling of lymphatic glands under a sterno-mastoid muscle may with confidence be regarded as a sarcoma (potato sarcoma of Mr. Hutchinson), while an idiopathic swelling of numbers of lymphatic glands in various parts of the body is as certainly due to lymphadenoma; but intermediate cases occur which cannot be positively called either the one or the other. In the same way, while ordinary cases of osteomalacia are unmistakeable, some of the reported cases of widespread sarcomatosis of bone marrow are remarkably like those of osteomalacia. Indeed, it is not easy to see how a generalised sarcomatosis of marrow, and of marrow only, can take place unless there is some alteration in this tissue, such as would be caused by osteomalacia, to predispose to it.

There is every reason to believe that the hyperplasia of osteomalacia may form a breeding-ground for new growths secondarily, as the expression of a further loss of cell-control, in the same way that the goitrous thyroid gland, the fibrous and degenerated breast, the tongue of ichthyosis linguæ, and, in rare cases, the liver of hepatic cirrhosis, may severally become the seat of malignant disease. It seems certain that this is what also takes place in osteitis deformans, for the bones in that disease are peculiarly liable to become the seat of cancerous tumours. This is in part to be explained on the ground that the tissues in general become more liable to this extreme form of degeneration as they increase in age. But in addition to this there is also an undoubted special proclivity of the hyperplastic bone

itself. It has already advanced to a half-way stage and the final descent into cancer becomes, therefore, so much the more easy.

The myelomata and sarcomata occur more frequently than the carcinomata, because these growths are more nearly related to skeletal tissue. The myelomata seem to have the same relation to these hyperplasias of bone and marrow that the fibromata have to ordinary fibrous hyperplasias, such as those of the hands in macrodactyly and of the thyroid gland in goitre. They appear to be manifestations of degeneration in a more localised and concentrated form. Connecting links between the myelomata and osteomalacia are not infrequent. Myelomata and osteomalacia may also occur together. Of this mixture a good instance is described by Hirschberg,[18] in the case of a man, aged 38 years, who had had osteomalacia for at least four years. After his death numerous cysts were found scattered through the substance of the long bones and small myelomata were also present in the substance of one tibia. Another case is described by Mr. Butlin[19] of a man who was affected with three small myeloid tumours, two being in the jaw and one in a rib, and who ultimately died from exhaustion produced by osteomalacia. An examination of some of the specimens of osteomalacia in our museums would, if one may judge from their naked-eye appearances, almost certainly show that this conjunction is by no means infrequent. The occasional occurrence of multiple myelomata is also suggestive of the presence of some generalised bone dyscrasia which predisposes to tumour formation. Nothing would be so likely to form such a breeding-ground for tumours as hyperplasia of a degenerative character, however slight it might be in extent. Myelomata also occur with osteitis deformans. Thus, Mr. B. Pitts and Mr. S. G. Shattock[20] give details of a case under Mr. A. O. Mackellar's care in which a growth having all the characters of myeloid disease occurred in a tibia affected with osteitis deformans. Other cases might be quoted. It is not improbable that some of the heterologous tumours which are occasionally found in cases of osteitis deformans are not in reality secondary to the disease, but occur only in association with it as the expression of a common morbid tendency. An instructive case which appears to support this view is reported by Mr. C. E. Richmond.[21] Spontaneous fracture of a femur had occurred in a patient who was affected with scirrhus of the breast and numerous growths which appeared to be secondary to it. On post-mortem examination cancers were found in the iliac crests and elsewhere. A section of one femur showed that that bone was not the seat of cancer but that it had undergone degenerative changes characteristic of osteitis deformans. Here it seems probable that the malignant disease and the osteitis deformans were not immediately connected, but were the associated outcome of some dyscrasia which was common to both.

6. The two diseases are prone to be associated with congenital and other disorders of growth. Dr. Goodhart has described a case of osteitis deformans occurring in association with lymphadenoma.[22] The patient was a man aged 65 years at the time of death. He was greatly emaciated. There were "many fleshy tubera apparently of a cancerous nature in the loin, and several firm, fleshy, cancer-like glands in the mediastinum and abdomen. One or two small nodules of growth in the pleura." The spleen was full of large circumscribed yellow masses and presented the typical appearance of a hardbake spleen of Hodgkin's disease. Dr. Goodhart was of opinion that these nodules and masses of growth were of a lymphomatous nature and that they were certainly not sarcomatous. He considered the case to be an example of the "interesting association of Hodgkin's disease of the spleen with osteitis deformans." There is also an instance reported of the occurrence of osteomalacia and lymphadenoma in the same person. This case was described in 1861 by Professor Perrin,[23] who calls it a general hypertrophy of the "whole of the ganglionic lymphatic system" with softening of the tissue of the bones. The age of the patient was 68 years. His disease began with swelling of the axillary glands seven years before. The bones became unduly brittle (there were five fractures) and were so soft that they could be cut with a knife. As nothing is said of the presence of heterologous tumours and the glandular enlargement was widespread there is every reason to believe that the bone softening was due to true osteomalacia and that the glandular swelling was also primary.

In glancing over the reports of cases of osteitis deformans again and again it is seen to be allied with some other degenerative growth disorder, either in the same individual or in some other member of the same family. Bright's disease, imbecility, optic neuritis or atrophy, choroiditis, retinal hæmorrhages, goitre, emphysema, carcinoma, sarcoma, molluscous outgrowths, and subcutaneous fatty and cartilaginous tumours are all mentioned in different cases. Special attention is called by some writers to certain of these associations, such as that with malignant tumours, with bulbar paralysis, or with degeneration of the posterior columns of the spinal cord. These degenerative disorders seem to occur far more often in association with osteitis deformans than they do among those of the same age who are not affected with this disease. The same may be said of osteomalacia. A good instance of its association with different degenerative disorders is published by Dr. George Dock[24] who, in describing the osteomalacia of a woman, aged 24 years, says that her father had had syphilis; the mother possessed a goitre as large as a man's head and had suffered from "rheumatic" pains of the limbs while she was carrying her first child (suggesting possible osteomalacia). A brother had a congenital deformity of the right thumb, while the patient herself had a goitre, a cartilaginous tumour of the right femur, and was found after death to be affected with fibrous degeneration of the spleen, the kidneys, and the ovaries. In the reports of other cases we find cleft palate, goitre, exophthalmic goitre, cataract, chronic Bright's disease, hydromyelus, and syringomyelus. Such diseases are not infrequent, but the most common of all are degenerative affections of the central nervous system. These are so common as to lead to the belief that osteomalacia may be directly produced by some trophic disturbance originating in the brain. It is possible that the general defect of nutrition which characterises some forms of insanity may predispose to osteomalacia or other growth disorders, but there does not seem to be any other relation between them beyond that of the association of allied diseases. They seem to be related rather as brothers and sisters than as parents and offspring.

7. Both diseases show evidences of hereditary transmission. Although the early forms of bone metaplasia (osteopsathyrosis) are often hereditary, among the few cases which I have been able to find the influence of heredity is apparently more often shown in osteitis deformans than in osteomalacia. In neither can the evidence of heredity be termed convincing, though it is more than suggestive. There appears to be no example of the detailed description of two cases from the same family, such as is needed to prove satisfactorily the occurrence of heredity.

In Mr. Clinton Dent's case of osteomalacia,[25] commencing in a male, aged four months, which has already been referred to as an instance of degenerative hypoplasia of bone, there are indications of some hereditary tendency to the complaint. "The parents were healthy but a sister had curvature of the spine; one cousin suffered from the same condition as the patient, another had scoliosis, and a third cleft palate." Here we have not only the statement of family heredity but also evidences of association with an hereditary deformity, constituting indirect heredity.

In an instance given by Ekmann[26] the disease began in a great-grandfather whose limbs were so deformed that he could not walk. Children of the succeeding generation were affected with deformity and softening of the bones, and of the next two generations with bending and fractures. Although there are points about these cases which are greatly in favour of their being examples of osteopsathyrosis, yet it is right to say that Ziemssen is of opinion that they may be due to rickets.

In the report of a case of osteitis deformans by Dr. Stephen Mackenzie[27] it is stated that "the patient was one of twins; his twin brother was imbecile and died in early life in an asylum. Dr. Robinson (who attended him at the time of death) elicited the important information that an

[18] Centralblatt für Chirurgie, No. 46.
[19] Transactions of the Pathological Society of London, vol. xxxi., p. 277.
[20] Ibid., vol. xxxvi., p. 184.
[21] Manchester Pathological Society, Feb. 13th, 1885.
[22] Transactions of the Pathological Society of London, vol. xxxix., p. 262.
[23] Bulletin de la Société Anatomique, 1861, 2 S., p. 247.
[24] American Journal of the Medical Sciences, 1895, vol. cix., No. 5, p. 499.
[25] Loc. cit.
[26] Dissertation, Upsala, 1788 (unverified).
[27] Illustrated Medical News, Sept. 29th, 1888, p. 11.

elder brother died a few years before the patient, at the age of 52, crippled by a deformity of his lower limbs. The course of his illness resembled that of the present case and he was believed by his family to have the same disease."

Another instance is given by Mr. Lunn.[28] The patient had a brother who was said to have died from cancer, and another brother, aged 68 years, who was examined by Mr. Lunn. Mr. Lunn says: "He tells me that he has noticed his own head getting larger and his hat seems too tight for his head. I find both femora enlarged in their lower halves and the right clavicle is decidedly larger than the left." Mr. Bryant[29] says that one of the five cases originally published by Sir James Paget had been that of a patient of his own and that he had the opportunity of following out the case to the end. He survived the publication of his case for 10 or 12 years. Two brothers who are still living are beginning to show signs of the same disease. Of this family these were the only three members.

8. Both diseases have their physiological bases in certain changes of normal growth. These changes are chiefly of two kinds, according to whether they are produced by sex or by age.

(*a*) Changes produced by sex.—Osteomalacia is, as a rule, disease of women and osteitis deformans is a disease of men. This is best explained on the ground that they are vices of growth and are therefore more liable to select those parts in which normal growth is most vigorous. Women are of the more passive or "lymphatic" temperament. The tendency of their tissues is rather towards the formation of fat and of lymphatic tissue than of muscle and bone. It is probable that the lymphoid tissue of the bone marrow is relatively of better growth in women than in men; it is also more subject to growth disturbance. The healthy rise and fall of nutrition which takes place periodically or at uncertain intervals renders it more liable to that loss of equilibrium which constitutes disease. On the other hand, there can be no doubt that the hard tissue of the skeleton of a woman is relatively of inferior growth; her bones are shorter, weaker, and slighter than are those of a man. Hence it is but to be expected that women should be more liable to false hypertrophy of the marrow and men of the hard substance of their bones. All this indicates that the respective pathological conditions have in each case a physiological antecedent and that this varies with the sex. This connexion between the sexual organs and the skeleton is so important in its bearing on the pathology of osteomalacia that it is necessary to deal with it more fully. It is shown under natural conditions as follows. 1. The growth of the sexual organs at puberty is closely associated with the growth of osseous tissue. The change of life which takes place at this age is almost as much one of the skeleton as of the reproductive organs. It is true that there is at the same time increased activity of growth of the soft parts, but this is slower than the growth of the skeleton and appears to be secondary to it as the result of physiological adaptation. The youth of 16 years of age is, as a rule, obviously more bony than the young man of 20, but it is not until the age of 25 years or thereabouts is reached that the muscles attain their full development and the soft parts reach to the standard of the skeleton. 2. A connexion between these organs is also to be observed during the decline of life, especially in women. The menopause corresponds in point of time with the period of physiological degeneration of the marrow. 3. It has been noticed that the bones and red marrow become more vascular during pregnancy, while the marrow is increased in amount. After pregnancy is over they return to the ordinary state.[30] This association is still more evident in certain abnormal conditions. 4. Premature sexual development is prone to bring with it corresponding changes in the bones. Thus a girl in whom menstruation has commenced prematurely may rapidly acquire the figure, and almost the height, of the mature woman. In a case of this kind I have observed that the ossification of a child of three years, shown in a skiagram of the hand and adjacent part of the forearm, corresponded with that of a normal child of 12 years. Similar changes may take place in the male. 5. On the other hand, absence of sexual organs in the young male determines a condition of bone growth which approaches that of the female; and absence of ovaries in the female is associated with a condition which approximates to that of a child. In all these instances it is evident that there is close relation between the bones and the sexual organs, though it is shown in different way in different cases. 6. Of the same significance is the fact that the bones of the female which are involved first and most frequently in osteomalacia are the pelvic bones, whereas in the male there appears to be no such selection, these bones not having the same sexual significance that they have in the female.

This connexion between bone and sexual organs is quite sufficient to account for the relation of osteomalacia to the functions of the ovaries without seeking for any other cause. The process which gives rise to degenerative hyperplasia is essentially a growth excess. It is a hypertrophy affecting a part which is undergoing degeneration and leads in consequence to overgrowth, but not to increase of function. Anything therefore which will tend to promote the activity of the red marrow will favour the onset and progress of the disease. In healthy pregnancy there is a general rise of nutrition, in which the bones share. This is the time when osteomalacia is most likely to appear, and the ossa innominata of parturient women, inasmuch as they are most active at this time, are the bones most likely to be affected first. On the other hand, there is, as a rule, a subsidence of activity during the period which immediately follows childbirth, and this is the period during which osteomalacia usually abates. Similar, though less marked, fluctuations are often produced by menstruation, which in some respects is a miniature childbirth. All these facts tend to the conclusion that whatever excites the activity of the red marrow promotes the disease, and that whatever depresses the function of the red marrow tends to subdue the disease. At the same time it is most improbable that osteomalacia is the direct result of increased nutrition. It is far more likely that owing to premature degeneration of the marrow, or to some general depression of vitality, it is unable to react to the calls which are made upon it during pregnancy, and the attempt to do so results, not in true hypertrophy, but in the spurious hypertrophy of osteomalacia. Thus, while it may be true that undue accesses of general nutrition precipitate the onset of the disease while the return to equilibrium improves it, the first cause may be traced to depressing influences alone. It is on these lines that we must look for the explanation of the immense improvement which so often takes place after the removal of the ovaries in cases of osteomalacia. There is no occasion whatever to look for some chemical solvent, some peculiarity in ovarian structure, or for fungi as an explanation of what is so amply accounted for. It is most improbable that a disease should be so strikingly influenced by such a physiological catastrophe as deprivation of the ovaries unless the disease and the catastrophe were intimately bound up together. In other words, the nature of both cause and effect plainly indicates that in *both* cases there is some very direct interference with physiological processes. Nothing is better calculated to show, on the one hand, that osteomalacia is an affection of growth and, on the other hand, that it is brought about by some influence which is internal, primary, or essential and is not dependent upon any outside cause. Osteitis deformans is probably not obviously affected by these sexual changes, partly because of the greater stability of bone as compared with bone marrow, and partly because it ordinarily appears at an age when the sexual organs are extinct.

(*b*) Changes produced by age.—The changes which take place both in osteomalacia and osteitis deformans are in many respects much like those which are met with in the marrow and bone of the aged. But the resemblance is one of kind rather than of degree. It is, in fact, so grossly exaggerated as to be a caricature rather than a resemblance. It is such as we may imagine would result were senile degeneration to become an active instead of remaining a passive process. In the natural course of events the red marrow undergoes fatty degeneration into yellow marrow and so it remains or becomes gradually absorbed. But in osteomalacia degeneration takes place far more rapidly and is met by wild and misdirected attempts at repair. The new material which is so lavishly expended is either incapable of transformation into proper red marrow or itself undergoes degeneration and so does but add to the mischief. The process is suggestive of a senile degeneration taking place in one organ, while the rest of the body is still vigorous and in a condition to resent a premature decay of part of its community. The changes which take place in health are retrogressive, whereas in osteomalacia they are also progressive. They are retrogressive in quality and progressive in quantity.

[28] Transactions of the Clinical Society of London, vol. xviii., p. 271.
[29] THE LANCET, May 31st, 1890, p. 1182.
[30] Hanau: Festschrift der Medicin, 1892, No. 7.

Much the same may be said of osteitis deformans. Professor Sir G. M. Humphry has taught us that senile changes in bone may be expressed by overgrowth as well as by atrophy. The porous bone of osteitis deformans is, it is true, very different from the dense layers of bone which are sometimes laid down in the calvarium in healthy old age. But it is not difficult to imagine that if to a deposit of fresh bone and to normal atrophy there be added the active process of interstitial embryonic cell-growth all the changes of osteitis deformans may be accounted for. This cell-growth has the same effect that yeast has upon dough: it makes the bone lighter, coarser, and bulkier. Osteitis deformans is like a redundant, senile osteoporosis. The grosser appearances of osteitis deformans are also those of exaggerated old age. The bent back, drooping figure, and bowed head of a patient affected with this disease are strikingly senile, and so are the shuffling gait and that loss of vigour and elasticity of carriage which is so characteristic of the disease. Finally, we have the increased liability to malignant degeneration which has already been commented upon.

CONCLUSION.

Enough has been said to show that the four primary growth diseases—hypoplasia, hypertrophy, degenerative hypoplasia, and degenerative hyperplasia—are all represented in the skeleton. They form two divisions of which the one—hypoplasia and hypertrophy—is distinguished by mere defect or excess of normal growth; while the other, in which are comprised the two degenerative diseases, shows all those broad clinical and anatomical features which in the first part of this article were seen to be characteristic of the degenerative diseases of growth, whatever the tissue may be that they effect. And as degenerative hypoplasia of the skeleton is seen to run into degenerative hyperplasia by imperceptible gradations, each being distinguished from the other by characters imprinted by age alone, so degenerative hyperplasia is subdivided into two diseases according to tissue. If it affects the hard substance of the skeleton especially it is called osteitis deformans; if the soft substance it is called osteomalacia. As a rule these two diseases are well defined, though in all cases both the clinical and material characters of the one can be traced in the other. The differences between them are in the main due to differences in tissue, function, sex, and age alone. They are due to variations of the part affected and not of the affection itself.

What has been said of the skeleton and its growth diseases may also be said in effect of all other tissues and their growth diseases. All are liable to the same four kinds of disorders and all are affected in the same way, varying only to the extent that one tissue differs from another tissue, one time of life from another time of life, one function from another function, and one sex from the other sex.

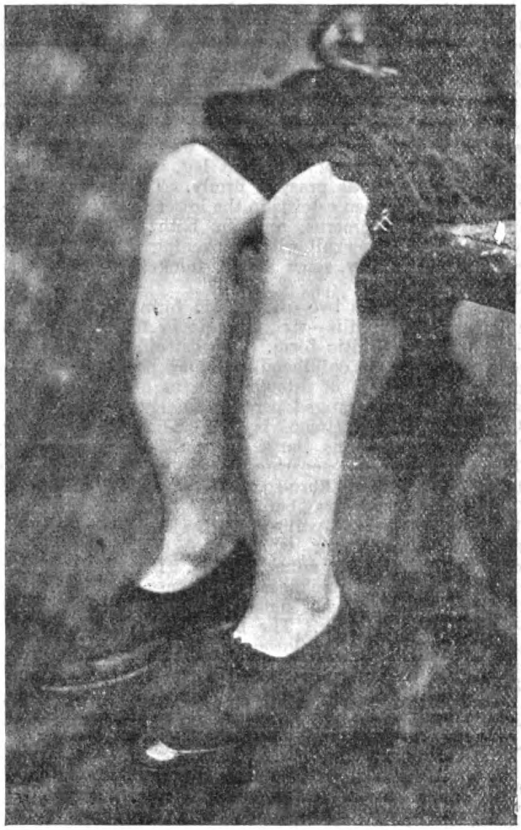
Reading.

A CASE OF SYPHILITIC FIBRO-SPONGIOID OSTEITIS.

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ALTHOUGH Wegner, Parrot, and Barlow have established the fact that in cases of inherited syphilis the bones are very frequently affected, it is remarkable how seldom such conditions are recorded in this country. The syphilitic pseudo-paralysis consequent upon epiphysitis is occasionally seen in the out-patient rooms of hospitals, but those forms of disease which Parrot has classed under the generic name "osteophytic" seem to be rarely observed. Possibly this may be due to the fact that the less marked cases never apply for treatment, whilst in others bending of the bones and other changes produce an appearance very similar to that of rickets, for which the disease is consequently mistaken. The case which I here record was sent into the hospital as rickets with a view to osteotomy.

A boy, aged 14 years, was admitted into the Bradford Union Hospital on Sept. 8th, 1899, with deformity of the legs. His family history was as follows. His mother had been twice married, and by her first husband she had had one daughter who was healthy and who was now grown up. Her second husband was a steady and temperate man but was very delicate. By him she had had five children, of whom the patient was the eldest. The second and third children died in infancy and the fourth and fifth were stillborn. The mother stated that the patient had snuffles very badly as an infant, that he was a very sickly child, and that he did not walk until he was five years old. He had had no rash at any



From a photograph showing enlargement and curvature of the tibiæ, especially of middle segment.

time except measles. She noticed bending of the legs about 18 months after he began to walk. As regards his condition on admission to the hospital the patient was a sleepy-looking boy and obviously was suffering from adenoids. He walked with a curious gait as if his legs were too heavy for him. He complained of aching pain in the legs at night, especially in the right leg. There was marked asymmetry of the skull, the left parietal and frontal region appearing to be flattened, whilst on the right side a large boss on the frontal bone made the temple singularly prominent. The skull was of the dolichocephalic type. The bridge of the nose was slightly flattened, whilst the malar bones felt more massive than normal. The teeth were very irregular and several were ill-developed. The incisors were tapering and pointed, but there was no central notch. The arch of the palate was excessively high and narrow. The lower jaw was greatly thickened, especially on the left side, where the enlargement could be seen on the face. The thickening of the bone was irregular, so that the surface felt smoothly undulating. On the right side there were three distinct bosses, but on the left the greater degree of thickening was nearly uniform from the angle of the jaw to the symphysis. The thyroid gland was large, the outlines being quite evident to the eye. Both clavicles were much thickened in their inner half, especially the right, the enlargement of the latter being distinctly visible in spite of the boy being fairly fat. The right humerus was irregularly thickened in its lower third, but the left was normal. There was no rickety enlargement at the wrists. The hands and nails were normal. The chest was well developed and was of good proportions. There was no beading of the ribs or

any sign of rickets. The body generally was well nourished. The spine was normal, as also were the pelvis and femora. Both tibiæ were greatly enlarged and appeared to be much elongated in proportion to the rest of the limb. The right tibia was from half an inch to three-quarters of an inch longer than the left. They both presented an anterior convex curve in the middle two-fourths. The lower fourth was normal in shape. These bones, whilst they were generally enlarged to a very marked degree, had in addition irregular bossy swellings on their surface. These bosses were not prominent but were sufficiently marked to give the surface of the bone a smoothly undulating character. A quantity of softer tissue surrounding the bone and filling up the interosseous space was also felt, as if there were great thickening of the periosteum. The cutaneous veins were large and prominent. There was slight tenderness on pressure, especially of the right leg, and the boy flinched when the limb was grasped firmly. To summarise, therefore, there had been osteitis in the lower jaw, in the clavicles, in the right humerus, and in both tibiæ. There was asymmetry of the skull with thickening of the right frontal bone and possibly some slight thickening of the malar bones.

Parrot describes two osteophytic forms of bone affection in congenital syphilis—viz., the osteoid form and the fibro-spongioid or rachitic form. The osteoid form may develop at any period of childhood and may possibly even be prenatal. It consists of osteoid growths of a pinkish colour with trabeculæ arranged perpendicularly to the surface of the bone. The tissue is more brittle than normal bone and contains large quantities of lime salts. The trabeculæ are separated from each other by medullary tissue. The fibro-spongioid variety, on the other hand, never appears before the fifth month of life. It begins as a sub-periosteal growth of yellowish pearly fibroid material over which the periosteum is much thickened and closely adherent to it. It may attain as much as half an inch in thickness and is very vascular. There is always a distinct line of demarcation between the new tissue and the bone beneath. The bones most commonly affected are the humerus at its lower end, the ulna, the femur, and the tibia. Although two distinct forms are thus described by Parrot, both are usually present together in varying degree, the osteoid tissue being covered by a layer of the fibro-spongioid material. In the case under consideration there seems to be an arrangement of this kind, the enlarged bone with its smooth nodes feeling as if it were clothed with a softer material of considerable thickness. The abnormal vascularity shown by the enlarged cutaneous veins also suggests this view.

The illustration shows very well the enlargement of the limbs and the degree of bending. It is worthy of note that the convex curve of the tibiæ occupies a different position to that commonly seen in rickets, being confined to the middle segment rather than the lower segment of the bone—a point of some practical importance in the differential diagnosis in a less marked case. This deformity was called attention to by Fournier, who described the curve of the bones as "sabre-shaped." Profile skiagrams of the tibia show the great thickening and the curve of the bone, whilst one of both bones taken from the anterior aspect delineates the osteoid node formation at some points.

Clinically speaking the most striking feature in the case is the marked clumsiness of the lower limbs. The patient walks as if he had heavy weights attached to his feet. The legs appear to be too long below the knee so that in bringing the feet forward he has to trail them on the ground. The family history is peculiar in that it is a typical syphilitic one in reversed order, but in spite of the absence of a definite proof of inherited disease I think no one would doubt the nature of the case for one moment.

Parrot[1] has fully described the osseous lesions occurring in congenital syphilis and in 1879 he gave an address on the subject to the Pathological Society of London and exhibited a large number of specimens. The interest aroused by his investigations seems to have chiefly centred on cranio-tabes and the conditions which give rise to the "natiform skull." Beyond Parrot's descriptions little seems to have been recorded, and I have been unable to find any account in English literature of such a pronounced type of the disease as in the case here related. Moreover, so far as I can ascertain, there is no report of any case in which the lower jaw has been involved. Affection of the clavicles has been observed in rare instances, but as a rule the lesions have been confined to the bones of the leg and the humerus. There can, I think, be little doubt that the bone lesions in inherited syphilis very frequently escape observation, otherwise it is difficult to explain the assertion of various writers that, excepting only the skin, the bones are more commonly affected than any other tissue. Such a marked example as the one here recorded is certainly uncommon, and is worthy of record if only to draw a closer attention to these conditions.

Bradford.

[1] Archives de Physiologie, 1879.

REMARKS ON THE VALUE OF UROTROPIN AND ITS PRACTICAL APPLICATION AS A URINARY ANTISEPTIC.

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THE drug urotropin, or "aminoform" as it is sometimes called, appears hitherto to have attracted little or no general attention, at any rate in this country, but there is little doubt nevertheless that in it we possess a most efficient urinary antiseptic. A clinical experience of over two years in the use of this drug enables me to add my testimony to its efficacy as a urinary antiseptic, but besides this action it has other important therapeutic properties which must not be overlooked, and may briefly be summarised as follows: (1) as a urinary antiseptic; (2) as a uric acid solvent; and (3) as a mild, non-toxic, and therefore harmless diuretic.

As regards the exact mode of its action as an antiseptic there appears to be some difference of opinion, but considering its chemical composition (the drug being a derivative of formic aldehyde and due to the combination of ammonia with formaldehyde) it is more than probable that its action as an antiseptic is, in part at any rate, attributable to the evolution of free formaldehyde in the urine, though all of the drug is probably not decomposed into formaldehyde. This may be readily verified from the fact that the drug itself may be detected in the urine within half an hour of its administration by the addition of a few drops of liquor bromi to it, when a reddish precipitate (urotropin bromide) will appear, showing how rapidly the drug is eliminated from the body in a more or less unaltered form.

It has been stated by one observer (and on this point my own clinical experience agrees with the statement) that one condition necessary for its complete action as a urinary antiseptic is that the urine should, if possible, be acid in reaction. This, coupled with the fact that the drug when heated with mineral acids gives off formaldehyde, tends, I should say, to favour the theory that its antiseptic action is attributable, more or less, to the presence of free formaldehyde. The latter, after administration of the drug per os, has been detected always in the urine, and sometimes in the blood also, which tends to show rather that the change takes place, at any rate in part, before the drug could ever have reached the urinary tract, or come into contact with the urinary secretion. It is just possible, however, that some obscure changes do take place within the body which enable it to exert its action fully as an antiseptic—changes, perhaps not yet thoroughly understood by us and which do not, at any rate, fall within the limits of this paper, but rather within the domain of the chemist.

Firstly, with reference to its action as a urinary antiseptic urotropin can be used with success in any condition involving invasion of the bladder or urinary tract by pathogenic micro-organisms. Foremost amongst these pathological conditions cystitis may be reckoned, whether primary or secondary to enlarged prostate or vesical calculus, &c. All of these conditions directly render the urine septic, which under the circumstances, moreover, acts as a most efficient medium for the development of these pathogenic micro-organisms once infection has taken place. In all such cases this drug usually gives speedy relief. Under this head I may mention its use as a preliminary to operations connected with the bladder or urethra, but more especially with reference to litholopaxy. In this case I have made it more or less a routine in my practice to administer the drug a day

or two previously to operation, when its speedy action, especially in India, is a decided benefit to patients who cannot, and do not usually like to, stay longer in hospital than necessary in order to render the urine as aseptic as possible, as there is usually a certain amount of cystitis present in most cases of vesical calculus before operation. I have good reason to believe that in one case at least upon which I operated—one of vesical calculus of large dimensions associated with enlarged prostate—in which there was marked concomitant cystitis, the patient's early and complete recovery was directly attributable to the preliminary use of the drug in this manner. Its employment possibly prevented the further development of septic micro-organisms within the bladder and thereby lessened the risk of any of these travelling backwards up the ureters and ultimately finding their way to the kidneys and setting up septic infection there, inducing pyelitis, &c., which complications may so easily ensue after such operations. Further, under this head I may also mention the important use that this drug may be put to in rendering aseptic the urine of patients suffering from enteric fever or other diseases in which it is known that pathogenic micro-organisms are eliminated from the body by this channel. There is little doubt that this occurs in diseases other than enteric fever; for instance, it is known that the bacterium coli commune is frequently found in the urine, and when present there plays a prominent part in the production of cystitis, possibly in the course of its elimination from the body in this way. It is now a well-established fact that the urine of patients suffering from enteric fever, more especially after the second week of the disease and during convalescence, contains large numbers of the bacillus typhosus. It is therefore important thoroughly to disinfect the liquid excreta of such patients as well as their fæcal evacuations. The use of urotropin in such cases should prove invaluable in preventing the dissemination of enteric fever by this important, and, I fear, much overlooked, channel of infection. It is obvious that, if possible, the urine should be disinfected before its evacuation from the bladder, rather than that this process should be left till afterwards, possibly to be forgotten altogether. This point is of very great importance in India and in tropical countries, where the means employed for the disposal of excreta are usually some form of dry earth system. That this is not always under the strictest supervision must be within the cognisance of those medical men who have practised in India, where liquid excreta are often carelessly disposed of by being thrown broadcast over the surface of the soil without previous disinfection. The risk is undoubtedly increased in the case of enteric fever affecting native patients, whose ideas of sanitation as well as of decency are usually very crude, and who, as a consequence, micturate as well as defecate indiscriminately over the surface soil, anywhere and everywhere. It is easy to conceive that when the soil is dry, and hot winds blow, or a dust-storm occurs, that the bacilli as well as the spores of pathogenic microbes (where such occur, which, however, is not the case, of course, with the bacillus typhosus) are carried far and wide, and that they eventually find their way into some well or other source of human food or drink supply with disastrous results. In India, it may be remarked, wells are usually of the open, and therefore unprotected, kind. There is little doubt in my mind that the subject of the thorough disinfection of the urine of patients suffering from enteric fever, previously to its final disposal, has not hitherto generally at our hands received the notice that it deserves. At any rate, as regards India in particular, I feel sure that enteric fever is spread more by means of this than by almost any other agency. Moreover, I fancy that when the medical history of the war in South Africa, especially with reference to the prevalence of enteric fever amongst the troops, comes to be written, it will go far to prove the truth of my statement. It was conclusively shown by one observer, as a result of some very interesting experiments made by him to determine the microbic impurity of the air of inhabited dwellings, that the number of microbes present per cubic foot of air was directly in proportion to the amount of dust particles floating about in the air of the space experimented upon, proving that dust is one most important agency by which microbes are disseminated. The particular case to which I refer was that of a school in which large numbers of children were accommodated. If the prevalence of dust everywhere (more especially in tropical countries, where it is blown far and wide by means of hot winds and dust-storms) be taken into account it may be imagined that a very important part is played by it in the dissemination of pathogenic micro-organisms of all kinds. That being so, we cannot exercise too much trouble and care in the execution of measures for the complete and effectual disinfection of all excreta, urinary as well as fæcal. It is in such cases that I see a wide and successful field for the employment of a drug such as urotropin, by means of which we are enabled to check the growth—in fact, to destroy the vitality—of pathogenic micro-organisms of all kinds within the body and before their evacuation, at any rate, by such a channel as the urinary tract. Under the head of a urinary antiseptic also, urotropin should prove of great value in the treatment of gonorrhœa, gleet, &c.—in fact, in any form of urethritis of microbic origin.

Secondly, as regards the action of urotropin as a solvent of uric acid, I have given it with benefit in cases of gout, gravel, and uric acid diathesis, and when combined with salicylic acid in certain cases its action is rendered more potent still. With reference to its action as a solvent of calculi, I fear for obvious reasons that we cannot hope that it will in any way replace surgical interference. I do not doubt, however, owing to its capability of rendering alkaline urine acid, and aided by its antiseptic properties which retard the growth of the bacteria of ammoniacal decomposition, that it may possibly prevent the growth of calculi already in the bladder, by lessening the chance of phosphatic deposits taking place. These phosphatic deposits usually occur sooner or later if left alone. In order to test its value in this matter I made some experiments on a small scale with the drug *in vitro*. Small portions of uric acid were taken from fragments of a calculus removed previously by litholopaxy. These were exposed to the action of a concentrated solution of the drug in pure and freshly sterilised water. The solution was then placed in an incubator and kept at body heat for some days, after which time I could not detect any appreciable loss of weight or substance. This result goes rather to prove that when a calculus, even of uric acid formation, has already formed, we cannot look to much permanent benefit from the exhibition of this drug, though it is just possible that in the presence of normal urine its solvent action would have been more pronounced. Stress of work and my having to proceed on sick furlough, however, prevented me from going more into this matter then, and I fancy that its solvent action on uric acid depends upon other complex chemical changes during its passage through the body, which probably operate upon this product through the medium of the blood and not locally. This is a subject which I hope to go into on my return to India.

Thirdly, with reference to its therapeutic action as a diuretic, an effect which is distinctly beneficial as a secondary help to its antiseptic action, it occasionally causes slight purging. This I noticed particularly in one case of enlarged prostate with irritable bladder in which I gave the drug. The amount given need not exceed 30 grains per diem, and it forms an agreeable, almost tasteless, beverage when taken with a little aerated water. I have myself hitherto seen no untoward results from its administration, but I believe that when the drug has been given in excess it has caused unpleasant symptoms, such as distressing diuresis and pain in the bladder and urethra, accompanied with slight hæmaturia, all of which symptoms, however, have at once ceased on the suspension of the drug or diminution of its dose, no permanent injury resulting.

In conclusion, I feel sure that there is a very wide field of usefulness in the future for the employment of urotropin. It has hardly, I think, received sufficient notice hitherto from the profession in England, but I am confident that its claims will be readily taken into account when it comes to be more generally known. In the hope of such a result I am glad to be able to add my testimony to its worth as a valuable therapeutic agent for combating a troublesome class of cases.

DRAINAGE OF EGG-BUCKLAND.—At Plymouth County Court on June 20th a dairyman claimed £20 from the Plympton Rural District Council for damage to a field at Egg-Buckland by reason of defective drainage. Evidence showed that the council without any notice to the plaintiff laid a drain through the field to a cesspit at the top, the result being that the cesspit constantly overflowed. The plaintiff was awarded 12 guineas and costs.

THE EXCRETION OF URINARY WATER AND UREA FROM THE HUMAN BODY, WITH DIMINISHED KIDNEY WEIGHT.[1]

BY JOHN B. NASH, M.D., M.R.C.S.,
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THE subject matter for this paper was suggested by a study of lectures published in THE LANCET of March 19th and 26th, and of April 2nd, 1898. They were entitled "Observations on the Pathology of the Kidneys," by Dr. John Rose Bradford, Professor Superintendent of the Brown Institution. As there were three patients in my practice with kidney weight diminished it occurred to me that an estimation of the quantity of urine and of its nitrogenous constituents excreted in a period extending over several weeks might be of sufficient interest to make a suitable contribution to this section of the congress; and it would apply to the human individual the principles laid down in the lectures quoted, and also contribute somewhat to our knowledge of the behaviour of the kidney tissue when its total weight relative to the rest of the body is diminished. In two of the cases one kidney—i.e., one half of the total kidney weight—and in the third slightly less than one fourth of the total kidney weight had been removed. The following are the cases.

CASE 1.—The patient was a female, aged 35 years. On March 24th, 1896, the right kidney was removed. On March 16th, 1899, she was confined of a full-sized healthy male child. The estimations were made about three years after the operation and at the time she was suckling her infant. They were begun on April 27th, 1899, and they were continued daily to June 14th, a period of exactly seven weeks.

CASE 2.—The patient was a male, aged 20 years. On May 29th, 1897, slightly less than one half of the right kidney was removed. The estimations, extending over a period of 52 days, were made two years after the operation they were begun on April 24th and ended on June 14th, 1899.

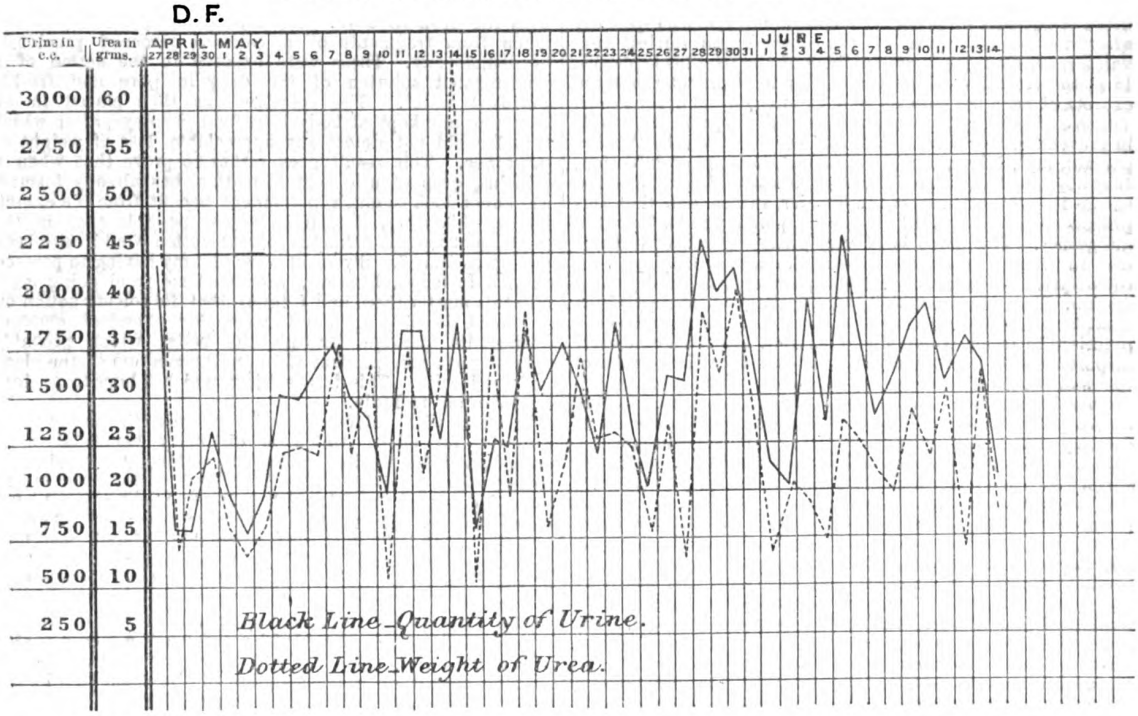
CASE 3.—The patient was a female, aged 56 years. On April 22nd, 1899, the left kidney was removed. The estimations were begun on the day after the operation and they were continued for 53 days or up to June 14th, 1899.

Cases 1 and 2 had time to settle into the normal condition and they exhibit the behaviour of diminished weight of renal tissue in bodies that had assumed a normal standard after complete recovery from the affections for which they were treated. There is one apparent difference in that the first patient suffered from disease and the second met with an accident; this is of no moment as the excreting tissue *in corpore* in each case must have been of a healthy type. Both individuals were upon an ordinary mixed diet and they carried on their customary duties. Case 3 shows the behaviour of one kidney immediately after it had been deprived of the assistance of its fellow, in which slightly more than half the acting structure was capable of performing its function, and further it shows how this single organ was equal to the requirements of the rest of the tissues in passing away the necessary quantity of water, nitrogenous extractives, and other solids after a somewhat serious operation.

In all the three cases the specimens examined were taken from the mixture of the total amount collected daily. The standards of comparison used are those given in Campbell Black's "Urine and Urinary Analysis," edition 1895. Herein the quantity of fluid excreted by the kidneys in 24 hours is given as from 1000 to 1200 cubic centimetres in the female, and from 1400 to 1500 cubic centimetres in the male. The urea elimination is stated at about 25 grammes daily in the female and from 18 to 30 grammes daily in the male. The volumetric analysis of the urea was made by the hypobromite of soda process with the ureometer of Doremus.

That one kidney is capable of doing the scavenging for which two are generally provided has been demonstrated upon many occasions in the after-history of persons from whom one kidney had been excised. The more thoroughly we realise the capacity of a diminished weight of tissue to perform all the particular requisite functions of the body which it was ordained to fulfil, with the more self-satisfaction do we attack and remove a diseased area of this tissue. The experiments in the dog (and they are being found to

CHART SHOWING EXCRETION OF URINE AND UREA IN CASE 1.



[1] A paper read before the Medical Section of the Intercolonial Medical Congress held at Brisbane in September, 1899.

apply to the human individual) have thrown much light on the physiology and pathology of the kidney; with the function of the healthy organ as an excreting tissue in some of its relations this paper is intended to deal.

Professor J. Rose Bradford writes: "An animal (dog) with diminished kidney weight is unable to excrete a concentrated urine ..... the urea is eliminated by an increased flow of water occurring—i.e., an hydruria follows; in this way the larger amount of urea is got rid of without the percentage in the fluid being greater. In a normal animal the urea is got rid of by the urine containing a greater percentage of it."

In Case 1 in the seven weeks during which the daily estimations were made the highest concentration was 3·47 per cent. of urea once, 2·8 per cent. once, and 2·79 per cent. once; the daily average throughout the whole period was 1520·5 cubic centimetres of urine containing 1·6 per cent. of urea; this is comparable to the 2·05 to 2·5 per cent. which is the approximate proportion excreted in the healthy female with two kidneys. The one kidney in this woman is able to excrete urine in all ways similar to that which we find in a normal woman. The highest proportion, 3·47 per cent., is sometimes demanded of the kidneys in the average healthy female with variations in diet, and upon the particular day of this excess there was a relative hydruria, 1875·5 cubic centimetres of urine having been voided. The greatest quantity of fluid that was passed in any one day was on two occasions 2301·7 cubic centimetres with urea 1·89 and 1·19 per cent. respectively. (See table, Case 1, and chart.)

In Case 2 during the 52 days over which the estimations extended the highest concentration was 3·59 per cent. of urea, with an excretion of 937 cubic centimetres of urine. On 15 occasions the proportion was over 2·25 per cent., while for the whole period the average quantities daily were 1167 cubic centimetres of urine and 2·13 per cent. of urea. This would seem to indicate that the kidney

CASE I.

Date.	Amount of urine in cubic centimetres.	Amount of urea in grammes.	Specific gravity of urine.
April 27th	2188	59·9	1021
,, 28th	795	13·6	1015
,, 29th	795	22·2	1024
,, 30th	1309	23·8	1020
May 1st	994	15·8	1018
,, 2nd	767	13·1	1017
,, 3rd	994	15·9	1014
,, 4th	1508	24·0	1014
,, 5th	1449	24·7	1014
,, 6th	1648	23·5	1016
,, 7th	1761	35·1	1022
,, 8th	1477	23·5	1014
,, 9th	1392	33·3	1022
,, 10th	937	10·7	1012
,, 11th	1847	34·7	1019
,, 12th	1847	22·1	1012
,, 13th	1278	32·0	1022
,, 14th	1875	65·2	1026
,, 15th	795	10·4	1011
,, 16th	1250	34·2	1018
,, 17th	1221	19·5	1012
,, 18th	1845	38·0	1022
,, 19th	1534	16·6	1010
,, 20th	1790	23·4	1014
,, 21st	1506	34·3	1022
,, 22nd	1193	25·1	1022
,, 23rd	1875	25·6	1014
,, 24th	1307	24·5	1028
,, 25th	1023	15·1	1022
,, 26th	1591	27·2	1016
,, 27th	1562	12·5	1013
,, 28th	2301	43·3	1020
,, 29th	2046	32·6	1015
,, 30th	2159	41·8	1020
,, 31st	1733	27·7	1015
June 1st	1136	13·6	1012
,, 2nd	1023	20·4	1021
,, 3rd	1903	18·4	1010
,, 4th	1335	14·4	1015
,, 5th	2301	27·5	1010
,, 6th	1818	24·9	1012
,, 7th	1135	21·3	1015
,, 8th	1619	19·4	1011
,, 9th	1875	27·8	1014
,, 10th	1903	22·8	1011
,, 11th	1562	30·1	1023
,, 12th	1761	14·0	1010
,, 13th	1676	32·5	1022
,, 14th	1079	17·2	1015

CASE II.

Date.	Amount of urine in cubic centimetres.	Amount of urea in grammes.	Specific gravity of urine.
April 24th	1136	25·9	1020
,, 25th	1136	20·7	1020
,, 26th	1078	20·9	1023
,, 27th	1136	28·5	1025
,, 28th	852	21·8	1027
,, 29th	1136	23·3	1024
,, 30th	994	23·8	1026
May 1st	1079	20·3	1022
,, 2nd	1221	25·0	1018
,, 3rd	1079	24·6	1022
,, 4th	1136	32·4	1027
,, 5th	852	23·3	1027
,, 6th	1136	25·9	1024
,, 7th	1463	29·2	1020
,, 8th	1079	28·3	1023
,, 9th	1449	33·0	1020
,, 10th	1278	27·6	1020
,, 11th	1136	25·9	1020
,, 12th	1364	24·8	1018
,, 13th	1165	21·2	1020
,, 14th	1648	37·5	1016
,, 15th	1506	34·3	1019
,, 16th	1335	41·1	1024
,, 17th	1221	33·4	1022
,, 18th	994	31·1	1026
,, 19th	909	28·0	1024
,, 20th	1335	24·3	1017
,, 21st	937	33·7	1026
,, 22nd	909	24·8	1024
,, 23rd	795	19·9	1026
,, 24th	1108	18·3	1016
,, 25th	1023	26·8	1023
,, 26th	767	16·6	1018
,, 27th	1108	19·0	1018
,, 28th	1136	33·7	1026
,, 29th	1108	16·4	1016
,, 30th	1079	21·5	1016
,, 31st	1108	18·3	1018
June 1st	1307	19·3	1015
,, 2nd	1278	13·8	1014
,, 3rd	1307	11·9	1010
,, 4th	1364	28·0	1026
,, 5th	1307	17·1	1012
,, 6th	1136	21·3	1020
,, 7th	1108	19·5	1019
,, 8th	1250	26·3	1020
,, 9th	1136	23·2	1020
,, 10th	1591	18·1	1014
,, 11th	1193	32·0	1025
,, 12th	1534	21·0	1015
,, 13th	1079	24·6	1024
,, 14th	1136	31·7	1026

and one half passed away a sufficiency of nitrogenous material but that there was a slight deficiency in the quantity of fluid. That the renal tissue left was capable of passing away more than an average daily amount of urine is evident, as 1506, 1534, 1591, and 1648 cubic centimetres were voided on four of the days. There was no marked hydruria or polyuria. (See table, Case 2.)

In Case 3 in the second and third 24 hours after the operation the highest concentration of the urine was seen, the single kidney excreting a fluid with 4·56 per cent. of urea. Moreover, the largest quantity of urea excreted during any one day was 29·8 grammes, and that in the second 24 hours after the operation with urinary water 653·5 cubic centimetres; in the third diurnal period 28·3 grammes, with 625 cubic centimetres of water; in the following like time 27·5 grammes, with 653 cubic centimetres of water. On the fiftieth, fifty-first, fifty-second, and fifty-third days the quantity of urine voided was respectively 1676, 1562, 1428, and 1335 cubic centimetres, with 0·79, 0·90, 1·02, and 1·49 per cent. of urea. The average for the 53 days was 889 cubic centimetres of urine, with 14·1 grammes of urea, or 1·57 per cent. The quantity of fluid voided steadily increased and towards the end of the estimations there was practically a hydruria but not a polyuria. (See table, Case 3.)

CASE III.

Date.	Amount of urine in cubic centimetres.	Amount of urea in grammes.	Specific gravity of urine.
April 23rd	454	10·37	1027
,, 24th	653	29·8	1026
,, 25th	625	28·3	1028
,, 26th	653	27·5	1026
,, 27th	568	18·8	1024
,, 28th	568	18·1	1024
,, 29th	596	20·7	1024
,, 30th	568	16·2	1028
May 1st	568	15·8	1024
,, 2nd	653	19·0	1020
,, 3rd	625	18·1	1022
,, 4th	682	12·4	1015
,, 5th	653	11·1	1016
,, 6th	653	7·7	1011
,, 7th	682	14·3	1018
,, 8th	710	11·3	1014
,, 9th	710	14·9	1018
,, 10th	658	19·3	1018
,, 11th	568	17·5	1020
,, 12th	710	13·7	1016
,, 13th	710	4·9	1010
,, 14th	653	8·9	1014
,, 15th	710	8·1	1010
,, 16th	937	13·3	1012
,, 17th	852	15·5	1016
,, 18th	852	8·7	1014
,, 19th	994	12·5	1012
,, 20th	1023	11·0	1009
,, 21st	852	9·2	1010
,, 22nd	966	10·5	1011
,, 23rd	994	9·0	1014
,, 24th	994	10·7	1014
,, 25th	1079	11·0	1009
,, 26th	1079	12·3	1012
,, 27th	1108	11·3	1014
,, 28th	1136	12·9	1010
,, 29th	1193	16·3	1015
,, 30th	1221	11·1	1011
,, 31st	852	10·2	1013
June 1st	934	13·6	1014
,, 2nd	909	17·1	1017
,, 3rd	1335	19·8	1018
,, 4th	1108	14·5	1016
,, 5th	1136	15·5	1014
,, 6th	966	10·4	1011
,, 7th	795	10·9	1013
,, 8th	1136	10·3	1010
,, 9th	1449	11·5	1010
,, 10th	1278	10·2	1010
,, 11th	1676	13·3	1011
,, 12th	1562	14·2	1012
,, 13th	1420	14·6	1014
,, 14th	1335	19·8	1016

In Case 1 a great variation between the minimum and maximum quantities in both urine and urea is to be seen. Under 800 cubic centimetres of urine were voided on four days, while over 2000 cubic centimetres were passed on five days. During the whole period the average 1520 cubic centimetres per day is well over the quantity voided daily by a healthy woman with two kidneys. Compared with the two other cases the urea variations were remarkable; more than 59 grammes were excreted on two occasions, the highest being 65·2 grammes on the eighteenth day of the estimations. Under 13 grammes were produced three times. These figures show that the single kidney is capable of getting rid of twice as much water and three times as much urea in one day as is the average for two healthy kidneys. The woman was in perfect health on an average mixed diet and suckling a full-sized male child.

In Case 2 the patient with his one and one half kidneys *in situ* the urinary water was under 800 cubic centimetres per day twice and over 1400 cubic centimetres six times. For the whole period the daily average of 1167 cubic centimetres is about equal to what two healthy kidneys should excrete. The urea was below 14 grammes on two days and 33 grammes or over on seven days. Between these two limits the quantities varied considerably. The loss of one-fourth of his kidney weight did not materially alter the excretion of either the fluids or the solids by the renal tissue. The patient was a healthy young male, of average activity, living on a mixed diet. If estimations were made on a like man under similar circumstances, but possessing his full proportion of kidney weight, much the same variations would be found in the daily quantity of fluids and solids passed.

In Case 3 we have a condition like to the dogs of Professor Rose Bradford, as the estimations were begun immediately after the operation. He writes: "All partial nephrectomies, single or double, slight or extensive, increase the amount of urinary water, to different degrees it is true; the amount of urea is not increased by either single partial nephrectomy or by double partial nephrectomy or yet by the removal of one kidney and a portion of the other, provided always that at least one-third of the original total kidney weight be left to the animal." In Case 3 at no time during the first five weeks did the urinary water reach 1200 cubic centimetres in one 24 hours, the nearest to that amount being 1108 cubic centimetres passed on the thirty-fifth day. This does not agree with the hydruria found in the dog. The urea for the first 24 hours stood at the normal healthy average; during the second, third, and fourth daily periods it was about twice the normal amount per ounce of urinary water, but only a little above the total required to be excreted daily by a healthy female with two kidneys. This differs from what happened in Professor Bradford's dogs and shows that immediately after removal of one kidney in the human subject the kidney left *in corpore* is capable of excreting a somewhat concentrated urine. During the sixth and seventh weeks the urinary water voided kept well up to a healthy average, while on the four days of the eighth week the quantity was about 300 cubic centimetres above the average. In these same periods the urea was about one-half of that usually excreted by two healthy kidneys. The table as a whole shows a steady increase in the quantity of urinary water. At first, when this was small in amount, the patient had a low-tension pulse, she was unable to take much fluid wherewith to fill the blood-vessels, and a diminution in the filtering processes followed. After major operations there is usually wasting for the first few days; this is probably accompanied by an over-production of nitrogenous extractives in the tissues and blood, thence moving onwards to excretion through the kidneys. After the fourth day the urea fell to a normal degree and only five times during the subsequent analysis was it up to 19 grammes in the 24 hours. The patient put on flesh and soon regained more than her accustomed vigour.

In the *British Medical Journal* of July 29th, 1899, Dr. W. L. Bell of Lowestoft Hospital, England, reports a case of

abdominal nephrectomy for renal calculus. At the end of the article he writes: "Estimations of urine.—During the first 24 hours 14 ounces of highly albuminous urine were excreted, but after this it remained free from albumin, and during the second 24 hours there were 15 ounces, next three days 28 ounces each day, after which the amount passed generally varied from 35 to 45 ounces. Careful measurements extended over a period of eight weeks."[2] In further illustration of the cases forming this article a statement of weekly averages of urinary water and urea excreted are here shown.

Weeks.	Case 3.		Case 2.		Case 1.	
	Urine.	Urea.	Urine.	Urea.	Urine.	Urea.
	c.c.	grms.	c.c.	grms.	c.c.	grms.
First	4120	154·1	7473	165 1	7,843	164·4
Second	4404	100·7	7970	180·8	10,173	175·1
Third	4705	96·1	9121	198·0	10,116	218·3
Fourth	5740	77·7	8240	226 7	11,054	187·8
Fifth	7075	74·3	6848	159·2	12,418	200·3
Sixth	7644	101·1	8553	129·4	11,423	140·7
Seventh ...	7871	83·5	8724	158·0	11,480	151·0
Eighth ...	5995 4 days	62·0 4 days	3751 3 days	77·3 3 days	—	—
Total ...	47,598 53 days	749 6 53 days	60,684 52 days	1294·9 52 days	74,509 49 days	1237·7 49 days
Average per week.	5943·13	98·2	8132·94	173 9	10,644·19	176·8
Average per day.	898·01	14·1	1167·0	24·9	1520·59	25·25
Average urea in grammes per cubic centimetre.	0·01574 = 1·574%		0·02133 = 2·133%.		0·0166 = 1·66%	
Average specific gravity.	1015·4		1020·6		1016·4	

The following conclusions appear to me to be justified: 1. If one kidney be removed then three years subsequently the healthy kidney *in situ* will excrete more than the average quantity of urinary water produced by two normal kidneys. 2. This same kidney will excrete per cubic centimetre of urine and per diem the average amount of urea that would be produced by two healthy kidneys. 3. If one half of one kidney be removed, then two years afterwards the urine voided will be the same in quantity as if two healthy kidneys were present. 4. The loss of the half of one kidney will cause no increase or diminution in the percentage of total amount of urea excreted. 5. If one kidney be removed then the quantity of urinary water excreted by the other during the seven weeks immediately succeeding the operation will be below the average daily amount. 6. The urea produced by this one kidney will be less than the average proportion usually seen as the result of the work of two healthy kidneys but probably not below the average excreted by two healthy kidneys from an individual recovering from a serious operation.

From the standpoint of the practical surgeon there is one important fact brought prominently forward in Professor Bradford's experiments and lectures. They teach us: first, that in the dog two-thirds of the total kidney weight can be removed with impunity, and the one-third remaining is consistent with the prolonged and healthy existence of the animal; and, secondly, that there is a limit between the one-third and the one-fourth of the total kidney weight beyond which, if excision be practised, the kidney tissue left is not sufficient for the sustaining of life, as the animal will rapidly emaciate and die; not, however, from uræmia, as even with one-tenth of the total kidney weight an hydruria and a polyuria immediately followed. Anyone of us may have the question brought before him in a case of kidney disease or a tumour growth of renal tissue as to how much of the kidney substance may be with safety excised. The general trend of all these observations is in the direction of Professor Rose Bradford's results, that one-third of the total kidney weight in the human being would be as capable of sustaining a prolonged and healthy life as he found to be the case in the dog. For the preparation of the accompanying chart and the working out of the averages and totals my best thanks are due to Dr. F. H. Cox, a graduate of the Sydney University.

Wallsend, New South Wales.

[2] Other references to the subject matters in this paper will be found as follows: THE LANCET, Feb. 15th, 1896, p. 417, Salford Royal Hospital, Nephrectomy, under the care of Mr. Herbert Lund. Brit. Med. Jour., Oct. 17th, 1896, p. 1100, Dr. Oscar Bloch, A Case in which Half the Kidney Invaded by Morbid Growth was Removed, with Remarks on the Conservative Surgery of the Kidney. THE LANCET, Oct. 31st, 1896, p. 1229, A Case of Abdominal Nephrectomy, by Mr. F. C. Wallis, at the Clinical Society of London.

ON THE

USE OF MERCURY IN THE TREATMENT OF CARDIAC FAILURE DUE TO ARTERIO-SCLEROSIS.[1]

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THE value of mercury in the treatment of disorders of the circulation was well recognised by the older physicians, but the zeal for its employment was not always according to knowledge. Consequently a generation arose which, following blindly in the footsteps of tradition and not finding their expectations answered, proceeded to ban mercury as a dangerous or useless drug under all circumstances and so impressed the public with this belated sagacity that even the acknowledged charlatan was forced to advertise his wares as free from that deleterious agent. One has only to mention the names of Withering and of Baillie, of Stokes and Graves and Gregory, however, to be certain that, whatever mistakes these distinguished men committed, they were the faults of strength, and that when they spoke positively of beneficial results obtained under certain circumstances they stated facts and opinions which required the respectful if discriminating attention of posterity. Posterity, however, for a time was more discriminating than respectful and it consigned in a great measure both these great authorities and their vaunted remedy to an unmerited oblivion. In the matter of mercury in the treatment of some forms of heart disease it is now beginning to revise its hasty condemnation.

It is not my intention on this occasion to consider the larger question of the use of mercury in the treatment of heart disease, but to limit myself to a consideration of its employment in that form of cardiac failure which is so frequently associated with the arterio-sclerotic changes connected with advancing life, and more particularly when this is coupled with that overwork for a means of livelihood which is the fate of many. I think I can do this most conveniently by quoting a specific instance and making it the peg on which to hang any general remarks I may have to offer.

A man, aged 67 years, an English labourer of the best type, calm, self-respecting, the father of a hard-working family and of good physique but stiff and bowed down with continuous work and advancing age, had been under my observation for about five years in the out-patient department of the Great Northern Central Hospital. He had suffered during that time from a tachycardial form of cardiac arrhythmia with periods of amelioration and comparative sense of well-being, broken by the inevitable relapse into breathlessness, defective sleep, and scanty urination, but never reaching that greater depth of cardiac failure associated with progressive anasarca and effusion into the serous cavities of the body until December, 1899. He then returned as an out-patient, water-logged and with a rapidly sinking heart. I advised him to enter the hospital, and by the courtesy of my colleague, Dr. E. Clifford Beale, he was placed under my care. By an oversight, however, I was not informed of his admission until a fortnight or so after that

[1] A paper read before the Æsculapian Society of London on May 19th, 1900.

event, during which time he was under the care of a house physician.

On admission into the hospital on Dec. 20th the patient's temperature is stated to have been 96° F. and his heart-pulse, so far as it could be counted with the stethoscope, 160, very irregular in force and in rhythm and few beats reaching the wrist. He was somewhat cyanosed and orthopnœic, and had a cough. He had anasarca as high as the waist and on his legs there were several foul sloughing sores. There was no detectable ascites and the urine was very scanty and contained some albumin. A mixture containing 15 minims of tincture of strophanthus, four minims of solution of strychnine, and 10 grains of diuretin was ordered to be taken every four hours. One grain of calomel was likewise prescribed daily, and at bedtime he took 20 grains of bromide of potassium and 20 grains of trional. Saline aperients were likewise administered and the patient was placed on admission diet. Ten days later there was no noteworthy improvement in his condition; the hypnotics were increased in power and tincture of digitalis was prescribed instead of tincture of strophanthus. On Jan. 5th, 1900, fish was added to the dietary and a pill containing two grains of calomel was ordered to be taken at bedtime every night. Finding on the 9th that the condition of the patient continued critical I placed him upon ordinary diet and prescribed three ounces of brandy, to be given in one-ounce doses and the last ounce at bedtime. I discontinued all hypnotics and ordered the pilula diuretica of the hospital pharmacopœia to be administered three times a day. This consists of powder of digitalis, powder of squills, blue pill, and extract of hyoscyamus, of each one grain. On the 16th the patient was still restless at night, but the œdema of his legs had subsided to some extent, and although there was a little recognisable serous effusion in his left chest, and the ratio between his heart and wrist pulse was as 150 to 100, the quantity of his urine had increased and it contained no albumin. By the 19th the ratio of his heart and wrist pulse was as 120 to 66; the impulse of the heart was stronger and its rhythm was regular; the patient slept better and there was less evidence of pleural effusion. The urine within the next few days began to flow more freely until on the 27th it reached a maximum of 110 ounces, and the patient's general condition had improved in every way. On the 31st the diuretic pill was discontinued as the patient's gums had become slightly affected. The urine, however, continued to flow satisfactorily until Feb. 12th, when it had fallen to 36 ounces, and on the next day the diuretic pill was resumed. Three days later it had reached 47 ounces and, with some fluctuation, a maximum of 73 ounces on the 19th. The general state of the patient had meanwhile continued to improve and on the 25th the pill was again omitted, and was resumed on March 3rd because of a fall of the urinary secretion to 15 ounces as nearly as could be calculated. Four days later the quantity had again risen to 50 ounces and the patient's general state was most satisfactory. All anasarca and serous effusion had disappeared, the force and rhythm of his heart had improved, and the discrepancy between the heart beat and the pulse at the wrist had been reduced, at times very greatly, such ratios as 90 to 72, 100 to 84, and 104 to 88 being noted. The patient also ate well, and slept from 7 to 10 out of the 24 hours without any other aid than his nightcap of one ounce of brandy. The diuretic pill was discontinued and again resumed for a few days at a time, and on the 27th the patient was discharged on account of the demand for beds. He was then in every way comfortable, and was free from all the evidences of cardiac failure with which he had been admitted. The heart, however, still manifested its arrhythmical instability and he was advised to rest as much as possible and to live as generously as his family could afford to allow him to do. He returned to my out-patient clinic in May free from œdema or subjective distress, but with increased tachycardial arrhythmia and stated that he could not "get along" without taking a few of his "pills" from time to time.

I have too great a regard for the reputation of mercury as a therapeutic agent in cases such as that just related to claim for it a greater share in the success attending its employment than an impartial review of the circumstances seems to justify. It has been pointed out alike by Baillie, by Stokes, and by others, that it is the combined operation of mercurials and cardiac stimulants which influences for good the majority of cases of cardiac failure such as that described. To these, however, must be added, in the case of persons in the circumstances of my patient, the rest, warmth, food, and general care which they receive on admission to a hospital. Without these influences it may safely be asserted that neither mercury nor digitalis would have had any result in the present instance. These, however, while they enabled the pill to act beneficially did not disprove the fact that there was an efficacy to be expected from the combination which would probably not have been attained by the use of one drug without the other, or, indeed, by the unduly preponderant use of digitalis as compared with the mercurial. For my present purpose it is fortunate that this point was also illustrated in this case. On admission a powerful cardiac stimulant and diuretic was prescribed, together with a grain of calomel separately at bedtime. A fortnight later, progress being unsatisfactory, digitalis was employed instead of strophanthus and an additional grain of calomel was prescribed to be taken at bedtime. It was not, indeed, until more than a fortnight after the simultaneous use of the drugs thrice repeated daily, and after the patient had been placed on full diet and brandy made to take the place of his ordinary hypnotics, that the full effects of the drug were attained and a urinary output which had fallen to 18 ounces and even 15 ounces a day rose to a maximum of 110 ounces. It could not, of course, be maintained at this high figure although such amounts as 93, 75, 81, 85, and 69 ounces were recorded. For it may be noticed in water-logged cardiac cases that when the methods employed begin effectually to squeeze the human sponge a copious drip takes place, but the human body obeys under the circumstances the general law of sponges which once squeezed fairly dry have little more than their normal moisture to part with unless they again become more or less water-logged, as may happen. As Carlyle was fond of remarking, "You cannot get more out of a thing than there is in it." Even under recurrences of anasarca, however, this case shows that a steady recourse to the combined drugs may again be expected to relieve the patient, and, as is stated at the conclusion of the record, the patient himself was so convinced of the value of his pill that he insisted on keeping it within reach. In his case I believe that he was justified in his confidence, although a like touching faith may be frequently observed under circumstances in which a wholesome scepticism would be more in place.

A few remarks may be made upon the possible causes of success in the treatment of the case related and upon the value of the combination employed. In connexion with the first point it is important to note that the kidneys of the patient, although congested, were essentially healthy, as it has been found by those who have used mercury in the treatment of heart disease that chronic renal disease, with the impeded elimination involved, is inimical to a sufficiently prolonged exhibition of the drug to secure beneficial action. In the next place all the agents in the compound pill prescribed were steadily pushed under favourable circumstances as to posture, food, and warmth until a definite result was secured. It is permissible to refer to this point because it is so frequently observed that a rational course of treatment has been conceived and initiated without being pushed home with sufficient persistence and vigour to secure success. In the third place, the patient was either philosophical enough or stupid enough to allow of the mental factor in his case being eliminated and thus prevented from upsetting the balance of his circulation by the intrusion of the emotions. Although the notes taken by the resident physician comprehensively state that while cardiac failure was at it worst the patient was "off his head" (as often happens under similar circumstances), he slept well and long when his anasarcous discomforts and the impediment in his circulation diminished and quite recovered his mental equilibrium. In sleep, while the vessels of the brain diminish in calibre the withdrawal of the psychical sphere from active operation appears to release the general vascular periphery, somatic and visceral, and thus to relieve the labour of the heart which, like the rest of the organism, enters refreshed on waking upon the work thrown upon it during the day.

The last point which may be mentioned as having conduced to the favourable issue of the case is that, although the patient was admitted to hospital on Dec. 20th, 1899, placed upon full diet and given systematic and persistent treatment by the diuretic pill and an allowance of brandy without hypnotics on Jan. 9th, 1900, and was practically convalescent towards the end of the same month, he was not discharged

from hospital until March 29th. In other words, he was two months in hospital under constant observation and with every comfort after convalescence was established. A similar case with equally happy results had been under my care in the hospital a year previously, and although this patient returned to the ward for a short time while the patient whose case I now describe was under treatment there has been no recurrence of his extensive dropsy since his convalescence. He also was kept for a long time in hospital. This patient was as old as the one whose case I now record, and had even harder arteries and a dilated and arrhythmical heart, and the full consolidation of his convalescence appeared to have established a compensation even under these circumstances which had successfully coped with the wear and tear of another year.

As regards the efficacy of mercury administered in the combination indicated and under the circumstances under consideration Sir Thomas Watson,[2] discussing the treatment of "anasarca," remarks: "Sometimes a combination or farrago of diuretic substances proves more efficacious than larger doses of any of the ingredients administered singly and the operation of some of these combinations is undoubtedly quickened or exalted in many instances by the addition of mercury. A fluid drachm of the officinal solution of the bichloride in each dose in a mixture or small quantities of calomel or of blue pill when the medicines are given in a solid form. A very useful pill of this kind, much recommended by the late Dr. Baillie, consists of three or four grains of the pilula hydrargyri, mixed up with one grain of the dried powder of squills, to be given twice or thrice a day. Dr. Baillie states that squills and digitalis are much less effectual by themselves than when combined with mercury." The formula of this pill, which is given in the second and third editions of Dr. George Gregory's "Elements of the Theory and Practice of Physic," is three grains of pilula hydrargyri and one each of powder of squills and of digitalis, to be taken at midday and in the evening. As the formula is not given in the first edition which was published in 1823—the year in which Matthew Baillie died—it is probable that the usual posthumous extension of Gregory's armamentarium took place after the death of his great and good contemporary. But Baillie would have been the first to acknowledge that the principle of the combination of coöperative elements was as old as the world itself, and exemplified by all the healing waters known to bathers and physicians from and prior to the days of the name-father of our society down to those of the last bath-doctor who has lost his mental equilibrium in enthusiastic praises of a new spring. Withering, indeed, writes of the therapeutic relation of squills to digitalis thus: "Next to the lancet, I think nothing lowers the tone of the system more effectually than the squill, and consequently it will always be proper in such cases to use the squill, for if that fail in its desired effect it is one of the best preparations to the adoption of the digitalis."[3] We now know that the active principle of squills acts much in the same manner as that of digitalis and that neither "lowers the tone of the system" except when administered in excessive doses or after too protracted use, but the above quotation shows that Withering's practical sagacity had detected the aid which one at times could lend the other. At page 170 of the same essay a prescription of Withering is given in which two grains of "grey mercury" were combined with 20 of powdered digitalis leaves and divided into 14 pills of which one was to be taken twice a day—evincing, surely, quite a modern timidity of mercury. I have not, however, met with any actual combination of all these ingredients in one pill in Withering's work and we may therefore assume that the attribution of that combination to the clinical acumen of Baillie is correct, but I have not so far met with a note of it in his works, which are well worthy of perusal even to-day. The addition of a grain of hyoscyamus —the "Guy's pill" used at the Great Northern Hospital— was probably not intended by its originator or originators to be other than a corrective to the intestinal effects of the other drugs, but it is just possible that as a drug of the belladonna group it may not be without influence upon the circulation when administered for a length of time. I have, indeed, occasionally used extract of belladonna in the pill instead of hyoscyamus on this principle and especially when there is a bradycardial rather than tachycardial tendency in the arrhythmia so frequently associated with arterio-sclerosis. The beneficial influence of mercury in the combination is, I think, clinically indisputable, but the discussion of the precise manner of its operation might lead to much, and perhaps not very useful, speculation. A fact, however, among the effects of mercurials to which Sir William Broadbent (to whom I attribute a considerable share in the revival of the medical use of mercury) attaches much importance is its lowering the tension of the pulse. How this is brought about—whether by the elimination from the blood of waste material which has a spastic effect upon the arterioles or by direct dilatation of the peripheral vessels in the process of its own elimination—it is not necessary at present to inquire and is very difficult to determine. That the permeability of peripheral vessels by a lessening of their resistance is secured appears to be clinically demonstrable. This being so it is not difficult to imagine, and is indeed permissible to suppose, that the combination of mercury (a peripheral dilatant) with digitalis and squills (which are in part central stimulants as well as peripheral contractors) constitutes it a rationally indicated adjuvant to the action of the latter in cardiac failure due to arterio-sclerosis. Like many other happy therapeutic combinations, however, it was probably at first employed in this connexion empirically, even by men of the calibre of Withering and of Matthew Baillie.

Upper Berkeley-street, W.

[2] Lectures on the Principles and Practice of Physics, vol. ii., p. 597.
[3] An Account of the Foxglove and some of its Medical Uses, 1775, p. 190.

"THE ACTION OF THE WATER OF LLANGAMMARCH WELLS ON URIC ACID."

BY WILLIAM BLACK JONES, M.D., B.S. LOND., D.P.H.,
PHYSICIAN TO THE LLANGAMMARCH WELLS SPA.

IN an article under the above title which appeared in THE LANCET of March 25th, 1899 (p. 830), by Mr. Edward Russell and myself, we recorded observations on two cases, one of uric acid calculus and the other of lithæmia, in both of which the patients had derived considerable benefit from drinking the Llangammarch Wells mineral water. In the latter case (which was that of Mr. Russell himself) the amount of uric acid voided was estimated by Hopkins's method.

During the season of 1899 I had several cases of lithæmia under my care. All those that I have subjected to analysis are given below. My method was to analyse two specimens in the above manner before the treatment began and then to make a second series of analyses about 10 or 14 days afterwards. In some cases a third series of analyses was made at a later date. In each case the amounts of uric acid given are the mean of two observations. My results are given in the following table.

Case.	Normal diet.				Drinking mineral water.				
	Urine.	Uric acid.			Urine.		Uric acid.		
	Amount in c.c.	Per cent.	Total output per diem.	Days after first experiment.	Amount in c.c.	Increase or decrease per cent.	Per cent.	Total output per diem.	Increase or decrease per cent.
			grms.					grms.	
1.	1440	0·058	0·83	14	1900	+ 31	0·066	1·25	+ 50
	1130	0·091	1·03	6	1530	+ 35	0·087	1·34	+ 30
2.	483	0·0675	0·318	15	653	+ 35	0·0787	0·513	+ 61
				35	650	+ 34	0·0385	0·25	− 22
3.	2000	0·0205	0·400	10	2850	+ 42	0·600	0·855	+ 113
				60	1560	− 22	0·0146	0·227	− 44
4.	1120	0·0423	0 47	11	1700	+ 51	0·033	0·561	+ 19
5.	840	0·0206	0·175	15	1700	+ 102	0·0273	0·464	+ 165
6.	1420	0·0275	0·39	10	1700	+ 20	0·0238	0·404	+ 3
				18	1700	+ 20	0·0135	0·229	− 42
7.	1036	0·0417	0·467	12	1850	+ 77	0·012	0·222	− 110
				25	1850	+ 77	0·0169	0·312	− 34

CASE 1.—This was the case of Mr. Russell, which I have referred to above, and which I have inserted for comparison with other cases.

CASE 2.—This patient suffered from pain in the loins, lassitude, and muscular weakness. She passed very little urine, and her appetite was very poor. She had influenza in February, 1899. Under treatment she made considerable improvement, lost the pains, and became more active. Her appetite and general health were very much better. There was at first an increase and then, after a month's treatment, a decrease in the amount of urine passed.

CASE 3.—A man, aged 38 years, had been suffering from rheumatism and gout for nine years. He complained of pain in the loins and between the scapulæ, and also had some stiffness of the joints. He was accustomed to considerable outdoor exercise. After a few days' treatment the uric acid excreted was more than double in amount and the pain was considerably less. After two months' treatment the pain had quite disappeared although the uric acid had diminished from its original amount.

CASE 4.—This patient, a woman, aged 50 years, had suffered from gout and rheumatism for some years. There were signs of osteo-arthritis of both knees and symptoms of chronic gastric catarrh. After a few days' treatment there was an increase of 19 per cent. in the uric acid excreted, and later there was improvement in the condition of the knees.

CASE 5.—A woman had complained of pain in the lumbar region for two years, accompanied by an excessive deposit of uric acid. She had also had symptoms of renal colic. After drinking the mineral water for a fortnight there was an increased output in the urine of 102 per cent., and in the uric acid of 165 per cent. This was accompanied by a diminution of the pain and a general improvement in the patient's health.

CASE 6.—This patient, a female, had suffered for four years from an obscure urinary trouble. She occasionally passed very offensive urine, which occurred generally after overwork and after walking. She then passed much mucus and pus. She had consulted several specialists, but none would give a definite opinion as to the nature of her case. When she came under my care she was in a very weak condition, but her urine was normal. After three weeks' treatment she was much stronger, but the uric acid, which at first increased slightly, afterwards diminished considerably.

CASE 7.—This patient, a man aged 57 years, had suffered from gravel for some years, accompanied by lumbar pain. He occasionally passed fine "sand" in his urine, but had not done so for two months. A year ago there was a slight amount of albuminuria. On examining the abdomen there was some pain over the right kidney. After a few days' treatment I found that he was passing less than half the amount of uric acid, and at the same time he felt much stronger and the pain in the loins was considerably diminished. This improvement continued, and at the same time there was a relative increase in the amount of uric acid.

It will be noted that of the above seven cases, four of them (Case 1, Case 2, Case 3, and Case 5) showed not only a decided relief of the symptoms, but a considerable increase in the output of uric acid. In Case 7, while the symptoms were relieved the uric acid diminished, and the same may be said to a certain extent of Case 6. It will be observed that in all the cases where a later examination was made the uric acid diminished in quantity. Probably the excess accumulated in the system had by that time been removed by the action of the water. In all the cases there was an increase in the flow of urine. That this is not solely due to the increased amount of fluid consumed, but is due partly to the action of the mineral water, was shown in the former article by Mr. Edward Russell and myself, mentioned above.

These results are, on the whole, most encouraging, and they show that in the Llangammarch mineral water we have a powerful agent for the elimination of uric acid. This water is therefore indicated in cases of rheumatism, gout, osteo-arthritis, and in all forms of the uric acid diathesis. In addition, patients who drink the water at the spring have many opportunities for physical exercise in a mountainous district like Llangammarch, thus forming a valuable adjunct to treatment.

Llangammarch Wells, Breconshire.

BRENTRY HOME FOR INEBRIATES.—At a meeting of the Bath Town Council held on June 12th it was decided to enter into an arrangement with the authorities of the Brentry Home for Inebriates, near Bristol, by which for the payment of £1000 seven beds in that institution would be available for 25 years.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. GEORGE'S HOSPITAL.

A CASE OF HERMAPHRODITISM.

(Under the care of Mr. G. R. TURNER.)

THE frequency of cases of true hermaphroditism is probably not great, but the statistics of the French military revising councils show[1] that a cleft of the scrotum causing an appearance of two labia is met with in about 5 per 1000 of all those rejected. The increase of the intertubular tissue of the testis (noticed in the following case) is mentioned in several of the cases in which the testis of an hermaphrodite has been examined microscopically after having been removed. We refer our readers to an annotation entitled "Marriage between Persons of the Same Sex" which appeared in THE LANCET of June 23rd, p. 1814, and which illustrates the extreme difficulty of diagnosis of sex in some of these cases.

A "girl," aged 14 years, had been "ruptured" ever since birth. She had worn a truss until she was 12 years of age, but since then nothing in the way of a support. She had been in early life under the care of a surgeon to a truss society who had wished to operate. She is the third of a family of six who are all well developed. She had never menstruated. On admission to St. George's Hospital there was a moveable oval irreducible swelling in the left inguinal region which was taken to be a prolapsed ovary. This was removed and proved to be a testis lying over the external abdominal ring. The cord was ligatured and the ring was closed by suture. The operation wound healed by first intention. The naked-eye appearance of the organ removed was that of a well-developed testis, the epididymis of which contained three little cysts. A microscopical examination was made by Dr. H. D. Rolleston and showed that there was no ovarian tissue; there were seminal tubules like those of the testis. In addition there were masses of interstitial cells like those seen in the testis of some of the lower animals.

Gas and ether were subsequently administered to allow of a thorough examination of the individual by Dr. W. R. Dakin and Mr. G. R. Turner. The mammary glands were both well developed for the patient's age. The pubic hair was scanty but the external parts were those of a well-developed female, the labia majora, minora, clitoris, and urethral orifice being normal. The latter was slightly caruncular. The vagina admitted the index finger half way up to the second knuckle. The width of the vagina was normal; it terminated in a cul-de-sac. No cervix uteri could be felt. A very small transverse cord, like a Fallopian tube or vas deferens, could be felt per vaginam. Nothing could be felt in the labia. On bimanual examination a transverse cord could be felt to slip away. This cord was situated one inch behind the pubes. Per rectum the whole pelvis could be explored. There was nothing found—nothing to represent either the uterus or prostate gland. The following were the pelvic measurements: inter-spinous, 8¾ inches; inter-cristal, 9⅝ inches; and external conjugate, 6⅝ inches.

Remarks by Mr. TURNER.—This case would appear to be one of true hermaphroditism in which the external organs of generation are like those of the normal female, the vagina ending in a cul-de-sac with no trace of uterus or ovaries. The inguinal testicle (now in the museum of St. George's Hospital) had all the naked-eye appearance of the normal except that the epididymis was the seat of cystic degeneration. Microscopically, too, the structure was testicular. A somewhat similar case is recorded by Dr. Chambers in the Transactions of the Obstetrical Society of

[1] Lagneau: Le Bulletin Médicale, April, 1895.

London, vol. xxi., page 256. In that case, too, the orifice of the meatus urinarius was irregular and granular; the vagina was an inch long and there was no trace of hymen, uterus, or ovaries. There were present two testicles the glandular structure of which had never undergone its normal development. Leopold records a similar case and Hauf made a post-mortem examination on one in 1873. In Shattock's case of spurious hermaphroditism with cleft scrotum and extreme hypospadias [2] both testes were removed in the course of a radical cure for double inguinal hernia. It is interesting to note that in these testes, as in the one removed from my patient, there was "a highly pronounced group of interstitial cells in the stroma." I have been unable to discover any marked inclination to either of the sexes in my patient. "She" has been brought up as a girl and acts as nurse to her younger relatives.

NEWCASTLE-ON-TYNE ROYAL INFIRMARY.

A CASE OF REMOVAL OF A GALL-STONE FROM THE COMMON BILE DUCT BY THE DUODENAL INCISION.

(Under the care of Mr. FREDERICK PAGE.)

IN the following case a gall-stone impacted in the common bile-duct was removed by an incision through the duodenal wall. This operation has been called duodeno-choledochotomy and was first performed by McBurney,[1] then by Kocher,[2] and for the third time by Mayo Robson.[3] It is a very useful method in some cases, as the stone is frequently fixed in that portion of the common duct which lies behind the duodenum. It has now been performed in about 15 cases with three deaths, a mortality of 20 per cent.

The patient was a woman, aged 59 years, who was admitted into the Newcastle-on-Tyne Royal Infirmary under the care of Mr. F. Page. She had been subject for the past two and a half years to sudden attacks of severe pain in the region of the gall-bladder extending down to the umbilicus and lasting several hours; when very severe it extended through to the back. The attacks were always accompanied by vomiting and shivering, the latter sometimes coming on before the pain. She was troubled in this way about once a fortnight. Three months previously she became jaundiced after an attack of colic; the discolouration had continued more or less

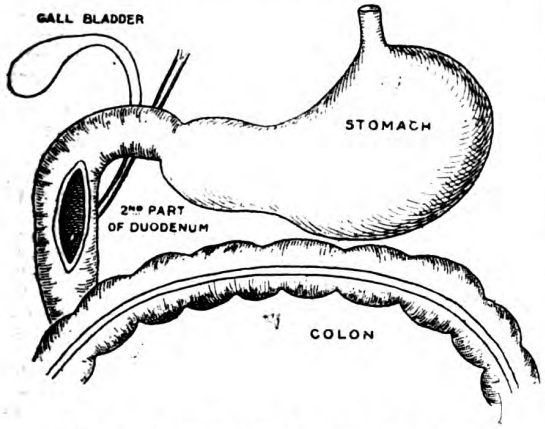


Diagram showing position of incision in duodenum.

until admission. Her family and previous history did not relate anything of importance. She was stout but feeble. The skin and conjunctiva were slightly jaundiced. The urine contained bile. The fæces were clay-coloured and she suffered from constipation. The gall-bladder could not be felt on abdominal palpation. During the seven weeks she was in hospital before operation she had several attacks of biliary colic.

[2] Brit. Med. Jour., vol. i., 1897, p. 460. Annals of Surgery, Oct. 18th, 1895.
[2] Correspondenzblatt für Schweitzer Aerzte, 1895, No. 7.
[3] Gall-bladder and Bile-ducts, second edition, p. 271.

On Oct. 14th chloroform was administered and the operation performed as follows. 1. A vertical incision was made over the situation of the gall-bladder. 2. The stone was felt to the right side of the head of the pancreas, but as very extensive adhesions prevented the common duct from being exposed from the outer side the anterior wall of the second part of the duodenum was incised in the position shown in the diagram, the opening of the common bile duct into the duodenum was incised upwards, and a large gall-stone was removed. The incision into the opening of the common duct was not sutured. 3. The incision through the anterior wall of the duodenum was closed as follows. A continuous catgut suture passing through the three coats of the bowel was first inserted, then the line of suture was covered in by a continuous suture of fine silk passing through the peritoneal coat alone; one or two Lembert's sutures were put in at the ends of the incision. 4. The abdominal wound, which had been enlarged parallel to the right costal margin, was then closed with three tiers of sutures. No drainage was employed. After the operation the patient was troubled with bronchitis but eventually completely recovered.

Remarks by Dr. JOHN CLAY, *surgical registrar*.—In the above case I had the good fortune to assist Mr. Page. It is an example of the simple and rapid method of suture employed by that surgeon. For the notes of the case I am indebted to the house surgeon, Dr. L. F. Hemmans.

Medical Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Nomenclature of Transverse Presentations and of Version.—Set of the Pelvis in the Body.

A MEETING of this society was held on June 13th, Dr. R. MILNE MURRAY, the President, being in the chair.

Dr. N. T. BREWIS showed (1) a Uterus removed by Hysterectomy (sub-peritoneal) after Cæsarean Section at Term; (2) a Gravid Uterus at the fifth month, removed by Panhysterectomy for Cancer of the Cervix; (3) a Uterus removed by Vaginal Hysterectomy for Cancer of the Cervix and Body; and (4) a Pyosalpinx removed by Vaginal Section.

Dr. F. W. N. HAULTAIN showed (1) a Ruptured Extra-uterine Gestation (after the operation a decidua was expelled from the uterus followed by very severe post-decidual hæmorrhage); (2) micro-photographs and microscopical preparation of a Fibro-adenoma of the Vagina; (3) a Cyst from the canal of Nuck; and (4) an Ovarian Cyst which was associated with 920 ounces of ascitic fluid.

Dr. J. W. BALLANTYNE showed photographs of Iniencephaly, Sympodia, Knotted Cord, &c.

Dr. J. HAIG FERGUSON showed a Dermoid Ovarian Tumour removed from a patient four months pregnant.

Dr. D. BERRY HART read a paper on The Nomenclature of Transverse Presentations and of Version, with Remarks on the Choice of the Leg seized. The best nomenclature of the position in transverse presentations was that which divided them into "dorso-anterior" and "dorso-posterior" and each of these again into "left acromio-iliac" and "right acromio-iliac," according as the acromion was to the left side or to the right side. It was better to name the positions from the acromion as it was often the presenting part. This plan was more exact than that which named them after the head, as "right cephalo-iliac" or "left cephalo-iliac." Little could be said in favour of the use of the scapula as the indicating part, as "left scapulo-anterior;" the acromion was a more precise point. The terms "right" and "left" referred to the mother and not to the fœtus. The nomenclature of the varieties of version was at present very confusing. The terms applied to version were descriptive either of the method by which the version was performed or of its aim. In "podalic" or "cephalic" version the aim was to substitute the lower limb or the head for the presenting part. The terms "bipolar version" and "external version" applied to method. Dr. Hart defined three great varieties of version: (1) combined external version (cephalic) which was now seldom used in practice and was practically performed by external manipulation, its aim being to get the head to present; (2) Simpson's combined version

(podalic) which was carried out by one hand placed externally on the abdomen and the other hand passed deeply into the uterus, its aim being "podalic," as it was to bring the lower limb to present; and (3) Braxton Hicks's bipolar version (podalic) which was performed with one hand external and the other internal but not deep (the hand should not be passed beyond the presenting part), the aim of which also was podalic. The second and third methods might for shortness be called "Simpson's podalic" version and "Hicks's podalic" version. In the choice of the leg seized Simpson advocated the further knee, and Galabin advocated the near foot as a rule. Simpson's original case was a dorso-posterior one and Galabin's a dorso-anterior one. In a simple case they could turn easily whichever leg was taken and the leg seized would come to the front in the end. In difficult cases, with the liquor amnii partly drained off, it was of importance to seize the knee which gave the safer operation. Nagel had given by far the most complete discussion of the subject. He did not consider the question of the leg to be seized merely from the point of view of the accomplishment of the version, but indicated that the leg, the half breech of which would pass sooner to the symphysis, should be seized, thus taking the standpoint of the older observers, Baudelocque and Hohl, and of his own master, Gusserow. Dr. Hart summed up as follows:—"Seize the knee or leg which maintains the dorso-anterior position or converts the dorso-posterior into a dorso-anterior—that is, take the further limb in dorso-posterior cases, the nearer in dorso-anterior cases. When, however, in dorso-anterior cases the breech is in the fundus traction on the nearer leg may convert it into a dorso-posterior, and when the breech is near the os in dorso-posterior position traction on the further leg may not alter the posterior position of the back after version, owing, again, to the want of the necessary obliquity in the pull."—Professor A. R. SIMPSON, the PRESIDENT, Dr. A. H. F. BARBOUR, and Dr. S. MCVIE discussed the paper.

Dr. A. H. FREELAND BARBOUR read a paper on the Set of the Pelvis in the Body (Inclination of the Brim apart from Posture) and its Obstetrical Significance. The inclination of the brim, instead of being described in reference to the horizontal plane, might be described with the subject lying on the back, in relation to a perpendicular let fall from the upper margin of the symphysis on a line passing through the promontory of the sacrum in the direction of the long axis of the abdomen. The advantage of this method was that instead of taking a plane outside of the body, which had no obstetrical significance and to which the relation of the pelvis changed with every posture, a fixed line within the body was taken. The angle of divergence of the plane of the brim (i.e., the plane passing through the conjugate of the brim) from this perpendicular was necessarily the same as the angle of divergence of the axis of the brim from the long axis of the abdomen. The smaller this angle—i.e., the more nearly the plane of the brim approached in direction with this line—the more did the pelvic inlet come into line with the long axis of the abdomen. The range of divergence in pelves which were obstetrically normal was considerable, varying from 40 degrees to 60 degrees. While a mean might be taken of 55 degrees, the variability of pelves from this, within certain limits, was a more important fact than the constancy of this angle which the mention of a figure was apt to convey. Though they were not in a position to gather up from clinical observation the results of this anatomical fact, owing to the difficulties of determining the size of this angle in the living subject, it was evident that its variability must exert a distinct influence on the engagement of the head and the driving power of the uterus in multiparæ. Dr. Barbour then discussed the work of Naegele, Weber, Meyer, and Prowchownik on the inclination of the brim clinically and the effect of posture on it. He also specially referred to the recent work of Dr. Sandstein who measured the height of the promontory above the symphysis in 28 cadavers, noting also the length of the conjugate. The true conjugate was found to range from four inches to 5·8 inches; and the height of the promontory from 3·7 inches to 5·4 inches above the symphysis. It was found that an increase in the length of the conjugate did not imply a proportionate rise in the level of the promontory, the cause of the variation in its level being the variability of the set of the brim which had a range of nearly 20 degrees.—The PRESIDENT and Professor A. R. SIMPSON made remarks on the paper.

CHELSEA CLINICAL SOCIETY.—At the annual meeting of this society, held on May 15th, Mr. J. Foster Palmer, the President, being in the chair, the following gentlemen were elected office-bearers for the session 1900–1901:—President: Dr. William Ewart. Vice-Presidents: Dr. C. C. Gibbes, Dr. C. J. Harrison, Mr. C. A. Morris, and Mr. A. F. Penny. Council: Dr. J. Barry Ball, Dr. J. Blumfeld, Dr. T. Vincent Dickinson, Mr. J. J. Marsh, Mr. J. W. E. Mortimer, and Mr. W. H. C. Staveley. Treasurer: Dr. A. Barry Blacker. Secretaries: Dr. Austin E. Cooper and Mr. R. L. Norman.—Mr. Foster Palmer, having expressed his hearty thanks to the vice-presidents and other members of the council as well as to the members of the society generally for their valuable coöperation and support during the last two years, proceeded to give a short valedictory address on some of the enemies—in a metaphysical sense—of the society, past, present, and future. These, which he characterised as demons, were Ignorance, Idleness, Superstition, and Fads founded on Folly. In accounting for the persistent vitality of some of these Fads he dwelt on the advantage Ignorance often possessed in being absolutely uncontrolled by the inconvenient knowledge of scientific facts and thus being able to give free scope to the powers of rhetoric and imagination. At the same time he thought the issues were still further obscured by the tendency to clothe their statements too much in technical or scientific language, and he advocated the cultivation of a simpler Anglo-Saxon diction without going quite so far as to adopt the powerful slang phraseology of John Hunter. The particular Fads referred to were as follows. 1. Anti-vaccination.—The undoubted facts of the remarkable diminution of small-pox and the rare occurrence of insusceptibility even now among the unvaccinated were alluded to and shown to be inadequately met by the prevalent objections that general sanitation had been the cause of the diminution and that the statistics had been falsified or wrongly interpreted. The case for vaccination did not rest wholly upon statistics. 2. Anti-vivisection.—The difficulty of tracing, and even of understanding, the progress of scientific research to those untrained in science was as great as that of grasping legal technicalities was to those untrained in law. On this subject, therefore, imagination and rhetoric had both run wild and it readily lent itself to both. The constant persistence of the Fad was partly due no doubt to the prevalent hatred of science and its professors in England (and in England alone), but also to some extent to the hyper-technical and scientific diction already referred to. Otherwise, surely Professor Huxley's argument, stated many years ago in the *Nineteenth Century*, would have convinced all who believed in the utility of experiments. If, he said, the alternative was actually put, and they had to choose between the sacrifice of a dog and the sacrifice of a man, which was it to be? There was no choice. To save the dog in such a case would mean murder, and all who encouraged the act by word or deed would be accomplices. This was how the experimenters viewed the case, and, sad as the alternative was, they had no choice. Most of the anti-vivisectionists, however, pinned their faith absolutely on the uselessness of experiments. Was there no way of convincing anti-vivisectionists of what was so patent to them? Most of them had seen life saved by the injection of strychnine, and all the applications of strychnine, as Sir T. Lauder Brunton says, were the direct consequences of physiological experiment. 3. Teetotalism.—Without definitely including this among the Fads Mr. Foster Palmer here ventured to take exception to some of the experiments quoted by Mr. Horsley on the ground that alcohol taken otherwise than as part of a meal (i.e., a good dinner) was taken in an abnormal and unnatural manner. It required neither argument nor experiment to condemn nips of alcohol taken on an empty stomach. Nor was rapidity of thought necessarily an absolute test of mental and physical health, or the occasional slowing of thought necessarily an evil as seemed to be assumed. The net result appeared to be that alcohol was not a stimulant at all, but was in reality a depressant causing a delusive feeling of stimulation. It was merely a change of names. "That which we call a glass of port, by any other name, &c." The actual physiological and therapeutical value of alcohol remained unaffected. Mr. Foster Palmer concluded by expressing a hearty wish for the future progress of the Chelsea Clinical Society.

WIGAN MEDICAL SOCIETY.—An ordinary meeting of this society was held on June 21st, Mr. R. H. Cowan, the

President, being in the chair, and there was a good attendance of members.—The President gave his presidential address on Some Experiences of Colliery Surgery. The address was an excellent one and was very interesting to the members.—Mr. Hugh E. Jones showed some naked-eye specimens illustrating the Anatomy and Pathology of the Ear, and supplemented the demonstration with some remarks on the Surgery of Middle-ear Disease.—A cordial vote of thanks was passed to the President for his address and to Mr. Jones for his interesting demonstration.—The President and Mr. Jones replied.

Reviews and Notices of Books.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D., F.R.C.P. Lond., F.R.S. Edin., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital, &c. Vol. I.: General Diseases. London: Macmillan and Co., Limited. 1900. Pp. 442. Price 7*s.* 6*d.*

THIS work is the latest addition to those publications which are not written by one author but issued under the editorship of a recognised authority, the various subjects being considered by different writers. The forms of disease are viewed more especially from the point of view of their clinical manifestations and treatment. The subjects of etiology and morbid anatomy are briefly summarised, but for further knowledge of these aspects of disease the reader is referred to other works. The aim of the editor has been to present such a picture of the several maladies as will conform to the appearances detected at the bedside and enable the observer rationally to administer such treatment as our art affords.

The present volume deals with "Diseases Excited by Atmospheric Influences" and "The Infections." The article on the first-named is written by the editor, Dr. W. H. Allchin, and includes the effect on the human body of heat and cold and also the phenomena produced by exposure to increased or decreased atmospheric pressure. A reference is also made to "lightning stroke." The chapter is a brief one but contains a large amount of useful information. It will be especially appreciated by those who desire to obtain a clinical knowledge of the conditions alluded to without having to glance through a long article containing a commentary on the various theories which from time to time have been brought forward to account for the phenomena encountered under such varying atmospheric influences. Professor G. Sims Woodhead contributes a most able paper on "The Infections." He gives a brief review of the general characters of the pathogenic micro-organisms and the toxic products of bacteria. Natural and acquired immunity are likewise discussed and also the question of "predisposition" to certain disease of bacterial origin. Details as to the general course and characters of the infective disease follow, especial reference being made to "mixed infections" which are by no means uncommon.

A series of articles then follows on the various "fevers." Many of these are of unusual interest, such as those on Tropical Diseases. Mr. James Cantlie writes on Cholera, Plague, Leprosy, Dengue, Beri-beri, Epidemic Dropsy, Oriental Sore, Dysentery, Malaria, Hæmoglobinuric Fever, and Kala-Azar, whilst an article on Mediterranean Fever is from the pen of the late Captain M. L. Hughes, R.A.M.C. Major W. G. Macpherson, R.A.M.C., contributes the article on Yellow Fever and Dr. Colcott Fox writes on Verruga and Frambœsia. This volume, therefore, should be particularly valuable to those practising in the climates where the above-mentioned fevers are met with.

Out of 45 articles it would be difficult to select any one for especial praise. All the authors seem to have carried out the intention of the editor and to have written their contributions from a clinical rather than from a pathological oint of view.

Dr. J. Rose Bradford is responsible for the articles on Mycoses and Rabies. In reference to the latter he urges that the Pasteur treatment should be applied as soon as possible if there are good grounds for suspecting the animal which attacked the patient to be rabid, and that the treatment should not be delayed until the diagnosis has been confirmed by the inoculation test, as thereby three weeks may be lost and the disease declare itself before protective measures can be carried out. Dr. F. F. Caiger contributes interesting articles on Diphtheria, Measles, Rötheln, Scarlet Fever, and Varicella.

One of the best contributions in this volume is that by Dr. W. Cayley on Typhoid Fever, and particularly interesting are his remarks on the "Complications and Sequelæ." Hæmorrhage and perforation naturally occupy the foremost place, but stress is also laid on the respiratory and nervous complications which may occur. With regard to the latter, peripheral neuritis and "typhoid spine" are mentioned as considerably prolonging the discomfort and sufferings of the patient. Dr. Cayley speaks highly of the "bath treatment' of typhoid fever, or when bathing cannot be employed of sponging. Details are given of both these methods which practitioners should have no difficulty in following.

Another instructive article is that on Acute and Sub-acute Rheumatism, by Dr. D. B. Lees. Attention will no doubt be directed to the section on Pathology. The remarks here found admirably sum up the views rapidly becoming accepted, that acute rheumatism is not essentially a joint disease. Dr. Lees says: "The true nature and origin of this disease are still unknown; but the facts already stated make it certain that no neurotic theory and no theory of perverted metabolism can fully account for the phenomena; these strongly suggest a microbic infection. The greater frequency and greater virulence of rheumatism in childhood remind the physician of the infectious fevers, and the occasional occurrence of sore-throat and of a characteristic eruption, with the pyrexia, are other points of resemblance. ..... No microbe has yet been proved to be the cause of rheumatism, but the same is true of such undoubtedly microbic diseases as measles, scarlet fever, whooping cough, and syphilis." Acute rheumatism and lobar pneumonia seem now to have taken their permanent places amongst "the infections."

No better author could have been found for the contributions on Variola and Vaccinia than Dr. S. M. Copeman and both these articles will well repay perusal.

There are numerous other well-known authorities who contribute to this volume, such as Dr. J. W. Washbourn (Erysipelas, Infective Endocarditis, Relapsing Fever, and Weil's Disease) and Dr. W. Hale White ("Fever"), but we have said sufficient to indicate the high level of excellence apparent in this first volume of a manual for which we predict success.

The Diseases of Women: a Handbook for Students and Practitioners. By J. BLAND-SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. Second edition. Crown 8vo. With 115 Illustrations (mostly original) in the text. London: Rebman, Limited. 1900. Pp. 473. Price 11*s.* net.

THE appearance of a second edition of this text-book has been taken advantage of by the authors to carry out a careful revision. They have succeeded in doing this without unduly increasing the size of the volume. Only 37 new pages have been added, while the number of illustrations remains the same. Amongst the numerous additions that have been made the chapter upon Vaginal Secretions and Vaginal Infections has been brought thoroughly up to date and now presents a very clear and succinct account of the important rôle played by the vaginal bacillus. The authors are inclined to overrate the importance of some of the subjects which they describe and in consequence the book is

somewhat ill-balanced. For example, 33 pages are devoted to a consideration of myomata of the uterus and only eight to that of carcinoma of the body and cervix of the uterus. The practice of describing epithelioma apart from carcinoma is not one that conduces to clearness in teaching students. Squamous carcinoma is quite correct and certainly a less misleading term. There are some curious omissions. Nowhere do we find any account of the method of introducing a Hodge's pessary. No mention is made of conservative operations under the surgical treatment of diseases of the Fallopian tubes and J. Taylor's classification of intra-ligamentary gestation is not given. Abdominal drainage after cœliotomy is described, but not vaginal, and nothing is said as to the great value of intermittent uterine contractions in the differential diagnosis of hydramnion. As might be expected, one of the best sections is that upon tubal pregnancy. It is interesting to note that of the authors' large series of cases the proportion of tubal abortion to tubal rupture has not been more than one to four. The important statement that no decidua forms in the tube in cases of tubal gestation is based upon the careful microscopical examination of 25 early gravid tubes. In the surgical treatment of myomata the operation of oöphorectomy is regarded as obsolete, to be replaced by conservative hysterectomy, one or other ovary being left. The opinion which we expressed in our review of the first edition of the book still holds good—viz., that the authors are inclined to neglect the medical treatment of gynæcological cases and that a student in reading the somewhat sketchy account of some of the most important major operations might be led to look upon them as easy and to recommend them without a due regard to their difficulties and dangers. In these days when operative gynæcology is so much to the fore we cannot help regarding this as somewhat of a defect in an otherwise excellent book. While we may not agree with all which the authors teach, yet we must admit that their practice is not wanting in boldness of conception or their views in lucidity of expression. Several of the new illustrations are of great interest, notably No. 17 and No. 18, a case of hematocolpos and hæmatometra in the newborn child compressing the urethra and ureter, and No. 87, a cystic ovary containing a calcified corpus fibrosum. By a diminution in the size of the pages the book is rendered easier to hold and the appearance of the print is improved. The index has been considerably enlarged and we must congratulate both the authors and the publishers upon the care that has been expended in the preparation of this new edition.

A Treatise on Nasal Suppuration; or, Suppurative Diseases of the Nose and its Accessory Sinuses. By Dr. LUDWIG GRÜNWALD of Munich. Translated from the Second German Edition by WILLIAM LAMB, M.D., M.C. Edin., M.R.C.P. Lond. With eight Illustrations in the Text, Two Plates, and One Table. London: Baillière, Tindall, and Cox. 1900.

THIS is a work of 316 pages with a copious bibliographical list of references and an index. The first part is general and deals with symptomatology and secondary diseases. The subjective disturbances of smell and sight together with mental processes are fully discussed, with such associated troubles as polypi, intracranial suppuration, and septicæmia. The methods of examination and prognosis are fully described.

The second part deals with special sources of suppuration, and here, as would be expected, the antrum and ethmoidal cells and the frontal sinus and sphenoidal cavity receive due attention.

A careful perusal of this book shows the labour bestowed upon it and impresses the reader with the fact that it is largely the outcome of the best sort of work—personal observation and research. Full lists are given from the author's actual experience of various conditions and symptoms which are of the highest practical importance. He has also endeavoured to combine pathological changes with clinical research and to explain their correlation, a matter of no ordinary difficulty, especially in this region of the body.

Speaking generally, we have read this book with a sense of disappointment. This is not due to the work itself, which is one of excellence, but to the fact that the author, though a man of unrivalled experience in this particular subject, has to confess to the almost insuperable difficulties which attend the diagnosis, especially the differential diagnosis, of sinus suppurations, and the too often tedious and negative results of treatment. We have often experienced these difficulties, and the clouds of doubt and difficulty which surround them are not lifted from our path by Dr. Grünwald's book. This wise and skilful observer does not hesitate to tell us that he has experienced cases of chronic antral empyemata which are incurable by all ordinary methods—a striking contrast to the "universal cures" claimed by some observers in this and other countries. In discussing the diagnosis of latent frontal empyemata a close reader will see that in the author's mind certain doubts arise as to the value of catheterisation and the position of drops of pus in the nasal chambers, and we are driven to the conclusion that a small exploratory opening is often needful to settle a vexed and difficult question.

The author thinks highly of the method of "damming back" certain areas of the nose in making differential diagnosis, but this again must in practice be difficult and very likely to lead a too confident observer totally astray.

The value of this book consists in its obvious honesty and in the wealth of clinical observation submitted. A close study of it will show how neglected the subject of nasal suppurations has been in the past and what a rich field for diagnostic research and improved treatment lies open in the future.

LIBRARY TABLE.

Burdett's Hospitals and Charities, 1900. By Sir HENRY BURDETT, K.C.B. London: The Scientific Press, Ltd. Pp. 958. Price 5*s*.—The eleventh issue of this useful book of reference is in no way behind any of its predecessors. To anyone who wishes to know about hospitals, as to their management, income, or the medical staffs and their hours of attendance, we commend the work as a mine of information. From the introductory chapters we learn that, excluding St. Bartholomew's Hospital, 75 of the London hospitals have invested property amounting to upwards of £4,000,000. Of these 75, 35 have invested property amounting to less than three years' ordinary expenditure, 21 have funds invested amounting to from three to five years' ordinary expenditure, and 18 have invested funds amounting to more than five years' ordinary expenditure.

My Diocese during the War. By the Bishop of NATAL. London: George Bell and Sons. Pp. 266. Price 6*s*.—This is in no sense to be taken as a deliberately thought-of comment upon the events of which it treats, for the book is merely a transcript of portions of Dr. Baynes's daily diary. But as notes of the observation of an intelligent and thoughtful civilian, of one who, owing to his official position, was affected to a far wider degree, and in even more distressful ways, than the ordinary civilian, the book is well worth reading. The notes go down to the end of April. Among the illustrations are some reproductions of drawings by the Bishop and also some photographs by Mr. Clinton Dent, including the views of the Boer trenches at Magersfontein which we had the privilege of publishing in our issue of June 2nd.

JOURNALS.

Records from General Practice. By J. KINGSTON BARTON, M.R.C.P. Lond., M.R.C.S. Eng. London: John Bale, Sons, and Danielsson. June, 1900. Pp. 84. Price 2*s.* 6*d.*—Few general practitioners can find time to take written notes of, and observations upon, their patients' cases, and there is no doubt that much clinical information is lost thereby. Mr. J. Kingston Barton has had the perseverance to keep a record of a large number of cases during the last 20 years and now has formed the very praiseworthy intention to publish some of them. The first instalment appears in the form of a periodical and others will be published "from time to time." The first number contains the report of several interesting cases, notably a summary of 50 cases of acute abdominal affection, including 32 cases of appendicitis and seven of gastric ulcer. There are also some instructive observations on conditions of the teeth—Erosion of the Teeth in Children, the Ratio of Occurrence of Deficient Enamel, and Early Decay of the Teeth. The last article in the book is an appropriate one for this time of the year—viz., Holidays, with Notes on the Life-History of the Salmon. Mr. Barton may be congratulated on his publication and we wish it every success.

Edinburgh Medical Journal.—The June number opens with a long paper by Dr. Louis Cobbett entitled, "Has Antitoxine reduced the Death-rate from Diphtheria in our Large Towns?" A consideration of the statistics supplied by nine large towns in Great Britain for varying periods of years shows that a remarkable fall, both in the diphtheria death-rate and case mortality, has occurred since 1894. Several causes may have contributed to this change, but there appears to be every reason for believing that the most efficient of all was the introduction of diphtheria antitoxin. Dr. Cobbett says that the diphtheria bacillus may remain in a dangerous state for a very long time in the mouths of those who have recovered, so that convalescents can be declared free from infection only after the disappearance of the bacillus has been ascertained, and not at the end of any arbitrarily selected period such as three weeks. Altogether there are five original articles.

Scottish Medical and Surgical Journal.—In the June number Professor A. R. Simpson of Edinburgh writes on the application of the steam of boiling water to the endometrium. This may be done in two ways, either by leading the steam through a fenestrated catheter into the uterine cavity (atmokausis) or by passing into the uterus a non-fenestrated catheter heated by steam which is not allowed to escape into the uterus (zestokausis). In the Edinburgh Royal Infirmary Professor Simpson has used the treatment in 14 cases of endometritis with menorrhagia or metrorrhagia. It was always carried out under chloroform narcosis and was usually continued for 45 seconds. Of the 14 cases 11 were cured and three were improved. In a long paper, entitled "Heredity in Disease," Dr. G. Archdall Reid speculates on some of the far-reaching effects of various maladies, such as the extinction of certain uncivilised populations through the spread of tuberculosis among them after the advent of superior races.

Dublin Journal of Medical Science.—The original articles in the June number are on Toxins and Antitoxins, by Dr. A. C. O'Sullivan; on Commercial Pepsin, by Sir Charles A. Cameron; and on the Dublin Method of Effecting the Delivery of the Placenta, by Dr. Henry Jellett.

Mercy and Truth.—The June number was issued before the recent outbreak of hostilities in China. It contains articles on the Work of Medical Missions in Persia, by Dr. D. W. Carr, of Julfa; on Overcoming Obstacles in China, by Mr. L. G. Hill, of Pakhoi; and on Opening a Way for the Gospel, by Dr. Mabel Poulter, of Hok-Chiang, South China.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE FRIENDLY SOCIETY.

THIS society, which was founded in 1884 with a somewhat multifarious programme, has now become, as the result of experience, a sickness insurance society exclusively so far as the transaction of new business is concerned. In making this change the directors have, we think, been well advised, for the accumulation of funds to provide deferred benefits is an operation which cannot be carried out economically on a small scale, and this society, therefore, has never been in a position to compete favourably with the better sort of life assurance offices in this department of its work. The annuity department has accordingly been closed and is now being conducted with a view simply to the working out of subsisting contracts. The business of life assurance is carried on by means of a sort of agency arrangement, by which proposals reaching the society are handed on to a particular office, but the connexion between the society and the insurance office is in no sense organic and, indeed, not, as we understand, particularly close. We think that a connexion of that sort cannot be too slight, for it is a serious responsibility to advise a man who is proposing to effect an insurance on his life as to the choice of an office, and the method upon which the society proceeds does not seem to us to involve sufficient discrimination. It is certainly not desirable that the entire insurance business of the profession should be turned into one channel, nor is the office which most readily concedes a rebate from its premium rates likely to be the one which will make the best return to the policy-holder for the premium actually received. It cannot be too often or too impressively pointed out that the secret of good finance in life assurance is the cutting down of all expenditure other than that on benefits to members to the lowest possible percentage of the annual outgo. A rebate from the annual premium may indeed be classed as a benefit when it is made to the policy-holder himself, but it may be doubted whether in fact any benefit in that form is the monetary equivalent of the savings effected by those offices which, eschewing all costly forms of advertisement, are conducted with a view to the benefit alone of the insured members.

But it is no part of our purpose to criticise the choice which the society has made of a patron among the life assurance companies. It is with its own proper work of sickness insurance that we are more concerned, and here we have the satisfaction of saying that the seventeenth report recently issued to the members is entirely satisfactory. The members paid in premiums about £11,300, plus 10 per cent.—say, £12,430—and received in benefit just over £13,000. The difference is made up for the most part of interest upon the investments standing to the credit of this fund; for although these investments were drawn upon to answer the bonus distributed to the members in this "Bonus" year the amount coming from that source was no more than £250. Such a result is in the highest degree creditable to the management of the society and shows that in this department the members obtain their full money's worth in the form of benefit. If to the mere balancing of the account we add the priceless boon of an insurance scheme which carries the invalided practitioner over a period of sickness without any heavy demand upon his savings or other resources we see at once that the aid which this society renders is not to be measured by its mere money worth and that the presentation of a satisfactory balance-sheet, although indispensable, is the least of the claims which the committee are entitled to put forward for the recognition and gratitude of the profession.

The present annual report is accompanied by an actuarial report which does not call for any particular comment.

BRITISH MEDICAL ASSOCIATION, SOUTH-WESTERN BRANCH.—The annual meeting of the South-Western Branch of the British Medical Association was held at Torquay on June 20th. Mr. Paul Q. Karkeek read an interesting paper upon Pre-professional Education of the Medical Student. The secretary (Dr. H. W. Webber) stated that the branch had now a membership of 358. A vote of thanks was awarded to the retiring president, Dr. Mark Jackson of Barnstaple. It was decided that the next annual meeting should be held at Devonport and that Mr. G. Thom should be the president-elect. The dinner was held in the evening under the presidency of Mr. Karkeek.

THE LANCET.

LONDON: SATURDAY, JUNE 30, 1900.

THE crisis in North China, which is causing us such anxiety about the welfare of our countrymen, has also a sad side when considered from a humanitarian point of view. The Chinese, with all their boasted civilisation, have as regards the science and art of surgery and the knowledge and practice of medicine not advanced beyond empiricism. They have kept their healing art in the region of magic with its mythical rites and incantations. No savage tribe or unlettered people practises surgery or medicine in a more primitive fashion or invoke the powers of paganism with more zeal or veneration than do the Chinese. The consequence of this backwardness in medical education must have appalling results at the present moment, when thousands of Chinese are being wounded partly at the hands of their fellow-countrymen and partly by a foreign foe. And while these ignorant fanatics must be punished no medical mind likes to contemplate the idea of neglected surgical injuries. During the Chino-Japanese war the ambulance equipment of the Chinese was rudimentary in the extreme but at the present moment, when undisciplined hordes are being mowed down by Maxims the medical arrangements must be altogether discounted and the condition of the wounded terrible to contemplate.

At Tientsin and Hong-Kong schools of medicine have been established for several years past. At Tientsin LI HUNG CHANG, at the instigation of Dr. IRWIN, inaugurated a medical school some ten years ago and the British Government seconded a medical officer from the British army, Surgeon-Major F. S. HEUSTON, to take up the work of superintending the teaching in the institution. LI HUNG CHANG'S primary idea in establishing the school was to provide medical men trained in Western medicine for service in his army and navy. We use the word "his" army and navy advisedly, for it was only in LI HUNG CHANG'S province of Chihli, of which he was formerly Viceroy, that anything like a modern army and navy existed in China. In 1887 a college of medicine for Chinese was opened in Hong-Kong. The school was initiated and its regulations were drawn up by Mr. JAMES CANTLIE, and Dr. PATRICK MANSON was the first dean. The Viceroy, LI HUNG CHANG, was (and is still) the patron, and in the letter of his acceptance of the position this head and front of Chinese mandarinism, this impersonation of anti-foreign education, wrote that "he hoped that anatomy and chemistry would form a prominent part in the training of the students, for he held these sciences to be the basis of all true medical knowledge." The grasp of knowledge expressed in these words by a man ignorant of science, steeped in Chinese prejudices and old-time mythology, is notable. The Hong-Kong and Tientsin schools are the only attempts in China at systematic teaching of modern medicine and surgery, and the Hong-Kong school especially has been attended with considerable success. The teachers are unpaid; the medical men in the colony have for 14 years now given their services willingly and gratuitously, but as yet no Government aid has been given to support this eminently useful work. Ambulance work was taught in Formosa by Dr. W. W. MYERS, and in Hong-Kong a bearer section was inaugurated, equipped and maintained by Mr. CANTLIE from amongst the students of the College of Medicine. This bearer section was attached to the Hong-Kong Volunteer Artillery, and has done excellent work.

With these exceptions there are no medical schools in China. There are Chinese practitioners in plenty, but their knowledge and practices would afford material for a comic opera rather than for serious consideration. A plaster to mend a fractured leg; a live duck split up and applied to the skin for a poultice; duck's blood smeared on the temples, face, and neck to relieve fever and headache; and "dragon's" blood and deer's horn to cure leprosy are examples of the practice of medicine in China, with which is combined the burning of printed emblems purporting to beseech the Evil One to ward off illness and death. The medical missionaries from Great Britain and the United States of America have done a great deal of excellent hospital work in China; but it is perhaps unfortunate that the medical work has been accompanied in almost every instance by religious proselytising. There seems little reason to doubt the fact that the progress of medicine and, what is still more important, the progress of general education and science and even of civilisation, have been thwarted by the fact that the converts are in most instances tinged with conversion to a new religion. The young Chinese trained in medicine are almost all Christians, and the fact is deterrent to the advance of medical science amongst the Chinese. We believe that were science to be taught to the Chinese in a purely secular way Christianity might follow, but it seems impossible to civilise the Chinese by means of Christianity. The Japanese have become civilised irrespectively of Christianity. Encourage secular Western education and especially medical science in China, send Chinamen thus trained into every centre and town of China, and a leaven will be introduced and a diffusion of knowledge spread through the length and breadth of China which will in the near future bring many good things in its train—among others, we truly believe, a considerable conversion of Chinamen to Christianity.

WEDNESDAY, June 20th, 1900, should be a memorable day in the history of Newcastle-on-Tyne, for on that day the new Infirmary was opened. The men of the north do nothing by halves. When they work they work, and when the vast and varied industries of the neighbourhood cease they play with equal energy. The laying of the foundation-stone of the new Infirmary—one of the many outcomes of the Diamond Jubilee of QUEEN VICTORIA—by the PRINCE OF WALES was an occasion which called forth all their enthusiasm. The huge works of the district were closed, and the resources of the North-Eastern Railway

were strained to bring the population of the counties of Durham and Northumberland into the decorated streets of Newcastle.

The Royal Infirmary of Newcastle has always been a conspicuous institution of the district. For a century and a half it has existed and has been served by physicians and surgeons who have left their mark on the history of the various branches of the healing art, while the members of its present staff of officers have entered thoroughly into the spirit of modern surgery and medicine and fully keep up the reputation of their predecessors. The proof of this lies in the fact that they have neutralised to a great extent the evils inseparably connected with ancient structures, so that the results of the work done were as excellent as when the Infirmary was new. This is a happy omen for the future when the staff will be working in the new building the foundation-stone of which has just been laid in the name of QUEEN VICTORIA by His Royal Highness the PRINCE OF WALES. The ending of an old hospital and the creation of a new one by the employment of all that is best in modern hygiene and medicine are no light undertaking. The promoters of the scheme for rebuilding Newcastle Infirmary have been favoured by the generosity of the citizens of that town, by public respect for the institution, by the high reputation of the staff, and by the harmonious coöperation of the Mayor and Corporation with the committee and staff of the Infirmary. The movement in Newcastle has now received an immense impetus from its Royal associations. The personal popularity of the PRINCE OF WALES is only second to that of Her Majesty the QUEEN. The PRINCE OF WALES has achieved for himself the enviable reputation of being a friend of hospitals—which means the friend of many friendless and truly pitiable people whose sickness is complicated with poverty. We have not always agreed with all that has been done under the name of His Royal Highness for the good of hospitals, but it is impossible not to recognise his great interest in these institutions and his efforts to eliminate all that is objectionable in their administration and to make them wholly beneficent influences. So far it has been chiefly in regard to metropolitan hospitals that the benevolent labours of the PRINCE OF WALES have been exercised, but his Newcastle visit will show that he has an equal interest in provincial hospitals. The PRINCE OF WALES went through the onerous duties of the occasion in a perfect style, his clear, short, pointed speeches being models of public speaking for such purposes. Nothing seemed to be omitted, nobody was forgotten. Even when the programme was defective he filled in the gaps, for he noticed the absence of the name of the Mayoress from the toast list at the luncheon. The munificent donor of £100,000—alas, now dead—and the generous contributions of the working men, amounting to £20,000, were alike remembered. He made it clear, not only by his words but by his whole demeanour, that he was perfectly at home in promoting the erection of a new infirmary. They inadequately judge the PRINCE OF WALES who fail to note the strong elements of benevolence and common-sense which characterise his public actions not less than his public speeches. His influence and his example may be the very saving of our voluntary hospital system, and they have never been more happily or properly used than in his visit to Newcastle.

It is no detraction from all this praise to say that the PRINCE OF WALES made it clear throughout that he was really representing his illustrious—or as he preferred to say his "dear"—mother. The sensible community of Newcastle could well understand the various reasons in this eventful year why the QUEEN could not undertake this work in addition to all the exceptional duties which have devolved upon her. The loyal and affectionate words used repeatedly by the PRINCE OF WALES on this subject went straight to the hearts of those whom he was addressing; and they were as grateful to the QUEEN for nominating the PRINCE as they were to His Royal Highness for coming so gladly and for bringing with him the PRINCESS OF WALES and their daughter, PRINCESS VICTORIA.

THE application made recently in the Queen's Bench Division of the High Court of Justice in the case of Bynoe *v.* the General Medical Council revives a story which attracted some attention a few years ago of a medical practitioner who if he is not a cunning and persistent criminal is one of the most cruelly wronged and unfortunate of men. The subject of the application was Mr. C. A. BYNOE, a medical man practising in London who in 1892 was convicted of forgery at the Old Bailey before Mr. Justice CAVE and sentenced to nine years' penal servitude. The fact of his conviction was in due course brought before the General Medical Council and his name was removed from the Register. During his incarceration continual efforts were made by him and by his relatives on his behalf to establish his innocence, which he had always strenuously asserted. New evidence and arguments were laid before the Home Office, but that department declined to advise either a "free pardon" or an abbreviation of sentence. But now that Mr. BYNOE has served his sentence in full he still maintains his innocence and hopes to establish it. With this view he sought the aid of the High Court that the Court might by its order compel the General Medical Council to hear his application to have his name restored to the Register. Such a proceeding would, of course, involve the re-opening of the question of his guilt, the reviewing of the evidence given at his trial, and the hearing of the new evidence which he is now prepared to adduce in modification or contradiction of testimony which had told against him. This order the Court declined to make, Mr. Justice GRANTHAM saying that to do so would place the General Medical Council in the position of judge and jury in a most complex and difficult case. Mr. Justice CHANNELL said that the Council had a discretion to re-hear the case, but there was no duty upon them to do so, and therefore the Court would not grant a *mandamus*.

That the General Medical Council, had it undertaken or had it been compelled to hold the proposed inquiry, would have had an exceedingly arduous and difficult duty to perform will be gathered from the following by no means exhaustive story of the case. Mr. BYNOE and his mother previously to his conviction kept a boarding-house at 1, Endsleigh-gardens, while he

practised at a surgery in the neighbourhood. At this boarding-house at one time resided a Miss POTTS, a lady of private means and intemperate habits, and a Mr. KIRK, her friend. After both these persons had left the boarding-house letters continued to arrive for Miss POTTS which were not forwarded to her, and some of these contained warrants for the payment of dividends upon stocks and shares owned by her. Certain of the dividend warrants which came in this way to 1, Endsleigh-gardens, and which bore Miss POTTS'S name forged upon them, were undoubtedly cashed by someone. Again, someone, presumably the same unscrupulous person, with considerable ingenuity wrote in Miss POTTS'S name to the companies issuing the warrants and stating that Miss POTTS had lost her certificates asked for duplicates of these documents to be sent to 1, Endsleigh-gardens, and forwarded the required indemnities. On these indemnities appeared the signatures of Miss POTTS and of her friend Mr. KIRK, both forged. The person who obtained the duplicate certificates also sold Miss POTTS'S holding in one of the companies, and to help him to procure an open cheque for the amount this person, a man, took a woman who personated Miss POTTS to the office of the outside broker who sold the stock. The cheque was given as asked for and was promptly exchanged for notes, while the notes were on the same day converted into gold. It was not denied by Mr. BYNOE that he knew of the dividend warrants and other documents coming to his house, and that more than one of the envelopes relating to Miss POTTS'S business had been opened there. He asserted, however, and, we believe, still maintains, that he forwarded all Miss POTTS'S correspondence, with the exception of a certificate found upon him (as to which he offered an explanation), to the care of Mr. KIRK at a club of which that gentleman was a member. Mr. KIRK appeared as a witness at the trial of Mr. BYNOE, Miss POTTS being then dead and he being her residuary legatee and executor. He denied having received any of the letters containing the dividend warrants. Beyond this it was proved at the trial that the prisoner was in more or less embarrassed circumstances. The secretary of the London and Universal Bank gave evidence of Mr. BYNOE having come to that bank on three occasions with relation to dividends of Miss POTTS. He professed himself, according to the witness, to be acting on her behalf and he obtained money for the warrants. The witness admitted no doubt as to Mr. BYNOE'S identity. The accused was further identified by two witnesses from the outside broker who sold the stock referred to and who saw him on two occasions with regard to payment for it; while two well-known handwriting experts gave their opinion that the documents said to be forged were written by the writer of documents which were acknowledged to be in the handwriting of Mr. BYNOE. (With regard to expert evidence of this kind it will be remembered that it is intended for the guidance of the jury, who, however, have the veritable documents before them, with every opportunity of forming their own opinions from the study of them.) In short, so strong was the case against Mr. BYNOE upon the depositions taken before the magistrate that the two very experienced counsel engaged to defend him—Mr. C. F. GILLand Mr. A. H. BODKIN—urged him to plead guilty. This he resolutely refused to do, maintaining that Mr. KIRK was responsible for the forgeries. In these circumstances Mr. GILL and Mr. BODKIN, without absolutely retiring from the case, remained in court and took no active part in it further, we believe, than making suggestions to Mr. BYNOE while he defended himself. This very unfortunate course, taken no doubt in consequence of the prisoner's determination to accuse Mr. KIRK of the forgeries, prevented the witnesses from being properly cross-examined. Mr. BYNOE was convicted, and the sentence passed on him quite possibly owed much of its weight to the endeavour to implicate an innocent man.

It will be seen from the above brief account of the case that Mr. BYNOE, if not guilty, was the victim of a most extraordinary combination of damnatory circumstances. It is, however, a fact that at his trial he endeavoured to influence the jury by producing an anonymous letter which he had received in prison, and which professed to come from the actual forger; while it is also a fact that a young woman is now in existence who states that she wrote that letter to Mr. BYNOE and that she personally wrote the forged signatures of Miss POTTS testified by the two handwriting experts to have been written by the prisoner and that she went to the broker's office and personated Miss POTTS. This young woman, who is of the humbler classes, declares that she committed the forgery ignorant of the import of her act, at the instigation of a man of whom she then was fond, who was not Mr. BYNOE and who has wholly disappeared; and the fact that she was at the date of the forgeries on friendly terms with a man answering to her description is borne out by her father. It is, apparently, the theory of those now interested on Mr. BYNOE'S behalf that the crime with which he was charged was committed not by Mr. KIRK, but by someone who had intercepted the warrants said to have been forwarded to Mr. KIRK. It seems clear that if this young woman had given evidence at the trial that she was the author of the forgeries the jury would probably have believed her and would have acquitted Mr. BYNOE; while if they had further believed that she personated Miss POTTS at the broker's office in company with a man not Mr. BYNOE (or if the evidence insp'red them with doubt, which would have been sufficient) they would have also acquitted him of uttering the forged documents, knowing them to be forged. The matter at present stands as follows. Many persons in a position to judge, including, we believe, officials at the Home Office, are of opinion that the experts' evidence in the matter of the handwriting was wrong and misleading, and that the young woman was possibly the writer of the forgeries. What, however, the General Medical Council would have been called upon to decide was a much more complicated question, involving issues far too numerous and intricate to be given even in outline. They would have had to say whether Mr. BYNOE, who, on his own showing, must have acted with almost incomprehensible imprudence and want of good sense, had been the victim of a concatenation of compromising coincidences as well as of a foul conspiracy. It is impossible to express enough sympathy for a man who, albeit in consequence of his own unbusinesslike conduct, becomes the victim of such a crime—for the guilt, if Mr. BYNOE be innocent, must have been deliberately thrown

upon him. It is also impossible not to wish that if he be innocent facts entirely exculpating him and inculpating the real offender may speedily be made known to his friends and by them to the Home Office. It is, however, another matter to wish the General Medical Council to hold an inquiry into such a story, and to sift evidence, already sifted by the Home Office, with a view to either confirming or disagreeing with the decision arrived at by the Home Secretary and his advisers. It was a foregone conclusion that the High Court would not order the General Medical Council to undertake such a task, and we think that the Council have shown proper discretion in not acting upon their own initiative in the matter of rehearing the case.

Annotations.

"Ne quid nimis."

THE TREATMENT OF OUR SICK SOLDIERS.

MR. W. BURDETT-COUTTS, in the capacity of a special correspondent to the *Times*, has sent to that paper a lurid account of the inadequacy of the preparations made for the medical care and nursing of the sick in our large army in South Africa. The amount of sickness which has manifested itself in all our camps has for some time been the subject of serious consideration among medical men, for, as we had occasion to remark a fortnight ago, the lists of daily casualties demonstrate only too plainly that we have not yet solved the problem of protecting large bodies of troops from the ravages of such diseases as enteric fever and dysentery. Mr. Burdett-Coutts's letter will produce upon the public more than the impression that medical knowledge is at fault in the presence of certain problems of epidemiology. He has levelled an indictment against the War Office, the gist of which is that no proper arrangements of any kind have been made for the care of the large number of sick which should have been expected in an army of 200,000 men. Who is to blame and to what extent, as well as how far all the statements are accurate, will certainly be discussed by the public and we trust by Parliament; and we may be allowed to hope that the department which has covered itself with glory in all its arrangements for dealing with the wounded will have been found not to have broken down so completely as Mr. Burdett-Coutts believes in its management of the sick. Probably Mr. Burdett-Coutts is ignorant of the extent to which the Commander-in-Chief's lightning strategy has dislocated the plans of the Royal Army Medical Corps. One thing is certain: for the War Office to quote any eulogistic words of Sir William Mac Cormac and Mr. Treves uttered upon their return two months ago from the seat of war will be no complete answer to the charges. The experiences of Sir William Mac Cormac and Mr. Treves enabled them to express very definite opinions upon the treatment of our wounded in South Africa, upon the way in which battle-fields were stripped, and upon the heroism of many members of the Royal Army Medical Corps, but the vast epidemic of typhoid fever now prevalent did not come within their purview. But when Sir William Mac Cormac and Mr. Treves have spoken of the same things as Mr. Burdett-Coutts medical men will know who is the more likely to have the necessary equipment for giving us the truth.

WORKHOUSE OFFICIALS AT VARIANCE.

EXCELLENT indeed has been the result of the operation of the circular upon workhouse administration issued by the Local Government Board in the year 1895, reference to which was made in THE LANCET at the time and on subsequent occasions.[1] The common practice at that time in workhouses all over the country for paupers to be employed to perform the duties of nurses in the sick and lying-in wards, or in any other part of the workhouse, has been abolished, and paid and qualified nurses and assistants have succeeded them. But the Local Government Board also insisted on the appointment of a superintendent nurse who should have sole control over the infirmary wards. The matron was still to be the matron of the workhouse, not excluding the infirmary, and the result has been in not a few cases that there have been differences of opinion between the nurses on the one hand and the master and matron on the other. At the East Preston Workhouse in West Sussex a long series of complaints preferred by the superintendent nurse has recently been investigated by the guardians, who expressed the opinion that the friction was only what might be expected when the Local Government Board insisted on the guardians appointing two authorities in the workhouse. At all events, unpleasantness of this kind amongst officers does not conduce to the thorough discharge of their respective duties. All the officers concerned have been supplied with a copy of the guardians' report.

THE ACCIDENT AT SLOUGH.

MR. W. BRAMWELL BOOTH, writing to the *Times* of June 25th, makes a sensible suggestion—namely, that there should be a third man on the footplate of the engine of an express train who should act as look-out. Mr. Booth argues that an express train should, like a steamship, have a captain who should keep a look-out for signals and who should issue orders to the engineers—who, in short, should let the driver drive. This is to our minds an excellent suggestion and so simple that, like most simple things, it is a wonder that nobody seems to have thought of it before. Of course, it would cost money, but we are sure that no railway shareholder would object to a slightly diminished dividend if he knew that by that means increased safety would be afforded to the travelling public and a necessarily terrible strain taken off the minds of a very noble and arduously worked set of men. Only the innovation should be made compulsory, if made at all, upon every company. The custom of running past distant signals in the hope that the home signal will be clear, or if not that the breaks will pull the train up, seems far too common and should be severely put an end to. In this particular accident, however, there was no intentional running past the signals. The driver in his evidence stated that he never saw the signals and must have lost himself. Nothing can foresee or prevent these occasional failures of mental power. They happen to the greatest minds, as for instance, to Napoleon at Waterloo in the great cavalry attack.

THE EXPEDITION OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE TO BRAZIL AND THE UNITED STATES.

THE expedition which has been organised by the Liverpool School of Tropical Medicine for the purpose of investigating the causes of yellow fever in the United States and Brazil will have the coöperation of the British Government. The committee of the school have received an intimation from the Marquis of Salisbury that he had asked the British Ambassador at Washington and Her Britannic Majesty's consul at Parà to obtain all possible facilities from the United States' and Brazilian authorities on behalf of the expedition. It is also pleasing to find that official invitations to the expedition to

[1] THE LANCET, April 13th (p. 945) and May 25th (p. 1326), 1895.

visit Washington have been received from the heads of the Medical Departments of the United States of America, and to visit Baltimore at the instance of the authorities of the Johns Hopkins University. The expedition, which consists of Dr. H. E. Durham (Grocers' Research Scholar) and Dr. Walter Myers (John Lucas Walker Student), both of Cambridge University, sailed from Liverpool on Tuesday, June 26th, for Canada, and will proceed thence to Washington and Baltimore. After conferring with the bacteriological experts in those two cities the expedition will proceed to New York and will sail from that port to Parà, their subsequent movements being guided by circumstances. Advantage will be taken of the opportunity to test still further the work of the Liverpool school in malarial fever carried on by Major R. Ross, I.M.S., and also to prosecute the study of dysentery. A public meeting was held at the Exchange Buildings in Liverpool on June 25th, which was presided over by Mr. Alfred L. Jones, the chairman of the Liverpool School of Tropical Diseases, to consider "what action should now be taken to press upon the Government the necessity for the amelioration of the conditions of life in West Africa and other tropical countries by improved sanitation, better water-supply, segregation of Europeans, clearance of bush near towns, the introduction of light railways to the mountainous districts, and such other means as science may direct." A motion to this effect was carried unanimously in an influentially attended meeting. It was also proposed: "That the Liverpool Chamber of Commerce be requested to coöperate with the School of Tropical Diseases, and to ask the Government to receive a joint deputation on the subject." In the evening, on the invitation of Mr. Alfred L. Jones, a company of gentlemen sat down to a banquet at the Adelphi Hotel to do honour to the members of Liverpool's third expedition to the tropics who were about to sail for the Amazon. The toast of "The Yellow Fever Expedition" was proposed by the chairman and seconded by Professor Osler of Baltimore, to which Dr. Durham and Dr. Myers suitably responded. The chairman referred to the high esteem in which the late Miss Kingsley was held by West African natives and he suggested that the proposed hospital in Liverpool for the treatment of malarial diseases should bear her name. Mr. Jones generously offered to head the subscription list with a donation of £1000. Other subscriptions, amounting to £1200, were also promised towards the erection of the hospital. It is proposed to build the hospital on some waste land near the Royal Southern Hospital.

FATAL CASES OF PTOMAINE POISONING.

ON June 19th an inquest was held at Plymouth touching the death of Mabel Elizabeth Starling, aged 20 years. This was the second death in the family as alleged from the same cause. A week previously to her death the deceased with eight other members of the family partook of pork for dinner. Of these nine persons "eight suffered from symptoms of poisoning, two had died, and one escaped entirely. Mr. Starling suffered in the slightest degree; Mrs. Starling suffered severely, but the symptoms went off quickly. One son escaped for 24 hours. The other children were taken ill at varying periods of from two to four hours after dinner but recovered during the night." The family had partaken of fish (gurnet) for breakfast, but since none of them were affected until after dinner it may reasonably be concluded that the fish was not the offending agent. No other cases of persons who had eaten pork from the same carcass being attacked have been reported, and since there was direct evidence that the meat when delivered to the family was to all appearance fresh and good it would seem in the highest degree probable that it became subsequently infected with micro-organisms. It seems strange that a number of people who have eaten of the same poisonou article of diet should be affected so differently as regards the period of onset of the symptoms, their degree of severity, and their duration. It must be borne in mind, however, that food may be poisonous in two ways: (1) from the direct irritant and toxic effects of animal alkaloids developed by the action of germs before the food is ingested; and (2) by the germs themselves setting up an infective process in the body and liberating during their culture the alkaloidal poison, just as in acute specific infective fevers. Writing on this subject Sir George Buchanan remarked: "The phenomena which were spoken of as food-poisoning are claiming an ever-growing evidence to be regarded as true infective diseases, as much so as was scarlet fever or tuberculosis. They have not been generally admitted into this rank (1) from the circumstance that some of them have seemed to be wanting in the incubation period, and (2) because they are rarely recognised as being transmissible from person to person." Thorough cooking kills the germs, but it does not destroy the animal alkaloids which they have formed. The poisoning is then a chemical one. On the other hand imperfect cooking fails to destroy the organisms, and so the individual is subjected to two influences—the developed alkaloid and the infective or fermentative process in his body. Now it is well known that the tissues, organs, and secretions of some people are more susceptible to the action of infective organisms than are those of others—"vulnerability," as it is termed—and thus it becomes abundantly clear why the results of implantation of the organisms should vary so extremely in different individuals. Moreover, as regards simple poisoning by animal alkaloids the effects will vary with the dose, with the empty or replete condition of the stomach, and with the rapidity with which the alimentary tract gets rid of the offending matter. Unfortunately, articles of diet—especially meat—which have become charged with animal alkaloids not seldom are free from noxious smell, and thus the warning given by the odour of putrescence is wanting. To avoid dangerous and even fatal consequences the meat should be examined to see that it is quite fresh and free from disease. It should be cooked early and thoroughly, and whilst kept in the raw condition it should be placed in healthy surroundings.

THE LECTURERS AND LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND FROM 1810 TO 1900.

AMONG the various preparations which have been made in view of the now fast-approaching centenary of the Royal College of Surgeons of England a great many details of much historical interest will be found in a list of lecturers and lectures compiled[1] by Mr. Victor G. Plarr, the accomplished librarian of the College. The Hunterian Professors, by whom the "Museum Lectures" were delivered, have invariably been men of eminence in their respective subjects, and many of their discourses have been published in THE LANCET, the latest example being Mr. A. W. Mayo-Robson's three lectures on the Surgery of the Stomach, which appeared in our columns on the 10th, 17th, and 24th of March last. Surprising changes have occurred in the science and art of surgery and in most of the allied branches of knowledge since these lectures were instituted at the instance of the Government when the Hunterian collection was handed over to the College in the beginning of the present century. The first Museum Lecture was delivered on Feb. 13th, 1810, between which date and the following May 10th two courses of 12 lectures each were delivered, one on Morbid Parts and Surgery by Sir William Blizard and the other on Comparative Anatomy by Sir Everard

[1] Printed b Taylor and Francis, Red Lion-court, Fleet-street.

Home, Hunter's brother-in-law, assistant, and executor, who made use of Hunter's manuscripts committed to his care and afterwards burnt the originals. From that year to 1839 inclusive 21 courses of lectures on surgery were delivered successively by John Abernethy, Sir Anthony Carlisle, James Wilson, Sir Benjamin Brodie, Thomas Chevalier, Sir Charles Bell, George James Guthrie, Sir Henry Earle, and Frederick Tyrrell. A long interval then ensued, but in 1868 the lectures were resumed and have been delivered regularly ever since. The other division of the Museum Lectures—namely, the course on Comparative Anatomy—underwent fewer vicissitudes, and the able discourses of Joseph Henry Green, Sir Richard Owen, Thomas Henry Huxley, Sir William Flower, William Kitchen Parker, and others have worthily upheld the scientific position of British anatomists. Mr. Plarr does not confine himself exclusively to the Museum Lectures, but gives lists also of the Arris and Gale lecturers, the Erasmus Wilson lecturers, the Bradshaw lecturers, and others. His pages are of considerable interest to ourselves from his frequent reference to the use which he has been able to make of THE LANCET in tracing the details of the lectures in the first half of the century, and from his discovery that among the pupils, tickets issued in 1816 for Sir William Lawrence's course on Comparative Anatomy No. 144 G was assigned to Thomas Wakley, the Founder of THE LANCET.

PERFORATING ULCER OF THE DUODENUM.

THE *Boston Medical and Surgical Journal* of May 3rd contains an exhaustive paper on this subject by Dr. R. F. Weir. Summaries of all the reported cases (51) in which an operation has been performed are appended. The symptoms of a duodenal ulcer are, as shown by Schwartz, frequently very slight. In 20 out of 25 cases of perforation the patients had been apparently in good health or had been so slightly indisposed that they had not sought medical advice. In only five cases were there previously gastric symptoms. One patient was thought to be suffering from dyspepsia and two from gastric ulcer. The following are the usual symptoms of duodenal ulcer. The pain when characteristic occurs several hours after eating. It is situated just below the gall-bladder and may reach to the median line or to a level with the umbilicus. Frequently it is absent. Occasional pressure, particularly over the region to the right of the twelfth dorsal vertebra, elicits pain. Vomiting was present in 17 per cent. of the cases. It is of diagnostic importance if it occurs one hour or several hours after a meal. The vomited matter consists of disintegrated food which is often mixed with bile and blood. Jaundice is rarely present; it results from duodenal tumefaction or from cicatricial contraction of the orifice of the bile duct. Hæmorrhage occurs in about one third of the cases of non-perforating ulcers. Bleeding may take place from the mouth or rectum and may prove speedily fatal. The blood discharged by the bowel is usually tarry, but it may be of a bright hue. When perforation occurs great pain is usually felt in the epigastrium or to the right of that region. Occasionally it has been observed at the umbilicus and in the left side. Vomiting often follows the pain; it occurred in 28 out of 34 cases. Peritoneal symptoms rapidly develop with a tendency in some cases to be localised in the upper abdomen and on the right side, for fluids escaping from the duodenum flow at first between the liver and colon and thence along the ascending colon. In the diagnosis of perforation the situation of the early or initial pain in the right hypochondrium and the previous history of dyspeptic symptoms are of great importance. The treatment of duodenal ulcer is similar to that of gastric ulcer. If the diagnosis has been narrowed down to perforation of the stomach, duodenum, or gall-bladder, an incision from four to six inches in length should be made along the edge of the right rectus muscle, not reaching much above the edge of the liver. Dr. Weir recommends that this incision should be supplemented by a transverse one in its upper third, toward the median line, permitting division of the fascia covering the right rectus muscle, which latter is to be pulled to the left, exposing its posterior sheath and peritoneum, which are to be divided. A duodenal perforation is usually found on the anterior wall of the bowel. An attempt should not be made to excise the ulcer because this would occupy too much time. In seven out of nine of the successful cases only suturing was employed. Thorough cleansing of the peritoneum is important. If the extravasation is limited careful wiping of the affected portion of the peritoneal cavity is sufficient; irrigation is more suitable in extensive peritoneal inflammation. Tubes surrounded by gauze are the best drains. As regards the 51 collected cases the ulcer was recognised and closed in 25. In 13 operation was performed after 30 hours' delay and all were fatal; 12 patients were operated on immediately, of whom eight recovered.

INNOVATIONS AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THIS society has recently resolved upon several very important alterations in its regulations for dealing with papers which in the matter of liberality are far in advance of anything that has yet been done by any medical society of the first rank. Authors of papers may now submit them to the Royal Medical and Chirurgical Society with the assurance that there is no probability of their being publicly discussed and afterwards returned as unworthy of a place in the "Transactions," for every paper accepted for reading is *ipso facto* accepted also for publication in the "Transactions." This is good, but the other alteration is even more important and shows that the present Council is determined that one of the principal aims of the society shall be carried out in the most liberal spirit. Every paper read before the society may be immediately afterwards, that is, before it has been published in the "Transactions," printed in any other medical or scientific periodical, and thus contributions to medical science, instead of being kept back, as hitherto, for 12 months and then published in the "Transactions" (the circulation of which must necessarily be limited), may be given to the professional world immediately through the medium of the medical journals.

THE HOUSING OF THE WORKING CLASSES.

WE have from time to time called attention to the prominence which is now being given to the problem of providing the poor of our cities with sanitary homes—a problem the complete solution of which seems in some cases almost hopeless. The Local Government Board has now addressed a circular to local authorities calling their attention to the Public Health Acts of 1875 and 1891 and the Housing of the Working Classes Act of 1890, and stating that the Board is preparing digests of the portions of these Acts dealing with this subject, which will be forwarded in due course. As the present system of drafting Acts of Parliament, which complicates them with cross references to other Acts already in existence, prevents any Act from being, by itself, a guide to those desiring to make use of its provisions, these digests will no doubt be extremely useful. Beyond promising these the Board of Trade circular contains a reference to the Bill now before Parliament which amends the portion of the Housing of the Working Classes Act that enables local authorities to build new dwellings for the working classes of their districts, but does not go further into this branch of the matter, owing, no doubt, to the fact that legislation on the subject is proceeding. The circular,

however, gives a full and instructive summary of the powers possessed by local authorities to inspect existing houses, abate nuisances, close houses where necessary, and procure the punishment of owners of insanitary premises, and in other ways to protect the poor within their gates; while by its language it emphasises the fact that the powers given to these authorities by statute do not only enable them to do certain things but impose upon them duties which they neglect if they do not acquaint themselves with their powers and proceed to act under them where anything exists to call for action. Acts of Parliament of this class, as we know—the Inebriates Act being an example which will occur to many—are not always acted upon with promptitude by local bodies, and as far as the Imperial Government is concerned circulars such as that before us constitute presumably the only method by which it can contribute to the enforcement of such Acts after it has once placed them on the statute-book.

THE HOWARD MEDAL OF THE ROYAL STATISTICAL SOCIETY.

THE next competition for the Howard medal will take place in the ensuing session of the Royal Statistical Society. The subject of the prize essay is "The History and Statistics of Tropical Diseases, with especial reference to Bubonic Plague." Essays must be sent in on or before June 30th, 1901, subject to the following rules:—

Each essay to bear a motto and to be accompanied by a sealed letter marked with the like motto and containing the name and address of the author; such letter not to be opened except in the case of the successful essay.

No essay to exceed in length 100 pages (8vo) of the *Journal of the Royal Statistical Society*.

The council shall, if they see fit, cause the successful essay, or an abridgment thereof, to be read at a meeting of the Royal Statistical Society; and shall have the right of publishing the essay in their *Journal* one month before its appearance in any separate independent form; this right of publication to continue till three months after the award of the prize.

The President shall place the medal in the hands of the successful candidate at the conclusion of his annual address at the ordinary meeting in November, when he shall also re-announce the subject of the prize essay for the following session.

Competition for this medal shall not be limited to the Fellows of the Royal Statistical Society, but shall be open to any competitor providing the essay be written in the English language.

The council shall not award the prize except to the author of an essay, in their opinion, of a sufficient standard of merit; no essay shall be deemed to be of sufficient merit that does not set forth the facts with which it deals—in part, at least, in the language of figures and tables; and distinct references should be made to such authorities a may be quoted or referred to.

Further information can be obtained from the assistant secretary, Mr. B. W. Ginsburg, at the office of the society, 9, Adelphi-terrace, London, W.C.

THE CAUSE OF CARIES OF THE TEETH.

IN a recent publication[1] Dr. Sim Wallace has advanced an ingenious theory to account for the increasing prevalence of dental caries. His views are as follows:—"The cause of the prevalence of dental caries is that the natural food-stuffs are to a large extent riddled of their accompanying fibrous parts and prepared and consumed in a manner which renders them liable to lodge and undergo acid fermentation in the mouth, while from this same cause and the induced conditions the micro-organisms of the mouth lodge and multiply and augment the rapidity and intensity of the acid fermentation." That the preparation of our food-stuffs may in some small measure assist in the production of caries seems possible, but that it is "the cause" is highly improbable. Much of Dr. Wallace's reasoning is unsound and many of his statements are incorrect. He crosses arms with those investigators who maintain that the teeth are degenerating in some unknown way and so are unable to resist the action of the acids set up by fermentation in the mouth. He prefers to hold the view that the cause is to be found in the food-stuffs being prepared in a manner which makes them more apt to lodge in the mouth, and he makes the statement, quite unsupported by any data, that the "teeth of the present day are as perfectly formed from a chemical and microscopical point of view as are the teeth of those races which are practically free from caries." That the structure of the tooth plays a most important part in the resistance to caries is within the knowledge of a dental practitioner with even a small experience. For example, in mouths where there is but a slight amount of caries, and that slow, the enamel of the teeth is generally hard and resistant to the instrument, while where caries is prevalent and rapid the reverse is the case. Indeed, it requires but little observation to show that there is something, so far not recognised or understood, which plays a most important part in the liability of teeth to be attacked by caries. Crowding of the teeth is a fruitful predisposing cause of caries and this is acknowledged by Dr. Wallace, but he attributes the crowding to want of development of the tongue from lack of fibrous material in the food-stuffs. The removal of this fibrous material from the food stuffs robs the tongue of a certain amount of activity and so interferes with its development. Here, again, as with nearly all his statements, no data are given in support of his contentions. The true cause of caries has yet to be discovered and is not quite so simple as Dr. Wallace would lead us to believe.

[1] The Cause and Prevention of Decay in Teeth. London: Messrs. J. & A. Churchill.

AN UNQUALIFIED PLAINTIFF UNDER THE MEDICAL ACTS.

A CASE heard recently in the Stourbridge County Court seems to have raised a question under the Medical Act of 1858 arising out of circumstances not contemplated by those who framed the statute. The plaintiff suing for fees for medical attendance was not a registered medical man. He was a medical student who while pursuing his studies had employed a qualified practitioner to keep alive the practice which he (the student) had inherited from his deceased father. The fees, therefore, had been earned by a qualified man but the person bringing the action was not on the Register, and the Act above referred to says that "no person shall be entitled to recover any charge in any court of law for any medical or surgical advice ..... unless he shall prove upon the trial that he is registered under this Act." This seems fairly explicit, but the Act was, according to its preamble, passed in order that "persons requiring medical aid should be able to distinguish qualified from unqualified practitioners," and the intention of the legislature was no doubt primarily to hinder unqualified persons from holding themselves out to be medical men and exercising medical functions. There is no direct authority as to what is to happen where a duly registered medical man has earned the fee and a lay employer has sued for it, but there can also be no very strong reason why the section we have cited above should not be construed literally in such a case. It is possible that those who passed it may have intended to stop by it any intervention whatever by laymen in matters connected with medical practice, while perhaps they contemplated a system of laymen farming the work of qualified medical men which might otherwise arise. In the case at Stourbridge no decision was given on this question by the county court judge, as he pointed out that should he decide it in the defendant's favour the only result would be that the qualified medical man would sue instead of the then plaintiff, and the objection was accordingly dropped. A case, however, might well arise in which, owing to some dispute between employer and employed, the man who had earned the fee might not be willing to aid in recovering it, and even if such a state of affairs as we have described may not

be likely to occur frequently we should have liked to see the law on the matter clearly laid down.

ANTI-STREPTOCOCCIC SERUM IN CEREBRO-SPINAL MENINGITIS.

WE learn that in an epidemic of cerebro-spinal meningitis at Jerusalem 12 patients were treated with Marmorek anti-streptococcic serum and all recovered. In a disease so fatal as cerebro-spinal meningitis it is allowable to employ any treatment in reason even though there is not much probability of its success. We must confess that *a priori* we should not have imagined that anti-streptococcic serum would have proved efficacious against an entirely distinct micro-organism such as that giving rise to this form of epidemic meningitis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: MEETING OF FELLOWS.

THE annual meeting of Fellows will be held next Thursday, July 5th, at 5 P.M., and it is desirable that a quorum should be present, otherwise it is possible that these meetings of Fellows may be discontinued altogether. Already one meeting a year has been done away with and no quorum has been obtained since July, 1897. The agenda paper includes three motions by Mr. R. B. Anderson relating to various matters of interest. We may mention also that the additions to the museum during the past year will be on view in the Council Room on July 3rd, 4th, 5th, 6th, and 7th.

VACCINATION FEES AT BURY.

AT the meeting of the Bury Board of Guardians on June 7th the reply of the Local Government Board to a letter from the guardians as to the fees payable to the public vaccinators was read. The principle on which payment is made is stated to be that "their remuneration should mainly depend on the fees which they received for successful vaccination," so as to give every inducement to promote, as far as possible, the vaccination of all children. Under the new system of domiciliary vaccination the board introduced the fees provided for under article 3 (1) (2) of the Vaccination Order of 1898. "The board decided that while the former should not be less than 1*s*. per case it should not exceed one-third of the fee payable for each case of successful vaccination." The guardians decided to pay 1*s*. 8*d*. and 5*s*.

CHOREA: A STATISTICAL AND CLINICAL STUDY.

PROFESSOR ALLEN STARR of New York contributes a valuable paper on the above subject to the volume of the *Festschrift* in honour of Dr. Abraham Jacobi, just published (May, 1900), analyses the histories of 1400 cases of chorea seen in the Vanderbilt Clinic. The proportion of females compared with male patients was almost exactly as 2 to 1, and it appeared that the disease was relatively common among children of the poorer classes and was often accompanied by anæmia. The most constant physical condition accompanying the disease was malnutrition. Among etiological factors preceding the disease fright was noted in 285 cases, and a history of acute rheumatism in 290. Organic cardiac murmurs were observed in 175 cases and functional or hæmic murmurs in 123 cases. In 871 patients no cardiac murmurs could be found. As regards age, 919 cases, or 65 per cent., occurred between the ages of seven and 14 years. As regards seasons, it was recorded that 707 out of 1129 cases occurred between March and August. The choreic movements were general in 951 cases and unilateral in 449, the right side being affected slightly more than the left. Mental changes were observed in 827 cases in the form of irritability combined with more or less dulness, and speech was affected in 556 cases. Therapeutically it appeared that arsenic given in increasing doses and pushed to its physiological limit gave the best results. The dose had to be reduced slightly after this. Antipyrin was also used with favourable results, but very little benefit was obtained from exalgin, paraldehyde, phenacetin, or the bromides. A change of air to counteract the anæmia and to add freshness to the patients' surroundings was attended with the most beneficial results.

THE INTERNATIONAL MEDICAL CONGRESS, PARIS, AUGUST, 1900.

ALL members of the profession, including ladies and dentists, who wish to become members of the Thirteenth International Medical Congress are requested to send in their names by return of post to the secretaries of the National Committee for Great Britain and Ireland (Dr. A. E. Garrod, 9, Chandos-street, Cavendish-square, London, W., and Mr. D'Arcy Power, 10A, Chandos-street, London, W.). The list of members in Paris will close on July 15th, and after that date it will be impossible to guarantee any of the privileges of the Congress to those who send in belated applications. A ladies' committee has been formed under the auspices of Mesdames Lannelongue and Brouardel and a convenient room has been placed at their disposal. The list of entertainments is completed by the announcement of a grand fête to be given by the Town Council of Paris in the Salons of the Hôtel de Ville on the evening of August 7th.

THE WATER-SUPPLY OF MANCHESTER.

THE water-supply of our towns becomes more and more difficult as the population grows, and where it is abundant to-day there is anxiety as to to-morrow. This is illustrated by the history of the Manchester supply. When the Longdendale reservoirs were completed it was thought that the provision made was practically inexhaustible, but after a time it became evident that more than the 25,000,000 gallons which it now gives would be wanted, so the Thirlmere scheme was gradually worked out and one pipe laid, when for a time there was the pleasant feeling of abundance and security. Since that day, however, there has been, according to the report of the Waterworks Committee which is to be submitted to the Council at their next meeting, "a very excessive increase in the consumption." The committee wish the public to get rid of the idea that there is "an exhaustless supply for all time," to avoid waste, and to practise a reasonable economy in the use of water. The present consumption is about 32,000,000 gallons per day, "and the increase during the last 10 years has been at the rate of over 1,000,000 gallons per day per annum." With the additional pipe which it is proposed to bring from Thirlmere it is calculated that the total quantity obtainable from that source will be 50,000,000 gallons daily, which with the Longdendale supply is estimated to make up 75,000,000 gallons per day. With the increasing growth of habits of personal cleanliness which are gradually permeating through the population from above downwards there is a much greater demand for water for domestic purposes, including the supply for baths which are now common in Manchester in small "weekly" houses, as they are called, than would have been dreamt of 50 years ago. The committee have come to the opinion that at the rate of increase for the last 10 years and allowing for the growth of the population "the whole 75,000,000 gallons per day is likely to be overtaken in about 35 years. They therefore feel it their duty to make this emphatic statement so that all citizens and consumers may realise their personal responsibility for the proper and moderate use of the water." While it is absolutely necessary to give water to the towns it ought not to be forgotten that many country places all

through the island suffer from a chronic water famine and means will have to be taken for their relief.

THE MIDWIVES BILL.

THERE was a debate, which will be found fully reported in our columns on p. 1920, in the House of Commons on Wednesday evening last upon this measure. Mr. Griffith-Boscawen moved that the Bill be considered upon that day three months on the grounds that it had been inadequately discussed on its second reading and rushed through the Standing Committee. Colonel Milward, in seconding the amendment, thought the measure too drastic. Sir J. Batty Tuke, in a successful maiden speech, approved the general lines of the Bill, though he considered that it should be amended in certain particulars. Dr. Farquharson thought the measure had been sufficiently discussed, but Sir Walter Foster urged postponement, pointing out that the measure should be dealt with by the Government of the day, the question involved being too large to be dealt with by a private Member. While Mr. Heywood Johnstone was falling in with this view 5.30 o'clock was reached and the debate stood adjourned—probably for the rest of the session, as Government has taken all the available time.

THE DEARTH OF MEDICAL ASSISTANTS AND ASSISTANT CURATES.

THE *Westminster Gazette* states that a vicar in the Midlands recently applied to five theological colleges for an assistant curate in priest's orders and was unable to obtain one. In our own profession the dearth of assistants has of late years become very marked, but there are obvious reasons for this. First comes the action of the General Medical Council in forbidding the employment of unqualified men, and this is an influence which will abide. Secondly, the war in South Africa has absorbed numerous younger members of the profession who would in all probability be holding assistants' posts if they were not engaged in minimising the necessary horrors of war. The reasons for an ecclesiastical scarcity are not so obvious. Possibly ideals are higher nowadays than they were 60 years ago and the class of man who used to take orders because it was a calling which carried with it a certain social position and a comfortable income has become smaller. Perhaps, too, the fact that the comfortable income has become smaller has something to do with the matter. But however this may affect the average assistant curate whose field of labour is a country parish we fancy that town incumbents who live with their assistants in a clergy house find no difficulty in getting men willing to live and work with them without any thought of the amount of their salary, provided that they are fed and have fairly comfortable quarters.

SMALL-POX AT STALYBRIDGE AND SALFORD.

IT may be remembered that small-pox was taken to Stalybridge on April 28th by a man returning from Russia. Up to June 6th there had been 18 cases and three deaths. The first death was that of the man who introduced the disease and the other two were those of two boys who were unvaccinated. A sub-committee of the Town Council has been appointed to consider the question of providing an infectious diseases hospital and to deal generally with all matters of emergency relating to persons suffering from small-pox. It appeared, the mayor said, from inquiries he had made, that small-pox was not subject to the quarantine laws, which only applied to cholera, to plague, and to yellow fever. He suggested "that action should be taken with a view to bringing small-pox within the operation of the quarantine laws." It was decided that the mayor, the town clerk, and the medical officer of health should go as a deputation to the Local Government Board "with a view to get the matter dealt with in an omnibus Bill at the end of the session." Salford also has had an outbreak of small-pox. Recently Mr. C. H. Tattersall, the medical officer of health, reported that five cases had been brought under his notice. Prompt measures had been taken to check the spread of the disease. So far Manchester has escaped.

THE PROPHYLAXIS OF PLAGUE.

La Salud, a monthly review of hygiene published at Buenos Ayres, contains in its March number an interesting article upon plague. Formerly, says *La Salud*, according to a tradition common amongst certain tribes of South-American Indians, wide-spreading fires used to sweep over the land. The inhabitants were in the habit of taking refuge in caves and dens of the earth. From time to time they poked out the branch of a tree and if this when pulled in again showed no signs of burning they considered it safe to come out. So formerly when plague ravaged and desolated various countries the inhabitants shut themselves up in the cave of isolation and did not come forth until they learned that plague had disappeared. Nowadays, however, just as the Indian tribes possess herds of horses which they did not formerly possess and are able by these means to stamp out pampas fires, so that there is no need to take refuge in a cave, so also modern cities possess hygienic knowledge and conditions which render isolation unnecessary and a general dissemination of plague throughout Europe or America is as impossible as a fire which should affect the whole pampas. In India and in China only those persons succumb who live under grossly unhygienic conditions. With reference to the recent outbreak of plague in the Argentine the article continues: "It would be greatly to the honour of the Argentine Republic if she would invite other countries to a conference to consider the question of meeting plague, if not actually by abandoning all international action yet by leaving commerce perfectly free and by treating the disease wherever it appears exactly like any other infectious disease which assumes endemic characters."

TICK FEVER IN NEW SOUTH WALES.

DR. FRANK TIDSWELL, Principal Assistant Medical Officer to the Government of New South Wales, has issued a second report upon Tick Fever. This report, which is dated February, 1900, is really a continuation of his first report which was dated December, 1898, and upon which we commented in our issue of May 6th, 1899, p. 1240. The first report dealt with the immediate effects of protective inoculation and the second takes up the tale and gives an account of the result of exposing an inoculated herd to the influence of ticks. The experiments were made at Greenfell, Rockhampton, in Queensland, a district seriously affected with ticks. The total number of animals used was 60—namely, 22 inoculated and eight controls from New South Wales, and 20 inoculated with 10 controls from the North Coast District. Of the inoculated animals five escaped entirely and eight died, but although these eight may be said to have died from causes incidental to their exposure to ticks none of them could be said to have died from tick fever *per se*. Among the control animals eight died, four from acute tick fever, one from debility following tick fever, and three from causes incidental to their exposure. As a rule, the symptoms were much less severe in the inoculated than in the control animals, although in six of them the disease was nearly as severe as in the control animals, and of these six four died, three of which were, however, old and unhealthy to start with. Dr. Tidswell concludes that the main line of defence lies in keeping the ticks out of

the colony, but inoculation may be of great service, for it does not involve permanent ill health; inoculated animals resist second inoculation attacks and, as was seen by the experiments, they take the fever much less severely than does an uninoculated control. Careful dipping is of great use. With regard to the selection of blood for inoculation its infectivity does not depend upon controllable factors. The blood of one animal will give good reaction 12 months after inoculation, while that of another will be useless shortly after three months.

THE FIRST PRINCIPAL OF THE UNIVERSITY OF BIRMINGHAM.

IT is announced that Oliver Joseph Lodge, F.R.S., LL.D., D.Sc., has been appointed the first principal of the new University of Birmingham. It is difficult to know whether to congratulate most the new principal upon the honour so rightly offered to him or the new University upon his acceptance of the post, but that both parties to the transaction are to be felicitated there can be no doubt. Dr. Lodge was educated at the Newport (Salop) Grammar School and at University College, London. In 1877 he took the degree of D.Sc. at the University of London, gave lectures on physics at the Bedford College for Ladies, and was appointed Assistant Professor of Physics at University College, London, where, during Professor Clifford's illness, he took charge of his classes. In 1880 he was appointed Professor of Physics at the then newly-established University College, Liverpool. He has written upon Electricity and Light, and his "Modern Views on Electricity" is perhaps the clearest account of a by no means easy subject which has appeared up to the present time. He has also made researches into the nature of lightning and lightning discharges and has also written upon Herz and his work. Apart from the more purely scientific subjects Dr. Lodge takes a deep interest in those somewhat obscure phenomena known as psychic. He is a prominent member of the Psychical Research Society and was one of those appointed to examine into the phenomena presented by Eusapia Palladino.

THE FAMINE AND SPREAD OF CHOLERA IN INDIA.

THE events taking place in China and in South Africa, to say nothing of those on the West Coast of Africa in the relief of Kumasi, occupy such a prominent place at the present moment as to absorb almost exclusively all public thought and attention. It is natural that it should be so, but the lamentable loss of life and the suffering entailed by these events are really insignificant compared with the truly deplorable state of affairs in India at the present time as set forth, for example, in a communication from the special correspondent of the *Standard* of June 26th. India has of late years been a prey to all the ills that can afflict a country. More direct and terrible even than the fear of starvation is the fear of cholera, and we are confronted with the sad and remarkable spectacle that the unfortunate and starving natives are being driven from many famine relief centres by the dreaded scourge of cholera in order to meet their end in a slower and less agonising way than that disease often causes; whereas in all the districts of India wherein cholera has not appeared distress compels them in increasing numbers to seek and hold on to the famine relief works as their only chance. Nor is this all. The want of water and the fear of a water-famine, the enormous mortality amongst both man and beast, and the extreme poverty and increasing enfeeblement of the native population make up an appallingly realistic picture of human suffering. The condition of the Rajput States, of the Bhil country, and of Jodhpur State, where over a million beasts have died from starvation, and of other extensive parts of India is simply terrible.

SIR WILLIAM GAIRDNER was entertained at dinner in Glasgow on June 19th with many evidences of sympathy and enthusiasm, the occasion being his retirement from his professorship in the University. The company numbered about 140, Principal Story, of the University, being in the chair. Sir William Turner, replying to the toast of "The Medical Profession," which had been proposed by Sheriff Berry, stated in the course of his remarks that after Sir William Gairdner had withdrawn from his duties as professor in Glasgow University he (the speaker) would take his place as the oldest teacher in a Scottish university, 40 years having elapsed since he commenced to teach anatomy in Edinburgh University. Sir William Gairdner, replying to the toast of his health, proposed by Principal Story, said that his arrival in Glasgow marked almost to a month the middle point of his life. He was 38 years of age when he became a professor and he had lived for 38 years afterwards. If he put to himself the question whether the former or the latter 38 years were more fraught with real happiness he should be puzzled to give an answer, but on the whole he thought he should prefer the latter period. The toast of "The Lord Provost and Corporation of Glasgow" was proposed by Sir Hector C. Cameron and acknowledged by Lord Provost Chisholm.

IT has been found convenient to postpone the Malaria Conference which it was proposed to hold in Liverpool at the end of July, the centenary celebration of the Royal College of Surgeons of England and other events in the medical and scientific world having been arranged for the same time.

SIR WILLIAM BROADBENT will formally open the new Clinical Museum at the Medical Graduates' College on Wednesday next, July 4th, at 8.30 P.M., when Professor Osler, F.R.S., of Baltimore, will deliver an oration on "The Teaching of Practical Medicine."

THE Guy's Hospital Biennial Dinner will be held at the Whitehall Rooms, Hôtel Métropole, on Friday, July 6th, at 6.30 P.M., under the presidency of Mr. Charles Higgens.

THE WAR IN SOUTH AFRICA.

THERE is still a pause in Lord Roberts's operations, for what has been recently taking place, although of a sufficiently stirring nature, is not likely to have any serious influence on the course of events. Notwithstanding that the Boer forces have exhibited unwonted activity of late and have had some successes the campaign is slowly but surely coming to an end—if it has not virtually already done so. General De Wet is commanding, however, with remarkable skill and success in his operations against our lines of communication between Kroonstad and the Vaal river. If it be true, as is reported of this Boer general, that he declared he would make Lord Roberts repent of having refused to accept his terms of surrender, he has done a good deal to justify his threat, for his force, owing to its astonishing mobility, has of late been apparently ubiquitous. A recital of the raids, surprises, and exploits of General De Wet reads like an exciting chapter in a book describing the adventures of some notable guerilla chief. By his energy and enterprise he has damaged the railway about Rhenoster river, captured the Derbyshire Militia, inflicted considerable loss on the Devonshire Militia, attacked a post at Honing Spruit and burned three wooden bridges, and succeeded in capturing several convoys with their wagons, stores, and ammunition, including one sent to the Highland Brigade.

It was at the last-named engagement that Colonel Bullock of the Devon Regiment, undaunted by his previous experiences, behaved with such stubborn pluck and that Mr. Lenthal Cheatle, who happened to be present in the train, had the opportunity of rendering very important services to the wounded. It will naturally be the first aim and object of Lord Roberts to see whether he cannot put an end to this eventful history by cutting off and capturing this force and its wily leader. We may confidently expect to hear soon of some active, and, let us hope, decisive, movements on the part of the British forces in the Transvaal.

So far for the military situation at the present time. Turning to the medical history of the war we may briefly allude to a communication which appeared in the *Times* of June 25th descriptive of the experiences of Dr. Morris Martin with General Cronje and the Boer forces until he obtained permission to go to Delagoa Bay, where he seized an opportunity for making his escape to this country. As the communication gives a description of what was going on behind the scenes with the Boers whilst the war drama was actually taking place it is worth reading.

The health of the British troops as a whole is stated to be good and their spirits are all that could be desired. There is still, however, a terrible amount of enteric fever prevalent among the army in the field and also (although to a far less extent) dysentery, together with many cases of pneumonia and diseases of the respiratory organs. A very large number of men are in hospital at Bloemfontein suffering from enteric fever. Large batches of sick and wounded are arriving from time to time in this country and reinforcements are in like manner being sent out to South Africa with *personnel* and *matériel* for the various hospitals, military and otherwise. According to a return just issued by the War Office the total losses since the beginning of the war up to the end of last week (exclusive of sick and wounded men now in British hospitals in South Africa) amounted to 26,296. The details are as follows:—

—	Officers.	Non-commissioned officers and men.
Killed in action	250	2384
Died from wounds	68	589
Missing and prisoners (excluding those who have been recovered)	37	1650
Died from disease	125	3985
Accidental deaths	—	66
Sent home as invalids	784	16,358
Total	1264	25,032

We notice that according to a communication from the special correspondent of the *Standard* at Cape Town, dated June 25th, it is alleged that during the last few weeks there has been a growing feeling of dissatisfaction on the part of both the public and the patients with the way in which the military hospitals and convalescent wards are being managed. The whole matter was discussed at a meeting of the Good Hope Society for the Aid of the Sick and Wounded. The Archbishop of Cape Town brought forward statements in regard to Rosebank Hospital to the effect that invalids were insufficiently supplied with warm clothing, while other statements were made that the food was insufficient in some cases, and in others of a nature unsuitable for patients suffering from dysentery or enteric fever. The Archbishop brought forward a motion drawing the attention of the military authorities to the great neglect in the supply of proper clothing and food, but subsequently withdrew it on a representation that the matter would be given full publicity in the press. The Rev. Mr. M'Clure urged that a report should be drawn up, contending that those found responsible for neglect should be very severely dealt with. The matter has been left in the hands of a committee, and the Archbishop of Cape Town is stated to have apologised for having made statements founded upon erroneous information. We must be content to suspend our judgment until the result is made known.

We have referred elsewhere to the communication from Mr. W. Burdett-Coutts, M.P., which appeared in the *Times* of Wednesday, June 27th. The accuracy of Mr. Burdett-Coutts's statements will be tested immediately.

WITH THE IMPERIAL YEOMANRY HOSPITAL.

(FROM A SPECIAL CORRESPONDENT.)

The winter has come upon us now with its black frosts. The days are much colder than on our arrival at Deelfontein, when the most comfortable uniform was merely a flannel shirt and trousers without any coat. Now the medical officers are often glad to make their rounds in top coats as well as to wear their warm winter underclothing. Life in tents has its drawbacks and one often longs for a more stable edifice in which a blazing fire could warm one's half frozen hands and feet. Although the thermometer does not register any great degree of cold the wind seems much more piercing here than in England, and one never feels warm unless the sun is shining brightly. At night black frosts occur, the absence of white hoar frost being due to the extreme dryness of the atmosphere, and we occasionally find that the water for our morning tub is covered with a layer of ice a quarter of an inch thick. It requires some amount of determination to take a bath in water like this and when exposed to a biting wind. The rainy season has been an exceptionally long one this year, and only last week very heavy showers fell for three days. These rains are very heavy while they last and are as a rule accompanied by thunder and lightning.

The general health of the hospital encampment remains good and the patients still continue to pick up their former health, and in some cases with an astonishing rapidity. So far, with one exception, none of the sisters has fallen seriously ill. Apart from minor ailments, such as sore-throats or toothache, their bill of health is a clean one. We all regret that one of the sisters, who was suffering from necrosis of the superior maxilla when she started from Scotland, has since been invalided home.

A few cases of scarlet fever have occurred in the camp, but by the most careful isolation Dr. J. W. Washbourn has been enabled to prevent its spread. The origin of the scarlet fever was found to be a patient who came from Naauwpoort Hospital and who was found to be "peeling" after having suffered from a sore-throat a week or two before. He passed the infection to the orderly who was attending the sick in the hut in which he was located, and one or two patients and orderlies have also since caught the infection. This has entailed considerable trouble and has necessitated the disinfection of the tents and huts in which the cases were discovered, together with the transference of the patients to other huts during the disinfection. Colonel A. T. Sloggett, R.A.M.C., has also arranged for two small separate encampments, one where the cases of scarlet fever are nursed and a second one where the men who have been exposed to infection can be put into quarantine. By these methods the disease has been stamped out and only a very few cases have occurred.

Of more serious import is the occurrence of typhoid fever and dysentery amongst some of the medical staff and a few of the orderlies and patients. Dr. R. T. FitzHugh[1] and Mr. Greenfield and Mr. Hobart, the store-keeper, are down with enteric fever, and one misses them sorely, for Dr. FitzHugh was acknowledged to be the best singer in the camp. His comic songs were unequalled and at every concert "We 'ad a roarin' time" was eagerly called for. Whilst one regrets that cases of these diseases should arise within the camp itself one must realise the immense difficulty of treating 300 or 400 patients suffering from typhoid fever and absolutely preventing any spread of infection when any single piece of soiled linen or any one patient can spread the disease indefinitely if any neglect of rules occurs.

All the huts are now completed and we have about 700 patients in the hospital at the present time. The camp is assuming the appearance of a small model village with its level well-kept streets, plainly marked out with a continuous row of whitewashed stones on each side of the roadway. 70 more tents are to be sent up from Cape Town and they will afford accommodation for 500 more patients. The medical cases far exceed in number those of a surgical nature and several of the surgical officers are giving assistance on the medical side of the hospital. The number of medical cases is larger for two reasons, chiefly because owing to the small amount of resistance offered by the Boers there have been very few casualties on our side lately, and also because convalescence in medical cases is a longer business than it is in surgical ones.

[1] We regret to say that Dr. R. T. FitzHugh, to whose illness our correspondent alludes above, died on June 15th, as announced in our last issue, p. 1830.—ED. L.

At present nothing very definite has been arranged by Colonel Sloggett, but it has been suggested that another branch hospital should be started. At first Surgeon-General W. D. Wilson, the principal medical officer, thought that the most suitable place would be at Kroonstad, but now, owing to our rapid advance and the occupation of Johannesburg and Pretoria by the Imperial forces, the necessity for a hospital there has disappeared. For strategic reasons it is now far more likely that Pretoria would be the more appropriate site for an advanced hospital, but it is quite possible that Maitland may be chosen in the hope that the staff of the Imperial Yeomanry Hospital may be able to be as near as possible to the probable camp of the Yeomanry forces when they collect again at Cape Town on their way home.

On the medical side of the hospital there are practically three diseases in evidence—typhoid fever, dysentery, and rheumatism. The hardships of campaigning without shelter against the rain and cold biting winds and with insufficient rations seem to have played a most important rôle in the etiology of dysentery and rheumatism. In many cases it is found that an attack of dysentery commenced after a soldier had been exposed without tents for three nights to wet weather, being obliged to allow his clothes to dry on him during the next day's march. This exposure may lower the vitality of the intestines and so render the man more liable to infection with the amœba of dysentery which would be repeatedly drunk in the dirty water with which he had slaked his thirst on the march.

A typical case of dysentery begins with a little diarrhœa, three or four motions on the first day, and with little or no rise of temperature. The number of motions on the second and third days reaches from 10 to 40 or 60, according to the severity of the case, and large quantities of red blood and mucus are passed, although each evacuation may be only small in amount. In untreated cases and in cases which resist treatment the diarrhœa increases until the patient requires the bed-pan almost continuously. There is severe abdominal pain and much rectal straining and discomfort. The stools are often very offensive and in older people may give rise to a suspicion of cancer of the rectum. The spleen is sometimes slightly enlarged in dysentery and may cause difficulty in excluding suspicions of typhoid fever. We have had no cases of abscess of the liver resulting from dysentery so far. The temperature chart is more or less typical and its variation may be given from an actual case which was proved by post-mortem examination to be one of dysentery. The temperature rises each evening about a degree until a temperature of 101° or 102° F. is reached and falls each morning, sometimes to normal, then a period occurs in which the temperature is about 101° each evening and normal in the morning. As the patient improves his temperature again gradually falls in the evening until the normal temperature is reached and maintained. Should chronic diarrhœa persist the temperature generally registers 99° in the evening. The temperature does not always vary with the severity of the diarrhœa. The treatment adopted is to give large doses of powder of ipecacuanha, from half a drachm to one drachm at a time for several doses, every four hours until the bleeding and diarrhœa stop, and then to continue with opium and bismuth. Great care is required in this treatment to prevent obstinate vomiting. It is advisable to keep the patient in bed and to give from 15 to 30 drops of laudanum by the mouth in a little water an hour before each powder, and also to administer a very little plain milk only whilst the ipecacuanha treatment lasts. It is of the utmost importance to commence the treatment early and to give large doses of ipecacuanha, as if the diarrhœa once becomes almost continuous nothing seems to be of any assistance to the patient and he gradually sinks and dies. His pulse fails, and in a few days his condition becomes most wretched. Continuous and uncontrollable diarrhœa quickly emaciate him, his appetite goes, he is listless and apathetic, and may have lost full consciousness of what is going on around him. He becomes a misery to himself and to those who attend on him. Rudyard Kipling well describes dysentery as the disease "which eats the heart out of a man." No improvement seems to take place in the amount of diarrhœa for the first 24 hours after the commencement of the ipecacuanha treatment but the patient is much more comfortable and blood is generally passed in smaller quantities. The treatment with sulphate of magnesia and sulphate of soda has also been tried. It seems useless unless the treatment is begun quite early, and as it is also apparently very exhausting and depressing it is advisable not to try it in the last stages of the illness. Young, robust men stand it best. Drachm doses of these drugs are given every hour or every two hours, and the treatment is continued until the passage of blood and mucus decreases and the evacuations become fæcal in character. Relief will generally be given after from six to eight doses, the patient feeling much more comfortable and experiencing much less pain and straining. In the first 24 hours the number of evacuations will not be lessened and at this time one can only judge of the success of the treatment by the feelings of the patient and by the character of the evacuations. In more chronic cases of dysentery rectal injections of boric acid and solutions of silver of nitrate are of service.

Post mortem more or less severe ulceration of the rectum and sigmoid flexure is usually found with thickening of the walls of the gut and enlargement of the mesenteric glands. Isolated patches of ulceration and inflammation of the rest of the colon often occur and the cæcum often suffers very severely. The small intestines are generally healthy, except that the lower part of the ileum has been inflamed in some cases. The amœba of dysentery has been searched for by Dr. Washbourn, but so far none has been discovered.

By far the largest number of our patients are suffering from typhoid fever of a very severe type. The chief strain seems to fall upon the circulatory apparatus and weak-running pulses of from 130 to 144 are not uncommon. The reason for this seems to be that the patients before contracting the disease have had excessively hard work to do, riding and marching for many hours every day, and this has no doubt weakened the resisting power of the heart in a disease which is known to severely attack the muscular structures throughout the body. Liberal quantities of champagne and brandy, with digitalis and strychnine, have to be given to tide the patient over his difficulties.

In all cases of doubtful diagnosis the Widal reaction is applied under the personal supervision of Dr. Washbourn. After dysentery sometimes chronic arthritis occurs with very little pain in the joint except on movement and with no swelling of the joint, but with a persistent temperature which has a suspicious resemblance to a typhoid fever chart. In one patient a doubt existed between the diagnosis of malaria and typhoid fever, so specimens of blood were examined by Dr. Washbourn for the plasmodium malariæ and a Widal's reaction was also tried. The plasmodium was found as masses of pigment in several of the red blood corpuscles and an immediate clumping of a typhoid culture pointed to the presence of typhoid fever. This double diagnosis has since been borne out by the subsequent progress of the patient. The Widal reaction is sometimes at fault. In one case of dysentery a strong and immediate reaction took place but typhoid fever was proved afterwards at the necropsy to be absent.

At present it is perhaps too early to condemn inoculation against typhoid fever. It certainly does not prevent a patient from contracting the disease, and it seems doubtful whether the inoculated person will show any greater immunity than the non-inoculated person. Slight attacks have occurred in both clases of patients and two patients in this hospital who were inoculated have succumbed to the disease. On *a priori* grounds one would hardly expect that a preventive serum treatment would be successful in a disease which after it has existed for something like three weeks cannot protect the patient from a relapse. Moreover, second attacks are by no means unknown and one of Dr. Richmond's patients had a most severe second attack of typhoid fever from which he died, so that a previous attack does not seem to protect either from the disease itself or to lessen its severity.

One cannot praise too highly the care and devotion to duty which has been shown by the nursing sisters, one and all, in their work in the hospital. It is, of course, in the treatment of typhoid fever that their assistance is of the utmost value, and many a convalescent soldier will owe his life to the skilful nursing of a trained sister. The arrangements for the treatment of cases of typhoid fever are most complete. Special huts are set apart for their reception and special sisters and special orderlies are appointed who never attend other patients. In addition to these arrangements a latrine for typhoid fever patients has been built in the midst of the huts occupied by those patients suffering from typhoid fever, where the evacuations are sterilised by disinfectants before they are destroyed, and where all soiled linen is soaked in

lysol for 24 hours before it is taken to the laundry to be washed.

Two interesting cases of relapse in typhoid fever have occurred. In the first case the patient's temperature rose about 10 or 11 days after his first attack and he had all the usual symptoms of a slight relapse, such as headache, malaise, pains in the limbs, slight abdominal distension, and enlargement of the spleen. The evening temperature remained up for seven days, with a normal temperature each morning after the first three days, during which time it rose to 102° F. On the eighth day the patient seemed quite well again; his temperature was normal and it remained so for five days. On the fourteenth day he was seized with pain in the abdomen and his temperature suddenly ran up to 105° without any preceding condition of collapse being noticed. His abdomen was rigid and did not move well with respiration. There was dulness of the lower part of the abdomen, especially on the right side, sickness began, and the pulse became more rapid and weaker. Dr. Washbourn, in connexion with Dr. Richmond, diagnosed a perforation of a typhoid ulcer, and laparotomy was performed by Mr. Raymond Johnson. A small perforation was soon discovered in the centre of a typhoid ulcer in the ileum of about the size of a shilling. The walls of the gut were too soft to allow of the ulcer being stitched up and so it was sewn into the wound and the peritoneum was washed out with boric acid lotion and the pelvis drained. The patient unfortunately sank a few hours after the operation. At the post-mortem examination it was found that this was the only ulcer present, although there were evidences of recent typhoid ulcers. It is thus clear that a single typhoid ulcer can give rise to a relapse, and that although such relapse may have a very short period of pyrexia it is of the utmo[illegible]nportance to treat such attacks with as much care as in the primary attack. In this instance the patient was kept on a strict diet of plain milk from the second day on which his temperature rose until his decease. In the second case a relapse occurred with all the usual symptoms and with enlargement of the spleen and with spots five weeks after the patient's temperature had been normal.

Deelfontein, May 14th.

ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

ANNUAL DINNER.

THE annual dinner of the Association of British Postal Medical Officers was held under the chairmanship of the President, Dr. W. DOUGAN, on June 21st, at the Whitehall Rooms, Hôtel Métropole. The usual loyal toasts having been honoured, Sir JAMES CRICHTON BROWNE proposed "The Imperial Forces" in an eloquent speech and the toast was replied to by Sir JOSEPH FAYRER who said that he had endeavoured to record in the book which he had just written and published the history of his life's work and he had honestly done his best for those Services for which he was responding. For the rest of his life, which in the nature of things could not be very prolonged, he felt that he had the approbation of his *confrères* in the profession and of his brother officers in the Service, which he thought was the best reward a man could have. "The Houses of Parliament" was next proposed by Mr. EDMUND OWEN in a brilliant and witty speech, and was replied to by Mr. J. WALTON, M.P., who said that he had always entertained the idea that the House of Lords was a body of men independent of, and uninfluenced by, the voice of clamour, but that idea of his a short time ago received a shock when the peers surrendered on the vaccination question. Mr. EUGENE WASON, M.P., proposed, and Sir ROBERT HUNTER replied to, the toast of "The Postmaster-General, the Secretary, and other Executive Officers of the Post Office." "The Board of Education and other State Departments" was proposed by Dr. F. DE HAVILLAND HALL, and was responded to by Sir GEORGE KEKEWICH, Secretary to the Board of Education. Dr. J. F. W. TATHAM, Superintendent of Statistics to the Registrar-General's Office, also acknowledged the toast, and said that he wished to extend the usefulness of the statistics issued by his office. He had to thank the members of his own profession for the hearty support extended to him in the performance of his duties. The toast of "Preventive Medicine" was proposed by Dr. WOOD (Dulwich) and was replied to by Professor W. H. CORFIELD, who said that such was the excellence of the carrying out of the vaccination regulations in Germany that since 1874 no epidemic of small-pox had occurred throughout that empire, and as a result when a case of small-pox occurred in the extreme outlying parts adjacent to countries where the vaccination laws were carelessly enforced the first German medical officer seeing the case generally mistook it for chicken-pox. He himself could remember three hospitals in London where scarlet fever cases in times past were mixed up with the general patients. For his efforts to stop that he had received the severest possible censure from the chief physician of one of the hospitals concerned who was also medical officer of health; that alone showed how preventive medicine had advanced.—Dr. A. WHITELEGGE (Chief Factory Inspector), in giving the toast of "The General Medical Council," said that it was realised that the Council was endeavouring to make the profession more select by elimination of undesirable members and by increasing the stringency of the qualifying examinations.—Dr. J. G. GLOVER, in responding to the toast, said that it would be well for the medical profession if all gentlemen spoke of the General Medical Council with the generosity which characterised the remarks of Dr. Whitelegge. He (Dr. Glover) did not wish to save the Council from criticism for it was the better for it, but any fair student of its proceedings would conclude that with the limited powers it had it did the best it could. Nothing would do the Council more good than the encouragement of the profession. As a slight proof of the right of the Council to feel that it had done something for the profession he would refer to the question of infectious diseases. He himself had taken an active part in trying to increase the education of students in the matter. He was a member of the deputation sent to ask Mr. Ritchie to open the Metropolitan Asylums Board hospitals to students. It was possible for a man to be a most distinguished student and yet never see a case of small-pox and possibly measles. When the deputation went to Mr. Ritchie Sir Samuel Wilks related how Guy's Hospital had been asked to send a medical man to one of the important public schools, and the best man the hospital had was sent. There arose in the school a mysterious complaint which this gentleman had never seen before. He was so puzzled that he went to the oldest medical practitioner in the district and detailed the symptoms and was duly informed that he had to deal with an outbreak of measles. This defect in medical education the Council was trying to remedy. The unity of the profession would be best served and promoted by giving all encouragement to the General Medical Council, for it was the most representative body in the profession: it represented the medical schools in the United Kingdom, the Universities, the medical corporations, and the great body of the medical profession, though, of course, it must be admitted that direct representation was not as adequate as it might be. If they used the amount of direct representation which they had in the right way it would be increased, but they might so abuse it as to secure not extension but extinction. He (Dr. Glover) could say as one of the Direct Representatives that the other members of that Council representing the Crown and other interests paid great respect to the views of the Direct Representatives.—Dr. R. PARAMORE proposed "The Medical Press," which toast was suitably responded to.—The Rev. HENRY BELCHER proposed "The Association of the British Postal Medical Officers," and this having been replied to by the PRESIDENT, Dr. H. FITZGIBBON proposed "The Guests," which received due acknowledgment from Sir THOMAS ROE and Mr. P. J. FREYER.—A very cordial vote of thanks to the honorary general secretary, Dr. R. Ritchie Giddings, concluded the proceedings. The enjoyment of the evening was much enhanced by the excellent singing of Miss Lilian Corner and Mr. George Schneider and by a well-selected programme of music executed by the Imperial Orchestra.

THE NEW INFIRMARY AT NEWCASTLE.

THE foundation-stone of the Royal Victoria Infirmary was laid by the Prince of Wales on Wednesday, June 20th. The new building, which is to commemorate the Diamond Jubilee of Her Majesty the Queen, will occupy a site upon Castle Leazes and will take the place of the old infirmary which, by

its lack of adequate accommodation, has not for many years been able to minister to the wants of a greatly increased population. Briefly the story of the new building is as follows. In 1896 Mr. R. Lord was for the first time elected mayor of Newcastle and he initiated the movement to build a new infirmary to celebrate the Queen's Diamond Jubilee. He asked for £60,000, £1000 for each year the Queen would have reigned. This sum was raised more easily than it was expected it would be and Mr. Lord then asked for £40,000 more to rebuild the infirmary on its present site. While this money was being collected Mr. John Hall, a wealthy Newcastle merchant, offered to give £100,000 to build a new infirmary provided the site were changed and after great trouble and much delay ten acres of land were given by the corporation who own the soil and by the freemen who own the herbage on one of the sites selected by Mr. J. Hall on the Castle Leazes, at one time a part of the great Newcastle Town Moor. For the part which Mr. R. Lord has played in this gigantic undertaking he deserves the gratitude of the inhabitants of the counties of Northumberland and Durham. For 30 years at least the building of another infirmary in Newcastle has been talked of and from time to time efforts have been made to raise the requisite funds, but till Mr. Lord did it everyone thought the task impossible. Now at last a complete building will be erected. It will accommodate 400 patients and will probably cost, including the value of the site, £300,000. It will be one of the very finest hospitals in the kingdom.

The date chosen for the foundation-stone ceremony was particularly appropriate, inasmuch as June 20th is the anniversary of the Queen's accession to the throne. Never before have the streets of Newcastle been decorated as they were; bunting and other coloured decorations disguised the handsome stone buildings so that in many cases they could hardly be recognised, and the thoroughfares were thronged with such a crowd of visitors as has rarely if ever collected together in the stately old town. Fortunately the day, with the exception of a few slight showers, was fine and warm, so that everything contributed to make the laying of the foundation-stone a complete success. The Royal party arrived at the Central Station from York at 12.10 P.M. and were met by the Home Secretary, the Lord Lieutenant of Northumberland (Earl Grey), Lord Durham, the Mayor (Mr. R. Lord) and Mayoress, the Sheriffs, and the members of the corporation, together with many of the prominent citizens. An address, enclosed in a casket of ivory and gold, was presented to the Prince of Wales in the Assembly Room. His Royal Highness, who represented the Queen, having replied, a procession was formed and, escorted by a detachment of the Household troops, proceeded to a large covered stand capable of accommodating some thousands of spectators, where, in the presence of a huge crowd, the foundation stone was laid.

In reply to an address read by Professor G. H. PHILIPSON, M.D. Cantab., on behalf of the governors of the infirmary, the PRINCE OF WALES said: It gives me much pleasure to be here to-day, by the desire and on behalf of the Queen, my dear mother, to lay the foundation-stone of the beneficent institution which Her Majesty has directed shall bear her name in permanent commemoration of the wisdom of your corporation and freemen and of the generous charity of the inhabitants of this great city and the adjoining counties on the occasion of her Diamond Jubilee. The vast and varied industries which have grown up on the banks of the Tyne and maintain your population of resolute and prosperous workers are, unfortunately, in some instances carried on with a considerable, though happily diminishing, risk to life and health. It is therefore extremely gratifying to the Princess of Wales and myself to take part in the inauguration of a hospital so extensive and well equipped, where the best resources of medical science and of skilled and efficient nursing will be at all times available for the benefit of the suffering. We learn with satisfaction that a very generous contribution has been made by working men towards the endowment of the infirmary from which they will derive such benefits. I shall be happy to convey to the Queen your loyal and dutiful expressions of attachment and your good wishes, and I have to thank you for the cordial reception which you have given to the Princess of Wales and myself and to our daughter the Princess Victoria.

The Bishop of NEWCASTLE offered a special prayer and the MAYOR, on behalf of the architects, Mr. W. L. Newcombe, F.R.I.B.A., Newcastle, and Mr. Percy Adam, London, and of the contractor, Mr. A. Pringle, presented to His Royal Highness a golden trowel and a mallet. The Prince then declared the stone to be "well and truly laid."

The MAYORESS, on behalf of the governors of the Royal Victoria Infirmary, presented to the Princess of Wales a fan embellished with a view of the new building.

At a lunch which was afterwards served in the St. George's Drill Hall to some 900 guests the PRINCE OF WALES, in reply to the loyal toasts, said: In the name of the Princess and of our daughter and in my own name I must express our heartfelt thanks for the manner in which the Mayor has so kindly proposed this toast and for the cordial way in which you have received it to-day. ..... The Mayor having intimated a great wish that the Queen should lay the foundation stone of the great infirmary which is called after her name, she, being unable for various reasons to do so, deputed me to take her place. ..... I need hardly say how gladly I was able to take the opportunity of once more being among you, where we have always been so kindly received. Most sincerely do I hope that the building will meet all its requirements. The spot chosen seems to be a most excellent one, and I am glad to hear not only of the great munificence of a donor who, alas, has been taken from us, but that the working classes have shown the great interest that they take in their own welfare by subscribing considerable sums towards the institution. Everybody knows how celebrated Newcastle is for its great works and for its shipping. It is known all over the world. His Royal Highness then proposed the health of the Mayor and Corporation of Newcastle, to which he added the health of the Mayoress.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON July 5th the Fellows of the Royal College of Surgeons of England will be called upon to elect four members of the Council, and the occasion is remarkable, not for the number of vacancies, for in some years five vacancies have occurred, but for the large number of Fellows who have come forward as candidates. 12 Fellows will compete for the four seats, and so far as we are aware this number is absolutely unprecedented. There were, indeed, 13 candidates, but Mr. J. H. Morgan has retired, as Mr. J. A. Bloxam, his senior colleague at Charing-cross Hospital, is a candidate.

The electors will certainly experience some difficulty in deciding for whom they should vote. The motives which influence the voting are necessarily complex, but far above all others the influence of the medical school is felt, for as a rule Fellows support those candidates who come from their own medical school, and provincial voters support provincial candidates. There is much that is good in this feeling of loyalty, but we do not hesitate to point out that the power of electing to so important a body as the Council of the Royal College of Surgeons of England is a serious trust and it should be exercised not for the benefit of any individual, but for the good of medical education and of the medical profession at large. Those Fellows should be chosen who have shown themselves to have at heart the real advancement of surgery.

In considering the long list of candidates we find that three of them have already been members of the Council. Two of the retiring members, Mr. John Tweedy and Mr. Alfred Cooper, are offering themselves for re-election, and we imagine that all will agree that a retiring member of the Council who has served one term of office well is always justified in looking forward to being appointed for a second period. Mr. Tweedy was originally elected as representing the reform party in the College, and his conduct during the time he has already served has fully justified his appointment, for though he has shown himself at all times a zealous supporter of reform, he does not under-estimate the difficulties of the task. He has done good work on the Council and he would be certainly much missed by his colleagues should he not attain re-election. Mr. Alfred Cooper has also served one term and has proved himself a useful member of the Council; he will no doubt receive much support. Dr. Ward Cousins has not at present a seat on the Council though he has been twice elected a member. On each occasion he has replaced a member who through death has not finished his full term of

office; the result has been that though Dr. Cousins has had two terms of office he has only served four years.

Of the nine remaining candidates one, Mr. Jordan Lloyd, is a provincial Fellow, a well-known surgeon of Birmingham. At present there are only four provincial members of the Council, though there have been five, and if the electors consider that five members should be from the provinces they will elect either Dr. Ward Cousins or Mr. Jordan Lloyd. We are sure that either of them would be a useful addition to the Council.

The eight London candidates who have not yet been on the Council represent six medical schools, for Guy's and Middlesex each have two candidates, Mr. Clement Lucas and Mr. Golding-Bird being connected with the former and Mr. Pearce Gould and Mr. Bland-Sutton with the latter. Charing-cross is represented by Mr. J. A. Bloxam, St. Bartholomew's by Mr. W. J. Walsham, St. Thomas's by Mr. H. H. Clutton, and St. George's by Mr. W. H. Bennett.

As Sir Thomas Smith, who is retiring from the Council and does not intend to offer himself for re-election, is from St. Bartholomew's it is not unlikely that that medical school will be successful in replacing him by Mr. Walsham, although four members of the Council at present represent that hospital.

With regard to the other candidates we do not feel called upon to discriminate between so many able surgeons and we must leave to the electors themselves the onerous task of decision.

This year, as for several years past, the Fellows have been supplied with ballot papers so that they can vote by post, and there will be a still further falling off in the numbers of those who vote in person; but we would remind the electors that six Fellows must be present before the election can commence and would ask any London Fellows who can spare the time to attend at the College on Thursday next at 1.30 P.M.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6569 births and 3325 deaths were registered during the week ending June 23rd. The annual rate of mortality in these towns, which had been 16·8 and 18·0 per 1000 in the two preceding weeks, declined again to 14·9 last week. In London the death-rate was 13·3 per 1000, while it averaged 16·0 in the 32 provincial towns. The lowest death-rates in these towns were 8·0 in Birkenhead, 9·9 in Cardiff and in Nottingham, 10·0 in Norwich, and 10·2 in Portsmouth; the highest rates were 20·7 in Manchester, 21·2 in Liverpool and in Sunderland, 21·8 in Oldham, and 22·4 in Salford. The 3325 deaths in these towns included 366 which were referred to the principal zymotic diseases, against 386 and 427 in the two preceding weeks; of these 117 were referred to measles, 82 to whooping-cough, 64 to diarrhœa, 56 to diphtheria, 28 to scarlet fever, 18 to "fever" (principally enteric), and one to small-pox. No fatal case of any of these diseases occurred last week in Birkenhead; in the other towns they caused the lowest death-rates in Swansea, Nottingham, Halifax, Gateshead, and Newcastle; and the highest rates in Wolverhampton, Derby, Manchester, Oldham, Preston, and Sunderland. The greatest mortality from measles occurred in Plymouth, Derby, Manchester, Oldham, Huddersfield, and Sunderland; from whooping-cough in Oldham; and from diarrhœa in Wolverhampton, Preston, and Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the 33 large towns. The 56 deaths from diphtheria included 21 in London, six in Leicester, six in Sheffield, and four in Leeds. One fatal case of small-pox was registered last week in Wolverhampton, but not one in any other of the 33 towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had increased from three to 15 at the end of the five preceding weeks, had declined again to 13 on Saturday last, June 23rd; one new case was admitted during the week, against four, four, and eight in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1810, against 1754 and 1766 on the two preceding Saturdays. 219 new cases were admitted during the week, against 194, 203, and 210 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 268 and 257 in the two preceding weeks, further declined last week to 181, and were 28 below the corrected average. The causes of 44, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Nottingham, Salford, Bolton, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Huddersfield, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·3 and 19·9 per 1000 in the two preceding weeks, declined again to 16·5 during the week ending June 23rd, but exceeded by 1·6 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 8·6 in Leith and 10·6 in Paisley to 17·0 in Edinburgh and 18·8 in Glasgow. The 510 deaths in these towns included 19 which were referred to diarrhœa, 18 to whooping-cough, 14 to measles, four to diphtheria, two to scarlet fever, two to "fever," and one to small-pox. In all 60 deaths resulted from these principal zymotic diseases, against 57 and 78 in the two preceding weeks. These 60 deaths were equal to an annual rate of 1·9 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been seven and 22 in the two preceding weeks, declined again last week to 19, of which seven occurred in Edinburgh, five in Glasgow, two in Dundee, and two in Paisley. The deaths from whooping-cough, which had been 17 and 21 in the two preceding weeks, declined again to 18 last week, and included 16 in Glasgow. The fatal cases of measles, which had risen from 10 to 23 in the four preceding weeks, declined again last week to 14, of which 11 were registered in Glasgow and two in Edinburgh. The four deaths from diphtheria corresponded with the number in the preceding week, and included three in Glasgow, where the two fatal cases of scarlet fever and the death from small-pox were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 106 and 101 in the two preceding weeks, further declined last week to 87, but showed an excess of 13 over the number in the corresponding period of last year. The causes of 25, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·9, 23·1, and 23·8 per 1000 in the three preceding weeks, declined again to 17·9 during the week ending June 23rd. During the past four weeks the death-rate in the city has averaged 21·7 per 1000, the rate during the same period being 15·9 in London and 16·7 in Edinburgh. The 120 deaths belonging to Dublin registered during the week under notice were 40 below the number in the preceding week, and included four which were referred to the principal zymotic diseases, against three, 10, and six in the three preceding weeks; of these, two resulted from "fever," one from diphtheria, one from whooping-cough, and not one either from small-pox, measles, scarlet fever, or diarrhœa. These four deaths were equal to an annual rate of 0·6 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·1 in Edinburgh. The two deaths from "fever" corresponded with the number in the preceding week, while the mortality from diphtheria showed a slight decrease. The 120 deaths in Dublin last week included 23 of infants under one year of age and 28 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers recorded in the preceding week. One inquest case and one death from violence were registered; and 47, or more than a third, of the deaths occurred in public institutions. The causes of eight, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Staff-Surgeons: James M'C. Martin, D.S.O., and W. E. Home to the *Centurion;* and H. P. Shuttleworth to the *Boscawen* for the *Minotaur*. Surgeons: Richard C.

Munday to the *Nelson*; S. Roach to the *Centurion*; William Walker, John O'Hea, Leonard S. Whitwan, Herbert, Denny, Alfred J. Hewett, and Gerald M. Eastment, to the *Duke of Wellington*, additional for disposal; Robert W. G. Stewart, John St. John, Murphy Henry J. Rogers, Alex. C. Remirck, Walter P. Dyer, and Thomas H. Vickers, all to the *Vivid*, additional for disposal; Robert R. Fasson, Arthur F. Fraser, and Ralph B. Ainsworth, to the *Pembroke*, additional for disposal; John R. Muir, Arthur F. Frank, and Richard R. Horley, to the *Wildfire*, additional for disposal; A. W. Campbell to the *Lizard*; A. Gaskell and J. D. S. Milln to the *Centurion*: and J. P. H. Greenhalgh to the *Prince George*.

INDIA AND THE INDIAN MEDICAL SERVICES.

The following promotions are approved:—To be Colonel:—Lieutenant-Colonel Charles Henry Joubert, Bengal Establishment. Majors to be Lieutenant-Colonels: *Bengal Establishment:* Charles Pardey Lukis, Robert Richard Harvey Whitwell, Lawrence Augustine Waddell, Dhanjibhai Barjorji Spencer, James Clarke, Cooverjee Cawasjee Vaid, Philip Durrell Pank, Thomas Richard Mulroney, and Thomas Rankin Macdonald. *Madras Establishment:* Rustam Hormasji Cama, Winthrop Benjamin Browning, C.I.E., Crosdaaile Miller Thompson, Cubitt Sindall Rundle and James William Evans. *Bombay Establishment:* Henry Peers Dimmock and Charles Bradley Maitland. Captains to be Majors: *Bengal Establishment:* Daniel Grove Marshall, David Macbeth Moir, Harry Frederick Whitchurch, V.C., James Reid Roberts, Frederick William Gee, Kanta Prasad, Patrick Wilkins O'Gorman, William Henry Gray, and George Thomas Mould. *Madras Establishment:* Allan Ewen Grant and Frank Charles Pereira. *Bombay Establishment:* James Graham Hojel, Henry Charles Leffler Arnim, and George Sloane Thomson. The transfer of the undermentioned officer to the half-pay list is also approved: Captain John William Wolfe, Bengal Establishment. The retirement from the service of the undermentioned officers is also notified:—*Bengal Establishment:* Lieutenant-Colonel Charles James Hislop Warden, Lieutenant-Colonel Richard Nugent Stoker, and Lieutenant-Colonel Thomas Rankin Macdonald. *Bombay Establishment:* Lieutenant-Colonel Atmaram Sadashiva Graudin Jayakar.

MILITIA INFANTRY.

Ernest Madge, late Surgeon-Lieutenant, Militia Medical Staff Corps, to be Captain.

VOLUNTEER CORPS.

Artillery: (1st Cornwall) Duke of Cornwall's (Western Division, Royal Garrison Artillery): Surgeon-Major W. Mason to be Surgeon-Lieutenant-Colonel; Surgeon-Captain W. K. Bullmore to be Surgeon-Major. Submarine Miners: The Clyde Division: Surgeon-Lieutenant J. Rowan to be Surgeon-Captain. *Rifle:* 8th Volunteer Battalion the Royal Scots (Lothian Regiment): George Alexander Dickson to be Surgeon-Lieutenant. 1st Volunteer Battalion the Royal Warwickshire Regiment: Surgeon-Major E. L. Freer to be Surgeon-Lieutenant-Colonel and to remain Supernumerary. 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Lieutenant G. D. Logan resigns his commission. 4th Volunteer Battalion the East Surrey Regiment: Surgeon-Major E. J. Lawless to be Surgeon-Lieutenant-Colonel and to remain Supernumerary. 1st Nottinghamshire (Robin Hood): James Black Roberts to be Surgeon-Lieutenant.

Memorandum.—Consequent upon the division of the 1st Volunteer Battalion the Lincolnshire Regiment into two Volunteer Battalions, designated respectively the 1st and 3rd Volunteer Battalions the Lincolnshire Regiment, Her Majesty has been graciously pleased to approve of the following with effect from June 20th, 1900, and of the officers so transferred being considered to have received in the new battalion commissions of the same rank and date as in the consolidated one, viz.:—1st Volunteer Battalion the Lincolnshire Regiment: Surgeon-Major F. J. Walker and Surgeon-Lieutenant J. Bruce.

TRANSVAAL WAR NOTES.

Lieutenant Carlyon, R.A.M.C., Civil Surgeon Bruce, and Civil Surgeon M. P. Cooke have left England for South Africa. Major Bond, R.A.M.C., is on his way to England wounded in the *Armenian*. Civil Surgeon Stamford is returning to England in the *Bavarian*. Lieutenant Buist, R.A.M.C., Major A. B. Cottell, Lieutenant H. G. Martin, Lieutenant Scott, Civil Surgeon Callum, and Civil Surgeon Smith have arrived in England. The following officers were discharged from hospital to duty for the week which ended June 10th: Civil Surgeons Smallman and Civil Surgeon Hunter. Major A. Wright, R.A.M.C., and Surgeon-Lieutenant-Colonel Lawless, 4th Battalion East Surrey Regiment, were discharged from hospital to duty for the week ending June 17th.

On June 19th Princess Henry of Battenberg visited the Syracusa Convalescent Home for Wounded Soldiers at Torquay. This institution, which at present contains 28 soldiers, several of whom are Canadians, was founded by Mr. and Mrs. Mallock. Mr. J. Quick described each case and Her Royal Highness had a cheering word to say to each of the men.

Mrs. Skey Muir, the honorary secretary of the Royal Army Medical Corps South African Fund, notifies all those who have been interested in the work of this Fund that the offices, 77, George-street, Portman-square, W., will be given up early in July and that no parcels can be received after the 7th prox. Gifts in money may, however, still be sent to the bankers, Messrs. Holt and Co., 3, Whitehall-place. Should it be found desirable to resume the work in the autumn due notice will be inserted in the daily press.

Invalids from South Africa, consisting of 23 officers and 200 men, have arrived in Plymouth this week and have been admitted into the Station Hospital, Devonport. In addition to the camp hospital for 50 beds which has been established at Fort Staddon the hospital at Tregantle Fort has been increased to 50 beds. Both these hospitals will be further increased should the occasion arise.

The s.s. *Cheshire* and *Pembroke Castle* arrived at Southamyton on June 19th and June 22nd respectively. The former brought 392 and the latter 334 sick and wounded from South Africa who were admitted to the Royal Victoria Hospital. We hear that in future convalescent patients will be sent on from the troopships to Portsmouth and that only men really requiring medical treatment will in future be admitted to the wards of the hospital.

TRANSVAAL WAR CASUALTIES.

Surgeon-Lieutenant-Colonel James Stevenson died at Cape Town on June 19th.

Mr. Benton Norman Maclean, medical officer attached to the Imperial Light Horse, is reported to have died from ptomaine poisoning at Ladysmith.

Captain J. H. Campbell, R.A.M.C., was severely wounded during the operations in Natal on Feb. 24th.

The following are reported dangerously ill:—At Bloemfontein: Surgeon-Lieutenant-Colonel W. W. Lake, Militia Medical Staff Corps. At Kimberley: Civil Surgeon W. H. Steele. Civil Surgeon W. B. Bennett, attached No. 1 Stationary Hospital, Natal. At Kroonstad, June 16th: Civil Surgeons R. W. Jameson and A. Robertson.

Lord Roberts telegraphs that the following sick officers are reported to be at Heilbron: Major Greig, R.A.M.C., and Civil Surgeon Ash, enteric fever; doing well.

THE CRISIS IN CHINA.

A *Times* telegram through Reuter's agency, dated Calcutta, June 26th, states that a wing of the 7th Bengal Regiment, together with the 43rd Field Hospital, embarked on June 25th on board the *Nerbudda*.

In a subsequent telegram, dated Simla, June 26th, the *Times* says: Major Cree, R.A.M.C., will proceed on hospital duty with the force. Lieutenant Douglas and Captain Walton of the Indian Medical Service have been placed in charge of the x rays apparatus, of which there is only one complete set available here.

The following Indian medical officers will accompany the regiments proceeding to China: Lieutenant-Colonel Bookey (principal officer), Lieutenant-Colonel Esmonde-White, Majors Mould and Whitchurch, V.C., and Captains Kenrick, Walton, and Price. Those proceeding with the hospitals are: Lieutenant-Colonel Waddell, Majors Burton, Fooks, Thomson, Marshall, and White, Captains Jenny, Carr, Moorhead, Harriss, and Hamilton, Lieutenants Fenton, McCay, Megaw, G. Stewart, Willmore, Meakin, Gidney, and C. Stewart.

ROYAL VISIT TO NETLEY HOSPITAL.

On June 21st H.R.H. the Princess Louise, Duchess of Argyll, visited the Royal Victoria Hospital with Mrs. Eliot Yorke with whom she was staying at Hamble Cliff. Arriving at the hospital at 2.45 P.M. Her Royal Highness was met by Colonel Charlton, R.A.M.C., accompanied by his secretary (Major Treherne, R.A.M.C.), and by Professor A. E. Wright, and was conducted through the wards of both the medical and surgical divisions of the hospital. In the

former the cases were explained to the Princess by Lieutenant-Colonel W. E. Webb, R.A.M.C., and in the surgical division by Major W. Dick, R.A.M.C., acting Professor of Surgery, and by Major Birt, R.A.M.C., the latter being the officer in charge of the surgical division. The Princess remained in the hospital for rather more than two hours.

ARMY MEDICAL SCHOOL, NETLEY.

Under orders from the Director-General of the Army Medical Service a special examination was held at the Army Medical School on June 20th and 21st to examine the surgeons-on-probation who had been nominated for the Royal Army Medical Corps. The following gentlemen were recommended for commissions as Lieutenants:—

1. P. Henderson.
2. J. P. Murphy.
3. A. R. Greenwood.
4. F. H. Hardy.
5. W. M. H. Spiller.
6. D. W. K. Moody.
7. A. D. Jameson.
8. W. Bennett.
9. B. B. Burke.
10. W. B. Fry.
11. C. R. L. Ronayne.
12. G. Baillie.
13. L. L. G. Thorpe.
14. J. B. Hall.
15. W. S. Crosthwait.
16. P. G. Douglass
17. R. F. Ellery.

DEATHS IN THE SERVICES.

Lieutenant-Colonel George Frederick Bevan, I.M.S., recently, who qualified as L.R.C.S. and L.R.C.P. Irel. in 1870 and 1871 respectively, met with a serious carriage accident at Bangalore in April last. He was recovering from its effects when pneumonia set in which rapidly proved fatal.

Lieutenant Charles William McG. Orpen, I.M.S., at Quetta, recently, from pneumonia. Lieutenant Orpen, who had only recently entered the service, graduated as M.B., B.Ch., and A.B.O. Dub. in 1897.

Correspondence.

"Audi alteram partem."

THE POSITION OF THE GENERAL MEDICAL COUNCIL WITH RESPECT TO THE MIDWIVES BILL.

To the Editors of THE LANCET.

SIRS,—As President of the General Medical Council I have been authorised and requested to state, should certain amendments to the Midwives Bill now under consideration in the House of Commons be placed on the notice-paper, that the Council at its last meeting carefully considered the bearing of the most important of these amendments and passed the following resolution:—

That the Council request the President to represent to the Lord President of the Privy Council that the amendment of Clause 2 (2) of the Midwives Bill by the omission of the words "or shall habitually and for gain attend women in childbirth" would so completely destroy its efficacy as a measure of protection for lying-in women of the poorer classes, that the Council could no longer approve of the Bill passing into law; and that accordingly they deem it unnecessary at the present time to express an opinion on the other amendments suggested.

As I understand that an amendment for the omission of the words referred to has been placed on the notice-paper I have to request that you will favour me by publishing this letter so that the Medical Council's position on this matter may be known.

I am, Sirs, yours faithfully,

June 26th, 1900. WM. TURNER.

THE RIGHT OF THE LICENTIATE OF THE SOCIETY OF APOTHECARIES OF LONDON TO STYLE HIMSELF "PHYSICIAN AND SURGEON."

To the Editors of THE LANCET.

SIRS,—Subjoined is a copy of a resolution passed by the Court of Assistants of this Society on June 19th. Having regard to the great importance of the resolution to the Licentiates of the Society I shall be much obliged if you will allow it to be published in your next issue.

I am, Sirs, your faithfully,

June 26th, 1900. JAMES R. UPTON.

The resolution passed by the General Medical Council at its recent session deciding not to employ the funds of the Council in defraying the expenses of a test case to determine whether the L.S.A. (1886) is or is not entitled to call himself Physician and Surgeon having been read,

Resolved, that in view of the opinions expressed by eminent counsel in favour of the Society's contention, and this court considering that the decision of the General Medical Council ought not to operate to the prejudice of the Licentiates of the Society, hereby authorises all Licentiates of the Society qualified under the Medical Act, 1886, to call themselves Physician and Surgeon and undertakes to defend them at the sole cost of the Society from the legal consequences of their adopting those titles.

THE DAVIES-COLLEY MEMORIAL FUND.

To the Editors of THE LANCET.

SIRS,—The irreparable loss which our hospital and medical school have sustained through the death of Mr. Davies-Colley while still with us in active work has awakened a general desire to perpetuate his memory. It is felt that there are many who will be eager to testify in some lasting form to Mr. Davies-Colley's great ability, unvarying uprightness, and daily devotion to duty. To this end at a meeting of the medical staff it was decided to invite subscriptions. The form which the memorial shall take will be determined at a meeting of the subscribers to be held at a later date. Subscriptions may be sent to Dr. T. G. Stevens at the address as below.

We are, Sirs, yours very truly,

CHARTERS J. SYMONDS, Treasurer.
THOS. G. STEVENS, Hon. Secretary.

8, St. Thomas's-street, London Bridge, S.E., June 28th, 1900.

LYMPHATIC LEUKÆMIA.

To the Editors of THE LANCET.

SIRS,—I have read with some interest the account of the case of lymphatic leukæmia published in THE LANCET of June 16th by Dr. Murrell. While agreeing with the author as to the importance of recording new and successful treatment in this disease, I should submit that the diagnosis is not so clear as was assumed. The diagnosis of lymphatic leukæmia is based upon three cardinal symptoms: (1) progressive hyperplasia of the lymphatic glands; (2) marked increase in the numbers of white blood corpuscles in the circulation; and (3) abnormally high percentage of lymphocytes. It is true that Muir and others have published cases in which the hyperplasia of the lymphatic glands was absent, but I am aware of no record of a case in which the latter two symptoms were also absent. In Dr. Murrell's case there is no mention made of the condition of the lymphatic glands, the number of white corpuscles was never above the normal; in fact, in the first and third counts there was a considerable leucopenia, and as regards the percentage a clear differentiation was not made between lymphocytes and hyaline corpuscles. I would further suggest that the condition described as "small cells having a single pale nucleus ..... surrounded by a narrow zone of fine granules staining very deeply with methylene blue" is such as is not infrequently seen when blood is deeply stained with methylene blue. Ehrlich[1] in describing the lymphocyte says: "The protoplasm shows with methylene blue and similar stains inequalities in the intensity of staining which must be regarded, not [as Ehrlich first thought] as the expression of a granulation, but as a net-like structure." It would be advisable that the indicated points should be cleared up before such a valuable case is put on record.

I am, Sirs, yours faithfully,

J. CHARLTON BRISCOE.

King's College Hospital, June 20th, 1900.

"ACCIDENTAL VACCINATION OF A WOMAN BY HER CHILD."

To the Editors of THE LANCET.

SIRS,—A case similar to that reported by Mr. Henchley in THE LANCET of June 23rd (p. 1846) occurred to me last year. A lady came to stay in this neighbourhood bringing her infant with her and in a few days she sent for me. She was suffering from pyrexia and from diffused redness of the face and much swelling which seemed to have its centre near the nose. The case seemed so obviously to be one of facial erysipelas that I notified it as such. Within two or three days a copious serous discharge from her nostrils began and continued for a week. As these symptoms slowly subsided the unusual course of the case led me to inquire further, and it came out that the infant had been vaccinated shortly before coming

[1] Die Anæmia, p. 46.

here, and by this time a small sore was discovered at the left side of the tip of the nose, just within the nares. The discharge ceased and the swelling decreased and eventually only a small scar was left. In this instance it appeared likely that the infection was conveyed from the infant's arm to the mother's nose through the medium of a pocket-handkerchief.—I am, Sirs, yours faithfully,

Blackheath, June 23rd, 1900. WALTER KIDD, M.D. Lond.

"HORSE AMBULANCES."

To the Editors of THE LANCET.

SIRS,—Perhaps the ancient and loyal borough of Wigan can lay claim to having one of the most complete systems of ambulances of any similar town in the kingdom. When I tell you that there are stationed in the town and district no fewer than 24 horse ambulances and 12 hand-wheel ambulances it will be at once evident that both Wigan and the district are doing their share of the work indicated in THE LANCET. But this has been going on for 20 years. The ambulance movement has all along been voiced through the annual report of the Royal Albert Edward Infirmary and through the local press, and there has not been lacking that spirit of magnanimity and generous kindness on the part of friends of this hospital to provide what was needed to establish this excellent hospital corps of which we are justly proud. The medical men in the district have done their share in giving lectures on "first-aid and ambulance work" in the various works, so that within a circle with a radius of nine miles from this hospital you will find men who have profited by those lectures and have possessed themselves of certificates or medals granted for proficiency by the St. John Ambulance Association.

I am, Sirs, yours faithfully,

WILLIAM TABERNER,

General Superintendent and Secretary, Royal Albert
June 26th, 1900. Edward Infirmary, Wigan.

MIDWIVES' REGISTRATION.

To the Editors of THE LANCET.

SIRS,—The protest published in THE LANCET of June 16th from the Beckenham and Penge Medical Society regarding the conduct of the Cannon-street Hotel meeting contained in a letter of sympathy to Dr. Glover would not require an answer did it not contain the statement that the delegates of that society went there "prepared to submit some very carefully considered alterations in the Midwives Bill which they hoped might render it a useful measure and one which would safeguard the public and be acceptable to the general practitioner." Of these "carefully considered alterations" we heard nothing either at the preliminary committee meetings or at the meeting itself. And how can this statement be made consistent with this society's delegates (including Mr. Sturges) having composed and signed the following, which is an extract from a letter which accompanied the invitation to the meeting?

> It is the opinion of the large majority of medical men, and particularly of general practitioners, who see most and know most of the class of work the Midwives Bill is intended to legislate for, that it is a measure likely to effect incalculable harm. Even if it provided, as it does not, for restricting to natural cases of labour only the legalised attendance of midwives, the harm would not be guarded against, for a natural case of labour requires complete scientific knowledge to diagnose and may become urgent and dangerous at any time between its commencement and completion. Since the study of midwifery has been changed, chiefly owing to the labours of the late Sir James Simpson and the Edinburgh School, from a despised art to an honoured science, the saving of life and suffering has been immense (as statistics will show) and the genus Mrs. Gamp, so powerfully exposed by Charles Dickens, has been disappearing by the ordinary process of evolution. That being so, the evil which we all recognise to exist seemed to be gradually curing itself; but the effects of this legislation, we fear, will be to revive it in a more dangerous form than ever existed before. The Medical Acts, which were drafted in the interests of the public, wisely ordained that medical men who are licensed to practise in any one branch of medicine or surgery (including midwifery) must show a thorough knowledge in all. Going absolutely against this principle the Midwives Bill will give a State-guaranteed qualification to women who can at most possess the little knowledge that is dangerous, which will deceive the public into thinking that in employing a midwife they are employing a properly qualified person to whom they are justified in entrusting their lives. We feel very strongly that this Bill has not been properly considered or the effect it will have sufficiently weighed; and although we wish all who follow the calling of nurse to the sick could be properly trained and even certificated by law we are convinced that no measure which provides for the attendance of lying-in women without proper medical supervision can fail to be productive of a largely increased death-rate among women and infants and also do much to encourage criminal practices.

This is the rational and consistent position which we still hold and the one from which they have apparently been washed back by the dogmatic ground-swell of medico-political orthodoxy.

I am, Sirs, yours faithfully,

Sydenham, June 17th, 1900. F. LORIMER HART.

HEALTH AND SANITARY CONDITION OF ABERDEENSHIRE: BRAEMAR SPECIAL DISTRICT.

To the Editors of THE LANCET.

SIRS,—In the issue of THE LANCET of June 9th, 1900, page 1682, under the heading of "Health and Sanitary Condition of Aberdeenshire," at the end of the paragraph it is stated that "scavenging has improved in all the districts except Aboyne, Torphins, and Braemar, '*where nothing has as yet been done.*'" This statement is incorrect as regards the Braemar district, where a scavenger has been employed for the last three years and paid a regular salary during that time. I have, therefore, to ask you to contradict the latter part of the paragraph in so far as Braemar district is concerned.

I am, Sirs, yours faithfully,

WM. MICHIE.

Clerk to Braemar Special District.
Tullochcoy, Crathie, June 23rd, 1900.

THE RAILWAY MEDICAL OFFICERS' UNION.

To the Editors of THE LANCET.

SIRS,—It will be a very great convenience and will considerably aid organisation amongst railway medical officers if you will allow me to ask those who previously communicated with me, as well as those who have not, if they will let me know as soon as possible whether they could attend a meeting at Ipswich during the session of the annual meeting of the British Medical Association, with a view of instituting a union for the protection and promotion of the interests of railway medical officers.

I find that the medical officers of some railway companies are already organised, having had associations for some years. If they will attend the proposed meeting their experience will be of use, not only in assisting the medical officers of other companies to form associations on their respective lines, but also in forming the national union.

There is nothing revolutionary intended in the proposed union. The objects are (1) to promote unity and good fellowship; (2) to compare the rates of payment of the different staffs; (3) to consider whether there should be a separate payment for minor surgical injuries as well as to consider the special fees for fractures, dislocations, &c.; (4) to consider the question of gratuitous or paid ambulance lectures; (5) to consider how we can protect each other from those who are seeking the appointments which we hold; and (6) finally to consider any other means which may be proposed from any member or staff likely to be for our mutual benefit.

If I hear from a sufficient number of medical officers I will make arrangements for a meeting at Ipswich and shall be glad to know what day and hour during the annual meeting will be most convenient for each writer. I not only wish to hear from those who have made arrangements to go to the annual meeting of the British Medical Association, but those who could make it convenient to run there specially for this meeting but have not the time at their disposal to remain for any other meeting. Our meeting will not be restricted to members of the British Medical Association. I shall be glad to hear from those unable to attend a meeting at Ipswich whether they are favourable to the union and will give it cordial support, in all cases stating what company they are attached to and any details connected with their appointment that may be of interest and utility to their colleagues. All communications will be regarded as confidential, facts only being made use of, not the names of the authors.

I am, Sirs, yours faithfully,

G. H. BROADBENT,

Medical Officer G.N. and G.C.Ry. Cos.
8, Ardwick-green, Manchester, June 25th, 1900.

CHELTINE FOODS.

To the Editors of THE LANCET.

SIRS,—Referring to your remarks on Cheltine Foods in THE LANCET of June 16th, when treating of the exhibits at the Medical, Surgical, and Hygienic Exhibition, we beg to state that the wording on the tins of diabetic food "Cannot turn into sugar" was a clerical error. Correction was made on our pamphlets two months ago but was unfortunately omitted on the diabetic tins. This has now been corrected, and in future all tins containing diabetic food issued by this company will have written on them "Will not form diabetic sugar."—We are, Sirs, yours faithfully,

WORTHS FOODS SYNDICATE, LTD.

Cheltine Works, Cheltenham, June 18th, 1900.

"CORONERS' INQUESTS ON PERSONS DYING UNDER ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—On reading your excellent leading article in THE LANCET of June 23rd, p. 1811, with regard to the questions propounded by Dr. Danford Thomas to be put, I presume, to medical witnesses at future inquests on deaths from anæsthetics, I could not help wondering whether the well-known coroner can possibly have any practical knowledge of the difficulties of complying with the suggestions which his questions would imply. A large number of the cases in which a general practitioner is called to give an anæsthetic are cases more or less of emergency, perhaps in some country village miles away from any professional assistance, cases in which there would be no time to make the thorough examination of the patient and the surroundings as suggested, or even if that were possible cases in which even unfavourable conditions might have to be ignored more or less. By all means let us have scientific inquiry with regard to anæsthetics, but I cannot help thinking that the general practitioner is being somewhat hampered by all the minutiæ of detail expected of him, which will make many men almost shrink from giving an anæsthetic. For instance, one of the questions suggested by Dr. Thomas is the experience of the anæsthetist. True, the more experience an anæsthetist has had the better for the patient and everybody. But it is not possible for all to have the same experience and many a young general practitioner may be called upon as a bounden duty to give an anæsthetic whether he has had experience or not. If the questions propounded by Dr. Thomas are to be put on every occasion of a fatality and the jury are to give their verdict according to the answers received, I for one, although I have had a fairly large experience of anæsthetics—i.e., ether and chloroform—hope I may never have to give any more if I am to run the risk of having my professional credit upset by a jury who are certainly not a competent tribunal on those matters.

I am, Sirs, yours faithfully,

June 26th, 1900. M.B., M.R.C.S.

THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN.

To the Editors of THE LANCET.

SIRS,—Although I am unable to discern that the columns of a medical journal are the proper arena for the discussion of the Irish Catholic University question I feel bound to contest your conclusion, as set forth in an annotation in THE LANCET of June 23rd, p. 1815, that the proposal to nationalise Trinity College is "as useless as it is impracticable." I hold, on the contrary, that the nationalisation of the College, which I understand to be the same thing as the complete de-sectarianising of it, would be most useful because it would remove for ever the only complaint which Irish Catholics can justly make against the Dublin University system. Trinity College is, indeed, national already but for one thing. Its education in arts, science, medicine, law, and engineering, and its degrees in these faculties, are as freely open, with all the honours of the higher grades, to Roman Catholics as to the students of any other religion. No questions are asked or any exclusion practised towards them, and many Roman Catholics who have passed through Trinity with honour have testified to that fact, and no grievance can be truthfully averred respecting the educational treatment of students of that or any other Church. There is, however, that within the University and its College which unfortunately affords grounds for the complaint that Roman Catholics are liable to be exclusively dealt with therein. The atmosphere is very strongly redolent of Protestantism, and the governing body, the Professors and Fellows and officials, are almost universally Irish Churchmen, and it would be no more reasonable to expect Irish Churchmen to feel comfortable in their studies at Maynooth than to expect Roman Catholics to feel comfortable at Trinity.

That the Protestant atmosphere is so thick in Trinity is due not to any desire on the part of the Protestants to boycott the Roman Catholics but to the refusal of the Catholic priesthood to allow their co-religionists to bear a hand in any form of Irish education over which they have not, practically, despotic control. They have pursued towards Trinity the same policy which they pursued towards the Queen's Colleges, using every effort to make them failures and then screeching that the institutions should be superseded because they *are* failures. No one in Ireland, I imagine, entertains any hope that the Catholic hierarchy will abandon this position until they must and the parade of imaginary grievances will no doubt continue, but if the nation recognises that the education of the people ought not to be chopped up for division amongst a number of sects and compels the Government to turn a deaf ear to the clamour of the Irish priests and to force Trinity to accept liberalisation and desectarianism the Irish University question will be solved as the nation desires. It may be true, just at present, that "no statesman of any party would attempt to interfere with Trinity College," but when we had a strong hand at the Ministerial helm instead of the time-serving Government which now rules the attempt was made and nearly succeeded and there is no doubt that the liberal voice of the British electors would now support any Government which would have the courage to ignore the assumed indignation of the Irish priests and proceed to eradicate all traces of sectarianism from the University of Dublin. To effect this latter purpose it would be essential to transfer in its entirety the Divinity school of Trinity College to the outside custody of the Church of Ireland with a grant to that Church equivalent to that now made to the sectarian education at Maynooth and elsewhere. Without this the Roman Catholics will always have a reasonable grievance and the priests a good cry for a separate Catholic university, and I see no insuperable difficulty in doing it whenever the nation has a Government whose regard for justice and for the interest of the people will restrain it from trafficking with parties for votes.

I am, Sirs, yours faithfully,

June 26th, 1900. A.M., M.D. DUB. UNIVERSITY.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending May 12th are as follows: remaining at the beginning of the week, 99; admitted, 23; discharged, 26; died, 10; remaining at the end of the week, 86. The totals up to the end of the week are as follows: cases, 216; deaths, 73; discharges, 57. "Contacts," 1242; "contacts" remaining, 153; cases among "contacts," seven. The population of Sydney should, perhaps, have been mentioned at an earlier date; it is about 456,000. Its composition is a matter much misunderstood in some quarters, in which it seems to be supposed to resemble that of South African towns. The truth is far otherwise. Australia is a white man's country, and it will not be the fault of the present generation if it does not remain so. The people are white, European or of European descent on both sides, and in preponderating proportion British. The only coloured people present in number of importance, in relation to vital statistics for instance, are the Chinese; but only 3465 were enumerated at the census of 1891, since when restrictive laws have prevented their immigration, hence nearly all the plague patients have been whites which might be inferred also from the gross death-rate. Only five coloured people have suffered; all of them were Chinese. Three have died, while two are likely to die.

Another point on which something may be said usefully is as to the completeness of the returns which have been given

from week to week. No doubt is entertained in any quarter that they are complete. That the first case discovered was the first case in reality is most probably the truth. It was certainly—the word is here used deliberately—not preceded by any important number of minor or of ambulant cases; one or two such there may have been; more there surely cannot have been. And if early in the epidemic it should be guessed that there may have been some oversight of declared or bubonic cases they diminished very quickly at all events; but the general feeling is that there never can have been more than (say) half a dozen at the outside. This is the opinion of all in a position to judge—of the resident staffs at the hospitals, for example, and of the staffs of the department of public health. As regards the latter, no doubts are entertained by it; it has the confidence of the profession which knows that its members will be rationally dealt with. A good many cases have been reported rather late, and even occasionally after death under medical care; but no one who has been puzzled by early symptoms fears that he will be rudely brought to book under the law, or that he will be asked publicly to explain his delay in reporting. On the other hand, all have learned that anything like wilful concealment or gross delay in reporting (in the case of other infectious diseases dealt with under the same law) is dealt with strictly. But the distant critic unacquainted with local conditions will be inclined to argue that wilful concealment of cases has occurred. He will refer to the early cases—if, indeed, cases of plague they were—in Calcutta. But the truth is that no evidence which would enable a reader to form an opinion was adduced regarding them;[1] a bare statement that the bacillus was observed comprised it. What, exactly, it was that was seen was not described; and whatever the bacteriological competency of an observer may be that, in a case where the possibilities of mistake are many, is not enough. From other quarters the evidence of precedent cases of ambulant plague—those, namely, in which there is recognised glandular swelling—is that practitioners remembered meeting with such cases which "must have been" plague, only after plague had become epidemic. Now, at first, attention was often drawn in Sydney to instances of glandular swelling, but they were almost always easily traced to one or other of the recognised causes and in reality were reported for protection; hardly ever had the patient any symptom of general illness, but the swelling was chronic, or at least of long standing. In one or two cases the cause of the swelling could not be made out, but then the most careful consideration and bacteriological examinations failed to afford the slightest support to a diagnosis of plague. In short, with as thorough a knowledge of plague as could be got from epidemiological and clinical study of accounts of the disease and its outbreaks, acquired long before the disease actually appeared here, nothing at all has been observed to support the notion that those causes of incompleteness in the epidemiological accounts which have existed or have been assumed in other cases have occurred here. The great importance of this matter in relation to certain etiological views is a good reason for writing upon it at some length.

There is little of interest to note except the diminished number of new cases for the week already shown above. The Millard house on having its floor taken up revealed a dry sandy soil and nothing else. The newly admitted cases show the same degree of virulence in the infection as at first on the average. Inoculation has recommenced; arrangements have been made for inoculating the inhabitants of the infected area and those employed there in preference to others, but comparatively little interest is shown by the public. On the first two days a few more and a few less than 100 respectively presented themselves.

May 15th.

[1] Papers relating to the Outbreak of Bubonic Plague in India to March, 1897.

THE DURHAM MEDICAL GRADUATES' ASSOCIATION.—The annual meeting of this association, followed by a dinner, is held alternately in London and Newcastle-on-Tyne. This year the turn of Newcastle came, very opportunely on the eve of the visit of the Prince of Wales. Many Durham graduates practising in London were present. The association is prosperous and betrays a warm affection for its *alma mater*. The dinner was held at the Grand Hotel, Barras Bridge, and was ably presided over by Dr. W. C. Beatley.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

Opening of the International Congress Season.—Graphology.—Agriculture and Health.—Grocers and Health.—Women's Work and Health.—The Housing of the Poor.

THE season for international congresses has now fairly begun. There were only three such congresses in the month of May, but 23 are taking place during the course of this month. The congress which in the month of May attracted the most general attention was that of graphology; a fact which is not surprising when we remember how experts in handwriting quarrelled over the celebrated Dreyfus *bordereau*. I am not aware, however, that anything was said about the graphology of medical prescriptions though this was certainly a subject on which a very interesting paper might have been written, beginning with some account of the mystic invocation to Jupiter which heads a prescription and concluding with some sarcastic allusions to the art of illegibility. Among the congresses that have already been held this month was that of the friendly and benefit societies called Le Congrès de la Mutualité. When the medical profession is better organised it should contrive to have a voice at such gatherings so that the other side of the questions treated may be brought forward. As it was we were treated to panegyrics on the advantages of thrift and on the benefit and growth of organisations the principal object of which it is to provide for a rainy day. Of course all this is excellent so far as it goes, but to accumulate vast reserve funds at other people's expense is not quite so estimable a performance. That the working classes and the small trading classes should be praised for such foresight and economy as they have displayed is quite right and proper, but at the same time it should be known that a part of these funds is not the result of economy and saving but the direct profit obtained by sweating members of the medical profession. It does not suffice to say this outside; it should be repeated within such congresses, so that it might be heard and understood by those who are responsible for the widespread grievances that afflict a large section of the medical profession in most countries. Another important congress was that of the grocers. I have not much to say about this meeting beyond mentioning the fact that there was an imposing British delegation of over 100 members. Considering how at scientific international congresses, such as that of hygiene, Great Britain is often very feebly represented, I must confess to a feeling of discouragement when I found that the grocers manage these things much better than the medical profession. But the grocers had also some things to say that affect public health. They were loud and bitter in their complaints against the truck system and against trusts which not only ruined legitimate trade but which, by abolishing competition, placed the public at the mercy of the monopolists. Such monopolists could more easily foist unwholesome articles on to the public, or sell things at exorbitant prices. The delegates, though they represented the master grocers, very generally agreed that the hours of labour for their shop assistants were too long and that they should be reduced. In this respect England was mentioned as a model nation where there is not only complete rest on Sundays but generally a half holiday in the middle of the week. It would be worth while holding such congresses if for no other purpose than to spread this custom to other nations among whom the exaggerated duration of the day's work for shop assistants has a very detrimental effect on public health.

M. Casimir-Perier, formerly President of the French Republic, presided over the Congress on Agricultural Education. He eloquently urged that every effort should be made to render education in agriculture at once attractive and easy, for it was most necessary to check the continual migration of the rural populations to the great towns. Though most of the speakers supported this view from the economical standpoint its importance as a question of national health and national defence was also admitted. It is from country districts that the best soldiers are recruited, and this for the simple reason that rural populations are healthier than town populations. In the name of the French Government M. Jean Dupuy, Minister of Agriculture, wished

the delegates welcome, so that the congress had a good set-off. Mr. Sutton represented the British Royal Agricultural Society, and there were influential delegations from the United States and most of the European nations. Here, then, was another opportunity, while keeping well within the programme of the congress, of propagating principles and projects of reform which would not only promote the interests of agriculture but also benefit the public health. The principal resolution adopted by the congress was in favour of teaching in universities and high schools those sciences which bear upon agriculture, such as chemistry, zoology, botany, geology, vegetable pathology, bacteriology, &c. Needless to point out, though the agriculturist would study bacteriology in view of preserving vegetable life and the lives of cattle, &c., he would not fail to realise that in many respects the same principles apply to the preservation of human life. The brotherhood of the sciences is an undeniable fact and a most beneficent fact, and hence sanitary reformers are well within their scope of action when they wish every success to the scientific agriculturist. Besides, on agriculture depends our food-supply and therefore it was but natural that several medical men should attend this congress. Dr. Cathélineau, for instance, read an interesting paper on the bacteriology of milk, insisting also that butter often contained the bacillus of tuberculosis and that therefore milk should be always sterilised. As the dairy industry depends on fermentation it should be conducted under conditions of the most perfect asepsis. There was also a good deal said about the cultivation of the vine and the necessity of legislation to prevent the adulteration of wine. The sale of cheap pure wine best contributed to prevent the evils of alcoholism, therefore a resolution was carried in favour of abolishing all local taxation (*octrois*) on wine. When natural wines became scarce and dear they were replaced by manufactured alcohols, with the result that there was invariably a great increase in drunkenness, crime, and insanity. The agriculturists in wine-growing countries had to be taught not only how to contend against the diseases that devastated the vineyards, but also how to employ such precautions in the making, bottling, &c., of wine that it would be able to travel and to keep without being strengthened by adding the more or less poisonous alcohols of commerce. Thus in many ways the Congress on Agricultural Education treated questions that might appropriately find a place in a congress of hygiene.

Then there has been an immense gathering of women—women politicians, women of science, and women authors and artists; but far more numerous than all these were the women engaged in works of charity and philanthropy. It was the Congrès des Œuvres et Institutions Féminines. I am not aware that there is a good equivalent in the English language for the word "œuvres." It means work, but work for a particular purpose or mission, and all charitable organisations come under this denomination. Now there are so many works of this description that from the very first the congress was hopelessly blocked by the reports brought by the delegates who individually were all naturally anxious to prove how very worthy of sympathy was their own particular mission. Those reports brought by the foreign delegates took up three-quarters of the sittings. Altogether there were more than 200 of such reports. In many cases only summaries could be read and it was rarely possible to discuss the points raised. Therefore the congress became terribly monotonous, yet these documents have a literary and historical value, but they are better suited for publication in a volume than for a congress. There was, of course, a great deal said about the care of children and about institutions affecting the same. A somewhat sharp discussion arose when Madame Dussaud urged that *crèches* should not be converted into institutions offering a premium on idleness. Therefore before admitting the children an inquiry should be made as to the position of the parents, but Mesdames Bazaine, Kauffmann, and Louise Dehor retorted that a little child or infant should not be made to suffer on account of the idleness or vice of its parents, and Mademoiselle Bonnevial protested that the object of day nurseries, &c., was not to punish bad parents but to save unfortunate children. The congress adopted various resolutions to increase the financial and other help given to poor mothers and to render it illegal for any woman to work during the first month following upon her confinement. Of course, the old arguments against the Contagious Diseases Act were brought forward again, but M. Trarieux and M. Bérenger, Senators, urged that such regulations were necessary for the preservation of public health. Madame Pognon, profiting by this division in opinion, attacked virtuous women for their want of sympathy with their fallen sisters, who were generally driven to a deplorable life not through any inherent vice of their own, but by the force of economical circumstances. It was not contempt but sympathy and a true understanding of the situation which alone would remedy the evil. In respect to this want of understanding of the true position of women, Mademoiselle Selma Riza attempted to show that Mahommedan women held a better legal position than Christian women. Mahomed was a great advocate of women's rights and also a great sanitary reformer. Consequently married women controlled their own property independently of their husbands, and if divorced retained the care of their children. On the other hand, as there is and can be no prostitution among Mahommedan women, Contagious Diseases Acts when employed in Mahommedan countries only affected the Christian populations. Unfortunately the instructions given by Mahomed that young women should be carefully educated had to a large extent been neglected, and consequently many Mussulman women had fallen into a condition of apathy and ignorance and led lives that might be considered as a sort of slavery. This was their own fault and contrary to the text and spirit of their laws and religion. A delegate from Alsace, Madame de Schlumberger, in regard to the question of morality thought that a mother should above all strive to remain the friend, companion, and confidante of her son during the critical period of adolescence. A mother should not fear from a mistaken feeling of modesty to speak of certain subjects, for it is on these very subjects that young men most need experienced advice. The congress adopted a resolution to this effect. In dealing with economic questions, which of course materially affect public health, for with extreme poverty sanitation becomes almost impossible, the congress adopted a motion in favour of what might be called a Woman's Homestead Act. Already in France it is illegal to seize for debts the bed and the implements of work, such, for instance, as a sewing-machine. These enactments should be enlarged so that homes cannot be so readily broken up. Another resolution adopted proposed to abolish all work for wages under the age of 16. Such is the nature of a few out of the enormous number of questions brought before this congress. They will suffice to show how the subjects treated often affected, directly or indirectly, the causes that bear upon public health.

The Congrès des Habitations à Bon Marché (artisans' dwellings and the housing of the poor) has also met this month and was presided over by M. Jules Siegfried, Senator and formerly Minister of Commerce. Mr. David Waterlow attended on behalf of his father, Sir Sydney Waterlow, who as chairman of the Housing of the Working Classes Committee in the British House of Commons was one of the honorary presidents of the congress, together with Mr. Geoffrey Drage, M.P. M. Siegfried in opening the congress expressed his sense of shame at the fact that so large a proportion of the peasantry still ignored the most elementary comforts and decencies of home-life. While in large towns there were block buildings where the rate of mortality attained the appalling figure of 80 deaths per 1000 per annum, yet the death-rate of the town as a whole might be even lower than 20 per 1000. To remedy this disgraceful loss of life sanitary reformers, architects, engineers, and financiers should come together and devise healthy dwellings where the rent charge should not exceed from 3 to 4 per cent. of the capital invested. Actually the rents paid amount to from 5 to 60 per cent. on the capital cost of the buildings. But if we were to reduce the profits of capitalists from 60 per cent. to 3 or 4 per cent. on moral grounds we must also make the tenants realise on moral grounds that they should not squander in unnecessary things what they should reserve for the essentials of existence. M. Siegfried concluded by quoting Jules Simon, who said: "Without home there is no family; without family there is no morality; without morality there are no men; and without men there can be no nation." M. George Picot, Permanent Secretary of the Academy of Moral and Political Sciences, read a lengthy paper on Artisans' Dwellings. He is an economist of the old school and fears State intervention. Nevertheless, he did admit that it might be useful and without peril to remove such legal obstacles as exist preventing the investment of capital which is locked up. In every other respect he argued in favour of existing conditions and it was difficult to see

where reform was to find a footing. Capital refused to be "moralised" and preferred high dividends. But if an outside influence should set a good example then investors might become reconciled to smaller profits in the face of such competition. M. Cheysson suggested that conflicting interests might be reconciled by a system of profit-sharing between proprietors and their tenants. The latter would then be less likely to injure the houses in which they dwelt. But this suggestion met with only scant support. M. Weber thought that the State was in any case quite justified in building homes for the aged and infirm. Reports were read describing what had been done in England—the Peabody buildings, the County Council common lodging-houses, &c. Lengthy arguments were held as to whether State or municipal intervention tended to paralyse private enterprise. M. Hector Denis, the well-known Belgian economist, was strongly in favour of municipal tenements and lodging-houses and was supported by many members of the congress, including several directors of private enterprises. The congress adopted a motion effecting a compromise and declaring that as circumstances differed greatly in the various countries the question of State intervention should be reserved for future congresses. But in any case the State must actively interfere to enforce all necessary sanitary regulations, and the congress determined to elect a permanent international committee to collect information.

Paris, June 24th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Cawnpore Plague Riots.—Improved Plague Mortality.—Birthday Honours.—The Anti-rabic Institute.

THE Local Government resolution recently issued explains the origin and course of the Cawnpore plague riots. There seems to have been a general fear of plague in the city and an ignorance of and uncertainty about the plague regulations. The compulsory removal to hospital and segregation of two cases seem to have inflamed the people and while they were gathering for a general meeting a false rumour was started about a boy being forcibly removed to the hospital to be burnt alive. The mob made for the hospital, murdered the head constable and five other men, and set fire to the huts of the hospital and segregation camp. A large assembly of the roughest elements afterwards took place on the parade-ground. As many of the men were armed with big sticks and were prepared for a disturbance the magistrate thought it wise to have them disarmed. Fortunately he arrived with the 5th Bengal Cavalry and had the ground cleared, but there was a great deal of stone-throwing. Thinking the disturbance was over the cavalry returned to barracks. The mob, however, broke out again and had it not been for the presence of the Volunteer Light Horse, who were compelled to fire on the crowd, there is no knowing what massacres might have taken place. The next day was more peaceful and conferences took place about the plague regulations. The inquiry showed that the people had not been sufficiently informed about the plague regulations, that the police were utterly useless, being apathetic and ignorant and without any information as to the state of feeling among the populace, and that the leading natives failed to lend any assistance and apparently gave covert support to the agitators.

I am pleased to be able to record a great reduction in the plague mortality throughout India. There were only 975 deaths in the whole of India last week. The Bengal Presidency had 388 deaths and the Bombay Presidency 519.

The following medical practitioners have come in for Birthday Honours:—Colonel Campbell, I.M.S., of Shillong; Captain C. H. James, I.M.S., of Jullunder; Miss Charlotte Adams, L.R.C.P. Edin., of Jodhpur; Miss Susan Campbell of Ajmere; Mrs. H. Smith of Jullunder; and Major Stevenson, I.M.S., of Allahabad, the two first-mentioned getting the Kaisar-i-Hind gold medal and the others the silver medal. I have not heard of any honours having yet been given to the plague medical officers who were appointed by the Secretary of State.

An Anti-rabic Institute for India is at last an accomplished fact. After numerous delays Government have stepped in and practically settled the difficulties. The Indian Chiefs' Victoria Jubilee Bacteriological Institute came to nought and the scheme for a Pasteur Institute has hung fire for years. The Royal Army Medical Corps, having an officer in Major D. Semple who had studied in Paris and Lille, determined to utilise his experiences, and the annual expense for sending soldiers to Paris was diverted for the new institute. The central committee of the proposed Pasteur Institute saw their opportunity and took over its control. With a capital of Rs. 70,000 and a yearly grant of Rs. 19,500 the expenses of the new institute ought to be fairly well met. The public may congratulate themselves that at last means are provided whereby European and native patients alike can be offered the best available treatment for the terrible disease of rabies.

May 24th.

The Famine, the Cholera, and the Coming Monsoon.—The Decline in the Plague Epidemic.

THE famine shows no signs of abatement and the total number of people under famine relief for the whole of India has now reached 5,700,000. The Central Provinces chiefly are affected. In the Bombay Presidency cholera has been decimating the labourers on the relief works. At Hadmatia there is a camp of 25,000 people and the disease is of a most virulent type. The scare has almost emptied the camp.

Intimately associated in interest with the present famine are the prospects of the coming monsoon. Unfortunately the forecasts are not favourable. The weather at Mauritius is reported as being more like that of April than of May, at the Seychelles the wind is unsteady, and the south-east trade winds between the two islands are unusually light, with less rain and sea than usual. These reports seem to indicate considerable delay in the advance of the south-east trade winds towards the Equator, and the current seems to be determined more than usual towards the Zanzibar coast.

The plague mortality continues to decline throughout India, only 746 deaths being reported for last week. From Bunder Abbas it is announced that plague has appeared at Kishm and that 18 cases have occurred since April 30th. The Australian papers report plague as prevailing at Sydney, Fremantle, Adelaide, Melbourne, and Brisbane. Rats teeming with plague have been found in Melbourne. There is also a death reported from Durban, the victim being an East Indian.

The trial of inoculation has been fairly extensive but in Bombay city, notwithstanding that the number of people inoculated has reached nearly 200,000, little impression seems to have been produced on the current outbreak. The prophylactic has been used this year in Karachi, Sholapur, Surat, and Aden.

May 31st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Tramps and their Children.

AT a meeting of the Chorlton Board of Guardians, held on June 22nd, the subject of the best mode of dealing with tramps and their children came up for discussion. A communication from the Coventry Board of Guardians was read, asking them to support the following resolution: "That the Local Government Board be asked to give the guardians permission to detain tramps for a period of seven days, and that while such tramps are performing the legal task of work their children should receive such elementary education as could be given by the proper officials." When one considers the results that follow the more systematic methods of the elementary schools, the effect of a week's tuition even by the most earnest and skilful teacher would not be very visible on such waifs and strays and would be dissipated by the time the next stopping-place was reached. Dr. J. M. Rhodes who has had much experience in, and thought much on, such subjects considered that there should be power to detain such children for at least six months and that the guardians should have authority to detain and educate them just as they had for children not under proper guardianship. This would no doubt be good for the majority of the children, but some would object to the interference with the parental relationship and its duties. Among the habitual tramps, however, the

former is but lightly regarded and the latter is not regarded at all, and the best thing that can happen to the children is to get free from their parents. But some of the homes for "waifs and strays" would be in many ways preferable to workhouse schools.

Anatomical Society of Great Britain.

The summer meetings of the Anatomical Society of Great Britain have been held this year in the Medical School, Owens College. At the close of the meeting on June 22nd Professor G. D. Thane of University College, London, proposed a vote of thanks to the Council of Owens College for their kindness in receiving and entertaining the members of the society. It was seconded by Professor A. M. Paterson of Liverpool and carried. In the afternoon Professor A. H. Young gave a garden party and in the evening the annual dinner took place. Mention should be made of the admirable arrangements for the meetings, the credit for which is due to Dr. Peter Thompson, the honorary local secretary for the Manchester visit.

Manchester Medical Staff Corps.

The Manchester Medical Staff Corps has by the services of the 85 men serving in South Africa earned the approval of the Director-General of the Army Medical Department. It appears that he inspected the companies at Aldershot and pointed out that there was so much sickness among the troops that for a long time more men of the department would be wanted, and he asked for additional volunteers. About 30 men have already volunteered for service from the Manchester companies, and they are being sent to Aldershot with all speed. It is expected that they will sail for South Africa on June 30th. It is pleasant to know that Surgeon-Captain Coates, to whom the Manchester corps owes so much, has been raised to the rank of surgeon-major.

Bar Parlours and Tuberculosis.

Dr. J. Wheatley, medical officer of health of Blackburn, in his annual report just issued, states that no places, excluding the workrooms of some trades, are more favourable to the spread of tuberculosis than bar parlours and other frequented rooms of public-houses. This is not to be wondered at when one considers the filthy habits as to expectoration too common among those who frequent these places and the neglect of cleanliness that often obtain with the people having the charge of the lower-class drinking-places. He urges most scrupulous cleanliness in the management of these places. He also says that the birth-rate has been steadily declining since 1872, and was last year the lowest on record.

The late Professor Thomas Jones.

A special meeting of the medical and surgical staff was held at the Manchester Infirmary on June 26th. A resolution was unanimously passed expressing their deep sense of the loss which the institution has sustained and their sorrow for the death of their late colleague Professor Thomas Jones. A further resolution was passed asking the chairman of the board, Mr. Hardie, to forward it to Mrs. Jones with expression of their sympathy with her in the irreparable loss which she has sustained. It need scarcely be said that the news of Professor Jones's death was received by the medical profession in Manchester and by a wide circle unconnected with the profession with the deepest regret. Strongly urged to accept the superintendence of the Welsh Hospital Professor Jones went to South Africa under a sense of duty which he felt unable to put aside. His departure was cheered by the good wishes of colleagues, friends, and students, and he went ready, if need be, to lay down his life for his country. The sacrifice has been made and in his grave at Springfontein rests all that is mortal of a brave man, one of the heroes of peace.

Hospital Organisation.

The board of management of the Manchester Royal Infirmary at their meeting on June 25th considered a communication from the Manchester and Salford Hospital Inquiry Association. The association thought that there was a considerable abuse of hospital charity from (1) the insufficiency of the means taken to investigate the circumstances of the patients; (2) the necessity under present conditions of showing a large return of work done, as estimated by the number of patients and consultations; (3) the tendency to accept trivial cases as suitable for continuous treatment; and (4) the custom at some special hospitals of treating cases outside the proper scope of their work. The association also recommended a conference of representatives from all the hospitals of Manchester and Salford with authority to create a united hospital board or to deal specifically with the causes of hospital abuse and to discuss the acceptance of contributions from patients. The board replied to the effect that they took reasonable and sufficient means to prevent the abuse of the charity; that there had not appeared to be any necessity for the infirmary to show a larger return of work than was actually done, a statement of which is given with the annual report; that the acceptance of all cases for treatment absolutely rested with the medical staff; and that the fourth question did not affect the infirmary. The creation of a united hospital board was not, in the opinion of the board, desirable, as they believed that each hospital committee was best capable of managing in its own way the affairs of the institution over which it had control.

June 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Epidemic of Typhoid Fever in Belfast.

THE epidemic of typhoid fever in Belfast is still with us and in the week ending June 21st 50 cases of the disease were notified. Two views as to the cause of this epidemic are put forward. The Public Health Committee say that the cause is the bad water-supply, and as evidence they point to the statements made by witnesses of the Water Commissioners (when they were promoting a Bill last year before a Parliamentary committee) as to the pollution of their catchment area at Stoneyford. To prevent this risk in the future the Commissioners obtained Parliamentary powers to buy compulsorily all farms the drainage of which might find its way into the Stoneyford reservoir. Now the Public Health Committee allege that this has never been acted upon and it is hinted that before the present outbreak there was a risk of typhoid excreta again reaching this reservoir. Other links in the chain of evidence that the present epidemic is water-borne are the facts that the places specially affected are on the direct supply from the Stoneyford reservoir and that, as stated in the public press, the water in the houses affected even to the naked eye is dirty and deposits on a handkerchief, as it filters through, a dark residue. But up to the present no scientific bacteriological evidence has been given as to the condition of the water in the affected houses. This form of laboratory examination takes time, but the Public Health Committee, alive to its great value, are not neglecting to have it done and Belfast is awaiting the result. The second view is that the disease is due to the soil being permeated with disease germs due to the defective drainage of so many of the jerry-built houses of Belfast; and, in truth, details brought before a meeting of the Public Health Committee on June 21st show an alarming state of affairs. It would appear that between April 25th and June 16th the drains of 819 houses in which typhoid fever occurred in the north division of the city had been tested. Of these, 431, or 52·6 per cent., were found in good order, and 383, or 47·4 per cent., were defective. In the south division of the city 731 houses in which typhoid fever occurred had been tested, and of these 342, or 46·8 per cent., were found to be in good order, and 389, or 53·2 per cent., were defective. Over 50 per cent. of the drains of houses where typhoid fever had not occurred had been found defective, and probably 50 per cent. of the drains of old houses are more or less defective, while the majority of the present cases of typhoid fever have occurred in a district where the houses are new and built on virgin soil. Now I think that these facts (and they were brought before the Public Health Committee at their meeting on June 21st) prove that sufficient attention in the past has not been paid to house sanitation in Belfast and that had a proper and effective supervision been exercised in the construction and arrangement of the drains there would have been far less typhoid fever. A single case of typhoid fever coming into a district where there is defective drainage will spread the disease, and with such admittedly defective sanitation is it any wonder that the city of Belfast is never free from the disease? The Public Health Committee may blame the water-supply and say that it is the cause of the epidemic, but the Water Commissioners may in

truth retort, If so, why is the epidemic not more general and may it not be more likely at the present time due to the acknowledged defective sanitary arrangements of so many houses in Belfast? Everyone knows that in Belfast typhoid fever is never absent—it seems to be endemic; but at times there is, as at present, an alarming recrudescence of the disease assuming the type of an epidemic. No theory of the prevalence of the disease will be sufficient which does not explain these facts. I think it is probable that there are two causes—the water and the defective drainage; and that neither the one nor the other is the *causa causans*, but that both take their share in giving rise to the disease. Unquestionably the present water-supply of Belfast is not good and that from the Stoneyford district is most suspicious. The Water Commissioners should push on rapidly with their new scheme which will bring a splendid supply of pure water from the Mourne mountains and in the meantime they should exercise their powers to buy out the farms in the neighbourhood of the catchment area at Stoneyford; while, on the other hand, the Public Health Committee must insist on the drainage of the houses of Belfast being made right and it is to be hoped that no more jerry-building (the great curse of Belfast in the past) will be permitted. All that is wanted is strictly to enforce the rules against such practices which already exist.

Municipal Honour to a Medical Man.

The Limerick Corporation on June 16th conferred the freedom of the city on Mr. Thomas Myles, M.D. Dub., F.R.C.S. Irel. He is a native of Limerick and was recently elected President of the Royal College of Surgeons in Ireland.

June 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Disinfection of Wells.

AT the meeting of the Academy of Medicine held on June 19th M. Delorme, the well-known military surgeon, gave a description of the methods employed by him for disinfecting the wells in the camp at Chalons. Steam pressure disinfection after the method of Neisser does not give the results claimed for it by that observer. According to him steam generated in a powerful generator under a pressure of five atmospheres should raise the temperature of the water to 95° C. and finally to 110° C. This process, Neisser considers, effects an absolute disinfection with great rapidity. It is, however, expensive, the average cost per well being 37 francs. Also it is not easy to carry out, for M. Delorme, employing a large Geneste-Herscher stove as a generator, could not raise the temperature of the water in the well more than from 20° to 30°. M. Delorme then had recourse to permanganate of potassium which in doses of from five to 10 centigrammes per litre destroys all organic matters as well as all living organisms. He estimated the quantity of water in the well and added the proper proportion of permanganate. A brown oxide of manganese is formed which is quite harmless and which can be precipitated by adding to the water a little powdered charcoal and fine sand previously sterilised in a stove. One part of charcoal should be used to three parts of sand. At the end of three-quarters of an hour thorough disinfection has taken place, the charcoal has been deposited, and the water is quite clear. A bacteriological examination carried out during a period of three months showed that the water after undergoing this process contained only an insignificant quantity of microbes—namely, 1026 per cubic centimetre—while before treatment the water contained 72,306 per cubic centimetre and had a most offensive smell. In another well, the water of which before treatment was very offensive and contained in addition 112,160 microbes per cubic centimetre, after treatment it contained only 150 per cubic centimetre. The alleged difficulty in the use of permanganate—namely, that it leaves in the water an amount of potassium which is dangerous to health, is groundless, for examination of the water after treatment shows only very slight traces of potassium. Besides, it is perfectly easy to use permanganate of lime instead of the potassium salt. M. Delorme concluded by saying that in his opinion this method was the best for the disinfection of wells, for it is easy, quick, and cheap, the cost being only about one franc per well.

A Forerunner of Pasteur.

A monument has just been unveiled at Teste de Buch to a humble French medical man who passed all his life from 1779 to 1851 in this little hamlet, but who was perhaps one of the most intelligent medical men of the century. He was the initiator of the Pasteur theory, and there is to-day but little to add to the brochure of 100 pages which he published in 1836 under the title of "Reflections sur les Virus." His name was Jean Hameau and he lived all his life devoted to the interests of his patients. He was almost the first to put vaccination into practice in the year 1801, and in 1812 he read a paper before the Society of Medicine at Bordeaux on the Transmission of Glanders (*Morve*) from a Dog to Man. In 1818 he discovered the existence of pellagra, a disease then completely unknown in France. It was not until 1847 that his work upon viruses appeared in the *Revue Médicale* and he died quite unknown. In 1884 M. Solles made the work definitely known to the inhabitants of Bordeaux; and in 1895 a second edition was brought out by the son of the author, with a preface by Professor Grancher in which full credit was given to the humble practitioner of Teste. Jean Hameau was veritably the first to formulate the nowadays triumphant doctrine of living and transmissible germs and of contagious viruses which reproduce themselves when sown in a favourable soil. He made many attempts to discover the germs of vaccinia and variola, of measles, and of scarlet fever, but without success; nevertheless he held firmly to his conviction. If only he had possessed the laboratory accommodation and means of investigation available at the present day the microbe theory of disease would have been established 50 years earlier than it was. To-day he is honoured by a bronze statue erected on the initiative of the medical men of the department where he worked, and toward the expenses of which the whole profession subscribed. The monument was unveiled on May 27th and orations were delivered, but it is impossible to avoid a feeling of sadness at the reflection that as in the analogous cases of Duchenne and Morvan, who were pathologists of the first order but who never rose from the ranks of humble practitioners, the spectacle is so often seen in France of men with brains and intellects far above the average who live unknown and whose work meets with no response simply because they do not belong to the official ranks of the world of medicine.

The Feeding of Tuberculous Patients.

At a recent meeting of the Hospitals Medical Society M. Letulle, physician to the Boucicaut Hospital, described the *régime* upon which he put his tuberculous patients. Every patient has six meals per diem. At 6 A.M. when they awake they have tea and milk. At 8 A.M. they have soup and meat powder. At 11 A.M. they have a breakfast composed of three different dishes. At 3 P.M. a lunch of cold meat is given. At 5.30 P.M. they have dinner, which consists of soup and three dishes, and at bedtime—namely, at about 8.30 P.M.—they have a glass of milk and some rusks. In addition some patients have extras, such as cream, eggs, and raw meat. Under this *régime*, together with rest, most tuberculous patients, whether in the first, second, or third stage of their disease, put on weight in a wonderful manner. Unhappily, however, after some weeks the weight remains stationary and occasionally decreases little by little to the amount at which it was when the patient was admitted. As a rule men derive more benefit than women from their stay in hospital, for in the case of the latter the recurrence of menstruation nearly always brings about a loss in weight. The practical conclusion to be drawn from these facts is that tuberculous patients should be transferred to the country as soon as their weight remains stationary.

June 26th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Reciprocity of Medical Practice.

THE intimation of the Privy Council to the General Medical Council that Part II. of the Medical Act of 1886 will be applied to Italy has been received with the greatest satisfaction by British practitioners resident here. This willingness on the part of Great Britain to grant the Italians the reciprocity of medical practice which the latter profess

to desire will, it is hoped, prevent the passing of the restrictive measures lately agitated for by certain Italian practitioners—measures which, had they become law, would have deprived foreign practitioners of all the privileges which they now enjoy. While it is far from certain that these privileges may not yet be withdrawn, the action of the Privy Council has, at all events, removed a powerful weapon from the hands of those here who founded their demand for the exclusion of British practitioners upon the alleged illiberality of the English law regulating foreign practice in Great Britain. It is even thought by some that the result may be the establishment of that equal and full reciprocity of medical practice between the two countries on which such stress was laid in the discussion of this question during the last session of the General Medical Council. When the recent dissolution of the Italian Parliament took place a Bill had been prepared proposing to limit still further than at present the rights of the foreign practitioner. Under the existing law any foreign practitioner may attend all foreigners indiscriminately. Under the proposed law only foreigners belonging to a country which grants reciprocity of medical practice to Italians could be attended by other than an Italian practitioner. Moreover, only foreign practitioners holding diplomas from such a country would have been permitted to practise in Italy. A double restriction would thus have been imposed by the new law. To British practitioners it would have probably amounted to prohibition, since the Italians do not admit that the British law in its present state permits them to practise in Great Britain; and even if it were not for this reason prohibitory the measure would have had the effect of cutting off the American practice which forms under existing conditions so large a proportion of the British practitioner's work. Although the proposed measure did not find favour among the better class of the profession here it would probably have passed in the form indicated, since its champion, Dr. Santini (who, by the way, has been re-elected by his constituency), is a man of considerable Parliamentary influence, and because the majority of the Chamber of Deputies would have been indifferent in the matter. Now, however, that such a clear pronouncement has been made by the Privy Council of the intentions of the British Government, the hope at least seems justified that a proposal so much at variance with the repeatedly expressed desire of the Italians themselves for reciprocity will not be revived, and that in any future legislation for regulating foreign practice in Italy the claims of British medical men to fair and liberal treatment will be fully recognised.

Award of the Balbi-Valier Prize.

The biennial prize of 3000 lire (nearly £120) which was founded by Balbi-Valier has been awarded by the Venetian Institute of Sciences to Professor Grassi of Rome for his work on the mosquito and its relation to malaria.

Medical Legislators.

Amongst those lately elevated to the rank of Senator of the Kingdom appear the well-known names of Professor Maragliano of Genoa and Professor Golgi of Pavia. Professor Sanarelli of Bologna has also been elected one of the Deputies in the new Parliament.

The Malaria Problem.

Dr. L. Sambon and Dr. Low, the two medical men entrusted by the British Government with the perilous task of testing the possibility of guarding against malarial infection in the Roman Campagna, have at length found a favourable place for their purpose. After rejecting various other localities as for one reason or another unsuitable, they have selected a spot about two miles distant from Ostia, between Castel Porziana and Castel Fusano, and within five minutes' walk of the latter place. The site of their hut is on the edge of a "stagno," or swamp, forming part of the royal hunting demesne of Castle Fusano, and left undrained in order to preserve the wild boar, water fowl, &c., which frequent it. The hut will stand close to a canal containing a luxuriant growth of algæ and other aquatic plants and within a stone's throw of a clump of pine trees, which forms the outskirts of the Castel Fusano pine forest. The few dwellings near are inhabited by peasants who constantly suffer from malaria and are infested by mosquitoes of the anopheles variety. Situated thus in the heart of the swamps surrounding the mouth of a large river, among the haunts of innumerable mosquitoes of the malarial variety and in a locality notorious as one of the most deadly of the fever-stricken centres of the Roman Campagna, this dread and unhealthy spot appears to offer ideal conditions for the carrying out of the interesting but dangerous experiment now about to be begun. The two daring investigators hope to have everything in readiness early in July; in the meanwhile their time is profitably occupied in studying the animal and insect life of the Campagna, collecting and examining frogs, lizards, bats, spiders, mosquitoes, and the like. They have already made some interesting observations, as, for example, that although the larvæ of anopheles are at this season apparently very few, the adult mosquitoes are collected in the houses in great numbers, being especially numerous near byres and stables. The King has graciously given his consent to the erection of the hut in the royal preserves, and the municipality of Rome are doing everything in their power to help the enterprise.

June 22nd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Montreal General Hospital.

AT the annual corporation meeting of the Montreal General Hospital, held in the latter part of the month of May, Dr. F. G. Finley, the secretary, presented the annual report. It showed that the income of the year from the ordinary sources was $76,421.72 and the ordinary expenditure $81,570.75, an excess over receipts of $14,149.63. As compared with the previous year the expenditure shows an increase of $1082.24, while the income shows a decrease of $1605.23. The total number of indoor patients treated to a conclusion during the year was 2824, being 94 more than in the previous year. Of these 189 remained over from the previous year and 2810 were admitted during the current year. 176 remained in the hospital at the end of this hospital year. 2629 were discharged, 195 having died in hospital, thus making the total of 2824. In regard to the 195 deaths 106 of them occurred within the first three days of their admission, a result in great measure due to severe accidents, but some to advanced disease. The average number of patients in the wards during the year per diem was 167, a decrease of nine compared with last year. The average number of days in the hospital per patient was 21·3 and the aggregate number of days in the hospital for all patients was 60,078 days. As compared with the previous year the report states that while the number of patients treated this year had increased the average daily number has decreased, thus indicating a shorter average stay per patient and further indicating a more active service together with a less number of chronic and incurable cases. Of the indoor patients treated to a conclusion there were—males, 1795; and females, 1029; giving a total of 2824. The following is the classification as to religious beliefs: Protestants, 1273; Roman Catholics, 1213; and other religions, 339. Another interesting classification from the Montrealer's standpoint: citizens, 2330; strangers, 368; sailors, 115; and immigrants, 11. Of the 2824 patients treated during the year 1684 were native-born Canadians and 773 hailed from the British Isles. The death-rate has been 6·5 per cent., or if the 106 cases which died within three days were excluded 3 per cent. In the outdoor department there were 37,373 consultations, being an increase over that of last year of 2295. In the medical department there were treated 12,403 cases; surgical, 10,843; eye and ear, 6213; gynæcological, 1400; nose and throat, 2437; dermatological, 1902; dental, 60; and emergency, 2115. The ambulance made 1104 trips during the year. Dr. Charles W. Wilson, having been appointed surgeon to the Royal Canadian Regiment, has been granted leave of absence for active service in South Africa. His duties are at present being satisfactorily performed by Dr. Gilday. Dr. von Eberts, the medical superintendent, was re-appointed for another term. Mr. F. Wolferstan Thomas (since deceased) resigned the presidency, and Mr. James Crathern was unanimously elected to succeed him.

Canadian Army Medical Services.

Amongst medical men who take an active interest in our militia a good deal of satisfaction is being expressed that the Government of Canada has at last been able to get the medical service upon a proper and efficient footing. Almost since confederation in 1867 the medical officer has remained in the position that era in our politics found him up to the present time—a more or less of an ornamental appendage to

the battalion claiming his services. It was only through some personal influence or social status or political "pull" that preferment could be obtained, which all tended to emphasise the importance of placing the whole service under special organisation. Last year a general order emanated from the Militia Department at Ottawa and a scheme for organisation was proposed which has now been carried into effect. Through this order a medical staff has been established which consists as follows: one colonel (director-general), seven lieutenant-colonels, 17 majors, 22 captains, and 25 lieutenants. For the purpose of promotion the officers of the Army Medical Staff are considered as a distinct branch, and promotion from rank to rank is to take place upon the same principle as that in vogue in a regiment or corps. By this order, also, five bearer companies and five field hospitals were established on a peace footing. A bearer company is to consist of one major, two captains or lieutenants, one sergeant-major, one quartermaster-sergeant, one staff-sergeant-compounder, four sergeants, one bugler, four corporals, and 20 privates. The Halifax bearer company (No. 1 bearer company) is, however, to be kept on a war footing of 64 of all ranks. The following is the *personnel* of a field hospital: one major, two captains or lieutenants, one sergeant-major, two staff-sergeants, two compounders, two corporals, and 14 privates. Schools of instruction will be opened at once at various centres throughout the country by officers who have already qualified at the depôt of the Royal Army Medical Corps at Aldershot. Instruction will be given on infantry drill, Parts I. and II., manual of the Royal Army Medical Corps, regulations for army medical services, military hygiene returns and duties, military law, and equitation. At the close of these schools, which are to last one week, examinations will be held and two classes of certificate granted, a first class for those officers obtaining 70 per cent. of the whole number of marks and not less than 50 per cent. in any one subject; a second class to those who make 50 per cent. of the total and not less than 33 per cent. in any one subject.

Prepared for the Plague.

Owing to an outbreak of bubonic plague having been reported at Honolulu, and the undoubted appearance of the curse at San Francisco and the Diamond Head quarantine station on the Pacific coast of the United States, the eyes of the people of the Dominion have been turned with no little anxiety to our own territory in that quarter, wondering what are the facilities inaugurated by our Government for coping with the first appearance of the dread disease. The quarantine station is situated on our western shores at William's Head, under the superintendence of Dr. Watt, an active and efficient officer. This station is situated on a long narrow peninsula, distant about eight miles from British Columbia's capital, Victoria. The equipment of the station far outclasses anything of its kind in the Dominion of Canada and is said to rival, or in fact to be far superior to, any similar institution in the neighbouring Republic to the south of us. On the wharf is a moveable engine for the purpose of forcing sulphur fumes into and through the holds of the vessels, whilst the ropes which hold the visiting vessel to the wharf are carefully covered with funnel-like rat-catchers to prevent the landing of any of these long-tailed carriers of the infection. The formaldehyde process is also employed in disinfecting, and in addition there is a large tank holding over 8000 gallons of muriatic acid and bichloride of mercury contantly ready at any moment to spray the exposed surfaces of ships where fumigation would not be feasible. The arrangements are such that 600 Asiatics can be accommodated at one time. The hospitals occupy another portion of the grounds and are scientifically constructed on the pavilion plan and complete in all their arrangements. There is also a cheery home for first-class passengers at some distance from the common quarters. With such complete arrangements on our western confines the plague will have some difficulty in finding footing on Canadian or British Columbian soil.

Toronto, June 2nd.

VOLUNTARY NOTIFICATION OF PHTHISIS.—The Plymouth Town Council has adopted a scheme for the voluntary notification of phthisis, by which medical practitioners will receive a fee of 2*s.* 6*d.* for each notification in the case of private patients and 1*s.* for the notification in parish or dispensary cases.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Anniversaries.

THE opening week of summer has been notable for the medical anniversaries which took place at Atlantic City, a favourite health resort on the Atlantic coast in the vicinity of Philadelphia. First came the New Jersey State Medical Society with papers and discussions on subjects of a local interest. Then came the "Confederation of Examining Boards," an organisation comprising all the State Examining Boards of the United States. These boards are devoted to the examination of persons intending to practise in their respective States and are responsible for the enforcement of the laws regulating medical practice in the several States. This was the tenth annual meeting of that body and it was very gratifying to learn of the progress of the reforms in the educational qualifications of practitioners throughout the country. In every State these boards are gradually raising the standard of education and thus sifting out the uneducated applicants in accordance with the newly-enacted laws of the States. Perhaps the most interesting and useful discussion was as to the steps to be taken to establish a uniform standard of preliminary requirements. As the General Government has no power to fix a standard of educational qualification it is of the first importance that the several States should come to an agreement and adopt a uniform standard. To that end this confederation of boards is properly exerting all its energies and has the support of the entire profession. The American Academy of Medicine, which admits to its membership only collegiates, was entertained with a variety of papers on ethical and scientific subjects. The American Medical Publishers' Association, the American Medical Editors' Association, and the Association of American Medical Colleges also held annual meetings at the same time and place. There were several other minor medical societies in session, but the great centre of attraction was the American Medical Association, which held its fifty-first annual meeting during four days. Indeed, it was the occasion of the meeting of this association that drew so many other societies to this city. The membership of the association numbers about 9000 and there were in attendance nearly 1000 physicians. The President, Professor W. W. Keen of Philadelphia, in his address discussed subjects relating to the welfare of the association and then dwelt at length upon the "needs for endowments of medical schools." He stated that in 1894 the charitable gifts and bequests in the United States amounted in round numbers to $20,000,000, in 1895 to $29,000,000, in 1896 to $34,000,000, in 1897 to $34,000,000, in 1898 to $24,000,000, and in 1899 to the enormous sum of nearly $80,000,000. Only a small portion of this amount has been bestowed upon medical schools. It was mostly given to colleges, theological schools, hospitals, museums, and libraries. He compared the theological and the medical schools. In 1898 84 theological schools reported endowments of $18,000,000 and 711 similar schools reported no endowment. In the same year 19 medical schools reported endowments of $1,906,072, while 151 medical schools reported no endowment. Yet in 1899 there were only 8000 students of theology for whom this enormous endowment was provided, as against 24,000 students of medicine, with a slender endowment of less than $2,000,000. Each theological student had the income of an endowment of $2250 provided for his aid, while each medical student had the income from $83. As against 171 chairs of theology, all endowed, there were only five in medicine. He recommended that endowments of medical colleges should be classed in three categories—namely, first, the endowment of professorships; second, the endowment of the laboratories; and third, the endowment of post-graduate scholarships and research fellowships.

Typhoid Fever among the American Soldiers in 1898.

Professor Vaughan of the University of Michigan and late Division Surgeon United States Volunteers has reported the results of the commission appointed by the Surgeon-General to study typhoid fever as it appeared among the American soldiers. In accordance with instructions this commission visited the national encampments and inspected most of the regiments. It spent about 18 months in an examination of the medical records of these commands and accumulated a vast amount of information which is embodied in a report

about to be submitted to the Surgeon-General. The conclusions of the commission are as follows. Every regiment in the United States service during 1898 developed typhoid fever. More than 90 per cent. of the volunteer regiments developed typhoid fever within eight weeks after assembling at the state encampments. Most, probably all, of the regular regiments developed typhoid fever within less than eight weeks after going into camp. The fever not only appeared in every regiment in the service, but it became epidemic both in the small encampments of not more than one regiment and in the larger ones consisting of one or more corps. It became epidemic in camps located in the Northern as well as those located in the Southern States. Neither the miasmatic nor the pythogenic theories of the origin of typhoid fever is supported by these investigations, but they do confirm the doctrine of the specific origin of typhoid fever. Camp pollution was the greatest sin committed by the troops of 1898. It may be stated in a general way that the number of cases of typhoid fever in the different camps varied with the method of disposing of excretions. The tub system of the disposal of fæcal matter and the regulation pit did not prove satisfactory in permanent camps. Infected water was not an important factor in the spread of typhoid fever, but flies undoubtedly served as carriers of infection. It is probable that the infection was disseminated through the air in the form of dust. A command badly infected by typhoid fever does not lose the infection by simply changing the location, for it carries the specific agents of the disease in the bodies of the men, in their clothing, bedding, and tentage. About one-fifth of the soldiers in the national encampments of the United States in 1898 developed typhoid fever and army surgeons correctly diagnosed a little less than half the cases. The continued fever recognised among the soldiers the commission decides was typhoid fever. The belief that errors in diet with consequent gastric and intestinal catarrh induced typhoid fever is not supported by these investigations. The percentage of deaths among cases of typhoid fever was about 7·5. The deaths from typhoid fever were more than 80 per cent. of the total deaths.

Victims of Lightning in the United States.

The Superintendent of the United States Weather Bureau states that the loss of life by lightning in this country last year was greater than in any year since statistics began to be collected. 562 persons were killed instantly or suffered injuries from which death soon resulted and 800 persons were injured, many of them suffering from physical shock, others from painful burns, and some from temporary paralysis of portions of the body. Paralysis of the arms or legs was the most common form of injury. The greatest number of fatalities, or 45 per cent., occurred in the open; the next greatest number, or 34 per cent., occurred in houses; 11 per cent. occurred under trees; and the least number, 9 per cent., happened in barns. A number, mostly women, were killed while taking clothes from wire lines or while near the lines during a thunderstorm.

Death of Dr. Edward O. Shakespeare.

This eminent man of science died suddenly from angina pectoris on June 1st, aged 54 years. Dr. Shakespeare devoted himself in his earlier years to ophthalmic surgery, to which he made some notable contributions. Later he became interested in sanitary investigations and on one occasion was commissioned by the Government to visit India and other countries for the purpose of reporting on cholera. The results of a year's study of cholera in the Delta of the Ganges and the chief cities of India were embodied in a very voluminous report, published by Government, which has been regarded as an authority on the question of the propagation of that disease. In 1894 he was commissioned to attend the Ninth International Sanitary Conference which was called by the French Government and which met in Paris. He took a leading part in that Conference and many of the rules adopted by that body governing the pilgrimages to Mecca were advocated by him. During the war with Spain Dr. Shakespeare was appointed by the Surgeon-General one of a commission to investigate the causes of typhoid fever among the soldiers in camp. His last days were spent in the completion of the report of the commission, which is a work of great magnitude and importance.

Responsibility of a Hospital for the Acts of a Nurse.

A verdict of $10,000 has been obtained against St. Vincent's Hospital of this city by a patient who was severely burned after an operation by a hot-water bottle placed against her leg while she was still under the influence of ether. It appeared on the trial that the person who placed the bottle against her leg was not a trained nurse but a pupil in the defendants' training school. The defence was based on the fact that the hospital was devoted to charity and on that plea chiefly two previous juries had failed to convict of culpable negligence. It was proved, however, that this patient was treated in the "pay ward" and that the plea of charity did not apply to her case and hence the verdict was against the hospital.

The Progress of the Bubonic Plague.

It is becoming daily more and more apparent that this pest can be arrested and stamped out even where all the conditions are most favourable for its propagation when modern scientific methods of sanitation are intelligently and rigorously applied. The outbreak in Honolulu is a striking instance of the enormous value of a well-appointed and well-equipped health organisation in a municipality which is allowed to exercise its authority with a free hand. The infection of the plague was there introduced into a community peculiarly susceptible by its location, its filthy habits, and its reckless opposition to all sanitary rules and restraints. It began to spread like fire in tinder and would, judging by its previous history, soon have involved the whole native Chinese and Japanese population. But the health authorities came at once to the rescue, and, like a well-organised fire department, first directed all their energies to the task of isolating the infected from the uninfected, and then attacked the infection itself. The result has justified measures that were regarded as unnecessarily severe, for the plague was at once brought under control and then exterminated. The same result has been secured at San Francisco and in a measure in Manilla. The lesson that we have learned will prove of incalculable value, not only in our future contests with this oriental pestilence, but with all other communicable diseases.

June 18th.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to noon on Thursday:—

	£	s.	d.
St. Michael's, Chester-square	1156	0	0
Chislehurst Parish Church (including £100 from Mr. Richard Foster)	290	0	0
St. Paul's Presbyterian Church, Westbourne-grove	103	0	0
St. John's Presbyterian Church, Kensington	82	0	0
St. Paul's Cathedral	255	0	0
St John's Wood Presbyterian Church	114	0	0
All Saints, Ennismore Gardens	487	0	0
Blackheath Congregational Church	154	0	0
St. Stephen's, South Dulwich	191	0	0
Union Chapel	130	0	0
St. Alban's, Streatham	182	0	0
St. Mark's, North Audley-street	107	0	0
All Saints, North Peckham	170	0	0
"F. H."	1000	0	0
St. Barnabas, Addison-road	100	0	0
St. Mary's, Kilburn	114	0	0
St. James's, Kidbrook	219	0	0
Holy Trinity, Sydenham	197	0	0

The total amount received by noon on Thursday, July 28th, was £24,000.

WELLS, SOMERSET.—At the meeting of the Wells Town Council held on June 18th it was decided to carry out the septic system of sewage disposal at an estimated cost of £4500.

THE NEW BELGRAVE HOSPITAL FOR CHILDREN.—The foundation-stone of this institution was laid on June 27th, by the Princess Henry of Battenberg. The site, which adjoins St. Mark's Church, Kennington, is the centre of a poor and populous district. £17,000 of the £50,000 required for initial expenses have been provided. The cost of the new site is £4000; the centre block and west wing will cost £25,000, the east wing £8000, the south wing £6000, and the out-patient department £5000. It is intended in the first instance to erect the centre block and west wing and the out-patient department. Purses to the amount of £200 were received by her Royal Highness.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In June the following candidates passed in the subjects indicated:—

Surgery.—J. M. Anderson, Aberdeen and Middlesex Hospital; J. R. Clemens, St. Thomas's and London Hospitals; R. V. Cowey (Section II.), Edinburgh and St. Mary's Hospital; W. A. C. Cox (Section II.), St. Mary's Hospital; H. J. De Saram, Middlesex Hospital; W. D. French (Sections I. and II.), and T. R. Griffiths, University College Hospital; J. H. Kellgren (Section II.), Cambridge and St. George's Hospital; B. Lewitt and A. H. L. Newstead, St. Mary's Hospital; W. P. R. Newth, St. Thomas's Hospital; E. C. Pratt, Birmingham; and A. T. Spanton (Section I.), Cambridge and St. George's Hospital.

Medicine.—E. A. Dunn (Section I.) and E. Evans (Sections I. and II.), Royal Free Hospital; A. W. H. Grant (Sections I. and II.), Charing-cross Hospital; J. H. Kellgren (Sections I. and II.), Cambridge and St. George's Hospital; J. Klein (Sections I. and II.), St. Mary's Hospital; B. Rowlands, St. Bartholomew's Hospital; M. H. Style (Sections I. and II.), Royal Free Hospital; and T. Young (Section II.), St. Bartholomew's Hospital.

Forensic Medicine.—E. A. Dunn and E. Evans, Royal Free Hospital; A. W. H. Grant, Charing-cross Hospital; J. H. Kellgren, Cambridge and St. George's Hospital; J. Klein, St. Mary's Hospital; G. R. Lucas, Charing-cross Hospital; S. Page, Birmingham; B. Rowlands, St. Bartholomew's Hospital; M. H. Style, Royal Free Hospital; and T. Young, St. Bartholomew's Hospital.

Midwifery.—S. F. Cneesman, Charing-cross Hospital; W. T. Colyer, Cambridge; M. B. Dawson, Middlesex Hospital; E. Evans, Royal Free Hospital; F. J. F. Jones, Guy's Hospital; J. Klein and A. H. L. Newstead, St. Mary's Hospital; A. T. Spanton, Cambridge and St. George's Hospital; M. H. Style, Royal Free Hospital; and H. V. Swindale, Middlesex Hospital.

The diploma of the society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—Messrs. J. M. Anderson, H. J. De Saram, W. D. French, T. R. Griffiths, J. H. Kellgren, B. Lewitt, W. P. R. Newth, and T. Young.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees, Easter Term, the following candidates were successful in the subjects indicated:—

THIRD EXAMINATION.

Part I.—G. F. Barham, B.A., and A. E. Bodington, M.A., Caius; A. R. M. Brenan, B.A., Trinity; J. M. Brydone, Jesus; F. J. Child, B.A., Christ's; H. N. Clarke, B.A., and J. S. Clarke, B.A., Caius; J. G. Cooke, B.A., Sidney Sussex; K. E. Crompton, B.A., Caius; G. W. Deeping, B.A., Trinity; J. B. Dunlop, B.A., Sidney Sussex; W. E. M. Ede, B.A., King's; A. Emerson, B.A., Caius; R. L. V. Foster, B.A., King's; T. B. Gilbart-Smith, B.A., Trinity; W. H. C. Greene, B.A., Corpus Christi; E. B. Leech, B.A., Christ's; N. Maclaren, B.A., Trinity; A. S. Mellor, B.A., King's; C. H. Miller, B.A., J. C. Newman, B.A., and G. H. Orton, B.A., Trinity; T. W. Paterson, B.A., Caius; J. S. S. Perkins, B.A., St. John's; J. C. S. Rashleigh, M.A., and L. Reynolds, B.A., Trinity; H. H. Riddle, B.A., Peterhouse; J. C. A. Rigby, B.A., Caius; E. W. S. Rowland, B.A., H. Selwyn; L. B. Scott, B.A., Christ's; G. A. C. Shipman, B.A., Trinity; J. L. Timmins, B.A., Emmanuel; R. H. Urwick, B.A., Trinity; H. Walker, B.A., King's; T. H. E. Watts-Silvester, B.A., and R. F. Williams, B.A., Caius; W. W. Wingate-Saul, M.A., Trinity; and H. C. S. Woodward, M.A., Downing.

Part II.—S. Bousfield, M.A., Caius; J. Bradford, Emmanuel; H. P. Bradley, B.A., and G. V. Bull, B.A., Caius; T. Burfield, B.A., Emmanuel; C. J. Coleman, B.A., Trinity; B. J. Collingwood, B.A., Caius; W. S. Darby, B.A., and W. M. Fletcher, M.A., Trinity; J. H. P. Fraser, B.A., Jesus; O. F. F. Grünbaum, M.A., Trinity; J. Gutch, M.A., Christ's; D. G. Hall, B.A., Emmanuel; A. C. Hill, M.A., Trinity; T. E. Holmes, B.A., G. F. Lobb, B.A., and J. L. Lock, B.A., Caius; J. W. Malim, B.A., Christ's; H. N. Matthews, B.A., J. C. Matthews, B.A., and F. J. Nicholls, St. John's; L. J. Paton, B.A., Caius; A. C. Pearson, B.A., Sidney Sussex; J. H. Philbrick, B.A., and G. R. Slade, M.A., Trinity; J. G. Taylor, B.A., and T. S. Taylor, B.A., King's; R. A. Walker, B.A., Clare; and A. Whitmore, B.A., and W. M. Willoughby, B.A., Caius.

The Council of the Senate have nominated Professor Sir Michael Foster, K.C.B., to represent the University on the Council of the Jenner Institute of Preventive Medicine.—Mr. A. W. Hill, B.A., King's College, and Mr. L. Lewton-Brain, B.A., St. John's College, have been appointed Demonstrators of Botany.—Mr. H. Nicholls, M.A., of St. John's College, was on June 19th admitted to the degree of M.D.—The Harkness Scholarship in Geology and Palæontology has been awarded to Mr. E. E. Walker, Trinity College.—The Professor of Pathology announces a series of ten courses of instruction in Pathology, Morbid Anatomy, Bacteriology, &c., to be given during the Long Vacation, beginning on July 5th.—The "Summer School" of Medicine for qualified practitioners, as announced last week, has been abandoned owing to the small number who intimated their wish to attend it.

UNIVERSITY OF BRUSSELS.—At the June examination the following practitioners satisfied the examiners and obtained the M.D. degree:—

W. Grantham Hill, B. Burnett Ham, J. L. Atkinson, and W. Gilbertson, London; C. S. Davies, Bishops Stortford; T. E. Pallett Earls Colne; G. H. Brand, Northampton; and Collingwood Fenwick, H. Hipwell, and S. Whitaker, London.
There were 13 candidates.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—FELLOWSHIP EXAMINATION.—The following gentlemen having passed the necessary examination have been admitted Fellows of the College:—Mr. R. C. B. Maunsell, M.B., B.Ch., B.A.O. Dub., and Mr. H. J. Satchwell, L.R.C.P. and L.R.C.S. Irel.

UNIVERSITY COLLEGE, LONDON.—The following is a list of the prizes awarded in the Faculty of Medicine for the winter session, 1899–1900:—Entrance scholarships: Bucknill Scholarship, £120, G. Hall; Int. Med. Course, £57 15*s.* each, J. A. Ferrière and E. Mapother*; Final M.B. Course, £79 16*s.* each, C. S. Parker* and T. L. Llewellyn. Atchison Scholarship (£55 per annum for two years): R. E. Lloyd. Bruce Medal: R. E. Lloyd. Physiology: Senior class, gold medal, A. M. H. Gray; third class, G. S. Hett; junior class, silver medal, R. A. Greeves. Certificates, 2† eq., J. A. Ferrière, G. Hall, 4,† R. S. Woods, and 5,† E. G. Perodeau; second class, A. G. C. Findlay; third class, N. S. Finzi,* P. M. Roberts, and C. S. White.* Anatomy: senior class, 1st silver medal, A. M. H. Gray, and 2nd silver medal, G. S. Hett; third class, C. H. Berry and M. W. Stewart-Smith; junior class, silver medal, R. A. Greeves, and certificates, 2,† G. Hall, 3,† and C. D. Holdsworth; second class, J. A. Ferrière, G. E. O. Williams, and R. S. Woods; third class, W. Appleyard, A. J. Blaxland, H. Farncombe, and A. G. C. Findlay. Medicine: second class, L. G. Hopkins, A. E. Jones, and R. E. Lloyd. Surgery: gold medal, R. E. Lloyd; silver medal, L. G. Hopkins; second class, A. E. Jones. Pathology, Morbid Histology, and Bacteriology: Tuke silver medal, T. L. Llewellyn; third class, C. S. Parker.* Practical Surgery: Erichsen prize, L. G. Hopkins; certificates, 2,† S. H. Bown, 3,† O. L. Addison, and 4,† T. C. Savage; second class, S. Bree, R. E. Lloyd, H. W. Reynolds, and A. N. Stevens. Clinical Medicine: senior class, Fellowes gold medal, H. W. Reynolds; Fellowes silver medal, A. E. Jones; certificate, 3,† T. C. Savage; second class, D. L. Davies, A. Emerson, L. G. Hopkins, R. E. Lloyd, and G. A. Upcot-Gill*; Junior class, Fellowes silver medal, A. F. Horn; certificates, 2,† G. E. Waugh, 3,† C. S. Parker,* and 4,† J. E. Stratton; second class, J. B. Burt, W. T. Crawford, L. A. E. de Zilwa, T. L. Llewellyn, and W. Parsons*; third class, J. C. Fleming and F. J. Lawson.* Clinical Dental Surgery: silver medal, L. G. Hopkins; certificates, 2† eq., A. E. Jones and R. E. Lloyd.

* Former pupil of University College School.
† Obtained the number of marks qualifying for a prize.

MEDICAL DEFENCE UNION, LIMITED.—The usual monthly council meeting of the union was held at the registered offices on June 21st, Dr. Walter Griffith, the President, being in the chair. An election of candidates took place, the total number of new members being 270. The general secretary read a draft letter which he had prepared in the matter of a report to the General Medical Council concerning the granting of certificates to persons other than medical practitioners by certain associations and lying-in institutions and which certificates are taken by the holders and the public as qualifying them to practise as midwives. The council adopted the letter and ordered it to be forwarded to the General Medical Council with a recommendation from the union to the following effect—viz., "That it is desirable in the interests of the public that medical practitioners either individually or collectively by association should not be allowed to issue any document which in any way can be taken by the holder or the public as granting authority to practise or which can be used to cover any practice of medicine, surgery, or midwifery, saving in the case of persons examined by duly appointed examining bodies under the supervision of the General Medical Council through their inspectors of examinations." Directions were given to the executive to call the attention of the council of the Royal British Nurses' Association to the heading in their register of nurses, Appendix B, and also to the use of the words "Diploma, London Obstetrical Society, &c.," appended to certain nurses' names. The union suggested to the Royal British Nurses' Association that the heading referred to—viz., "List of Nurse-members who have Obtained Certificates Qualifying them to Act as Midwives"—i.e. to practise midwifery—was likely to mislead the public into the belief that these

nurses were duly qualified practitioners and that an alteration was desirable in the title to the appendix. A medical practitioner who was proved to be "covering" the practice of a much-advertised self-styled "aural institute" was ordered to be reported to his licensing corporation for unethical conduct. An important report drawn up by the solicitors of the union with regard to the present law relating to the keeping for gain of persons of unsound mind by registered practitioners who possessed no licence from the Lunacy Commissioners was read and ordered to be entered upon the minutes. The report urged an amendment in the lunacy law with regard specially to the definition of a "lunatic" and steps were directed to be taken to bring this question before the Lord Chancellor. A report in reference to the admission by school boards of certificates of ill-health of children signed by persons other than registered medical practitioners was ordered to be extended and dealt with later. Owing to the numerous cases which were brought before the council at each monthly meeting it was decided to hold executive council meetings regularly every 14 days in order to shorten the sittings if possible. Action was directed to be taken in certain instances where members were threatened with writs for alleged negligence in cases attended and reports were made by the solicitor and general secretary in other cases in which actions threatened had collapsed when it became known that the union was prepared to defend. A report was made by the solicitors in a case of dispute between a medical member and a druggist in reference to the ownership of prescription books kept by the latter which contained solely the prescriptions for patients for whom the druggist had dispensed medicines at the instance and at the charge of the practitioner. A satisfactory result of the difference was reported, but it was decided to recommend medical men who handed their dispensing over to local druggists that in order to avoid any chance of dispute they should use their own books in which the prescriptions could be copied in future.

CHURCH SANITARY ASSOCIATION.—The eighth annual meeting of this association was held last week at the Church House, Westminster.—Dr. W. Collingridge, sanitary officer for the Port of London, who presided, emphasised the need for the society's existence. A question which urgently demanded attention was the vital necessity for cleanliness in the preparation, storage, and use of food. Animals should be examined before slaughter by a competent authority. Municipal slaughter-houses would do much to prevent cruelty and undoubtedly much to prevent unfit food from being consumed.—The Rev. F. Lawrence, honorary secretary, reported that sermons had been preached during the year at home and abroad and efforts made to induce legislation respecting slaughter-houses, overcrowding, and the like. He appealed for additional funds.—The report was adopted on the motion of Dr. Christopher Childs, seconded by General Lowry.—Canon Rawnsley moved that it was desirable that preachers and all persons of influence should aid in preventing diseases and fostering the health of the people.—Mr. Hugh Munby seconded, and the Rev. A. M. Mitchell supported the motion, which was carried.—On the motion of Major W. C. Poole, R.A.M.C., it was agreed that "this meeting is of opinion that hygiene should be taught in elementary schools."—Miss Ethel Springett read an interesting paper on the subject of consumption.—Resolutions of thanks to the chairman and secretary concluded the proceedings.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL.—The presentation of the scholarships, medals, prizes, and certificates awarded during the summer session of 1899 and the winter session of 1899–1900 took place on June 26th. Mr. H. Beerbohm Tree occupied the chair. The Dean, Dr. Montague Murray, in his report for the current year, stated that the number of new students had been 88 as contrasted with 82 in the previous year. The only important changes in the teaching staff were the appointment of Professor Moore of the Yale University to the Lectureship on Physiology, and of Dr. Marrett Tims to the Lectureship on Biology. In the school buildings important improvements had been effected. A new staircase had been added to the Museum and the electric light had been introduced. Reference was made to the large number of old and of present students now serving in South Africa, headed by Mr. C. Gibbs, one of the assistant surgeons, who is now senior surgeon to the Langman Hospital. The Dean announced that the new academical year would open on the evening of Oct. 1st with a conversazione given by the Students' Societies, that the Huxley lecture would be delivered on Oct. 2nd by Lord Lister, President of the Royal Society, and that the Old Students' dinner would be held on the same evening at the Hotel Cecil. The renovations and additions to the hospital had been commenced, and in two years' time the Dean anticipated that a considerable portion of the new buildings would be ready for occupation. Mr. Beerbohm Tree, in presenting the prizes, referred to the sympathy and regard with which the members of his own profession were ever held by members of the medical profession.

MEDICAL GOLF TOURNAMENT, 1900.—This tournament was held under medal play regulations on May 10th by permission of the Wembley Golf Club on their links. The winner was Mr. Percy Furnivall.

FALMOUTH.—A man at Falmouth was on June 19th fined £3 and £1 15*s.* costs for entering a cab whilst suffering from scarlet fever and also for mingling with the public in the street.

VACCINATION GRANT.—Mr. Richard Macartney, L.R.C.P., L.R.C.S., L.M. Edin., of Cinderford, Gloucestershire, public vaccinator for the fourth district, Westbury-on-Severn Union, has been awarded a grant for successful vaccination.

PERMANENT APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.—Mr. C. M. Fegen, M.R.C.S. Eng., L.R.C.P. Edin., D.P.H., has been appointed permanently medical officer of health to the Croydon Rural District Council at a salary of £600 per annum. The appointment has been confirmed by the Local Government Board.

COMPLIMENTARY BANQUET.—Mr. Daniel Dougal, M.D., F.F.P.S. Glasg., of East Overton, Strathaven, was entertained on June 22nd in the Public Hall to a complimentary dinner and presented with a gold watch on his retiring from active practice and leaving the district after a life-long connexion with it. A considerable sum of money has also been subscribed and Dr. Dougal liberally assented to hand over the balance to the committee to appropriate as they deem most advantageous for the general public.

THE WOOLWICH, PLUMSTEAD, AND CHARLTON MEDICAL UNION.—At the last meeting of this union the following resolutions were passed:—"1. That medical officers of friendly societies be recommended to decline to attend juvenile members of clubs for a less sum than shall be agreed upon by members of this union. 2. That the union's resolution, 'That the same annual subscription with respect to juvenile clubs should be required as for men's clubs—viz., 4*s.* a year per member,' be taken to apply to clubs taking children over eight years of age only. 3. That under eight years of age children should be only taken at 8*s.* a year."

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The twentieth annual general meeting of this association will take place at the Café Royal, Regent-street, W., on Tuesday, July 3rd, at 6.30 P.M. At 7.30 P.M. the members and their friends will dine together, and among the guests are expected Sir Walter Foster, M.P., Dr. G. Vivian Poore, Dr. T. Gilbart Smith, Dr. Dawson Williams, Mr. Howard Marsh, and Dr. Clement Godson. Any Brussels medical graduate desiring to be present is requested to communicate with the honorary secretary, Dr. Major Greenwood, 243, Hackney-road, N.E. Tickets for the dinner are 7*s.* 6*d.* each, exclusive of wine.

DEATHS FROM PTOMAINE POISONING.—An inquest was held at Carmarthen on June 15th upon the wife of the head constable of that town who had been taken ill after eating some shrimps on May 26th and had died on June 5th. Medical evidence showed that death had resulted from ptomaine poisoning and a verdict to that effect was returned.—A man, his wife, and seven children ate roast pork for dinner at Plymouth on June 10th and within a few hours all, with the exception of two boys, were seized with vomiting. One of the children, a boy, aged five years, died on the following day. At the inquest held on June 13th the medical evidence showed that death was due to ptomaine poisoning and a verdict was given by the jury to that effect. This latter case is referred to in another column.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Hours of Labour in Shops.

LORD AVEBURY having failed to induce the Government to take steps this session for the appointment of a Parliamentary inquiry into the hours of labour in shops has announced that he will himself move for the appointment of such an inquiry at the commencement of next session.

Registered Companies and Medical Practice.

The Bill of the Government to amend the Companies Acts has been read a second time in the House of Commons and referred to the Grand Committee on Trade. The third clause of the Bill says that it shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife, and if any company contravenes this enactment it shall be liable on summary conviction to a fine not exceeding £5 for every day during which the contravention happens. Both Mr. RITCHIE (the Minister in charge of the Bill) and Mr. BALFOUR assured the House that the Government are anxious to see the measure passed into law during the present Parliament.

Midwives Bill.

The Midwives Bill may now be regarded as dead so far as the present session of Parliament is concerned. The Government allowed two Wednesdays for the consideration of private Members' Bills, and on the second of these Wednesdays (June 27th) the Bill was reached but no progress was made with it.

HOUSE OF LORDS.

TUESDAY, JUNE 26th.

The St. Pancras Lunacy Scandal.

Lord RUSSELL OF KILLOWEN raised this question in debate and asked the Government whether they intended to take any proceedings. His lordship gave an account of the system which has recently been exposed. Under this system, he said, there was a temptation to the relieving officer to take up an insane person, to take such a person before a particular medical man to the detriment of others as well qualified but more scrupulous, and to take patients, not to public institutions where they could be kept at a cost of something like 19s. a week, but to private asylums where the cost was two guineas or more. There was reason, it seemed, to believe that the system, whilst not universal, was not confined to St. Pancras. He had been waited upon by a member of the vestry of St. Matthew's, Bethnal-green, where they found that this dishonest state of relations existed. They had drawn the attention of the Local Government Board and the Lunacy Commissioners to it. The latter said they had no authority to deal with the matter, and the Local Government Board only held an inquiry after considerable delay and continued pressure.—The LORD CHANCELLOR, after commenting on the seriousness of the subject, said that the attention of the Commissioners in Lunacy had been called to the Bethnal Green case as long ago as last November and they invited the Public Prosecutor to consider whether it might not be made the subject for a prosecution of the persons concerned. The Public Prosecutor, after taking the opinion of counsel, came to the conclusion that the Act of 1889, Lord Randolph Churchill's Act, would not reach these persons. His own attention had been drawn to the case by the Lunacy Commissioners, who forwarded to him a draft clause for insertion in the Bill amending the lunacy laws. This Bill had passed the House of Lords and was now before the other House. He believed it was urgently demanded, not only for the particular matter now under review, but on other and general grounds, though he was afraid, having regard to the period of the session which had been reached, that the measure was in some peril of not being passed this session.—The Earl of KIMBERLEY asked what action, if any, had been taken by the Local Government Board.—The LORD CHANCELLOR said that he had received a communication from the Local Government Board on the subject. In the course of this communication the Local Government Board stated that the charges in the Bethnal Green case appeared to be well founded, and as it was alleged that similar practices prevailed in another Poor-law union in the metropolis they proposed to address a circular letter to boards of guardians on the subject.

HOUSE OF COMMONS.

THURSDAY, JUNE 21ST.

Medical Officers in Volunteer Corps.

Mr. BILLSON asked the Under Secretary of State for War if the army order relating to the payment of volunteers in camp would limit the payment to medical officers to one such officer for each corps, so that when a corps was entitled to two or more medical officers all but one would have to pay their own expenses; and, if so, why medical officers should be placed in such a position.—Mr. WYNDHAM replied: The order allows pay for one medical officer in each unit, one additional for each brigade, and three for each bearer company. This is considered sufficient.

The Mortality Averages for Liverpool.

Sir JOHN WILLOX asked the Secretary to the Treasury whether his attention had been drawn to the last report of the medical officer of health of the city of Liverpool, in which allegations were made of the inaccuracy and unreliability of the census returns of the last census and the consequent errors in the calculation of the mortality averages for the decennial period; and whether measures would be adopted to ensure greater correctness in taking the next census by the employment of more competent enumerators or otherwise.—Mr. CHAPLIN, who replied to the question, said: The question of my hon. friend appears to be founded on a misapprehension. No allegations are made in the report referred to of the inaccuracy and unreliability of the census returns. The medical officer appeared to have been referring to the estimates of population in the years between 1881 and 1891. These estimates were based on the increase in population in the 10 years between 1871 and 1881, and the result of the last census showed that in the case of Liverpool this rate of increase had not been maintained. There appears, however, to be no reason to suppose that the census returns themselves were inaccurate.

Medical Examination under the Workmen's Compensation Act.

Mr. WOODS asked the Home Secretary if, under Clause 11 of the First Schedule of the Workmen's Compensation Act, 1897, a workman was entitled to submit himself for examination by the qualified medical practitioner appointed for the district in which he resided by the Secretary of State, when the medical practitioner appointed by his employer had given a certificate upon his condition with which he was not satisfied, although the case had not been before a committee, arbitrator, or judge, in consequence of the employer and the workman having previously agreed to pay and receive a fixed weekly sum as compensation.—Sir MATTHEW WHITE RIDLEY replied: The provisions of Paragraph 11 of the first schedule of the Workmen's Compensation Act apply to any workman "receiving weekly payments under the Act." Whether any particular case of agreement is "under the Act" is a question which can only be decided authoritatively on the facts of the case by a court of law and I am unable to express an opinion on it in general terms.

Soldiers Invalided from South Africa.

Sir EDWARD GOURLEY and other Members called the attention of the Under Secretary of State for War to the case of Private Mitchell of the Wiltshire Regiment, who was shot in both ankles at the battle of Modder river and invalided home.—Mr. WYNDHAM replied: There are over 7000 beds reserved in the various military hospitals for private soldiers invalided from South Africa. On reaching convalescence the soldier is transferred to a convalescent home. We have ample accommodation for the first stage of recovery in hospitals and for the second in homes. But many soldiers prefer to proceed on sick furlough to their friends. This is allowed when their health justifies it. They are in that case provided with sufficient funds and with a printed statement for their guidance which contains this paragraph: "Soldiers on furlough who require medical aid shall apply for it to the nearest military station. When this is impracticable they may apply to a civil practitioner, to whom they will show this furlough paper, and who will be allowed to charge for attendance at the rate laid down on Army Form O, 1667." Arrangements had been made to send Private Mitchell to a convalescent home, but at his own request he was allowed to go on furlough to Croydon. On leaving hospital he received £7 17*s.* 6*d.* pay. Private Mitchell states that the people with whom he had intended to stay had left Croydon. He accordingly proceeded to London and feeling ill went to the Morley Hotel, 112, Lambeth-road. His health did not improve and when he had spent two days and two nights in bed the manager sent for a doctor who ordered his removal to the infirmary. A gentleman at the hotel applied to the commanding officer, St. George's Barracks, for his removal to a military hospital. The reply did not arrive before his removal. He was accordingly visited in the infirmary and removed in a military ambulance to the station hospital in Rochester-row. I beg to thank the hon. Members who by raising this question have given me an opportunity of stating the facts at a length which will not, I hope, be considered excessive in view of its importance. There has been much comment on this case and I shall be obliged if the press will give equal publicity to the fact that civilians who find a soldier left stranded on their hands should apply to the nearest military authority and not despatch him incontinently to a pauper institution.

FRIDAY, JUNE 22ND.

The Extermination of Rabies.

During a debate in committee of supply on swine fever and the outbreak of foot and mouth disease in Norfolk Mr. WALTER LONG, President of the Board of Agriculture, said he would like to take the opportunity of acknowledging the great debt of gratitude he owed to the medical and scientific men of this country for the uniform support they had given him from the commencement of his labours in connexion with rabies and also to the members on both sides of the House for the support they had given him in spite of the unpopularity and difficulties it had brought upon them in their constituencies. He was glad that their labours had been so successful, for he believed that rabies had been practically exterminated, and, with a loyal obedience to the regulations the Department had thought it necessary to impose, he believed there was no reason why they should not hope to protect the country against any fresh outbreak of this most terrible disease.

The Sale of Food and Drugs Act.

Mr. WALTER LONG, questioned on the administration of the Sale of Food and Drugs Act of last year, said that he adhered to the view he had before expressed, that the main object of the Act was to ensure local action against adulteration, and the function of the Board of Agriculture was to exhaust every effort in urging, and, as far as they could, compelling, discharge of this duty before taking action themselves. Nothing could be more disastrous than for the central authority to be ready to do the work which rightly fell to the local authority. To do that would inevitably lead to dilatory and neglectful administration. So far as he was aware the operation of the Act of last year had been most satisfactory. The Treasury had given assistance and local authorities had been made fully acquainted with the requirements of the new Act, and he had every reason to believe that the exercise of its power by the department had led to vigorous administration by local authorities. The department would leave no stone unturned to make the Food and Drugs Act a success and to put an end to the adulteration of food.

The St. Pancras Lunacy Scandal.

In Committee of Supply, when the vote for the salaries and expenses of the Commissioners in Lunacy in England was taken, Mr. BURNS called the attention of the Attorney-General to what he described as a gross scandal in one of the branches of the Lunacy Commissioners' work. Some weeks ago it was discovered that five relieving officers employed by the St. Pancras Board of Guardians had been trafficking

with the owners of private asylums in London, so that lunatics who ought properly to have gone to the asylums controlled by the London County Council or some other public authority and there been maintained at a cost of 11s. per week, had been diverted to private asylums where the weekly maintenance charged ranged from 35s. to 40s. The five officers admitted that they had received presents and sums of money from the private asylum owners. The officials were censured by the guardians, but he was of opinion that they ought to be dismissed. There was a feeling that this sort of thing was somewhat general and he hoped the Attorney-General would have a special inquiry made.—The ATTORNEY-GENERAL (Sir Robert Finlay) said that if the facts had been correctly reported to the hon. Member they disclosed an offence of a very serious kind committed both by the relieving officers and by those who were alleged to have bribed them. He hoped, however, the hon. Member was mistaken in supposing that the practice was at all common, and he assured him that the Lunacy Commissioners would investigate with the utmost vigour the management of any establishment where it was shown the practices complained of prevailed.—Sir WALTER FOSTER, after speaking of the statement of the Attorney-General as satisfactory, said that the Member for Battersea (Mr. Burns) had rendered a public service in calling attention to the management of private lunatic asylums.

TUESDAY, JUNE 26TH.

Sunstroke at Aldershot.

Dr. FARQUHARSON asked the Under Secretary of State for War if he could state how many cases of sunstroke in connexion with the Aldershot review had been treated in hospital, what was the average duration of their stay, and whether any of the cases were reported as severe or dangerous; and whether the principal medical officer at Aldershot was consulted as to the propriety or otherwise of holding the field day on June 11th.—Mr. WYNDHAM: The total number of cases was 62; the duration of stay in hospital of those discharged was 10 days; 14 are still in hospital; 29 of the cases were considered severe. The general officer commanding did not consult the principal medical officer, nor was there any ground for doing so, since exceptional heat was not anticipated.

Inoculation for Enteric Fever.

Several questions were addressed to the Under Secretary of State for War with reference to the results of inoculation against enteric fever performed on soldiers going to South Africa. Mr. WYNDHAM replied that medical records showing these results were being compiled in South Africa but that the statistics at present available were not sufficient to enable him to give a conclusive reply. He doubted whether it would be possible to report on the subject before the end of the war.

MIDWIVES BILL.

DEBATE IN THE HOUSE OF COMMONS.

On Wednesday, June 27th, in the House of Commons, the order for the consideration of the Midwives Bill as amended in the Grand Committee on Law was reached at a quarter to five o'clock, that is to say, three-quarters of an hour before the time when the discussion of contested business must, by the rules of the House, cease.

Mr. GRIFFITH-BOSCAWEN moved that the Bill be considered upon this day three months—the formula for the rejection of a measure. The hon. Member said that he knew it was rather a strong order when a Bill had been read a second time by the House and considered and amended by a Grand Committee, to move that it be not considered, but in this case there were special reasons for the course he had adopted. First of all there was the great importance of the Bill and the necessity for the House considering its provisions very carefully and realising their full effect. Another reason was that the Bill had never had any proper consideration from the House. It came on for second reading most unexpectedly on an occasion when, to the astonishment of everybody, the business of the Government was suddenly concluded and when there was a very small attendance of members. The fact was that there had been no real or adequate discussion of the provisions of the Bill in the House. Then it went to the Standing Committee. Now reference to a Standing Committee was an excellent plan for Government Bills in which a large number of members were interested, but it was most unsatisfactory in the case of a private member's Bill, except, perhaps, from the point of view of the particular private members interested in the measure. By means of a little careful whipping any private member's Bill in which only a few members were interested could be got through a Standing Committee. This Bill was rushed through the Standing Committee and now that it came back to the House the House should carefully consider whether or not it should be allowed to proceed. He submitted that the Bill was contrary to the whole tendency of legislation in these matters in recent years. The whole tendency of recent legislation had been to insist upon a higher medical standard, to substitute science for what he might call quackery. This Bill went in quite the opposite direction. It proposed to give a certain bogus certificate to midwives to enable them to pose before the world as properly qualified. Under the Medical Acts before a person was recognised as qualified he must prove competency in medicine, surgery, and midwifery, while this Bill proposed to legalise the practice of midwifery by a class of people who were only qualified in one of these branches. If they could be sure that every case would be one of natural labour simple knowledge of midwifery would be adequate, but as in almost every case abnormal symptoms might arise it was necessary that there should be somebody present who was qualified not only in midwifery but also in medicine and surgery. He admitted the worthiness of the motives of those who promoted the Bill, but he denied that its provisions would have the effect desired. It would, in his opinion, largely increase the mortality in connexion with childbirth because it would induce people to employ partially qualified persons to a greater extent than in the past. The Bill, being badly drafted, stood in great need of amendment. Such an amount of amendment was necessary that the work could not be satisfactorily overtaken in the time now at the disposal of the House. In the Bill as it stood there was neither proper local control nor proper means of bringing to book certificated persons who did wrong. The local committee could do nothing but examine and report to the Central Midwives Board, a body sitting in London with no knowledge of the local circumstances, and all the Board could do was to suspend the midwife who did wrong; it had no power to fine her. It might be said that in this matter he was the mouthpiece of certain members of the medical profession who objected to the Bill from motives of self-interest, but this was not the case; he was the mouthpiece of no such people. The medical profession, or at any rate the great majority of the medical profession, objected to the Bill because they considered it contrary to the public interest.

Colonel MILWARD, in seconding the motion, said he objected to the Bill because it was another symptom of the modern craze for examining and registering everybody. They had had a measure for examining and registering plumbers and one for examining and registering architects, and now they had one for examining and registering midwives. Two of the promoters of this Bill were very esteemed country gentlemen, and he supposed that some day they would have a scheme for examining and registering country gentlemen. He was an advocate for greater freedom and a return to the old times when everybody had not to be examined and registered. He was anxious as any man to see the certified midwife properly educated and restricted to her proper duties, but he considered this Bill far too drastic.

Sir JOHN BATTY TUKE then rose to deliver his first speech in the House of Commons. He was received on rising with cheers from all parts of the House. He said that his hope was that this Bill would be allowed to proceed, because he believed it to be an important measure affecting the public health. The mover of the motion used the argument that the conduct of all cases of labour should be relegated to the medical profession. That would be highly desirable, but, unluckily for his argument, midwives had existed from the beginning of the world and he was afraid they would continue to exist. One might as well attempt to suppress the condition which gave her her employment as attempt to suppress the midwife. It had been said that a large number of the medical profession objected to legislation in regard to midwives. That was true. But there was also a large section of the medical profession which approved of the registration of midwives and was anxious that their practice should be regulated. He desired to say that the General Medical Council, of which he had the honour to be a member—a body appointed by Parliament to regulate very important matters in connexion with medicine—approved generally of the Bill now before the House. As the House was aware, a series of Bills on this subject had been introduced. At the invitation of the Lord President of the Privy Council these Bills had been considered by the General Medical Council and after long and serious consideration the latter body had approved of them generally. The Bill now before the House was under consideration at the last meeting of the General Medical Council and its general principles were accepted, if not unanimously, at least by a very large majority. The Council had made suggestions from time to time the influence of which he saw in the Bill now under discussion. In his opinion the Bill contained the essentials of a good measure—registration of midwives, provision for their education, a good midwives board, and a provision by which all those practising midwifery should be under supervision. He must not be understood as approving of all that was in the Bill. He thought it might with advantage be amended very considerably, but he strongly urged the House to allow it to proceed inasmuch as it was an important measure and one which proceeded on the proper lines.

Dr. FARQUHARSON said that he quite admitted the importance of the Bill, but he was not prepared to admit that it had been sufficiently discussed. A large number of medical men opposed it and a large number supported it and with this balance of opinion he thought the House of Commons should be able after due discussion to produce a workable measure. In its present state the Bill was by no means perfect, though he admitted that upon the whole its principle was a good and sound one. He agreed with Sir John Batty Tuke that they could not end the midwife, but if they could not end the midwife they could mend her. At the present moment two-thirds of the poor women of the country in labour were attended by people of their own sex. Some of the midwives were clever, capable women; many of them were stupid, old, and unqualified. All that was wanted was to give midwives some reasonable period of study and some reasonable examination and then to hall-mark them in some reasonable way so as to show that they were qualified for their work. He had put down amendments in the hope of improving the Bill and he felt confident that when the measure came up again for discussion, perhaps in another session, they would be able to make it a really good Bill.

Mr. PARKER SMITH said that his opinion was that this matter should be looked at, not from the point of view of the interests either of medical men or of midwives, but from the point of view of the interests of the women of England and the coming generation, and he felt sure that the medical profession looked at it from this point of view. This was really not a medical man's question at all. The great majority of births were attended not by medical men but by women, and what was wanted by a Bill of this kind was to secure that these women had some kind of qualification. He felt confident that a very small amount of training would be sufficient to get rid of the worst of the dangers now incurred, because a very small amount of training and knowledge would enable these women to discriminate between the cases with which they could deal and the cases which required the skill of the qualified medical practitioner. He hoped the House would not put aside the subject, but express its sense of its urgency and importance by its vote that afternoon.

Sir WALTER FOSTER said he agreed with the last speaker that this was a matter of considerable importance, and because it was a matter of considerable importance he wanted it postponed. He thought he was to some extent responsible for some of this attempted legislation. Seven years ago he endeavoured to move the General Medical Council to take some steps to bring about the better education of women who attended the poor in childbirth and he was still in favour of that principle. For that principle he was prepared at any time to vote, but he was not prepared to vote for a Bill which would abrogate and repeal the Medical Acts of 1858 and 1886 by creating a new class of practitioner which was absolutely unnecessary in the interests of the public. What they wanted was that the public should have in time of childbirth properly educated nurses to look after them and when it was necessary to send for the local practitioner. That was the method by which they treated the paupers in the United Kingdom. The Local Government Board recognised these midwives under certain conditions. They recognised them only on condition that in every case of labour which they attended they let the parochial medical officer know that they

had gone to attend the case, in order to warn him to be in readiness to attend the pauper if any difficulty arose. In that position these women would do a vast amount of good, but put them on this register and they would compete not only with the medical man but with other women engaged in the same business. He thought that all they wanted in the interests of public health, in the interests of the great mass of the people—and it was what the great mass of the medical profession wanted—was that they should have properly qualified women to come in and act as monthly or midwifery nurses in all cases of labour that presented no difficulty and to call in assistance in all cases that did present difficulty. This Bill did not provide that and did not secure it, and because it did not provide or secure that he thought the House should hesitate before it proceeded with it and should give the matter further consideration. Another reason for not proceeding with the Bill now was that there were a large number of amendments standing on the notice paper. Manifestly it was not a Bill which had been properly prepared and properly considered. He was not aware that the Government were prepared to back the Bill in its present form. His own view was that the subject was too large to be dealt with in a private Member's Bill; it ought to be dealt with by the Government in a Bill for which the Government were responsible. He hoped that the Government in another session would take up the matter and give them a Bill they could pass into law.

Mr. HEYWOOD JOHNSTONE, the Member in charge of the Bill, said he quite agreed with Sir Walter Foster that this was a matter which ought to be dealt with by the Government. It ought to be dealt with on the responsibility of the Government of the day. He agreed also with him in hoping that it might in the future be taken up by the Government of the day. But as the Government of the day had not taken it up the promoters of this Bill had felt it their bounden duty to bring the subject before the House and to keep it before the House and before the country. This matter had been the subject of inquiry by select committees of the House in 1892 and 1893.

Half-past five o'clock having now been reached, the SPEAKER made the usual call to order and the debate was thus peremptorily brought to a close. When the debate will be resumed no one can say, for all the time of private Members has been appropriated by the Government for their own business.

PROPOSED EXEMPTION OF HOSPITALS FROM LOCAL RATES.

EVIDENCE BEFORE THE SELECT COMMITTEE.

FRIDAY, JUNE 22ND.

The Select Committee of the House of Commons appointed to inquire into the proposed exemption of hospitals from local rates held another meeting to-day for the examination of witnesses.

Mr. BURT, Chairman of the Central Hospital Board for London, who had been partly examined at the previous sitting, said that the total amount of rates levied upon the 77 scheduled medical hospitals in the metropolis was £21,301 per annum. He thought that this was a burden which institutions of the kind should not be called upon to bear. He considered that a good enough definition of hospitals which should enjoy the proposed exemption would be hospitals carried on, not for profit, but for the care of the sick poor in mind or body and maintained partly or wholly by voluntary contributions or endowments.

In reply to Sir CAMERON GULL, M.P., witness said that the only objection to exemption which had been raised in London came from Lambeth.

The Chairman of the committee (Mr. T. W. RUSSELL, M.P.) said there could be no doubt that if exemption were granted in favour of medical hospitals other institutions would come forward and claim exemption upon practically the same grounds. He had received a letter from an institution in London which gave aid to the sick poor, had no endowments, and depended entirely upon voluntary support, praying to be heard before the committee.

Mr. BURT said he quite admitted that the question presented many practical difficulties, but of course he appeared before the committee to support the claim of the medical hospitals.

Mr. MANDERS of the Irish Office was the next witness and in the course of examination stated that under a series of statutes the hospitals in Ireland were entirely exempt from local rates.

Mr. HOLLAND, Chairman of the London Hospital, Poplar Hospital, and Tilbury Hospital, gave evidence in favour of exemption from local rates. He expressed the opinion that it would be unfair to exclude from the proposed exemption hospitals which happened to have some paying beds. He admitted that if hospitals were exempted other institutions would make a claim for exemption. This was a difficulty, but it was not for him but for that committee to solve it or to suggest a solution. He admitted that it would be reasonable to say that a hospital collecting patients from all parts of England and not doing anything for the parish in which it was situated should not be exempted from the rates of that parish. Perhaps a contribution might be got from the parishes which sent patients to the hospital.

Mr. PATRICK BLAIR, W.S., one of the managers of the Royal Infirmary of Edinburgh, was the next witness. He stated that until the year 1896 the parochial authorities did not demand payment of poor rates and school-rates, or if a notice of assessment was sent in (as occurred once or twice) a simple letter from the treasurer and clerk pointing out that the institution was a charitable one effected the withdrawal of the claim. In the year named, however, intimation was made that the exemption which had hitherto been allowed must cease, in pursuance of the circular issued by the Local Government Board of Scotland on Oct. 28th, 1896. The question of the legality of these particular exemptions had been raised by the official audit, which had been instituted some little time previously and which had enabled the Board to check the procedure of the various local authorities. The matter was remitted to the Law Committee of the Royal Infirmary Board, who reported that as the law stood the institution had no defence against the claim of the parish council, and the rates amounting to £348 15s. 9d. were accordingly paid. In March, 1897, a special committee of the Board, consisting of the then Lord Provost (Sir Andrew McDonald), Professor Rankine, and himself, were appointed to approach the Local Government Board with reference to this question. That committee subsequently met representatives of the Board and discussed the question but without any satisfactory result. In December, 1897, the matter was again before the Law Committee, when they reported that it was their opinion that under the 67th Section of the Poor-law Act, 1845, it would be lawful for the parish council to contribute "annually or otherwise from the funds raised for the relief of the poor" to the funds of the Royal Infirmary the amount of the poor-rate for which the institution was assessed, or such sum as might seem to the council reasonable and expedient. A letter in accordance with this report was therefore forwarded to the parish council, who replied on March 22nd, 1898, that it had been unanimously agreed to refuse the application of the managers for a contribution towards the funds of the institution. The managers of the Royal Infirmary felt most strongly that if there was one institution which, above all others, should be exempt from the payment of poor-rates and school-rates it was that whose affairs they had the honour to control. All treatment and advice at this hospital were granted absolutely free; no letter of recommendation was asked for, the necessity and urgency of the case being the sole requisite qualification. The poor-rates, not only of the city, but of the whole of Scotland were relieved thereby, as by promptly treating free of charge wage-earners who might fall ill or sustain injuries those depending upon them were enabled to do without the parochial assistance which many of them would otherwise require.

In cross-examination Mr. BLAIR said that while the Edinburgh Royal Infirmary had been compelled since 1896 to pay school-rates and poor-rates it had been exempted from the municipal rate.

Mr. HAYES FISHER, M.P., expressed his surprise at this state of things, saying that if the infirmary were to be called upon to pay any rate at all he should have expected it to be the municipal rate.

Mr. JAMES M. DODDS of the Scottish Office laid before the committee a copy of the circular referred to by Mr. Blair which was issued by the Scottish Local Government Board on Oct. 28th, 1896. The circular stated that the exemption of hospitals was not in terms of law unless in cases of inability to pay and intimated that it was the duty of the local boards who were responsible for the recovery of the assessment to see that the owners and occupiers legally liable were duly assessed.

The committee then adjourned.

TUESDAY, JUNE 26TH.

The committee met again to-day, with Mr. T. W. RUSSELL in the chair, and examined five more witnesses.

Sir EDWARD HAMILTON, one of the Secretaries to the Treasury, said that he was strongly opposed to any further extension of the principle of exemption from rates. He thought the principle was thoroughly bad. Anything like an exemption from rates was equivalent to a contribution from rates, and instead of being made in a disguised form it should be made above-board. Instead of exempting them from rates local authorities should, if they thought fit, make a direct grant to hospitals. The policy of the last 30 years had been to include every species of property almost in the valuation list and to draw the net closer and closer. Between 1840 and 1870 there were a good many exemptions made directly by Parliament, but since the later year, with the exception of the exemption accorded to voluntary schools three or four years ago, there had been no case, he thought, of extending exemptions. The concession to the voluntary schools was a substantial one, but he thought he could draw a distinction between voluntary schools and hospitals because one could localise the benefit of the former much better than one could the latter. The children attending a school belonged to the district, whereas the patients in a hospital were usually gathered from other districts. One great objection to providing state aid by means of exemption was that it was impossible that the benefit received should be coterminous with the area taxed. Take such a place as Ventnor, where there was a large hospital for consumptive patients. He understood that it was a large establishment and to omit it from the valuation list would mean a very great loss to the ratepayers of the locality who he imagined, rarely benefited directly from the hospital. He fancied there would be great difficulty in defining the hospital which properly was entitled to relief.

The CHAIRMAN said there was another difficulty which pressed upon his mind. Hospitals were very valuable and did an enormous amount of good work for the poor, but there were other institutions which did precisely the same class of work—orphanages and places of that sort—relieving the poor and doing it from sheer philanthropy and love of human kind. Did the witness think it would be possible to exempt from rates hospitals and not exempt institutions of that kind?

Sir EDWARD HAMILTON said he did not see any standing ground. That was his point; he said that the principle of exemption was bad and that it was impossible almost to draw a line of exemption. He had consulted the Chairman of the Royal Commission on Local Taxation and his lordship (Lord Balfour of Burleigh) had told him he fully contemplated that there would be practical unanimity against the principle of exemption from rating being carried further. The question of hospitals had not been considered by itself by the Royal Commission. He was interested in the Royal College of Music in South Kensington. About five years ago the question was raised whether that institution came within the four corners of the Act of 1843. The question came before the courts and the judge gave his decision in favour of the Royal College, which in consequence was relieved of rates to the extent of £500 or £600 per annum. He did not suppose that the ratepayers of South Kensington were aware that they contributed this amount to the Royal College of Music. He was not opposed by any means to the idea of hospitals receiving aid from the rates, but he thought that the aid should be given in the form of a contribution. He thought that in all cases where the benefit could be fairly well localised the local authority might make a contribution to a hospital, but of course it would be a strong thing for Parliament to say that the contribution should be compulsory.

Mr. RALPH BROCKLEBANK, representing 14 of the hospitals of Liverpool, gave evidence in favour of exemption. The institutions he represented relieved the rates to a very large extent and besides they carried on valuable educational work which, he thought, should be acknowledged. He admitted that it might be difficult to resist other claims for exemption, but he considered the hospitals had a special case, seeing that the patients they treated would have to be otherwise provided for. To relieve the 14 hospitals he represented would mean an addition of one-thirtieth of a penny in the £1 to the rates in Liverpool. When the Liverpool hospitals did not pay rates the ratepayers made no complaint, and he believed if it were legal the Corporation of Liverpool would be willing to forego the rates or, failing that, to make a direct contribution to the hospitals. As for the hospitals, he did not suppose they cared whether the aid came in the form of exemption from rates or of direct contribution.

Mr. WAINWRIGHT, treasurer of St. Thomas's Hospital, who was next

examined, said that last year that institution paid £2566 in rates. If the hospital were relieved of this charge its managers would be able to open two wards with 30 beds each and treat between 380 and 400 in-patients. Owing to want of funds they were obliged to refuse many applications.

Dr. J. M. RHODES said he was the president of the Poor-law Unions' Association of England and Wales, the past president to the Homes for the Feeble-Minded at Birmingham, the chairman of the Chorlton and Manchester Joint Asylums Committee, and a member of the London and also the Manchester Association for Improving the Condition of the Feeble-minded. He believed that the association of which he had the honour to be president was in favour of everything being done to promote the welfare of the feeble-minded who, up to the present time, had been a very neglected class. The only question was this, Could exemption be made in favour of the buildings belonging to this class without an injustice being inflicted in some cases? Take, for instance, a case with which he was well acquainted. An institution for epileptics and feeble-minded was going to be established in another county to that with which he was connected, from which the patients would be drawn. Over 400 acres of land would be occupied, having taken over those buildings and the grounds associated with them. Upon that land between 300 and 400 patients would be placed. Was it right that the authorities in that county should lose the whole of the rates from that institution and have to bear the whole of the expense of maintaining the roads along which all the stores, such as coals, &c., would have to be carted? If they made an exemption in favour of the feeble-minded, where were they going to draw the line? Epileptic colonies and the epileptics, who were certainly as deserving a class as the feeble-minded, would demand, and rightly demand, exemption, and personally he did not see how they were to grant the one and refuse the other. If exemption was given to these institutions it should be on a plan similar to the Agricultural Rating Act, by which the loss to the unions was made good from the Imperial Exchequer. As he said before, the unions had every sympathy with the promotion of establishments for the welfare of the feeble-minded, but they were certainly of opinion that this matter should be dealt with as a whole, not by dealing with it piecemeal, as in this instance, creating a precedent which would no doubt be made a case for exemption of a large number of other institutions which appeared to them equally deserving of exemption.

The Rev. A. W. JEPHSON, the last witness, said he represented the School Board of London who paid £120,000 in rates per annum. The view of the Board was that all exemptions were unfair to the ratepayers who were not exempted. The Board were of opinion that there should be no exemptions and that if possible Parliament should undo the injustice which had already been done. It was an entire misapprehension to say that the Board sent its children to the hospitals in London for the examination of their eyes. They had recommended the parents to have the eyes of their children examined and provided them with a list of the hospitals, but it was a question for the parents where the children should be examined. He might add that the Board no longer gave a list of the hospitals.

The committee then adjourned.

BOOKS, ETC., RECEIVED.

ALT, JOHANNES, Frankfurt-am-Main.
Die Mimik des Menschen. Von Henry Hughes. 1900.

BALE, J., SONS, AND DANIELSSON, Great Titchfield-street, Oxford-street, London.
More Loose Links in the Darwinian Armour. By P. Y. Alexander, M.A., LL.D., &c. 1900. Price 2s. net.
A Handbook of the Gnats or Mosquitoes, giving the Anatomy and Life History of the Culicidæ. By Major G. M. Giles, I.M.S., M.B. Lond., F.R.C.S. 1900. Price 15s. net.
The Early Treatment of Appendicitis. By Donald W. C. Hood, M.D., F.R.C.P. Lond. 1900. Price 2s. 6d. net.

BAILLIÈRE, J. B. ET FILS, Paris.
Les Actualités Medicales, Les Albuminuries Curables. Par J. Teissier. 1900.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
The Philosophy of Voice. By Charles Lunn. Ninth (standard) edition. 1900. 5s. net.
On Diabetes Mellitus and Glycosuria. By Emil Kleen, Ph.D., M.D. 1900. Price 10s. 6d. net.

BELL, GEORGE AND SONS, London.
My Diocese during the War. By the Bishop of Natal. Illustrated. 1900. Price 6s.

BLACKWOOD, W., AND SONS, London.
Journal of the Scottish Meteorological Society, with Tables for 1897 and 1898. Third Series, Nos. 15 and 16. Price 15s. (gratis to members).
Recollections of My Life. By Surgeon-General Sir Joseph Fayrer, Bart., K.C.S.I., M.D., &c. 1900. Price 21s.

BUTTERWORTH AND CO., Bell-yard, London, W.C.
A Practical Guide for Sanitary Inspectors. By F. C. Stockman. With an Introduction by H. Kenwood, M.B., L.R.C.P., D.P.H. 1900. Price 5s. net.

CARRÉ, GEORGES, ET C. NAUD, Paris.
La Goutte et le Rhumatisme. Par A. Delpeuch. 1900.

CASSELL AND COMPANY, London.
Diseases of the Tongue. By H. T. Butlin, F.R.C.S., and W. G. Spencer, M.S., M.B. Lond. Illustrated. 1900. New edition, price 21s.

CHURCHILL, J. & A., Great Marlborough-street, London.
Surgery: Its Theory and Practice. By W. J. Walsham, F.R.C.S. Eng. Illustrated. Seventh edition. 1900. Price 15s.

CLAY, C. J., AND SONS, Ave Maria-lane, London.
Histology of the Blood, Normal and Pathological. By P. Ehrlich and A. Lazarus. Edited and translated by W. Myers, M.A., M.B., B.Sc., with a Preface. By G. Sims Woodhead, M.D. 1900. Price 5s. net.

CLIVE, W. B., London.
The Organised Science Series. First Stage Hygiene. By R. A. Lyster, B.Sc. Lond. 1900. Price 2s.

CONSTABLE, A., AND CO., Whitehall-gardens, Westminster.
The Ascent of Mount St. Elias. By H.R.H. Prince Luigi Amedeo. 1900. 31s. 6d. net.

DEACON, C. W. & CO., Duke-street, Adelphi, London.
Before Good Night (being a Little Story told to a Little Child) and from Door to Door (a sequel to the above). By G. H. R. Dabbs, M.D. 1900. Price 2s. 6d.

F. A. DAVIS COMPANY, Philadelphia.
Annual and Analytical Cyclopædia of Practical Medicine. By C. E. de M. Sajous, M.D., and others. Illustrated and Maps. Vol. V. 1900.

FINCH, B., AND CO., 82, Belvedere-road, Lambeth, London.
Finch's Scientific and Novel Sanitary Appliances for Hospitals and Asylums.

FISCHER, G., Jena.
Die Specielle Chirurgie in 60 Vorlesungen. Von Dr. E. Leser. Vierte Auflage. 1900.

GREEN, W., AND SONS, Edinburgh.
Encyclopædia Medica. Editor, C. Watson, M.B., M.R.C.P.E. Vol. IV. Foot to Hernia. 1900.

INGRAM, ROBT., Pleydell-street, Fleet-street, London.
Sewage and the Bacterial Purification of Sewage. By S. Rideal, D.Sc. Lond. 1900.

KEGAN PAUL, TRENCH, TRÜBNER AND CO., Paternoster House, Charing Cross-road, London.
B. Bradshaw's Dictionary of Bathing Places and Climatic Health Resorts, with a Map. 1900. Price 2s. 6d.

KIMPTON, H., High Holborn, London.
Progressive Medicine. Vol. I. March, 1900. Edited by H. A. Hare, M.D., assisted by C. A. Holder, M.D. 1900. Price 12s. 6d. net.

LEHMANN, J. F., München.
Lehmann's Medicinische Handatlanten. Band 7: Ophthalmoscopie. Von Prof. Dr. O. Haab. 1900.
Theorie und Praxis der Schattenprobe. Von Dr. O. Neustatter. 1900.
Die Begutachtung der Erwerbsfähigkeit nach Unfallverletzungen des Sehorgans. Von Dr. E. Ammann. 1900.
Die Rolle der Schilddrüse bei Stillstand und Hemmung des Wachstums und der Entwicklung und der chronische gutartige Hypothyreoidismus. Von Dr. E. Hertoghe und Dr. J. H. Spiegelberg. 1900.
Die Typischen Operationen und ihre Ubung an der Leiche. Von Dr. Emil Rotter. 6. Auflage. 1900.

LITTLE, BROWN AND CO., Boston, U.S.A.
The Mechanism of Dislocations and Fracture of the Hip—Litholapaxy. By Henry J. Bigelow, A.M., M.D. 1900.
Surgical Anæsthesia. Addresses and other Papers. By Henry J. Bigelow. 1900.
A Memoir of Henry J. Bigelow. 1900.
Orthopedic Surgery and other Medical Papers. By Henry J. Bigelow. 1900.

MACDOUGALL, A., Mitchell-street, Glasgow.
Lectures on Clinical Medicine delivered in the Glasgow Royal Infirmary. By John L. Steven, M.D. Illustrated. 1900. Price 6s.

MACMILLAN COMPANY, London.
The Ophthalmic Patient. By P. Fridenberg, M.D. 1900. Price 6s. 6d. net.
The Care of the Child in Health. By N. Oppenheim, M.D. 1900. Price 5s.

MALOINE, A., Paris.
La Médication Ergotée (Ergot de Seigle, Ergotine, Ergotinine). Par Samuel Bernheim. 1900.

MARCUS, LOUIS, Berlin.
Fliegenlarven als gelegentliche Parasiten des Menschen. Von Dr. E. Peiper. 1900.
Dermato-histologische Technik. Von Dr. M. Joseph und Dr. G. Loewenbach. 11. Auflage. 1900.

MIEDES, RAMÓN, Zaragoza.
Lecciones de Clinica Quirurgica. Por Dr. R. Lozano. 1900.

RENSHAW, H., 356, Strand, London.
An Introduction to Pathology and Morbid Anatomy. By T. H. Green, M.D., F.R.C.P. Ninth edition. Revised by H. M. Murray, M.D., F.R.C.P. Illustrated. 1900. Price 21s.

SCIENTIFIC PRESS, Southampton-street, Strand, London.
Burdett's Hospitals and Charities. 1900. By Sir H. Burdett. Eleventh year. Price 5s.

SCOTT, GREENWOOD, AND CO., Ludgate-hill, London.
The Risks and Dangers of Various Occupations and their Prevention. By L. A. Parry, M.D., B.S. Lond. 1900. Price 7s. 6d. net.

SIMPKIN, MARSHALL, HAMILTON AND CO., Stationers' Hall-court, London.
The Failure of Surgery in Cancer, and what has Medicine done during the Queen's Reign? By S. Kennedy, L.R.C.P., L.R.C.S. Edin. 1900. Price 1s. net. By post 1s. 3d.

SMITH, ELDER, AND CO., Waterloo-place, London.
Origin and Character of the British People. By N. C. Macnamara. 1900. Price cash 4s. 6d.

SWAN SONNENSCHEIN AND CO., Paternoster-square, London.
With Methuen's Column on an Ambulance Train. By E. N. Bennett. 1900. Price 2s. 6d.

UNIVERSITY PRESS OF LIVERPOOL.
The Thompson-Yates Laboratories Reports. Edited by R. Boyce, and C. S. Sherrington. Illustrated. Vols. I. and II., reprints and reports 1898-1899.

WILSON, EFFINGHAM, Royal Exchange, London.
Food and Drugs: A Manual for Traders and Others. By Chas. J. Higginson, Barrister-at-Law. 1900. Price 2s. 6d. net.

Conty's Practical Guides to the Paris Exhibition, 1900 (Conty's Guides Office, 12, Rue Auber, Paris), price 1s. net.—Magazines, &c., for July: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Munsey's Magazine, and Sandow's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ARMISTEAD, H., M.B., C.M. Edin., has been appointed Medical Officer for the Oswaldtwistle Sanitary District.

ASTIN, W., M.B., C.M. Aberd., has been appointed Medical Officer for the Loughton Sanitary District of the Epping Union, vice F. A. Owgan, resigned.

BARRON, H. T., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Registrar to the Westminster Hospital.

BENNETT, J. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 4 Sanitary District by the Maidstone Board of Guardians, vice A. S. Wood.

BENSON, CHRISTOPHER RICHMOND, M.R.C.S., L.S.A., has been appointed Medical Officer for the Bratton Clovelly District by the Okehampton (Devon) Board of Guardians.

BRAUND, JAMES MONTAGUE, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health by the Stratton (Cornwall) Rural District Council.

BROWNLEE, J., M.D. Glasg., D.P.H. Camb., has been appointed Physician Superintendent at the Belvidere Hospital by the Glasgow Corporation.

CHESTNUTT, J., L.R.C.P., L.R.C.S., Edin., has been appointed Certifying Surgeon under the Factory Acts for the Howden District.

CLARK, J., M.D. Aberd., F.R.C.S., Edin., has been appointed Certifying Surgeon under the Factory Acts for the Osmotherley District.

CRUICKSHANK, R. W., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Civil Parishes of Cruden and Slains in the county of Aberdeen.

DAVIS, HENRY, J., M.A., M.B. Cantab., M.R.C.P. Lond., has been appointed Assistant Physician to the West London Hospital, Hammersmith-road.

DEY, A., M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Glendale Rural Sanitary District, vice R. Walker, resigned.

FAIRBAIRN, J. S., M.B., B.Ch. Oxon., F.R.C.S. Eng., has been appointed Pathologist to the Chelsea Hospital for Women, Fulham-road London, S.W.

FLANEGAN, H. J., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Third Sanitary District of the Evesham Union.

FOSTER, PERCY, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Sussex County Hospital, Brighton.

FRYER, W. F., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the No. 6 Sanitary District of the Woodbridge Union, vice W. Adams, deceased.

HOLLINSHEAD, F., M.D. St. And., M.R.C.S., has been appointed Visiting Medical Officer at the Infirmary of the King's Norton Union.

HORA, J., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Resident Medical Officer at the Infirmary of the King's Norton Union.

KEATING, JAMES, L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Ballygarvan Dispensary District, County Cork.

KELLY, T. J., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Enniscorthy Nos. 1 and 2 Dispensary Districts.

LONGFORD, J. M., L.R.C.P., L.R.C.S. Irel., has been appointed Assistant Medical Officer for the Cottage Homes, Aston Union, vice A. Ingram.

MACDONALD, C. R., M.D. Aberd., D.P.H. Camb., has been appointed Medical Officer of the Burgh, Troon.

MCGAURAN, A., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Newtowngore, County Leitrim, Dispensary District.

MACLENNAN, ALEXANDER, M.B., C.M., L.M. Rotunda, has been appointed Extra Dispensary Surgeon to the Western Infirmary, Glasgow.

MANNIX, J. F., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Caherciveen District, county Kerry.

MANSON, R. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Northern Sanitary District of the Darlington Union.

MARTIN, FRED. W., M.R.C.S., L.R.C.P. Ed., has been re-appointed Medical Officer of Health to the Borough of Brighouse.

MARTIN, J. M., M.B., B.C. Cantab., D.P.H., has been appointed Medical Officer of Health for the Stroud Rural Sanitary District, vice T. Partridge, resigned.

MITCHELL, ARTHUR M., M.A., M.D., B.C. Camtab., D.P.H. Camb., has been appointed Medical Officer of Health for the Borough of Guildford.

MORGAN, D. N., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Gilfach Sanitary District.

NICHOLSON, T. D., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Shap District.

O'DRISCOLL, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Valencia Dispensary District in Caherciveen Union, County Kerry.

RACE, J. P., L.S.A., has been appointed Assistant Medical Officer for the Gordon-road Workhouse of the Parish of St. Giles, Camberwell, vice F. Friend.

RICHARDS, JOHN, L.R.C.P., Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Conwil Sanitary District by the Carmarthen Board of Guardians.

ROBERTSON, J. A., M.D. Glasg., has been appointed Medical Officer for the Farcet Sanitary District of the Peterborough Union, vice G. S. Payne, deceased.

SIMONS, CHARLES EDWARD GLASCODINE, M.B., C.M. Aberd., D.P.H. R.C.S. Edin., has been appointed Medical Officer of Health for Merthyr Tydvil.

STEDMAN, S. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Swinhope Sanitary District of the Caistor Union, vice J. B. O. Richards, resigned.

SUTTER, R. R., M.D. Aberd., L.R.C.P. Lond., M.R.C.S., has been appointed First Assistant Medical Officer for the Poplar and Stepney Sick Asylum.

SWAIN, W. P., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Devon and Cornwall Ear and Throat Hospital.

SYMONS, WILLIAM HENRY, M.D. Brux., M.R.C.S., L.R.C.P., L.S.A., D.P.H. Oxon. and Durham, has been re-appointed Medical Officer of Health for Bath.

TETLEY, T. WALSH, M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon to the Clayton Hospital, Wakefield.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, rising by three equal increments to £150, with board, lodging, and washing.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum with board and residence.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board), or £80 per annum, with board.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—Assistant to the Bacteriologist. Salary £120 a year. Applications to the Clerk of the Joint Committee, Glamorgan County Offices, Cardiff.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road.—Physician to the Out-patient Department.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer for twelve months. Salary £60 per annum. Also Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer for these hospitals, unmarried. Salary £100 per annum, with board, washing, and lodging at the hospital. Applications to be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the Town Clerk, Municipal Offices, Liverpool.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £100, rising to £120 per annum, with board, furnished apartments, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

HAMLET OF MILE END OLD TOWN, London.—Assistant Resident Medical Officer at the Workhouse Infirmary, Bancroft-road, Mile-end, East. Also Assistant Medical Officer to the Workhouse and School, unmarried. Salary £150 per annum, with, board, lodging, and laundry (subject to statutory deduction).—Apply to the Clerk to the Guardians Offices, Bancroft-road, Mile-end, E.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer. Salary £100 per annum, rising £20 annually to £200, with board, lodging, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London.—Two House Surgeons to Out-patients, non-resident, for six months. Salary 25 guineas each and lunch at the hospital.

KENSINGTON INFIRMARY.—Resident Assistant, *pro tem.* Salary £3 3*s.* per week, with apartments, board, and washing. Apply to the Medical Superintendent at the Infirmary in the Marloes-road.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL. — House Surgeon. Salary £140, rising £10 annually to £170, with rooms in the infirmary and attendance (option of board at £40 per annum).

LIVERPOOL STANLEY HOSPITAL.—Honorary Physician.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

METROPOLITAN ASYLUMS BOARD.—Four Assistant Medical Officers—males—at the Fever and Small-pox Hospitals, unmarried. Salary £160 per annum the first year, £180 the second year, and £200 the third and subsequent years, with board, lodging, attendance, and washing (subject to statutory deduction). Applications to the Clerk to the Board.

MIDHURST UNION, Sussex.—Medical Officer and Public Vaccinator for the Tillington District. Salary £60 per annum (subject to statutory deduction). Apply to the Clerk, Midhurst, Sussex.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer. Salary £125, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—A Senior and a Junior House Surgeon for one year. Salary £85 and £70 per annum respectively, with board, residence, and washing.

PARISH OF BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer for the Workhouse Infirmary, for one year. Salary £100 per annum, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Applications to the Clerk to the Guardians, Parish Offices, Edmund-street, Birmingham.

PARISH OF ST. GILES, Camberwell.—Locum Tenens to act for the Medical Officer at the Constance-road Workhouse, East Dulwich, for four weeks. Salary 5 guineas per week, and the usual in-door allowance. Apply to the Clerk to the Guardians, Offices, 29, Peckham-road, S.E.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT.—Second Assistant Medical Officer for the Sick Asylum at Bromley, Middlesex, E. Salary £100 per annum, with rations, furnished apartments, and washing (subject to statutory deduction). Apply to the Clerk to the Managers, Bromley, Middlesex, E.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—House Surgeon for twelve months. Salary £80, and board, lodging, and washing. No stimulants.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL INFIRMARY FOR THE SICK AND LAME POOR OF THE COUNTIES OF NEWCASTLE-UPON-TYNE, NORTHUMBERLAND, AND DURHAM.—Honorary Ophthalmic Surgeon. Applications to the Secretary, Royal Infirmary, Newcastle-upon-Tyne.

RUBERY-HILL ASYLUM FOR THE CITY OF BIRMINGHAM, Barnt green, Worcestershire.—Senior Assistant Medical Officer.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, residence, laundry, &c.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, London.—Demonstrator of Physiology. Salary £150.

ST. MUNGO'S COLLEGE, GLASGOW, FACULTY OF MEDICINE.—Bellahouston Chair of Anatomy. Emoluments £300 per annum.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, London.—Honorary Anæsthetist.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SALFORD ROYAL HOSPITAL.—Honorary Medical Officer for the Pendleton Branch Dispensary.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon for two years, unmarried. Salary £100 per annum, with board, lodging, and washing.

SURREY DISPENSARY, Southwark, S.E.—Resident Medical Officer. Salary £120 per annum, with furnished apartments, coals, gas, and attendance. Apply to the Secretary, 53, Borough High-street, Southwark.

SUSSEX COUNTY HOSPITAL, Brighton.—Assistant House Surgeon, unmarried. Salary £30 per annum, with board and residence in the hospital.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts:—At Portsmouth in the county of Southampton; and at Ellesmere, in the county of Salop

UNIVERSITY COLLEGE, Cardiff.—Demonstrator and Assistant Lecturer in Anatomy, and Demonstrator and Assistant Lecturer in Physiology. Salary in each case, £120.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Honorary Physician. Also House Surgeon, resident and unmarried. Salary £75 per annum, with board and 10*s.* a month for washing.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST RIDING ASYLUM, Menston, near Leeds.—Locum Tenens for two months. Salary, three guineas per week, with board and apartments.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing. Also Assistant House Surgeon, for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance

Births, Marriages, and Deaths.

BIRTHS.

BARENDT.—June 20th, at 65, Rodney-street, Liverpool, the wife of Frank Hugh Barendt, M.D. Lond., F.R.C.S. Eng., of a son.

BUCHANAN.—On June 26th, at Hammersmith-terrace, W., the wife of G. S. Buchanan, M.D., of a daughter.

CROSS.—On June 19th, at The Limes, Wallwood-park, Leytonstone, N.E., the wife of Ernest W. Cross, M.R.C.S., L.R.C.P. Lond., of a son.

FORDE.—On June 18th, at Central-hill, Upper Norwood, S.E., the wife of R. M. Forde, Colonial Surgeon, Gambia, of a son.

GONIN.—On June 19th, at Towcester, the wife of Edmund Henri Gonin, M.D., of a son.

HAMILTON.—On June 23rd, at Sandon-street, Falkner-square, Liverpool, the wife of George G. Hamilton, F.R.C.S., of a daughter.

HORNER.—On June 27th, at St. Mary's-road, Walthamstow, the wife of Charles Julian Horner, L.R.C.P. Lond., M.R.C.S., of a daughter.

LAMBE.—On June 20th, at West View, Seaford, the wife of Thomas Lambe, M.R.C.S., L.R.C.P., of a daughter.

LEWIS.—On June 21st, at Farleigh, Pontypridd, the wife of B. M. Lewis, M.R.C.S., L.R.C.P. Lond., of a daughter.

LISHMAN.—On June 21st, at Puerto Orotava, Teneriffe, the wife of Frederick Lishman, M.D., of a daughter.

MANN.—On June 10th, at Revesby, Lincolnshire, the wife of F. W. S. Mann, M.R.C.S., L.R.C.P. Lond., of a daughter.

PARKINSON.—On June 19th, at Wimpole-street, the wife of J. Porter Parkinson, M.D. Lond., of a son.

ROWE.—On June 20th, at Cecil-street, Margate, the wife of Arthur W. Rowe, M.S., M.B., of a son.

MARRIAGES.

BACON—PLATT.—On the 19th inst., by the Rev. O. P. Sergeant, at St. James's, West End, near Southampton, Robert A. E. Bacon, M.R.C.S. Eng., L.R.C.P. Lond., only son of Robert Bacon, Esq., R.N., of Sandmere, Bitterne Park, Southampton, to Elizabeth S. Platt, second daughter of Charles Platt, Esq., R.N., of Wood Leigh, West End, near Southampton.

CARTER—TOONE.—On June 21st, at Emmanuel Church, Loughborough, Arthur Burnell Carter, M.R.C.S., L.R.C.P., of Dartford, Kent, to Edith Annie, eldest daughter of the late William Henry Toone, Solicitor, of Loughborough.

COURT—PARLBY.—On June 19th, at St. Peter's, South Weald, by the Rev. R. W. Chilton, assisted by the Rev. Canon Fraser, Edward Percy Court, M.R.C.S., L.R.C.P., of Hambledon, Hants, to Lillie, eldest daughter of John P. Parlby, of Harold Wood, Essex.

DUNLOP—GRIMLEY.—On June 22nd, at St. Magnus Episcopal Church, Lerwick, Scotland, Alexander Watson Dunlop, M.A., M.D., Dunrossness, to Agnes, eldest daughter of Mr. William Grimley, Sutton-bridge, Lincolnshire.

HIBBARD—WEST.—On June 27th, at Holy Trinity Church, Cottage-grove, Bow, E., Charles E. Hibbard, L.R.C.P., L.R.C.S., of The Grove, Wandsworth, to Alice, only daughter of James West, Bow-road, E.

MAGUIRE—JEFFERYS.—On June 23rd, at St. Helen's Church, North Kensington, W., George J. Maguire, M.B., Richmond, Surrey, to Louise, younger daughter of Francis Jefferys, of Cambridge-gardens, W.

RUST—SHIERS.—On 21st inst., at St. Margaret's Church, Dunham Massey, by the Rev. Albert Rust, brother to the bridegroom, assisted by the Ven. Archdeacon Woosnam, John Rust, M.R.C.S., L.R.C.P., of 30, St. Mary's-road, Crumpsall, Manchester, third son of John Rust, Ditchingham, Norfolk, to Florence Louisa, youngest daughter of the late Richard Shiers of Bowdon, Cheshire.

VASEY—GRIFFITHS.—On June 21st, by the Rev. W. Hardy Harwood, at Union Chapel, Islington, S. Arch. Vasey, F.I.C., F.C.S., of Loughton, Essex, to Gertrude, the youngest daughter of J. J. Griffiths, Esq., J.P., of Highbury-grange, N.

WYLLYS—BALLANCE.—On June 21st, at St. George's, Hanover-square, Henry John Mackeson Wyllys, F.R.C.S.E., of Great Yarmouth, to Rosa Louisa, third daughter of the late Charles Ballance of Clapton.

DEATHS.

FARR WHITE.—On June 20th, at Leopold-road, Wimbledon, George Farr White, F.R.C.S., late Assistant Surgeon, H.M.'s 77th Regiment.

FITZ HUGH.—On June 15th, at the Imperial Hospital, Deelfontein, Civil Surgeon Richard Truman Fitz Hugh, M.B. Lond., aged 28 years.

FORRESTER.—On June 19th, at Cape Town, Surgeon-Lieutenant-Colonel J. S. Forrester, Royal Horse Guards, aged 46 years.

HOPE.—On June 21st, at Church-hill, Petworth, Samuel Wilson Hope, M.R.C.S., L.R.C.P., in his 56th year.

JONES.—On June 20th, at Windsor Esplanade, Cardiff, Francis William Brandram Jones, M.D. Edin., aged 39 years.

RAMSDEN.—On 24th inst., suddenly, at Sunnyside, Dobcross, Saddleworth, Walter Henry Fox Ramsden, M.R.C.S., L.R.C.P., aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A LAYMAN'S VIEWS OF INEBRIETY.

A CORRESPONDENT writes:—So great an interest has been aroused in the arguments for and against the so-called temperance question at the present time that the following translation of a quaint passage from the writings of Pufendorf can scarcely fail to be of interest. The translation was made by Mr. R. Milne, who sent it to the Society for the Study of Inebriety. That society caused it to published in their pamphlet of Proceedings. Many of the temperance journals have unwarrantably assumed that the society is necessarily an ardent patron of teetotalism. Most of the so-called temperance reformers aim not at temperance or moderation in drinking, but at total abstinence. The society mentioned, however, does not consist and is not intended to consist of teetotal members. It exists for the study of inebriety as such and not for its extinction or suppression. Thus, as a really learned body the society does not hesitate to hear and discuss all sides of a question. One may feel sure that such breadth of view in investigation can only result in the attainment of really valuable knowledge of the subject. One cannot feel much confidence in the conclusions arrived at about inebriety or excess in drinking by societies known to be prejudiced in favour of total abstinence and intolerant of the views of the millions of moderate drinkers. The passage is as follows:—

We should ask *why* people get drunk? And *how* it is that some keep sober?"

One is sober because he has not the means to get drunk.

Another because greater pleasures than drunkenness are within his reach.

Another simply through *fear*, whether of the law, or of his fellows.

Another because drunkenness hinders his pursuits and the ends he has most at heart. Thus are great criminals sober.

[This last observation is of great antiquity. Aristotle wrote: "If the knave be sober through design, and the invalid through necessity, the wise man will be so from choice and the good man from a sense of duty."]

One is drunk simply because his bodily machine is so crazy and dilapidated that he can find no other way to keep his brain alive but through drunkenness.

Another because of the desolation and the joylessness of his life. He drinks to forget.

Another because drinking exalts certain powers of his body or mind for a time.

Another because drinking feeds the vices he takes most pleasure in.

Another because drinking makes him feel big and important.

Another is drunk because drinking eases certain stomach distresses.

Another because the *very ideals* of the sober party are hateful to him.

Another simply because he has somehow got into the habit of drinking.

Another to stave off exhaustion.

Another because his dietary is unsuitable to him.

Saint and sinner alike we all seek pleasure, and men will go wherever to their understandings the greatest promise of pleasure is held out. All these notions, both of sober and inebriate, are at root one and the same, the getting of pleasure or the avoidance of pain of every degree whatsoever, for if you can avoid pain you will be absolutely happy. And this absolute easing it is that gives the "beatific vision" to the face of the dead. There is no more tension. While we live there must be this tension, for only thus is life, work possible. And this tension means myriads of tiny worries and distresses, most of them through habit unknown even to ourselves.

What, then, are the remedies?

In one word, Knowledge. All else will follow. We must *take counsel with* the inebriate. And before he will allow that he must see that you love him, that you respect him, and you understand him and his bodily and mental needs. There is no reformation, no amendment, but *from within outwards*. You must coöperate with the man himself.

The translator adds: "There seems to be in this book the ancient, the eternal, confusion between what a man ought to do and what his neighbours have a right to require of him. By 'ought to do' I mean either what is due to his Maker or what is due, fitting, becoming to himself. Do you really think you have the *right* to compel your neighbour to be sober, supposing you had the power? I mean no offence in thus asking."

PULEX IRRITANS.

C. M. H. wishes to know how to get rid of a plague of fleas in an old country house where the pests have established themselves in the woodwork and cracks of the floors. In THE LANCET of April 6th, 1895, p. 882, and in our issue of May 14th, 1898, p. 1344, the subject is dealt with, but perhaps some of our readers may be able to help our correspondent further. The use of formalin, of which we have no experience in this particular application, is suggested, but if it is tried we would recommend as an additional measure that a stiff soapy lather should be worked into the cracks and crevices of the boards before or after fumigation and allowed to remain for 24 hours.

HOMES FOR INCURABLE POOR.

To the Editors of THE LANCET.

SIRS,—Could any of your readers kindly give me the addresses of homes for incurable patients, where the patients are received for very nominal amounts per annum?

I am, Sirs, yours faithfully,

Hayle, Cornwall, June 25th, 1900. H. ROBERTS.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—In the issue of THE LANCET of June 23rd, 1900, p. 1846, appears a letter from Mr. C. J. Harris, in which he quotes the case I reported in your issue of June 9th, 1900, using that case to draw a comparison between the older method of giving chloroform and the latest fad of the Krohne Inhaler. But Mr. Harris does not quote correctly. He says that chloroform in my case "was administered by the towel or Simpson's method." Well, it was not so. The chloroform was given on an inhaler of the Skinner type to the patient on both occasions and on both was the same amount used. Giving chloroform as I am doing very frequently I can practically be certain that I hold the mask the same distance from the face in every case, so that the concentration of the vapour of chloroform and air is the same in each case, and according to experiments by S. J. Lister the percentage of chloroform is about 4·5 per cent., and I maintain that an ounce of chloroform used on an open inhaler during the space of 20 minutes, of which the patient gets 4·5 per cent., cannot be in any way construed as an excessive dose; my patient certainly had quite as much chloroform on the second occasion with no ill results. I cannot explain why he behaved as he did on the first occasion, but in view of the second operation I state emphatically that it was not an overdose, and I am certain that had the chloroform been given in a Krohne or any other inhaler the result would have been the same. The advocates of some particular new fad are always quoting any case under the old conditions, but one notices that no figures are given in support of the new *régime*, and when one considers the huge number of occasions on which chloroform is given under what they are pleased to term the "old" method in a year and the comparatively insignificant number of casualties resulting, one feels inclined to go on until one's own figures at any rate are equalled. I have administered chloroform up to date 576 times with no deaths and I know two of my fellow anæsthetists, one of whom has had over 3000 cases with no deaths and the other over 1500 cases with no deaths. When I see these figures equalled under any new conditions it will be then quite time enough to change from the "old" to the new.

I am, Sirs, yours faithfully,

FRANK E. MARSHALL, M.B., Ch.B. Vict., L.S.A.,
Anæsthetist to the Royal Southern Hospital, Liverpool.

Liverpool, June 22nd, 1900.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 16th, 1900, there is a very interesting paper upon anæsthetics by Dr. Dudley Buxton. But there is one sentence on which I think we need further light. Dr. Buxton writes (page 1715, col. 2):—

> "It is one great advantage of inhalers such as Junker's over the open method that you can give chloroform in great dilution but maintain the continuity of the inhalation. With skill and judgment the drop-bottle method with a Schimmelbusch's mask will give a good result, but it is inferior to a regulating inhaler."
>
> At page 1716, col. 1, Dr. Buxton again writes: "..... I gave him oxygen with chloroform with the best result. I administered oxygen continuously and exhibited chloroform from my modified form of Junker's inhaler."

Many readers will be thankful to see this pronouncement, and especially the essential principle of "great dilution," "extreme dilution and slowly." But what instrument does Dr. Buxton mean by "the Junker inhaler"; what by "a regulating inhaler"; and what by "my modified form of Junker's inhaler"?

This is a serious question because practitioners who order "a Junker inhaler" or "a Buxton's modified Junker" will have planted upon them an obsolete and dangerous instrument which can hardly be what Dr. Buxton means. Of course, "with skill and judgment," if only there be enough of it, the drop method on the flannel mask, the towel method, an old Junker, *or any other method* may be made safe. But the drops of chloroform that come off the lip of a bottle vary in size with the shape, magnitude, and thickness of the lip. Moreover, the saturated flannel mask does not enable one to measure the volume of chloroform-air which goes into each inspiration. In fact, it is a rule-of-thumb method and the graduated drop-bottle is illusory.

As to the "Junker inhaler" it has two fatal faults. The respiration orifice, when the throttle valve is fully open, is of smaller cross-section than the glottis and is inadequate to save from asphyxiation. Moreover, it cannot be seen whether this throttle valve on the collar of the

inhaler is open or shut except by the administrator on his stooping down to make a close inspection. This is a very dangerous fault and it adds the risks of asphyxiation to the chances of chloroform poisoning. The old Junker is, however, safer than the Junker modified by the rubber-inflator, which makes the mask air-tight to the face. With the old Junker the throttle valve was useless and unsafe, but the patients' lives were saved by the fact that the periphery of the facepiece, being of rigid vulcanite, never fitted the face air-tight. Large chinks remained open between the patient's face and the base of the mask, and while the administrator was worrying over the illusory throttle valve the patient was breathing comfortably through these chinks. These chinks also made it extremely difficult for the most strenuous pumper to kill his patient, inasmuch as the heavy chloroform vapour drained out through the chinks at every expiration. But when the rubber inflator was put on to the edge of the mask it fitted the face air-tight and the improved Junker became a death-trap.

The presence of Krohne's two fire-engine balls so as to produce a continuous jet of chloroform-air all round the respiration cycle also made the apparatus chaotic in action and practically unmanageable. The result was that practical men preferred the towel method, or any other, and they were then quite right.

Subsequently to the application of the rubber inflator Krohne knocked off altogether the collar and its valve and replaced them by a large respiration orifice many times the area of the glottis and always open—unless some sage stops it up with a towel or puts his hand over it. Krohne thus transformed the inhaler. It was now perfect except as to one point—the survival of the continuous jet. It was my good fortune to point this out in THE LANCET of Oct. 28th, 1899, pages 1205–6. Krohne at once adopted the single ball and improved valve as suggested by me. The result now is an inhaler with which any volume of chloroform-air can be injected into each inspiration, and *if worked as described by me* the whole of the chloroform used goes into the recesses of the lungs. All that is now necessary is for the administrator to learn to think of his chloroform in fractions of a minim instead of in fractions of an ounce. Krohne added the "feather indicator," which exhibits to everyone in the room the rhythm and amplitude of every phase of each respiration cycle.

What I desire to point out is that if we want the right implement we must order the "Krohne Inhaler 1900." In this we have the fundamental step made by Junker of pumping chloroform vapour into a facepiece, the continuous jet abolished, the rubber inflator to close up the chinks round the periphery of the mask, the large uncloseable respiration orifice, and the feather indicator. It is a perfect instrument. But it will not be obtained under either of the names used by Dr. Buxton.

One more point. It is useless to talk vaguely and incidentally of "large dilution" of the chloroform vapour. What is large dilution? Sound teaching should point out that the anæsthetising atmosphere must contain from 1 to 2 per cent., by volume, of chloroform vapour; that a larger percentage is dangerous and is only to be used on rare occasions. 1 to 2 per cent. means one to two cubic inches of chloroform vapour diluted up to a volume of 100 cubic inches with pure fresh atmospheric air. Such an atmosphere, continuously inspired, induces a safe, comfortable, and perfect surgical anæsthesia, in less than ten minutes, and with a total abstraction from the graduated burette of from 30 to 50 minims of chloroform. And the anæsthesia is as pleasant as the 40 winks into which a tired man drifts in an afternoon siesta. The first ten inspirations should carry into the lungs even less than 1 per cent. of chloroform vapour. First, we gently benumb the reflex irritability of the larynx and air-passages. That having been achieved we commence the work of charging up the whole mass of the circulating blood and its extra-vascular plasma. This charging up of the system requires time for the necessary diffusion and penetration. It must be so graduated that a killing surcharge is never at any moment precipitated into those few cubic inches of blood which lie between the capillaries of the pulmonary artery and the capillaries of the coronary arteries—a fraction of the circulation which I have described as "the pulmo-cardiac blood," and on which the life of the heart depends. A momentary surcharge here kills the heart.

I am, Sirs, yours faithfully,

Manchester-square, W., June 23rd, 1900. JAMES EDMUNDS.

"THE YOUNG PRACTITIONER, HIS CODE AND TARIFF."

To the Editors of THE LANCET.

SIRS,—Will someone inform me in the columns of THE LANCET where I can obtain a copy of this work? I can gain no information about it at the usual shops.

I am, Sirs, yours faithfully,

June 17th, 1900. M.R.C.S., L.R.C.P.

POINTS IN ETIQUETTE.

C. G. D. asks:—

1. What course should be adopted when a junior partner in a large general practice refuses to be governed by the ordinary rules of etiquette in his conduct to his partner and totally ignores all rules by which medical men are usually governed? 2. Also, can a junior partner in a large general practice accept an honorary appointment in a hospital (which may take him away from his work probably for some hours each day) without the consent of his partner?

1. The gist of the first question lies in the words "ordinary" and "usually." No member of the profession, we are sure, would willingly infringe the rules of medical etiquette, whether he did so to the detriment of his own partner or of any other medical man, but the rules are not as definite in many directions as they might be and presumably the junior partner differs from his senior in his interpretation of them. 2. The answer to the second question depends upon the phraseology as well as upon the meaning of the agreement between the partners. It may be good for the practice that one or the other partner should hold an appointment in a hospital, and the junior partner might be able to bring evidence that such is his view. In general answer to both questions we would say that it is perfectly clear that the matters in dispute should be settled amicably by arbitration. A medical man of senior standing whose position is recognised as a good one by both partners should be asked to decide upon the *modus vivendi*.

O. H. B.—No book contains the information in question. The position of the General Medical Council now practically is that the employment of unqualified assistants is completely forbidden. A practitioner may be accompanied to a case by a *bonâ-fide* pupil, while the chief difference between a pupil and an assistant lies in the fact that the former pays for information that he is gaining, whilst the latter is paid for help that he is rendering. We cannot reply more definitely than this.

B. O.—In our opinion the Oxford graduate should be considered the senior man, but we can only give an opinion. If the matter is of importance the electing body should decide which is to be considered senior.

Ethics.—We regret to be unable to help our correspondent, but have published his letter as some of our readers may be better informed than we are.

A Subscriber.—The possession of such diplomas would make their owner "doubly qualified."

ERRATA.—In the letter of Dr. Chaumier, headed "A Propos du Rapport de la Commission de THE LANCET, sur la Pulpe 'Vaccinale' Glycérinée," which appeared in our issue of June 23rd, p. 1831, the following corrections should be made: On page 1832, col. 1, line 7, Chalybaüs should read *Chalybäus*; on page 1833, col. 1, line 18, the word printed "infinie" should be *infime;* in paragraph 2, line 2 "pouvait" should be *pourrait*; paragraph 4, lines 4 and 5, "Grigorien" and "Volton" should read *Grigoriew* and *Voitow*.—In THE LANCET of June 2nd, on page 1629, column two, paragraph two, lines 10 and 11 should read: "It had taken place since he ceased to be a member of the board—i.e., February, 1897."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 28th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
June 22	29·83	W.	0·36	114	70	55	57	60	Cloudy
" 23	29·77	N.W.	0·18	116	70	49	52	56	Cloudy
" 24	29·84	S.W.	...	119	69	53	57	62	Cloudy
" 25	29·46	S.W.	0·12	108	66	54	54	55	Raining
" 26	29·84	N.W.	0·55	102	69	53	55	58	Cloudy
" 27	30·00	N.W.	...	110	70	50	54	59	Hazy
" 28	30·00	N.E.	...	70	61	55	56	57	Overcast

During the week marked copies of the following newspapers have been received: *Western Mail, Western Morning News, Whitehall Review (London), South Wales Daily News, Sydney Daily Telegraph, Leeds Mercury, Staffordshire Sentinel, Macclesfield Courier, Dewsbury Reporter, Manchester Guardian, Newcastle Daily Chronicle, Birkenhead News, Daily Mail (London), Gazette (Middlesbrough), Norfolk Daily Standard, Times of India, Pioneer Mail, Architect, Builder, Citizen, Bristol Mercury, Yorkshire Post, Caterer, Liverpool Daily Post, Sanitary Record, Barrow Herald, Siam Free Press, Brighton Gazette, Jersey Express, Carmarthen Reporter, The New Age, Drogheda Advertiser, Morning Post, Morning Advertiser, Warrington Guardian, Christian World, City Press, Reading Mercury, Local Government Journal, Natal Mercury, Surrey Advertiser, Swansea Journal, Manchester Evening Chronicle, Mining Journal, Local Government Chronicle, Hertfordshire Mercury, Preston Herald, Torquay Times, Topical Times, Hastings Times, Lincoln Mercury, Horse Guards Gazette, Chelsea Mail, Public Health Engineer, The Observer, Chester Guardian, Walsall Observer, Daily Express (Dublin), South London Press, Liverpool Journal of Commerce, Scotsman, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (7th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

SATURDAY (30th).—PATHOLOGICAL SOCIETY OF LONDON (Pathological Laboratory, New Museums, Cambridge).—4 P.M. Papers and Demonstrations by Prof. Woodhead, Dr. Dixon, Dr. Eyre, Mr. Griffiths, Dr. Nuttall, Dr. Cobbett and others. 6.30 P.M. Dinner in Trinity Hall.

WEDNESDAY (4th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. H. Roberts, Dr. Blacker, and Dr. Fairbairn. Paper:—Dr. A. Routh: Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids obstructing Labour, with Remarks upon the Relative Advantages of the modern Porro Operation over the Sanger-Cæsarean in most other cases requiring Abdominal Section.

FRIDAY (6th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases and Card Specimens. 8.30 P.M. Papers:—Mr. F. M. Ogilvie: On one of the Results of Concussion Injuries of the Eye ("Holes" at the Macula).—Mr. K. Scott and Mr. J. Griffith: Alveolar Carcinoma of Eyelid.—Mr. C. D. Marshall: Further Notes on a Case of Optic Nerve Tumour previously reported to the Society.—Mr. P. Flemming: Three Cases of Ophthalmitis ("pseudoglioma") in Children, One Recovery, Two Fatal, from Meningitis. The Annual General Meeting will be held after the Ordinary Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Mr. C. Woakes: Demonstration on Selected Cases. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Keetley: The Diagnosis of, and Operations for, Diseases of the Breast.

TUESDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Medical.)

BRUSSELS MEDICAL GRADUATES' ASSOCIATION (Café Royal, Regent-street, W.).—6.30 P.M. Twentieth Annual General Meeting. 7.30 P.M. Dinner.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.)—3.30 P.M. Mr. M. Gunn: Ocular Paralysis.

WEDNESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—8.30 P.M. Formal Opening of New Clinical Museum by Sir William Broadbent. 9 P.M. Clinical Lecture:—Prof. Osler: The Teaching of Practical Medicine.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. W. S. Fenwick: On Diarrhœa in Children. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Schorstein: The Forms of Dyspepsia in Pulmonary Tuberculosis.

MASON UNIVERSITY COLLEGE, BIRMINGHAM (Medical Lecture Theatre of the College).—4 P.M. Dr. O. J. Kauffmann: The Commoner Neuroses of Childhood, their Pathology and Treatment. (Ingleby Lecture.)

THURSDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Keetley: The Diagnosis of, and Operations for, Diseases of the Breast.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. M. Davidson: Röntgen Ray Demonstration. (Post-graduate Course.)

FRIDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Tilley: Consultation. (Nose and Throat.)

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1900, which is completed with the issue of to-day, will be given in the next number of THE LANCET.

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The Croonian Lectures

ON

THE DEGENERATION OF THE NEURONE.

Delivered before the Royal College of Physicians of London on June 19th, 21st, 26th, and 28th, 1900,

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

LECTURE III.[1]

Delivered on June 26th, 1900.

THE CHEMISTRY OF DEGENERATION AND ITS RELATION TO AUTO-INTOXICATION.

MR. PRESIDENT AND GENTLEMEN,—Osmic acid has long been known to have the property of staining fat (including myelin) black, but owing to difficulty in penetration it could not be made use of for studying the degeneration of the central nervous system in the same way as the peripheral, although Exner[2] was enabled to show by this method the existence of fine medullated fibres (tangential system and supra-radial) in the grey matter of the cerebral cortex, and Tuczek applied this method and demonstrated the important fact that atrophy of the tangential fibres of the frontal and central convolutions was the earliest and most constant morbid change in dementia paralytica. I have had the opportunity of confirming this observation in at least 50 cases by the Marchi-Pal method. This degeneration does not appear to be peculiar to general paralysis, as similar atrophy may occur in other diseases of the cerebrum associated with dementia, as, for example, in alcoholic and epileptic dementia; it does not, however, exist in purely efferent systemic degeneration—e.g., amyotrophic lateral sclerosis—although in this disease, as I shall show, the whole motor efferent system of neurones from cortex to peripheral muscle is degenerated.

THE VALUE OF THE MARCHI METHOD.

About ten years ago Marchi introduced his method of staining degenerated nerve fibres, using it for the purpose of demonstrating the degenerations which followed experimental ablations of the cerebellum performed by Luciani, and the most striking results were obtained. By this method Marchi showed a descending cerebellar system in the antero-lateral column of the same side as the half of the cerebellum that had been removed. Russell, Ferrier, and Turner have, however, shown that this tract does not proceed direct from the cerebellum but through a relay in Deiter's nucleus. It is now the method adopted by all investigators for determining the path, not only of tracts of fibres, but of actual individual fibres, in the central nervous system. It has, in the hands of numerous investigators, served to demonstrate accurately the course and termination of nervous paths. There are a few fallacies in connexion with it for the inexperienced, but if care be taken to avoid these no method is so delicate or so reliable. By this method I was able to trace the course of the fibres of Gowers's tract, which I showed to consist of three sets of fibres; one, the more numerous, terminating in the middle lobe of the cerebellum after looping over the fifth nerve and running down on the surface of the superior cerebellar peduncle; another set terminating in the corpora quadrigemina; and the third, few in number, joining with the fillet fibres and ending in the optic thalamus. By this method single fibres can be followed in their course along the whole cerebro-spinal axis, from the cortex to the lumbar sacral region when they are efferent, and from the lumbar sacral region to the optic thalamus when they are afferent. I was unable to find any evidence for the existence of a cortical fillet described by Flechsig after cutting off the posterior column nuclei in monkeys and tracing the degeneration upwards, all the fillet fibres terminating in the optic thalamus.

THE CHEMISTRY OF THE MARCHI METHOD IN RELATION TO DEGENERATION.

In working with the Marchi method I was struck by the fact that in the neighbourhood of a lesion vessels could often be seen with phagocytes containing black-stained particles in their sheaths. These were undoubtedly carrying away the products of degeneration. I also found that muscles which had undergone fatty degeneration reacted to the Marchi stain—that is to say, pieces of muscle which had been hardened in Müller's fluid, like pieces of the degenerated central nervous system, when placed in the Marchi fluid for from 10 to 14 days (one part of 1 per cent. of osmic acid and two parts of Müller's fluid), revealed fatty degeneration by the fat particles being stained black. I had long before noticed that the fat particles in degenerated muscle were stained by the hæmotoxylon when the Weigert or Weigert-Pal method of colouration was used; therefore, I came to the conclusion that a non-phosphoretted fat, the result of degeneration of proteid, would be stained by either of these methods. Putting this fact by the side of another—viz., that degenerating nerves of the central nervous system stained by the Weigert or Weigert-Pal method appear uniformly blue throughout, whereas in a transection of the normal nerve-fibres only a ring of myelin stains blue, the central axon being unstained—the conclusion is that the proteid of the axon has degenerated and become converted into a fatty substance; but it is otherwise, as I shall now show, with the Marchi method, which really depends for the success of the reaction on the differential staining of the phosphoretted fat contained in the myelin (protagon) from ordinary (non-phosphoretted), such as olein, palmitin, stearin, &c. In sections of a normal nervous tissue stained by the Marchi method the nerve-fibres in transection present the following appearances: the central axial core is unstained, the ring of myelin is stained a greenish ash-grey colour, and degenerated fibres are stained black throughout, so that no differentiation can be seen between the myelin sheath and the axial core. It might be said that this was due to the axial core having broken up and its place being occupied by the degenerated myelin, but I have observed in longitudinal sections of nervous tissue showing degeneration in the earliest stages the axis-cylinder stained black, as well as the myelin (Fig. 1). Neumann and

FIG. 1.

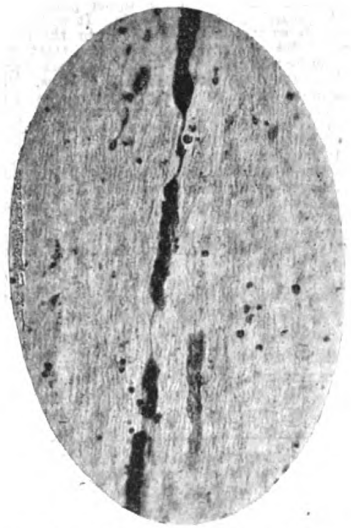


Photo-micrograph showing degenerated nerve fibre in a longitudinal section of the spinal cord ten days after experimental lesion. In places the thin axial core can be seen stained black. The greater part of it, however, is covered up by the degenerated myelin sheath, also stained black.

[1] Lectures I. and II. were published in THE LANCET of June 23rd and 30th, 1900, respectively.

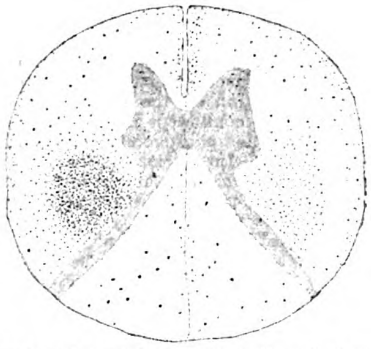
[2] Exner's method is as follows. Small pieces of brain, one cubic centimetre in size, are placed in 1 per cent. of osmic acid for from five to ten days, cut in alcohol with a wet knife, after sticking on cork with shellac. The sections, which must be very thin, are mounted in glycerine. If they are allowed to remain in alcohol they spoil. They are best transferred on a section lifter in a drop of strongly ammoniated water. The preparation should be examined at once. The essential in this process is the use of the ammonia, whereby the neuro-keratin supporting structure is swollen up into a homogeneous mass. The finest fibres of the cortical layers are demonstrated remarkably well by this method.

Eichorst contend that during degeneration of the peripheral end of a cut nerve the medullary sheath and axis cylinder undergo a chemical change of such a nature that structurally and chemically it is not possible to differentiate between the two. Moreover, there are chemical reasons for supporting this view. Examination of numbers of tissues, vegetable and animal, containing, or consisting of, simple non-phosphoretted fats, by the Marchi method showed that these fatty bodies gave the black reaction. I was lead to the conclusion that probably the myelin in the process of degeneration underwent a chemical decomposition by which the complex phosphoretted fat was split up into simpler bodies—viz., glycero-phosphoric acid, stearic acid, and choline; by the taking up of water lecithin would undergo the decomposition as shown[3]:—

$$\underset{\text{lecithin,}}{C_{44}H_{90}NPO_3} + \underset{\text{water,}}{3H_2O} = \underset{\text{stearic acid,}}{2C_{18}H_{36}O_2} + \underset{\text{glycero-phosphoric acid,}}{C_3H_9PO_6} + \underset{\text{cholin.}}{C_5H_{15}NO_2}$$

To prove this I took the spinal cord from a case of right hemiplegia of 21 days' duration, the result of thrombosis of the middle cerebral artery, and divided it longitudinally into as nearly as possible equal halves, reserving a small portion for microscopical examination by the Marchi method. The two halves of the cord were dried in a sulphuric acid exsiccator and it was found that the right half lost the most in weight by this process. Both halves were then dried at 100° C. and extracted in a Soxhlet's ether apparatus

FIG. 2.



Section of first cervical segment of the spinal cord from a case of hæmorrhage into the upper part of the pons on one side, causing left hemiplegia. It will be observed that there is scattered degeneration in the homolateral pyramidal tract and also in the direct tract, but there is a very marked degeneration in the left crossed pyramidal tract. The patient died at the end of 14 days. The result of the chemical examination of the two halves of the cord is given below. Left side: ether extract, 42·1 per cent.; calculated as lecithin, 18·9 per cent.; other extractives, 23·2 per cent.; residue, 57·9 per cent.; phosphorus in ether extract, 1·72 per cent.; phosphorus in residue, 0·92 per cent.; and phosphorus in half-cord, 1·19 per cent. Right side: ether extract, 38·9 per cent.; calculated as lecithin, 22·2 per cent.; other extractives, 16·7 per cent.; residue, 61·1 per cent.; phosphorus in ether extract, 2·14 per cent.; phosphorus in residue, 0·97 per cent.; and phosphorus in half-cord, 1·38 per cent. For details of the estimation see "Archives of Neurology," p. 346.

so that all the fatty matter was extracted. It was found that on the degenerated side the ether extract appeared like butter, whereas on the non-degenerated side it was more crystalline in appearance. The degenerated right side yielded a larger proportion *pro rata* of fatty matter than the left (Fig. 2), but the phosphorus (the details of the estimation of which are given fully in the paper with Dr. J. W. Barrett) which was obtained from the right half was less than the left. The conclusion, therefore, was that the phosphoretted fat (lecithin) had broken up in the way I have mentioned; this result I have stated in my article on the Pathology of Nutrition in the first volume of Clifford Allbutt's "System of Medicine." I have since examined another cord with the same results and two others in conjunction with Dr. J. W. Barrett. The results of these examinations are given in the first volume of the *Archives of Neurology*. Some of the increase of the fat cannot, however, be accounted for by the decomposition of the lecithin; it therefore probably comes from the degeneration of the proteid of the axis-cylinder process which we have seen to give the black fat staining reaction.

THE POSSIBILITY OF DEGENERATION CAUSING AUTO-INTOXICATION.

While examining a case of acute general paralysis with numerous epileptiform seizures I was struck by the fact that the peri-vascular lymphatic sheaths of many of the vessels were filled with cells staining black like the Marchi reaction and I came to the conclusion that very probably in this disease a decomposition of the myelin of the proteid matter of the nervous system occurred incidental to the degenerative process and that the cerebro-spinal fluid, and possibly also the blood, would yield some of the products of degeneration, and perhaps the presence of such might account for some of the symptoms which occur in this disease (*vide* Fig. 3). On account of the laboratory

FIG. 3.

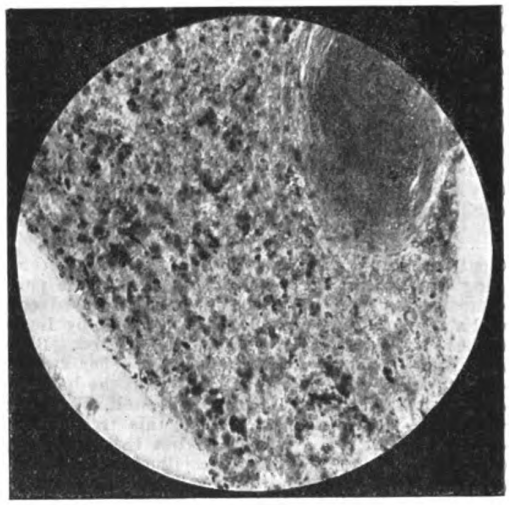


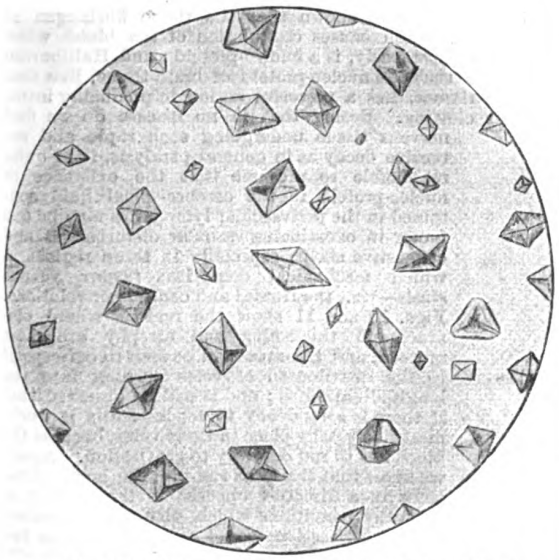
Photo-micrograph of a small vein from a case of acute general paralysis running towards the cortex with a lateral branch cut transversely, and dark in appearance on account of the contained congested blood. The section was stained by Marchi method and the whole of the external wall of the vein is seen covered with cells stained black by the fat contained in them taking up the osmic acid. Magnification 350 diameters. ("Archives of Neurology," p. 275.)

of the London County Asylums not being licensed for experiments I was fortunate enough to obtain the coöperation of my friend Professor W. D. Halliburton who was good enough to associate himself with me and conduct a series of experimental inquiries relating to this subject, a full account of which has been published in the Philosophical Transactions of the Royal Society. At first it was thought that choline only existed in the cerebro-spinal fluid and blood of patients who were suffering from general paralysis of the insane. This was no doubt due to the fact that in this disease choline was easily detected both chemically and physiologically, because in no other affection of the nervous system is there such a rapid and widespread degenerative process affecting the nervous system, but subsequent observations have shown that practically in any degenerative process affecting the nervous system if extensive enough choline can be detected in the blood, although normally it

[3] Liebreich and Diakonow considered that protagon was a mixture of lecithin and cerebrin, but numerous researches by Gamgee, Blankenhorn, Baumstark, Kossel, Freytag, and Ruppel have shown that protagon is a single chemical substance without, however, its precise constitution being determinable. Noll in an interesting paper refers to these researches and describes a method for the quantitative estimation of protagon. By this method he was enabled to show that protagon rapidly diminished in quantity in degenerating nerves and finally completely disappeared. He made comparative quantitative estimations of the two sciatic nerves after cutting the nerves on one side in dogs and horses. The protagon diminished in quantity until on the twenty-eighth day it had completely disappeared. In one case he examined the central ends of the sciatic nerves and found a considerable diminution on the side of section. He also performed an experiment relating to phosphorus, and his results, he states, are in agreement with ours with regard to the splitting up of lecithin.

does not exist in sufficient quantities to be recognisable. Thus it was found in two cases of combined sclerosis and in two cases of beri-beri where the disease had been of sufficient duration to give the Marchi reaction in the nerves; but in another case, in which the patient had died in the early stage from heart failure, there was no evidence of choline. This led to further researches and it was found that as soon as the myelin began to undergo decomposition in the peripheral portion of the experimentally cut sciatic nerves that the blood of the animals so operated upon gave the physiological and chemical reactions indicating the presence of choline. These facts show that my original surmise was true, that the protagon splits up into simpler bodies with elimination of choline. Many observers have found that extract of brain matter gave a physiological reaction similar to that of choline—namely, upon injection of a solution of an alcoholic extract of brain matter a fall in the blood-pressure was produced. This was noticed by Schäfer and Oliver, Swale Vincent, and Halliburton. The latter two have continued these researches, but arrive at somewhat different conclusions; it appears, however, to me that Halliburton is right in assuming that the effect produced is due to the existence of choline, for he finds that brain extract, like choline after injection of atropine, produces a rise instead of a fall of blood-pressure (*vide* Fig. 9). Again, the alcoholic extract of fresh brain-tissue yields the characteristic octahedral crystals which choline forms with platinum chloride (*vide* Figs. 4 and 5). In consideration of this fact we must conclude that choline is continually being formed as a normal product of lecithin metabolism and is continually escaping into the cerebro-spinal fluid which drains into the sub-arachnoid cavity and carries away the waste products of this metabolism. This view was put forward by Professor Gumprecht at the recent congress at Wiesbaden. Although it is probable that choline is continually escaping into the cerebro-spinal fluid, either it must disappear very rapidly by absorption of the fluid or it must be in very small quantities, for normal cerebro-spinal fluid did not give the physiological or chemical

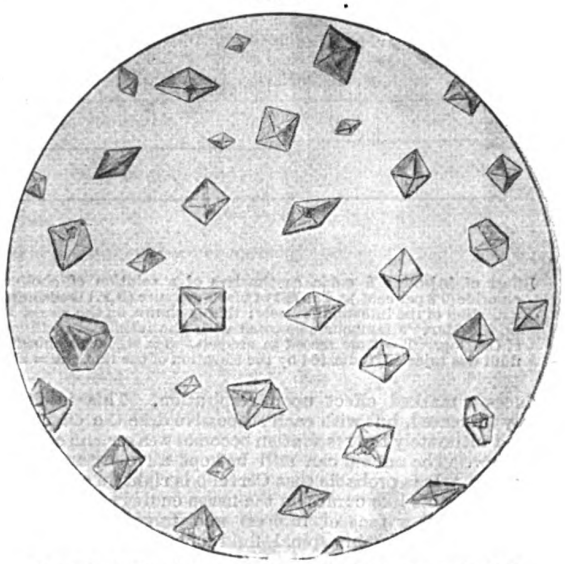
FIG. 4.



Crystals of the platinum double salt of choline crystallised from 15 per cent. alcohol.

reaction indicating the presence of choline. Gurlewitz, Schäfer, and others corroborate this statement. Hunt, in a recent paper, finds choline existing in the suprarenal gland. I have often thought it possible that one function of the suprarenal capsule, which Schäfer and Oliver in their valuable experiments proved to possess a powerful stimulating action upon the peripheral neuro-muscular mechanism of the arteries, is to produce a substance which will neutralise the influence of blood-pressure-lowering substances. Choline is not found in the urine, it is therefore probably oxidised into urea; it belongs to the same trimethylamine series of bodies as muscarine, neurine, and betaine, but it is not a powerful toxic substance, whereas neurine is. Many of the contradictory results which have been obtained as regards the toxic effects of choline are due to impure materials containing neurine having been used. Neurine, which is very much more poisonous than choline, has certain specific poisonous properties and acts especially upon the respiratory centre. In general paralysis and other diseases where a large amount of nervous tissue is undergoing degeneration choline may exist in sufficient quantities in the cerebro-spinal fluid taken from the cadaver soon after death, or even from the living subject by lumbar puncture, to give well-marked physiological and

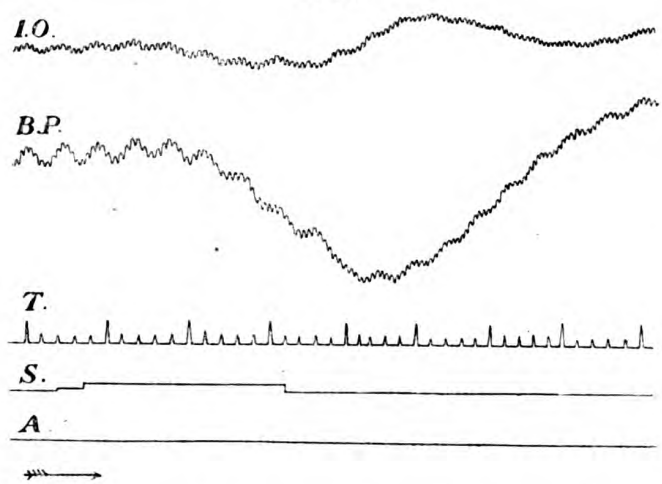
FIG. 5.



Crystals of the platinum double salt of the base separated from cerebro-spinal fluid in cases of general paralysis of the insane. Crystallised from 15 per cent. alcohol.

chemical reactions indicating its presence. Two specimens by lumbar puncture were kindly forwarded to us by Dr. J. Turner of the Essex County Asylum. It was also found in the blood taken for the purpose of treatment from patients suffering from prolonged seizures in general paralysis and from cases of beri-beri with right heart failure and asphyxia, and in the blood of other cases, such as combined sclerosis, experimental section of the sciatic nerves, &c. We may therefore assume the premiss that choline is a product of nerve degeneration, the result of breaking up of protagon or lecithin, that it escapes into the cerebro-spinal fluid, thence into the blood in larger quantities than it can be disposed of by oxidation, and that its accumulation in the blood might produce auto-intoxication. The principal physiological actions of choline were found to agree entirely with the effect produced by the intravenous injection of the cerebro-spinal fluid or the alcoholic extract of the blood (*vide* Figs. 6, 7, 8, and 9) dissolved in normal saline solution obtained from those cases. They are as follows. A fall of arterial blood-pressure, partly due to its action on the heart, but mainly due to the dilatation of the peripheral vessels, especially in the intestinal area (*vide* Figs. 6 and 7). This dilatation could actually be seen to take place through the glass lid of the intestinal oncometer when the solution was injected into the vein or if the intestine were irrigated by directly allowing the fluid to flow into the oncometer. The action on the splanchnic vessels is due to the direct action of the substance on the neuro-muscular apparatus of those vessels, for after the influence of the central nervous system has been removed by the section of the cord or of the splanchnic nerves choline still causes the typical fall of arterial pressure (*vide* Fig. 9). Neurine, a very toxic substance, we did not find in the blood or cerebro-spinal fluid, although it is possible that under certain conditions, such as the existence of micro-organisms, it might be produced. It produces upon intravenous injection first a fall, then a marked rise, and subsequently a fall of blood-pressure to the normal. Neurine

FIG. 6.

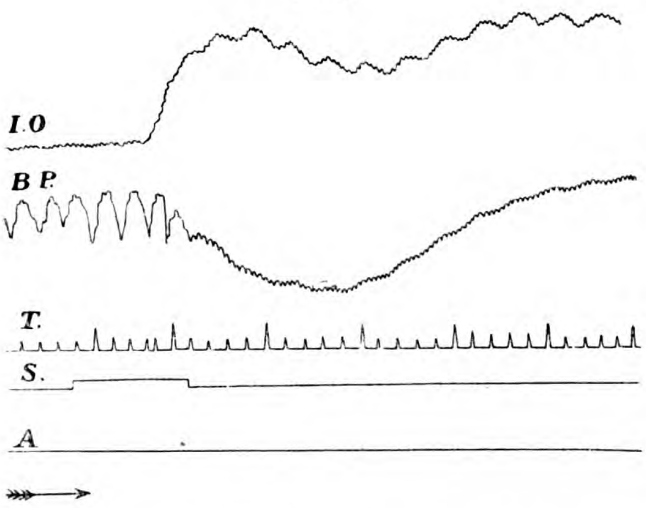


Effect of injecting 5 cubic centimetres of a solution of choline hydrochloride (0·2 per cent.). The fall of blood-pressure (B.P.) is accompanied by a dilation of the intestinal vessels; this is shown by the rise of the lever of the Marey's tambour connected with the intestinal plethysmograph (I.O.) Dog. T = time record in seconds. S = signal to show when the fluid was injected, indicated by the elevation of the line. A = abscissa.

produces a marked effect upon respiration. This is first greatly increased, but with each successive dose the effect is less and ultimately the respiration becomes weaker and ceases altogether. The animal can still be kept alive by artificial respiration. It is probable that Cervello is right in asserting that neurine acts like curare on the nerve-endings of striated muscle. Another fact of interest and importance is the existence in the cerebro-spinal fluid of a relatively large amount of proteid matter—three times as much as normal. Seeing that the cerebro-spinal fluid in the cranial cavity is greatly increased in general paralysis the quantity of proteid matter is very abundant. Examination of this proteid matter showed us that it contained a considerable amount of phosphorus; we were therefore led to believe that there was a nucleo-proteid present not found in normal cerebro-spinal fluid. As a rule we did not use the fluid itself for experimental purposes, but an alcoholic extract dissolved in saline solution, and the quantity injected (from five to ten cubic centimetres) would not contain enough nucleo-proteid to produce intravenous coagulation when diluted by the mass of blood, but in one specimen which contained a larger quantity than usual of proteid ten cubic centimetres of the cerebro-spinal fluid injected into a cat produced death by intravenous coagulation. It is therefore probable that a nucleo-proteid escaping into the cerebro-spinal fluid of the perivascular lymphatics may favour congestive stasis and even coagulation in the veins of the brain in general paralysis especially during the epileptiform seizures, when presumably the nervous tissue is undergoing disintegration. Congestive stasis in the vessels is the rule and not infrequently intravenous coagulation, and thrombosis of the large veins and even of the longitudinal sinus sometimes occurs. Thus the disintegrating nervous tissue, by providing a substance which favours stasis and coagulation, may be the means of setting up a vicious circle whereby, owing to the circulatory disturbances, acute destructive processes of the nervous tissue are brought about. This hypothesis is supported by the fact that most of the nerve-cells in the degenerating tissue of the cortex are devoid of the normal Nissl granules.

Now it has been shown by Held that these Nissl granules are the result of coagulated nucleo-albumin, for sections of nervous tissue hardened by alcohol and treated by artificial gastric juice still show the granules and these stain in a characteristic manner. Moreover, Macallum, by his modification of Lilienfeld and Monti's molybdate method, has micro-chemically demonstrated the existence of abundant phosphorus in these granules; we may therefore conclude that the disappearance of the same from the degenerating cells may be associated with the existence of a nucleo-proteid in the cerebro-spinal fluid. The researches of Halliburton have shown that the tissue fibrinogen of Wooldridge, which causes coagulation of the blood when injected intravenously, is a nucleo-proteid; and Halliburton has shown that the nucleo-proteid of brain-tissue, like that of other tissues, has a powerful action in producing intravascular clotting. Seeing that in no disease do we find nervous tissue undergoing such rapid and extensive decay as in general paralysis, it is quite reasonable to presume that the existence of nucleo-proteid in the cerebro-spinal fluid contained in the perivascular lymphatics may be one factor in occasioning vascular disturbances and congestive stasis, especially in those regions in which mechanical conditions favour venous stasis—viz., the frontal and central convolutions. Figs. 10 and 11 show the regions where pia-arachnoid thickening and atrophy are most marked, and the area will be seen to correspond to the distribution of veins opening into the longitudinal sinus; and it will be observed that if there is a tendency to venous stasis it would most likely take place in these veins, because the blood has to run contrary to gravitation. Again, we know that the veins run into the longitudinal sinus in a direction opposed to the current, so that any conditions which give rise to general venous congestion would make themselves felt especially in the area drained by these particular veins. Of course, it may be argued that the great anastomotic vein of Trollard has an important connexion with the lateral sinus and that this would prevent, in a measure, such mechanical disturbances. Still, look at it as we will, we must consider that the flow of blood in the veins I have indicated is at a mechanical disadvantage compared with that of the other veins which drain directly into the torcula or into the lateral sinus. That venous congestion does play an important part in the production of the congestive, epileptiform, and apoplectiform seizures of general paralysis is shown by the fact that a brisk purge or an enema will

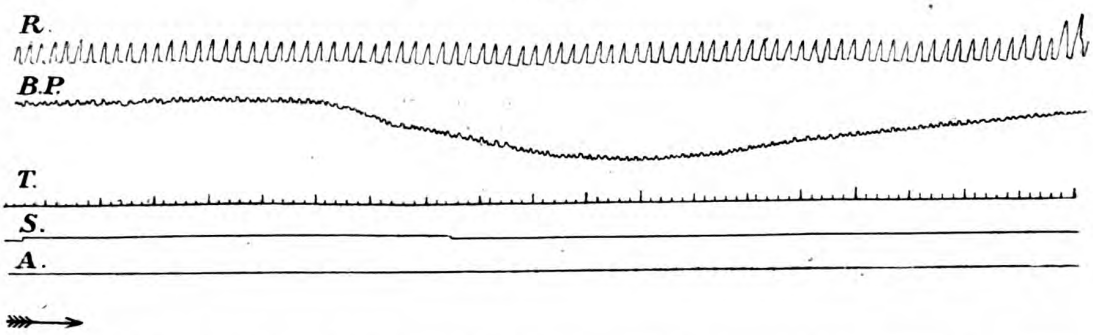
FIG. 7.



Tracing of intestinal oncometer (I.O.) and arterial blood-pressure (B.P.) in a cat. 10 cubic centimetres of cerebro-spinal fluid were injected; the same effect was obtained in the same animal by injecting 2 cubic centimetres of 0·2 per cent. solution of choline; the fall of blood-pressure is at first mainly cardiac in origin, for the oncometer tracing first follows the fall of arterial blood-pressure passively; it, however, soon rises, indicating dilatation of the peripheral vessels.

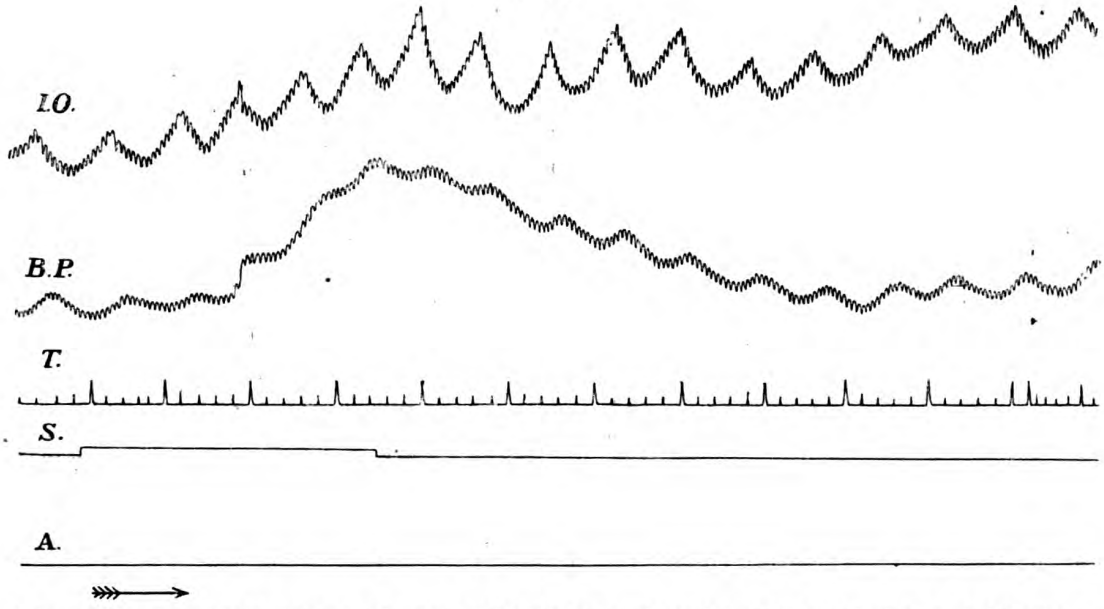
often prevent or cut short these seizures, presumably by relieving portal congestion and general venous turgescence. If, as we have seen, choline has the property of dilating the intestinal vessels in such a marked manner, it is possible to conceive that it may cause portal congestion and thus act as a factor in the production of venous stasis. The effect produced experimentally was only transitory because the quantity of choline introduced was rapidly diluted by the mass of blood, and probably oxidised also; yet when the whole mass of blood contains this substance in appreciable quantity continuously it means the possibility of constant toxic

FIG. 8.



Effect in a dog of saline solution of the alcoholic extract of 70 cubic centimetres of blood removed during a seizure from a patient suffering from general paralysis of the insane. There is no effect on respiration (R.), but there is a well-marked fall of blood-pressure (B.P.). In the same blood choline was identified chemically.

FIG. 9.

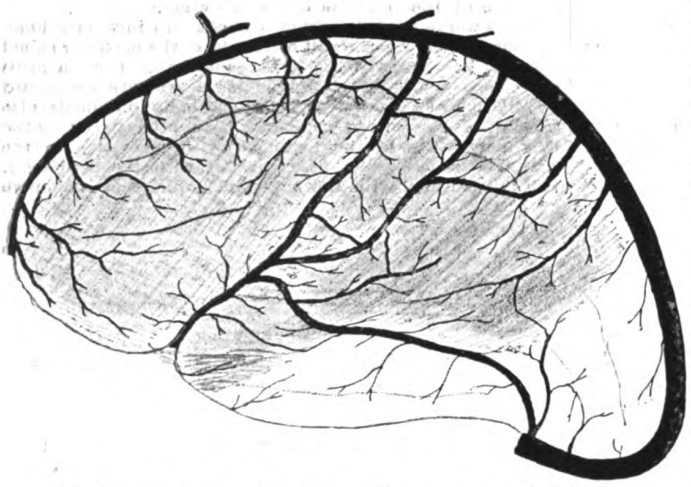


Injection of 5 cubic centimetres of pathological cerebro-spinal fluid in an animal anæsthetised with A.C.E. mixture, but which subsequently received an injection of atropine. It will be observed that now instead of producing a fall choline causes a rise of blood-pressure. The same effect is produced by the injection of 5 cubic centimetres of a 0·2 per cent. solution of choline hydrochloride.

effect; therefore, although choline can hardly be regarded as a dangerous toxic substance, still, under certain circumstances it may serve as an additional factor in the production of complications in this disease.

The Marchi reaction applied to the central and peripheral nervous systems shows rather different results; one striking difference is the comparatively rapid disappearance of the products of degeneration in peripheral nerves as compared with the central nervous system. For example, if the posterior spinal ganglia be removed and the animal kept alive for months no traces of the products of degeneration can be found in the peripheral nerves, whereas in the posterior columns of the spinal cord I have found well-marked evidence of the products of degeneration. Dr. H. Head, who has worked extensively on the changes in the cord and peripheral nerves the result of lesions of the posterior spinal ganglia, has observed the same conditions. From a large experience of this method of studying degeneration produced by all kinds of lesions of the cord and brain in animals, also from disease occurring in man, I have been struck by the long persistence of the products of degeneration in the central nervous system as compared with the peripheral. Is this connected with the anatomical difference which we know to exist between the nerve-fibres in the central nervous system and peripheral—viz., the existence in the latter of a chain of tubular cells of mesoblastic origin, forming the nucleated sheath of Schwann? And, we may ask, do these cells have a phagocytic action upon the products of degeneration, utilising the same for the formation of fresh protoplasm and myelin? and does the peripheral portion of the nerve-fibre depend solely for its nutrition upon the central cell of origin? There is some evidence in favour of the view that nerve regeneration may take place from the periphery, but there is no evidence to show that regeneration of fibres of

FIG. 10.



External and upper surface of hemisphere, showing distribution of veins opening into the longitudinal sinus. The shading shows the usual area of pia arachnoid thickening. A large branch is seen running back into the lateral sinus, connecting it with the great central anastomotic vein. The lateral sinus is diagrammatically represented as continuous with the longitudinal sinus and the torcular is not shown.

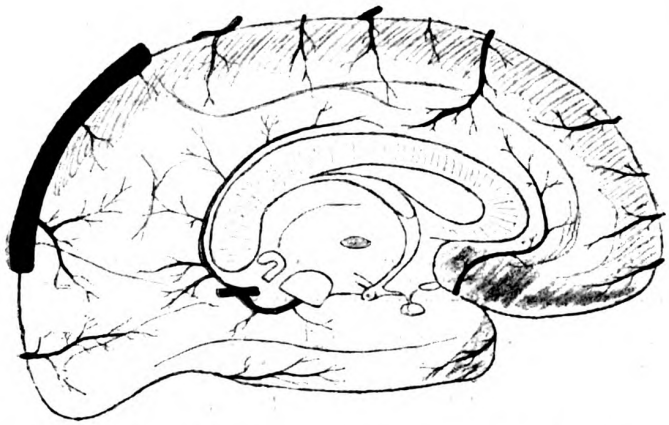
the central nervous system (where this sheath is absent) can take place.

TWO FORMS OF DEGENERATION.

There are two forms of degeneration, but both may react to the Marchi stain. They are as follows:—1. Secondary (Wallerian) degeneration due to interruption of the axon when it is cut off from its cell of origin, as, for example, in a focal transverse lesion of the spinal cord produced by disease or injury. Tracts of fibres which have their cells of origin above the lesion degenerate downwards and are recognised by the black-stained products of degeneration mapped out in definite areas corresponding to definite systems of efferent neurones, while tracts of fibres conducting afferent impulses having their cells of origin below the lesion have a normal appearance. The converse applies to tracts above the lesion—viz., all the afferent tracts which have their cells of origin below the lesion have their limits definitely mapped out by the black-stained products of degeneration, while those with their cells of origin above have a normal appearance. Therefore, secondary degenerations, whether occurring as the result of experiment or disease, may be considered of traumatic origin and arising from conditions outside the neurone very frequently due to vascular occlusion and local softening. 2. Primary degenerations are clinically and pathologically quite different from secondary. They arise as a result of altered conditions of the blood and lymph, due generally to the introduction or generation within the body of poisonous substances, and are insidious in origin, progressive in character, and generally fatal in termination. They are influenced by hereditary or acquired tendency to nervous degeneration, and election of the particular system or systems of neurones not only constitutes definite groups of clinical phenomena, which admit of empirical classification into definite diseases, but also shows that certain poisons have elective affinities for particular systems of neurones; but the election of certain structures may also be determined by occupation and habits which induce stress on some particular system of neurones, or vascular conditions may lead to circulatory disturbances which will determine the appearance of degenerative changes earlier and their more rapid progress in certain parts of the nervous system than in others. In connexion with the latter contributory factor we have already referred to the reason why certain portions of the brain should show more atrophy and degeneration in general paralysis than others. Again, I have found the left hemisphere, which presumably is used more than the right in all right-handed people, is more often atrophied in general paralysis, for the two hemispheres in this disease are seldom of equal weight, and the left hemisphere in two-thirds of these cases weighs less than the right. We know that the speech affection is one of the most characteristic and earliest clinical phenomena of this disease; possibly this difference in the weights may be the result of excessive activity of the left hemisphere while in a process of decay. At the same time, this tendency of the left hemisphere to waste more rapidly than the right might be partly explained on mechanical principles, for venous congestive stasis might take place more easily in the left hemisphere than in the right, owing to the fact that the blood in the internal jugular vein on the right side has a more direct course to the right auricle than the left.

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FIG. 11.



Mesial surface of hemisphere, showing the veins opening into the longitudinal sinus draining the upper portions where the thickening of the pia arachnoid occurs. Only a small portion of the longitudinal sinus is represented. These drawings are from Testut modified to show the area of pia arachnoid thickening and its correspondence in great measure with the area drained by veins opening into the longitudinal sinus.

THE DRAINS OF FURNISHED HOUSES.—At the Devon Assizes, held on June 26th, before Mr. Justice Kennedy, a lady brought an action against a landlord for damages for breach of an implied warranty to have a house in a sanitary and habitable condition. Counsel for the plaintiff stated that she had taken a furnished house at Exeter; the agreement did not contain any stipulation as to the drains, but when a furnished house was let there was an implied warranty that it was fit for habitation. Eventually some members of the household were attacked with enteric fever and the drains were discovered to be defective. The jury awarded the plaintiff £240 damages.

AN ABSTRACT OF

The Bowman Lecture

ON

THE PRESENT STATE OF OUR KNOWLEDGE REGARDING VISUAL SENSATION.

Delivered before the Ophthalmological Society of the United Kingdom on Friday, June 15th, 1900,

BY R. MARCUS GUNN, F.R.C.S. ENG.,
SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS, ETC.

MR. PRESIDENT AND GENTLEMEN,—The subject naturally demands several distinct series of observations—first, the nature of the stimulus that excites vision; secondly, the manner in which this stimulus affects sentient cells; thirdly, the path and mode of conduction of the nerve impulse; and fourthly, the ultimate appreciation of the conducted impulse.

I.—First, as to the nature of the stimulus. The expression "ether wave" must not be held necessarily to imply any actual movement in the ether, but rather an influence, a rapid, periodic change of some of its properties, the term "wave" simply meaning a disturbance of definite periodicity in space and time.

From every great centre of energy (the sun being, of course, the most important to us) radiations of energy take place, and pass through space in the form of these ether disturbances. So far as is known all such radiant energy travels at the same rate, and the "waves" occur transversely to the direction of propagation of the force. As to the nature of the vibrations or disturbances in the ether, the view now held is that first suggested by Faraday, and elaborated later by Clark-Maxwell—viz., that they are electro-magnetic. Bodies that are conductors of electricity absorb such radiations rapidly, and are therefore opaque; while those that are transparent to light are insulators. The length of the wave—that is, the interval between the disturbances—varies between many yards and four or five-millionths of an inch; that is, from the Hertzian waves on the one hand to the so-called chemical waves on the other. But all these waves, whatever their length, possess certain familiar physical properties in common; they can all be reflected, refracted, absorbed, and polarised.

The human retina is influenced by a comparatively short part of the entire scale, corresponding to what may be called an "octave"—that is, the shortest visible waves are approximately half the length of the longest—while on either side of these there are several "octaves" of invisible waves either too long or too short to be appreciated in this way. Variations in the length of the waves produce different effects on the retina of many, probably of most, animals, and these effects are instrumental in exciting in man a definite series of colour-sensations.

There is no real distinction between heat and light waves. To quote the words of the late Professor Preston: "It is not that there are two classes of waves, heat waves and light waves, but that we have two senses by which we can distinguish the same waves." The length of the wave corresponding to extreme red (32-millionths of an inch) is equivalent to about one-tenth the diameter of a red blood corpuscle, and that of violet, therefore, about one-twentieth.

II.—The phenomena produced by light in living cells of no visual function may be stated to be: (1) movement of chlorophyll corpuscles, probably associated with protoplasmic currents; (2) chemical activity produced in chlorophyll-containing cells of plants and animals; and (3) contraction of protoplasm. To these we may add (4) phototaxis, which is expressed in two ways—(*a*) the wandering of free cells towards the light and (*b*) the position assumed by the cell, parallel to the axis of the incident ray.

The earliest appearance of what can be called a visual organ is produced by a simple modification of surface epithelium; indeed, all light-sentient cells are modifications of surface epithelial cells, or developed from the same embryonic layer which forms these cells. In every class of the animal kingdom in which true eyes are to be found, examples are presented showing a high ocular development with a correspondingly high type of visual cell.

The general characteristics of such a visual cell are—(1) the end of the cell, corresponding to the cuticle, has a prolongation, usually in the form of a rod; (2) the opposite end of the cell is either directly continued as a conducting fibre, or is connected with a ganglion cell and ultimately with a nerve-fibre; and (3) pigment is present in the light-percipient cell itself, or in a distinct although closely related cell, often in both. It is to be noted that the main deposit of pigment is usually of a brown colour, and that it is situated at the end of the cuticular prolongation furthest removed from the incident light, both in invertebrates and vertebrates.

In the vertebrate retina we have, first, the pigment epithelial cell. This is of comparatively large size so that in man each cell has several end-organs embedded in it. The outer part of the cell is colourless and contains the nucleus. The remainder of the cell-body possesses much pigment, principally in the form of needles or crystals called *fuscin*. From the inner or cuticular surface of the cell arise numerous fine processes which pass inwards for a considerable distance between the end organs; they are colourless or contain pigment according to previous conditions as regards shade or exposure to light. Secondly, the neural or visual epithelial cells are, in most vertebrates, of two kinds, named, from the shape of their outer segments, rods and cones. Each cell is much elongated in a direction perpendicular to the free surface of the retina, and while its outer extremity is more or less deeply embedded in the pigment epithelium, its inner end rests on the internuclear layer. Each may be divided primarily into cell-body and cuticular formation. Under this latter term are probably to be included not only the outer segment, but also the highly refractive outer part (so-called ellipsoid) of the inner segment. The cell-body, traced from the cuticular end, begins as a distinct granular protoplasmic swelling, called the myoid; then (immediately in the case of the cone, after a varying interval in the case of the rod) comes a nucleus or granule. Next, there is a constricted part of the cell known as the fibre, and, finally, the fibre-bulb or enlargement. The relative size of rods and cones varies greatly in different vertebrates, but, where both elements exist, the chief distinctions between them consist in the greater development of the myoid in cones, and in the fact that the outer segment of the rods have, with few exceptions, a uniform reddish colour under ordinary circumstances during life.

We now come to the most important question included in this division of our inquiry—viz., what are the evidences of effect produced on such specialised light-sentient cells by the action of light? Observations on this matter have been mainly conducted on the eyes of vertebrates, and I shall confine my remarks to the effect produced on this most highly developed form of retina. First, in the pigment epithelium, when at rest, the fuscin is collected in a close mass in the body of the cell. When stimulated by light (*a*) the long pigment particles wander forwards, that is, towards the light, and invade the processes which extend between the outer segments, reaching nearly up to the external limiting membrane. This migration seems to be due to, or at any rate associated with, currents in the fluid cell-protoplasm. Marked wandering of the pigment takes place in red light, but the movement is most active towards the violet end of the spectrum and the activity seems, roughly, to be inversely proportional to the wave-length. Once the pigment is in the forward position, it returns to the body of the cell very slowly in the dark. (*b*) Also caused by exposure to light we have swelling of the pigment cell processes, which consequently grasp the outer segments. In this way the retina, over an illuminated area, is made to adhere to the pigment epithelium, forming what has been called an epithelial optogram. (*c*) Yet another effect from light is the alteration in the reaction of the contents of the pigment cell. This seems to be an oxidising process, accompanied by a substitution of an acid for a previously alkaline reaction, and there is reason to believe, from the action of staining fluids, that the change in reaction is communicated to the rods and cones, and that the activity of the chemical change varies in amount according to the wave-length.

In the visual epithelium there are several important changes brought about by exposure to light. 1. The purple of the rods undergoes change of colour wherever

the light falls on the retina, and this action is strictly confined to the illuminated area. The red end of the spectrum has but little effect, and the most active wave-lengths are those that correspond to the yellowish-green, which are the waves chiefly absorbed. Absolute bleaching ultimately takes place, the rapidity of the process depending on the intensity of the light. The purple is slowly restored in darkness if the rods remain in contact with the pigment epithelium, so that the formation of the purple stain is evidently dependent upon some action in the pigment cell, presumably of a secretory nature. 2. Movement of the cone. While a cone protrudes well into the pigment layer when protected from light, it retracts rapidly on exposure, the contraction taking place in the cone-myoid. The shorter wave-lengths act most energetically. It would seem to be an illustration of movement caused in excitable protoplasm by light. Similar but more feeble movements have been described in the rod-myoid due to the same action. 3. Photo-electrical response. It has been conclusively demonstrated that the action of light upon the retina is accompanied by a marked electrical change. The current so induced travels from pigment epithelium to nerve fibre layer, is positive in character, and is ascribed to increased disintegration. On exposing a fresh eyeball to light there is first a very short pause, followed by a rapid rise (or positive deflection); with continued illumination the positive effect increases slowly or remains stationary; and on shutting off the light there is a further short sharp rise, succeeded by a gradual fall to the position of rest. Waller has shown that there is evidence of two antagonistic processes in every such response, one positive, the other negative, the positive effect being dominant in the case of the fresh eyeball, the one possibly an evidence of disintegration, the other of reintegration. Very weak illumination—e.g., moonlight—suffices to produce the electrical variation. It has been repeatedly asserted that the electrical change depends upon the retina proper and is independent of the pigment epithelium. This, however, seems to me to require further investigation; it is difficult to believe in a marked change of this character being produced by light without the presence and participation of the pigment epithelial cells in which there is every reason to think that the light energy is mainly arrested and transformed. According to Dewar and McKendrick white light is the most effective, but on examining with spectrum colours their observations seemed to show that the yellow rays have the greatest power and that there is a gradually diminishing action on either side of the yellow. These observations on the activity of different parts of the spectrum are, however, open to the objection that the difference in response depended on the intensity rather than upon the wave-length. If the electrical change is due to the effect of light on the pigment cell we should presumably have the greatest action from that part of the spectrum that is brightest at very low intensities.

If we now compare the evidences of the effect of light on visual and on certain non-visual cells we find a striking similarity. In both there is a marked stimulation of the cell-protoplasm, combined with chemical activity, and in the case of the visual cell the amount of effect seems capable of measurement by the galvanometer. Since writing this paragraph, Dr. A. D. Waller has brought forward evidence to prove that the light effect upon a fresh leaf is also accompanied by an electrical change, thus completing in a remarkable manner the parallelism here described.

III.—The conduction of the impulse. The simplest example of the conduction of a light effect in an individual is in the case of a unicellular organism such as the *euglena*, where the whole cell responds to the influence communicated to it from without. In the neuro-muscular cells of the *hydra* the irritation is conveyed directly from the free surface to the deeply-lying processes which are in this way stimulated to contract. In the syphon of the *pholas dactylus* the superficial epithelium is pigmented and immediately beneath it there occurs a fine layer of contractile fibres which in turn overlie nerve-cells, and these again are connected with the longitudinal muscle which moves the syphon on exposure to light. Here we have an instance of a photo-chemical change in the pigment cell causing movement of the subjacent contractile tissue, serving as a mechanical irritant of the nerve-cell which occasions the general muscular movement of the syphon. This, of course, is not vision, but it is an effect, apparently purposeful, produced locally by light without any appeal to a central nerve mechanism. The effect required in lower forms of animal life—viz., escape from danger or search for food—may thus be brought about by the local effect of light. Where the body to be protected is large it is necessary to have the sense organ associated with a central nervous mechanism in order to secure protection with the minimum of specialised tissue.

We get a local combination of many light-sensory cells to form a visual apparatus and a union of many ganglion cells to form a central nervous mass. These sensory cells may be situated directly on a small collection of nerve cells, but more frequently in the case of higher forms these are connected by intermediary ganglion cells presumably formed, like the sensory cells, from epithelium, but at a later period. This explanation rests on strong biological evidence and is supported by the developmental changes which occur in the ectodermal cells forming the inner division of the secondary optic vesicle of vertebrates, where a single layer of columnar cells by multiplication is converted into three definite superimposed layers, the outermost constituting the true sensory epithelium, the innermost the large ganglion cells, and the intermediate layer the connecting bipolar ganglion cells, or inner granules. This leads us to inquire how nerve cells are connected with each other.

[The lecturer here described the modern views of the connexion between different nerve cells.]

In the present state of our knowledge as to the nature of a nerve wave it is perhaps not of great importance in attempting to follow its path to know exactly *how* the different nerve cells are brought into physiological relation with one another, so long as we are familiar with the general characteristics and position of the path traversed. The actual nature of the process associated with progress of the nerve current would appear to be most easily explained by supposing that the force, originated for example in the sensory cell, produces a physico-chemical effect on the nearest particle of the associated nerve tissue, this effect being of such a nature that it produces in turn a similar change in the state of the particle next in order, so that the influence is transmitted onwards. The influence produced locally seems to be accompanied by the formation of carbon-dioxide, and the progress of the impulse along the nerve can be traced by a change in the electrical condition known as the "current of action." The process leaves the nerve substance practically in its original condition, the nutrition of the fibre being maintained by its relation with the protoplasm of the associated ganglion cell, aided possibly in the case of long medullated axons, by the cells of the medullary sheath. In altered blood states or inflammatory conditions exhaustion readily occurs and restoration may be extremely slow or deferred indefinitely.

In the visual path, an effect having been produced on the sensory epithelial cell is immediately influential as far as the extreme termination of this cell or fibre-bulb. From this it is communicated to a bipolar ganglion cell (or inner granule) and then to one of the ganglion cells of the ganglion cell layer. Along the axis-cylinder of this cell the impulse passes as far as the external geniculate body, where this axis-cylinder ends, but the nerve wave is passed on to another neurone, the cell-body of which is in this situation, and travels along its axon to have an effect finally upon a nerve-cell of the cortex. Ramòn-y-Cajal believes that there is no direct relation, beyond that of mere contiguity, between the bulb and the outer process of the bipolar cell; that, in fact, the relation of the sensory epithelial cell to the inner granule is exactly similar to what he has described as existing between two ganglion cells elsewhere. Other observers have found distinct evidence of a direct anatomical continuity between these elements. Golgi again, and Dogiel have described a direct connexion between the ganglion and the bipolar cells.

Many rods (more than 20) and several cones may be physiologically connected respectively with single bipolar cells and several bipolar cells with one ganglion cell. This satisfactorily accounts for the relatively large number of rod and cone cells in the retina as compared with the number of fibres in the optic nerve. The cone cells of the fovea appear, however, to be exceptional, in that each has only one bipolar cell and one ganglion cell in relation with it.

What conjecture can we form with regard to the origin of the visual nerve impulse? Though the wave force which excites the retina is electrical the nerve impulse cannot be a mere continuation of it, since an electrical ether wave travels at a rate immeasurably greater than that of a nerve current. It is certain that the energy contained in the

light wave must undergo a profound change when it strikes and is arrested by the pigment, and the change that first suggests itself is that heat should be produced. But as a result of this transformed energy in the pigment chemical changes are induced, which should be compared with those brought about in plants by the action of light on chlorophyll. These chemical changes are also probably factors in the promotion of protoplasmic movement. In the case of chlorophyll the wave-lengths that are mainly arrested are the most chemically efficient, and this probably holds good also in the case of the retinal pigment.

The pigment cell when at rest has a marked secretory function, evidenced by the formation of retinal purple in the outer segments of the rods. The material thus formed is undoubtedly of great visual value, though there is no conclusive proof that the purple stain itself has actually any direct influence on sensation. Although complete rest—that is, darkness—causes an accumulation of this secretion the function proceeds during exposure to light.

The next fact of importance in this consideration is the contraction of the cone-myoid, which may be either due to a direct action of light on protoplasm, comparable to what has been observed in *peiomyxa palustris*, or to a change produced indirectly, the cone-myoid contracting in consequence of some stimulus, possibly chemical, received from the pigment cell.

Prolonged exposure to an intense illumination—direct sunlight, for example—causes actual changes of so pronounced a character that the outer segments of the visual cells are altered anatomically as well as functionally, and this alteration may persist for many months or even remain permanent.

The fundamental idea of vision seems to be to connect visual impression with muscular action, so that the animal may move out of danger, protect itself, or find its food. There is no necessary consciousness associated with any such visual influence, even in the case of animal forms where different wave lengths produce a difference in the muscular movements induced. In the case of the *daphnia*, for example, the experiments of Lubbock demonstrated that this tiny crustacean, with its feebly developed nervous system, is capable of distinguishing between light of different wave lengths, and that it is influenced particularly by the rays that correspond to what we know as yellow-green. It is unnecessary, and surely unreasonable, however, to conclude that the daphnia has any real conscious vision as we understand it in ourselves—still less a true colour sense. As an instance of how eyes may be developed, and prove serviceable for the production of a muscular action beneficial to the individual, no better could be brought forward than that observed by Semper in the *onchidium*. This land-snail lives close to the sea-shore, and the same shore area on certain coasts is frequented by the periophthalmus, a fish which leaves the water in search of food. Wherever this particular foe exists, and nowhere else, the local onchidium exhibits numerous highly developed eyes on its back, each having retinal cells, pigment, and optic nerve. In these dorsal-eyed onchidia, and in these alone, the skin of the back is thickly set with minute glands containing concretionary pellets, which are discharged by a general contraction of the body in hundreds. Such a contraction is induced, according to Semper, when the dorsal eyes give notice of the approach of this enemy.

Protective changes in colour under the influence of their surroundings occur in many animals, particularly in many fish and amphibians. The pigment is contained in contractile cells in the skin, and Lister has shown that the activity of these cells affecting the distribution of pigment is dependent on vision. Pouchet subsequently proved that the reflex takes place through the sympathetic nerves, the intensity of the nerve-current excited and the completeness of the contraction of the pigment-bearing cells being proportional to the brightness of the light reflected from surrounding objects. It is not a question of the animal consciously assuming a protective shade, but an instance of a visual impulse provoking a muscular contraction.

As we ascend in the animal scale we get further centralisation of the nerve mass, and find the visual apparatus intimately connected with it. Even in the case of the vertebrate brain it has been asserted that in all probability each part was primarily independent, and the division connected with the optic nerve was one of conspicuous importance. In the lower vertebrates—fishes, amphibians, reptiles, and birds—we still find the central connexion of the optic nerves almost confined to one part, the large optic lobes corresponding to the corpora quadrigemina of mammals. But as we ascend the scale this part of the brain becomes progressively smaller and less developed and seems to be mainly instrumental in the transmission of visual impulses that are to be immediately—that is, without reference to the visual cortex—conveyed as reflexes by way of motor nuclei to muscles, such as those for movements of the iris, and possibly to some extent of the eyeball—movements that can occur independently of sensory vision. There is absolutely no evidence that there is any difference in the character of the original impulse, or in the optic nerve-fibres that convey it, to distinguish what will be a mere muscular reflex and what will be a conscious impression. As to the manner in which such fibres are connected with visual cells, so that there may be, as it were, double central representation (sensory and reflex) of every part of the retinal area, we are still ignorant. It is possible that this is brought about by lateral communications between the processes of retinal ganglion cells of one or other layer, but more probably it is effected by a collateral from the axon of the last retinal neurone.

The visual fibres, strictly so-called, take, at least mainly, another course in the higher vertebrates. In man, for example, they pass from the optic tract to the external geniculate body and pulvinar, and thence the impulse is conveyed by fibres which traverse the posterior end of the internal capsule and pass, as the optic radiations of Gratiolet, to the cortex of the calcarine fissure and its immediate neighbourhood. The crossing of the optic nerve fibres at the chiasma so as to produce unilateral representation of the corresponding half of each retinal field; the bilateral representation of each macula; the association fibres which bring the cortical region of visual projection into relation with the much more extensive area of visual representation; the question of a distinct unilateral representation of each ocular visual field; and the arguments for and against a separate cortical area instrumental in colour perception must be left with a bare mention.

As regards the receiving apparatus, the visual fibres end by communicating directly, or indirectly through a nervous felt-work, with cells of the visual area, and destruction of this part of the cortex causes immediate blindness of a corresponding part of the field of vision. It would appear that the upper and lower lips of the calcarine fissure of one occipital lobe correspond respectively to the upper and lower parts of the homonymous halves of both retinæ, and that the fovea is represented along the entire length of the fundus of the fissure.

But whether the cells of the calcarine cortex are the seat of conscious impressions or merely constitute a stage in the path to yet higher centres, and whether the same cerebral cell is capable of appreciation of differences in colour as well as of difference in amount of light effect, must remain debateable questions. So much only may be observed, that this part of the cortex is particularly rich in cells, mostly of small size, while there is no reason to regard a small nerve cell as inferior to a large one in functional activity.

IV.—With regard to the broad facts of our recognition of the conducted impulse we have evidently two distinct sensations dependent upon light—colour and brightness; both influenced by differences in wave rapidities or wave-lengths.

On gradually reducing the intensity of the spectrum the colours fade and cease to be recognisable, but not simultaneously. Of these two sensations, light and colour, that for light is the one that persists with the smallest recognisable stimulus and is presumably the more elementary. The most elementary visual sensation is that derived from waves near E, that is for green. Clinically we have additional proof of this difference, for example, in cases of optic nerve disease with failure of conduction, colour sensation disappearing before that of light. Moreover, in the case of total congenital colour-blindness the brightest part of the spectrum is also in the green, about the line E, just as we find it to be on sufficiently diminishing the intensity of the solar spectrum to the normal eye. In fact, the appreciation and conduction of the stimuli associated with colour sensation seem to be more delicate than for light; a greater stimulus is needed to excite it, and it is more readily affected by any failure in the conducting path. The longest visible waves are recognisable as a colour (red) at the same time as they become visible as light, while in the case of shorter waves near E (green) there is a marked interval

between the intensity necessary for the perception of light and that for colour. Green, indeed, affords us the best clinical test of early failure of conduction, the appreciation of the colour failing, while that for light persists.

Of these two sensations there is reason to regard light perception as the more *primitive*, and the primitive type of visual cell is pigmented epithelium. We are encouraged, then, to consider this part of our retina as mainly concerned in the appreciation of light as distinguished from colour, and many facts support this view. Thus, in disease of the pigment epithelium there is difficulty in appreciating differences in the amount of light. Again, when changes have occurred in the pigment cells, when the eye is kept in the dark for about an hour, there is a remarkable increase in the sensitiveness of the retina to light. We may infer that the chemical action, induced by light on a particular secretion of the pigmented epithelium, is intimately associated with the causation of the effect recognised as *light-sense;* and the next step is to inquire how the impression is conveyed from the pigment cell, whether by rod- and cone-cells indifferently, or mainly by one of them. Although the power of appreciating a faint light stimulus is so markedly increased as a whole by "dark-adaptation," we find that this does not apply to the entire visual field, and does not apply equally to all parts of the field where it is increased. Thus in the central area the light-sense is actually diminished under these conditions; and whereas it is increased outside the central area, it is relatively more augmented as we approach the periphery. That is to say, it is not increased at all where cones alone are present, and the increase becomes more marked as the rods become more and more the predominant element. It has therefore been argued, with reason, that the rods are the elements concerned in the appreciation of light, or, rather, of the change produced in the pigment cells by light, while the eye is thus adapted; although whether or not the retinal purple is visually concerned may be considered still an open question. So definite is the physiological area of diminished light-sense in this condition that it can be shown to correspond with the projection of the rod-free foveal retina.

The only possible argument that can be adduced against this conclusion is the possibility that there may be a difference in the behaviour of the pigment cells themselves, in the central and peripheral regions of the fundus, but no evidence in favour of this has ever been brought forward. Granted, then, that the rods have this particular function, it by no means follows that the cones are not serviceable in the appreciation of light in ordinary illumination, though their peculiar office is presumably concerned with the recognition of differences of stimulation associated with variations in wave-length recognised as colours. Indeed, we know that light is ordinarily appreciated with marked efficiency by the macular area, but it is possibly always in virtue of the same function that is concerned in colour vision, white light being recognised, not as a simple result of stimulation, but as a consequence of, say, three simultaneous stimuli any one of which alone would excite a central impression of colour. It would seem as if a minor amount of stimulation that can be appreciated only by the rods must be excited before the cones come into functional activity. It is possible that the first action of light on the pigment cell is instrumental in providing a product of secretion or decomposition that is required so that the finer differences in wave-lengths be appreciated by the cones and the colour-sense stimuli be thereby initiated. Very possibly the movement of the cone-myoid is of service in this association.

PURE BUTTER.—Recently a firm of grocers at Rhyl sued a Liverpool firm of butter merchants for costs sustained in defending an action in which they were charged with selling butter adulterated with boric acid. Judge Lloyd decided in favour of the plaintiffs on the ground that butter containing boric acid was not absolutely pure. The case was then taken to the High Court and remitted back to Judge Lloyd for consideration as to whether it was pure butter according to the trade. At the Rhyl County Court on June 22nd it was stated that the plaintiffs had consented to a judgment for defendants and agreed to pay £15 costs. His Honour consented to the settlement, but remarked that although butter which contained boric acid as a preservative might be regarded as pure in the trade, it could not be absolutely pure according to the customers' idea.

UNUSUAL COMPLICATION FOLLOWING GASTRO-JEJUNOSTOMY.[1]

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I RELATE the following case to offer another instance of a good result following operative interference when there seemed to be but a forlorn hope of giving relief.

The patient, a woman, aged 62 years, had suffered for many months from pain after food, the pain gradually becoming most acute so that opium in full doses was needed to obtain anything like comfort. Latterly regular attacks of vomiting occurred about every 48 hours, when most of the nourishment taken during the preceding two days returned. No tumour could be felt but the symptoms all pointed towards pyloric stenosis. As the condition of the patient was getting unendurable I decided, after consultation with Dr. T. Churton, to open the abdomen to see if anything could be done. At the operation I found the pylorus greatly thickened and masses of enlarged glands constituting too great an area of disease to be attacked with any degree of safety. I therefore joined up a loop of jejunum to the stomach, using Senn's plates as the scaffold of anastomosis.

For the next two weeks all went as well as such cases usually do; the vomiting ceased and the pain gradually subsided. At the end of that time, however, the symptoms of obstruction began to reassert themselves, the pain again grew severe, and again the regular vomiting began, the amount corresponding with the quantity of fluids taken. It seemed clear that the new opening had for some reason or other ceased to be effectual. I therefore was face to face with a most discouraging chain of events and the patient herself was as badly off as she was before she submitted herself to operative interference. I decided to act on the assumption that the new opening between the stomach and the jejunum had closed and determined to re-open for the purpose of ascertaining the reason. Accordingly I re-opened the abdomen and I found that the junction between the bowel and the stomach externally was quite satisfactory. I then made an incision into the stomach two inches above the junction, and putting my finger inside found that all trace of the bone-plate had disappeared and also that all trace of the opening was absent. After a minute or two I felt the edge of the oval cut of the former operation and pressing firmly in the centre of this tore through a membrane by which the opening had been occluded. My finger then passed easily into the bowel and I stretched the opening freely in all directions. I then closed the exploratory incision into the stomach and finished the operation in the usual manner. After a day or two, during which time vomiting was incessant, improvement set in. The pain again left and it has not since returned. The patient is able to take light food and the vomiting has ceased. She is now out of bed daily and is gaining strength.

I have had occasion to operate for the relief of pyloric stenosis a good many times and in each instance I have used Senn's plates, but never before has the disaster I have related taken place. The membrane through which I tore was about as thick as ordinary note-paper. I do not know what occasioned the formation.

I said at the commencement of the notes of this case that I related it to add to the number of recorded surgical successes under desperate circumstances. With the condition which I have related to hold one's hand was to let the patient die in great distress; to operate again gave her one chance, but it also exposed her to the risk of death upon the operating table. Problems such as these come before us only too frequently and end only too often disastrously. I think it right, therefore, to put upon record this case, as it may possibly afford a guide as to the line of action to be decided upon should failure to relieve attend upon operation for a like condition.

June 24th.—The patient is now well, taking ordinary food and doing her ordinary work.

Leeds.

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on May 4th, 1900.

A CASE OF PRIMARY CARCINOMA OF THE VERMIFORM APPENDIX.

WITH REMARKS.

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A WOMAN, aged 26 years, was admitted into St. George's Hospital, on March 26th, 1900, under the care of Dr. F. G. Penrose, with a fourth attack of appendicitis, the first attack having occurred in January, 1899. On March 27th, 1900, the day after admission, the appendix was removed by Mr. A. Marmaduke Sheild. There was a small peritoneal adhesion connecting the apex of the appendix with the posterior surface of the uterus. No enlarged glands or anything in any way suggesting secondary growths were seen at the time of the operation. When the appendix was cut open a globular mass, a little larger than a marble, was found near the apex arising in the mucous membrane. It was somewhat caseous in appearance and suggested the possibility of tuberculous disease. The patient recovered from the operation, but during the middle of April she had an erratic temperature with some pain on the left side of the abdomen. This, however, subsided and she went to the convalescent home in May. I have recently (June 27th) heard from Mr. Sheild that the patient is losing flesh and strength, and that it is possible secondary growths are developing in the abdomen. The appendix was sent to me, for microscopical examination and report, by Mr. Sheild, to whom I am greatly indebted for permission to publish this interesting case.

Microscopical examination of the vermiform appendix showed, most unexpectedly, that it was the site of primary spheroidal-celled carcinoma. In its earliest stage the growth was seen to be limited to the mucous membrane (*vide* Fig. 1), but its histological structure in this situation was exactly the same as in other sections of adjacent parts of the appendix, where it was seen to be widely infiltrating the muscular coats and extending nearly up to the peritoneal covering (*vide* Fig. 2).

FIG. 1.

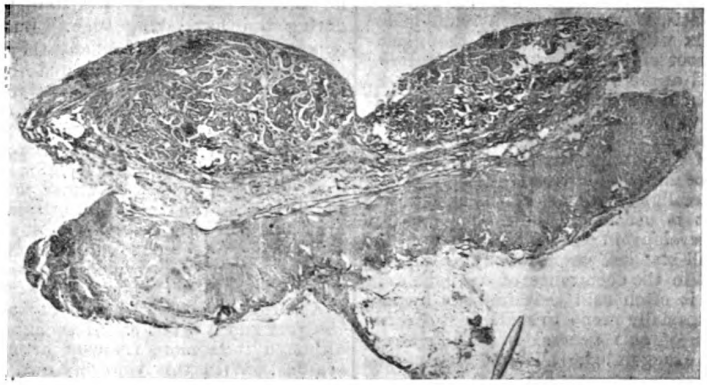


Photo-micrograph No. 1. Section of vermiform appendix showing carcinoma beginning in mucous coat. × 6.

FIG. 2.

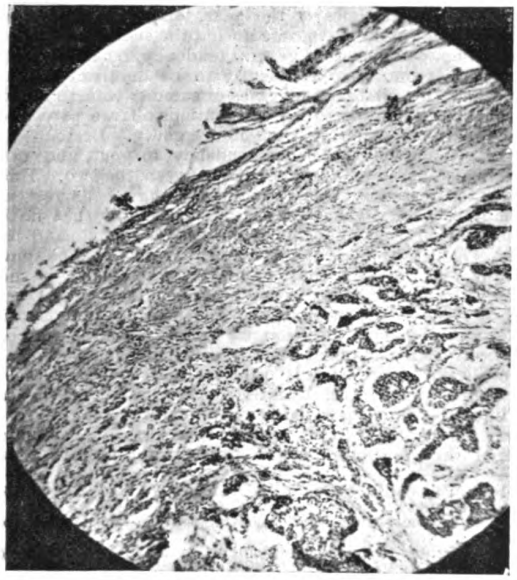


Photo-micrograph No. 2. Section of vermiform appendix showing carcinoma invading muscular coats. × 126.

The facts that (1) the growth was most extensive in the mucous coat, (2) that it could be traced outwards into the muscular coats, and (3) that there was no growth on the outside of the peritoneum, showed that the growth originated in the mucous membrane of the appendix, and that it was not a secondary growth either implanted on the peritoneum or arising as a result of embolism within its substance. I have several times seen secondary growths, in generalised malignant disease of the peritoneum, invading the appendix from without. If such an appendix were removed during life it might, if only superficially inspected, give rise to an erroneous diagnosis of primary malignant disease of the vermiform appendix. In the case of secondary malignant disease of the bowel due to emboli of infective tumour-cells the growth arises, and is most prominent, in the sub-mucous or muscular coats and only secondarily involves the mucous membrane. For the excellent photo-micrographs I am greatly indebted to the kindness of Mr. E. J. Spitta of Clapham, and Mr. Harold R. D. Spitta, a senior student of St. George's Hospital.

THE RARITY OF THE DISEASE.

Primary malignant disease of the vermiform appendix is not mentioned in Hawkins's work on "Diseases of the Vermiform Appendix" (1895) or in Allbutt's "System of Medicine." Kelynack in his monograph on "The Pathology of the Vermiform Appendix" (1893) could not bring forward any undoubted case, but he refers to three cases in a tabular statement drawn up by Leichtenstern, and to a case of colloid carcinoma described by Draper, which he (Kelynack) thinks probably arose in the ileo-cæcal valve.

Lafforgue [1] collected no less than nine cases of primary carcinoma of the appendix. Mosso and Daunic [2] found the

[1] Thèse de Lyon, 1893.
[2] Bulletin de la Société Anatomique de Paris, Novembre, 1897.

appendix of a woman, aged 50 years—who had not presented any special symptoms pointing to disease of the vermiform appendix, death being due to morbus cordis—to be affected with carcinoma. The appendix was four centimetres in length and 45 millimetres in its greatest circumference. On section the muscular coats could be distinguished surrounding a tumour growing in the inner coats. In this way it resembled the section of the early stage of carcinoma seen in my case (Fig. 1). The growth was regarded as a columnar-celled carcinoma with a transition to the spheroidal-celled type. Letulle and Weinberg [3] in a careful investigation into the histology of 12 cases of obliterative appendicitis discovered quite unexpectedly that two of their cases showed microscopical evidence of developing carcinoma at the level of the cicatricial obliteration of the tube. Wright [4] described a columnar-celled carcinoma of the appendix close to its insertion into the cæcum which had perforated near this spot and set up fatal peritonitis. It must be admitted that this last case and one recorded by Thiersch [5] are very much the same as carcinoma of the cæcum—a much commoner condition. In a boy, apparently the subject of appendicitis, Warren [6] found a round-celled sarcoma of the appendix with involvement of the glands extending back to the root of the mesentery. H. Gilford [7] removed the cæcum and appendix from a woman, aged 27 years, who had had trouble in that region for 13 years. It is described as a sarcoma around a calculus in the vermiform appendix, but after reading the case I do not see any convincing reason for doubting that the microscopical appearances were those of granulation tissue.

The rarity of primary malignant disease of the appendix is rather striking when it is considered how comparatively frequently carcinoma develops in another annexe of the alimentary canal, the gall-bladder, which resembles it in its liability to infection and in the occurrence of a calculous or lithogenic catarrh.[8] It is often said that fœtal relics and atrophying organs are especially prone to malignant disease, but whatever the value of this general statement, and I believe it to be rather exaggerated, it is not true of the vermiform appendix.

Primary malignant disease of the appendix is perhaps not so rare as would appear from literature for two reasons. 1. Because in the early stage of carcinoma the appendix may be removed for symptoms of appendicitis, and in the absence of a routine histological examination of removed appendices some cases may thus escape recognition. The present case is an instance in point, the condition naturally being unsuspected until a microscopical examination was made. It is the only case I have met with in a histological examination of 34 morbid appendices. 2. Because if the disease runs its course without interference a large mass of growth would probably result which might become adherent to the cæcum, the bladder, or the bowel, and then be thought to have originated there, rather than in such an unusual site as the appendix.

CLINICAL FEATURES.

It is remarkable that in three of the cases referred to above there were practically no clinical symptoms. When symptoms are present they are those of appendicitis. It is possible, on the analogy of tumour myelitis in the spinal cord that the growth sets up appendicitis, or, as suggested by Wright's case, that a small perforation may set up peritonitis around it. On the other hand Letulle and Weinberg's discovery of carcinoma developing in cases of obliterative appendicitis suggests that the growth is related to appendicitis much in the same way that carcinoma of the gall-bladder is related to cholelithiasis, which is of course the outcome of cholecystitis. It is, however, quite possible that the growth alone, without the addition of any ordinary inflammation, may account for the symptoms in some instances.

It may be worth while putting forward the suggestion that when apparently multiple primary (nodular) malignant disease of the liver occurs the vermiform appendix should always be carefully examined at the necropsy. It is hardly likely that multiple secondary growths would develop in the liver while the primary growth in the appendix is so small as to require microscopical examination. But it is quite conceivable that in a case of multiple carcinoma, apparently primary in the liver, the really primary growth might have been in an appendix previously removed for supposed appendicitis.

Upper Brook-street, W.

[3] Ibid., 1897, p. 47.
[4] Boston Medical and Surgical Journal, Feb. 17th, 1898.
[5] Berliner Klinische Wochenschrift, 1882.
[6] Boston Medical and Surgical Journal, Feb. 24th, 1898.
[7] THE LANCET, July 29th, 1893, p. 241.
[8] "Fæcal concretions" are, like gall-stones, products of inflammation of the surface surrounding them and not concentrated residues of its normal contents.

ON THE TREATMENT OF THE SO-CALLED "HAY-FEVER" OR SUMMER CATARRH.

BY KARL GRUBE, M.D.

SUMMER catarrh (*catarrhus æstivus*), also called "hay-fever," was first described at the beginning of this century by Dr. John Bostock [1] of London, who himself suffered from it. As the name implies, the affection occurs during the summer months, but chiefly at the time when grass flowers and during the haymaking time. But while many patients only suffer from it when they come near a hay-field others are also affected by any strong-scented flowers or by ordinary dust; several of my patients were always attacked on railway journeys in hot and dusty weather. The catarrh affects the mucous membranes of the eyes, nose, and lungs. In the same person the mucous membrane of all the parts mentioned may be affected or the catarrh may be limited to either the eyes and nose or to the bronchi. In the intervals between attacks the patients are either perfectly well without any affection of the respiratory organs, or there may be a tendency to catarrh of these organs or a chronic morbid condition of the nasal mucous membrane with thickening.

According to Beard,[2] hay-fever may arise at any season of the year and it is not at all peculiar to summer or autumn, although it is more frequent or more persistent at these seasons. With this view my own experience agrees, as I have seen cases of so-called hay-fever as early as February.

In most of my cases, and in all cases which were treated successfully, a gouty tendency could be traced to be underlying the local affection, the patients either coming of a gouty stock without themselves having any other symptoms of gout or suffering from gout in some form or other—e.g., gouty rheumatism.

Strictly speaking the universally used term "hay-fever" is misleading, for, as I have already mentioned, the catarrh is not produced only by grass or hay, nor is it entirely limited to the summer months. One frequently finds on inquiry that persons who pronounce themselves to be suffering from hay-fever also suffer more or less freely from catarrhs at other times of the year, only the attacks are more frequent and more severe during the summer. In these cases, then, one sees that general tendency to catarrh of the mucous membranes so frequently to be observed in gouty subjects. Of course, not all cases of summer catarrh are due to gout, but according to my observations a large percentage of the patients suffering from it are gouty. Bostock himself mentions that he had a tendency to gout, and other writers also speak of a connexion between the two. I may quote, for instance, Gueneau de Mussy,[3] Leflaive,[4] and Lermoyez.[5] Sir Dyce Duckworth [6] also states that he has sometimes noticed the connexion between gout and hay-fever. A further proof of this connexion may also be found, I think, in the fact that hay-fever, like gout, is more common in England than in any other country.

If it should be true that the gouty disposition is often underlying the local affection we can *a priori* only expect success from a treatment that is directed against both. I have always acted on this principle and have always laid great stress on a careful and strict regulation of the diet on lines that are so well known as not to require to be detailed here. The local treatment consists in the application of the Neuenahr waters in the form of inhalations,

[1] Case of Periodical Affection of the Eyes and Nose, Medico-Chirurgical Transactions, 1819, x., and 1828, xiv.
[2] New Facts and Suggestions relating to Hay-Fever, New York Record, 1876, vol. iii., p. 680.
[3] Sur la Rhino-bronchite Spasmodique ou Fièvre de Foin, Gazette Hebdomadaire de Médecine, 1872, vol. ix., p. 9.
[4] De la Rhino-bronchite Annuelle, &c., Thèse de Paris, 1887.
[5] Sur la Pathologie de l'Asthma de Foin, Annales des Maladies de l'Oreille, &c., 1888.
[6] A Treatise on Gout, p. 219.

gargle, and nose-douche. In cases in which there have been muscular and articular pains in addition to the catarrhal affection hot baths and massage have proved to be of great use. The best time for this sort of treatment, according to my experience, is during the months of May and June—that is to say, before the attacks of hay-fever have begun to show themselves. July I should not recommend; in August and September, however, I have treated cases with success. There are cases of hay-fever which do not respond to the treatment. These I have always found to be cases in which there was no history of gout, while in those cases in which the combination of gout and summer catarrh existed I have scarcely ever failed to obtain a good result. The following is the history of a few of my cases.

CASE 1.—The patient, a female, aged 19 years, had suffered from hay-fever for many years. There was a history of gout. The affection generally began towards the end of May. Hay, roses and other flowers, as well as heat and dust, immediately brought on an attack which began with sneezing and running at the eyes and nose, and which after a short time was followed by coughing. During June and July the attacks were of almost daily occurrence. In other respects the patient was perfectly well. There was some thickening of the mucous membrane of the nose, especially on the left side. Bleeding from the nose was easily brought on. The treatment as described above was carried out in April and May, 1897, with the result that there were no attacks of hay-fever during that summer. A second shorter course of treatment was thought advisable in April, 1898. There has been no recurrence of the attacks of hay-fever up to the present time (March, 1900).

CASE 2.—The patient, a female, aged 36 years, had suffered from hay-fever since the age of 15 years. Both her parents were gouty. The patient herself had suffered from rheumatic pains and articular swellings. She had severe attacks of hay-fever from May till August, recurring almost daily and much exhausting her. During the attacks there was great swelling of the upper part of the face, intense frontal headache, much secretion from the eyes and nose, together with coughing and a wheezing respiration. Local treatment of every description had been useless. Relief was only to be obtained by residing in a bracing place at the seaside. The patient was treated at Neuenahr during part of May and June, 1897, and though the attacks became less violent they did not entirely cease. The treatment was repeated in the following year with the result that no attacks of hay-fever occurred during that summer, nor has there been any recurrence since 1898, but I should mention that the patient has lately been more subject to rheumatic pains.

CASE 3.—In this case a history of gout was obtainable. The patient, a female, aged 42 years, was first treated for hay-fever at Neuenahr during 1895 with good results. She remained free from attacks during the following two years. In 1898 a relapse occurred which made her return to Neuenahr; she had after that no more attacks during 1898 and 1899.

CASE 4.—The patient, a girl, aged 10 years, came of a very gouty family and was herself a very delicate child. She has been suffering from severe attacks of hay-fever for the last four years. She was quite disfigured by the attacks. Her face was swollen and red, her eyes were inflamed, and there was constant running at the nose together with coughing and wheezing respiration. She contracted the attacks everywhere and from all sorts of causes, but especially from heat and dust. When she arrived at Neuenahr she was in the midst of one of her most severe attacks and was very prostrated. During the following four weeks she kept quite free from the attacks, nor did the long journey to St. Moritz affect her, although the weather was hot and dusty. She has since kept wonderfully well.

CASE 5.—This case is one of those treated without any success. The patient had suffered from hay-fever and asthma for several years. There was no history of gout. The attacks occurred almost daily during May and June. They began in the usual way with sneezing and increased nasal secretion, but their chief feature was violent coughing, a feeling of severe tightness round the chest, and a difficulty in breathing. The usual treatment was carried out but had to be given up after its ineffectiveness had been proved.

The following are the conclusions to which I am led. 1. There are cases of summer catarrh (so-called hay-fever) which can be cured, or at least relieved, by treatment with the waters of Neuenahr. 2. The cases especially suited for this treatment are those in which the affection is a part of the gouty dyscrasia. 3. Cases without a history of gout do not seem to be benefited by the treatment.

Neuenahr, Germany.

EXERCISES IN THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.

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THE beneficial influence of gymnastic exercises upon the general health of the body has been recognised for ages and it is needless, in discussing the present subject, to dwell upon this fact further than to state that in treating curvatures of the spine everything which benefits the general health will materially assist other treatment.

My present purpose is to consider the local effects which may be produced upon a crooked spine by specified muscular exercises, either by correcting the shape of and strengthening the joints, or by strengthening any particular set of muscles connected with the deformity. In the first place it should be noted that it is impossible to lay down any hard-and-fast rules for gymnastic exercises by which to deal with every instance of curvature, because cases differ to such an extent that what is suitable to one individual would be totally wrong for another. Moreover, patients differ as regards the muscles they bring into use in carrying out the same movements. I will in the first place describe briefly the various kinds of lateral curvature and the application of gymnastics to their peculiar requirements.

CLASS 1.—That in which the most notable condition is debility occurring after illness or from some other cause. In these cases the muscular system being especially affected the patient is unable to hold his spine erect except for short periods, but in the early stage there is not any well-marked bony deformity. For such a condition a course of general active and passive exercises of the trunk and neck, and also of the legs and arms, will have a beneficial effect. As a rule, these exercises should be carried out while the patient is in a recumbent position. The general health of these patients always requires treatment by means of a nutritious diet and tonic medicines, some form of lime being especially beneficial. Massage is also helpful. It is usually also advisable to limit the amount of voluntary active movements in order to avoid producing fatigue.

CLASS 2.—In this class we find, in addition to the above symptoms, laxity of the ligaments of the spinal joints. For these patients exercises will be beneficial, but greater care must be taken to prevent the spine from subsiding into curves during the intervals between the exercises.

CLASS 3.—In which alterations in the form of the bones has already occurred. In these cases the exercises must be directed not only generally, but specially, in order to overcome these curves. For instance, the special exercise to be presently described to correct rotation is one of the most important.

CLASS 4.—In which the curves are more severe. For these patients some good may be done doubtless by a course of exercises, but less permanent effect must be hoped for than in the less severe cases.

In Class 1 mentioned above it is nearly always desirable to commence treatment by exercises and in many cases with the addition of massage. In Class 2, also, exercises may be carried out, but the patient should be carefully watched to determine whether he is really recovering and to detect when the disappearance of curves is more apparent than real. In Class 3 and Class 4 a combination of methods must be brought to bear upon the case.

Description of exercises.—A great variety of complicated exercising machines have been devised and used from an early date in the study of this deformity, but although these apparatus are very beneficial under some circumstances, it should be the object of the surgeon to simplify as far as possible the various movements carried out, with the view of teaching the patient to continue the treatment by himself as far as possible subsequently.

In the early periods of treatment of any case, however, the knowledge of the surgeon and the efforts of the skilled teacher are both necessary, and unless the curvature be very

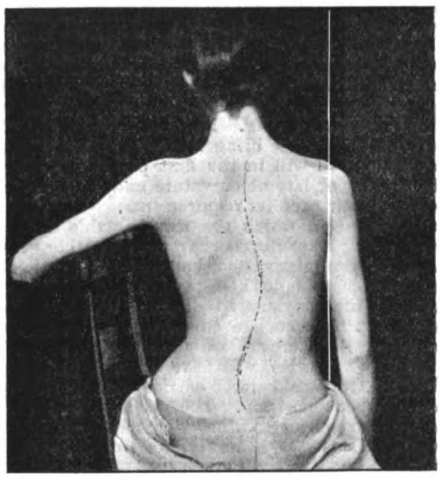
slight the medical supervision is required for a considerable time.

General exercises.—I have already stated that, as a rule, the patient should rest in the recumbent position whilst carrying out the general exercises. The object of the recumbency is to remove the weight of the body from influencing the curves.

We almost invariably find that where there is general debility and a weak muscular system there also exists laxity of the joints. Under such circumstances whenever the spine is in an upright position, whether the patient be standing or sitting, there is a certain deforming influence upon these lax joints caused by the superincumbent weight, and the spine consequently tends to give way in one or other direction.

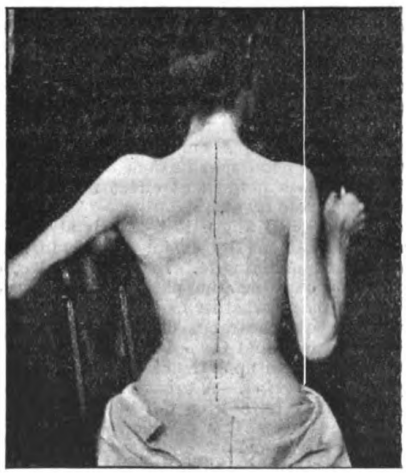
The object of general exercises is to strengthen the muscles and also, by bringing more blood to the weak parts, to nourish and strengthen the whole spine. The test as to when a patient may safely undertake exercises in an upright or sitting position must be his ability to control his spine in a straight posture for a sufficient length of time. For instance, when we have first examined the case the patient, upon sitting in a chair, will, after a certain short period, have relapsed as regards his spine into one or other or several curves. When the time has arrived that he can sit up easily with the spine in a perfectly normal position not only as regards lateral but also in respect to antero-posterior posture for at least five minutes, then we need not restrict the exercises to the recumbent position.

FIG. 1.



Dorso-lumbar curvature, the dorsal curve being most prominent about the tenth dorsal vertebra.

FIG. 2.



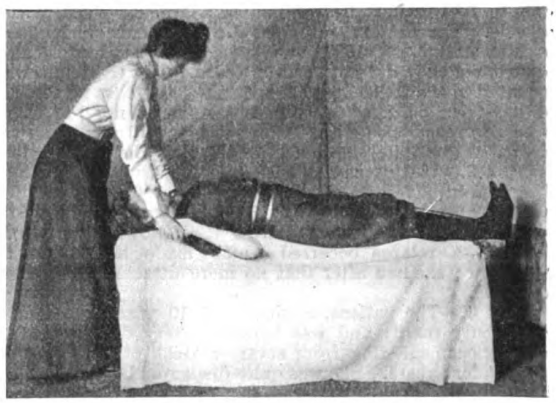
The same patient as in Fig. 1 drawing back the elastic expander with the right arm, thus using the muscles between the shoulder and the spinous processes of the deflected dorsal vertebræ, straightening the whole spine and un-rotating the vertebræ. The vertical lines from the outer side of the pelvis show the relative positions of the side of the body, without and with the active exercise.

FIG. 3.



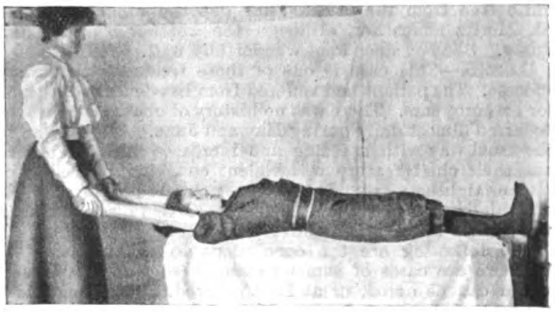
The exercise for drawing back the prominent side of the thorax. Here the dorsal curve was to the left. The patient in Fig. 1 and Fig. 2 would have done this exercise with the left arm.

FIG. 4.



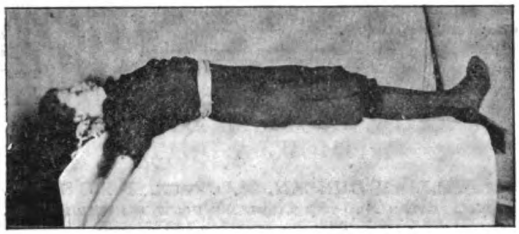
Arm extension, first position, with resistance by the patient. In the second position the arms are raised and the operator resists.

FIG. 5.



Arm extension, second position, in which the operator resists.

FIG. 6.



Arm extension without resistance, second position. In the first position the arms are flexed and the fingers touch the shoulders.

FIG. 7.



Arm extension, third position.

FIG. 8.



Simultaneous leg elevation. The arms are extended to balance the body. This exercise has a powerful effect upon the abdominal and lumbar muscles and has to be attained by gradual slighter movements.

FIG. 9.



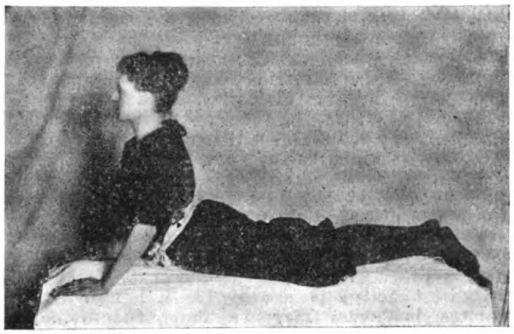
Simultaneous leg and arm circling. The combination of these exercises is only carried out in exceptional cases and requires considerable strength.

FIG. 10.



This figure shows the first position for the exercises in Fig. 11 and Fig. 12.

FIG. 11.



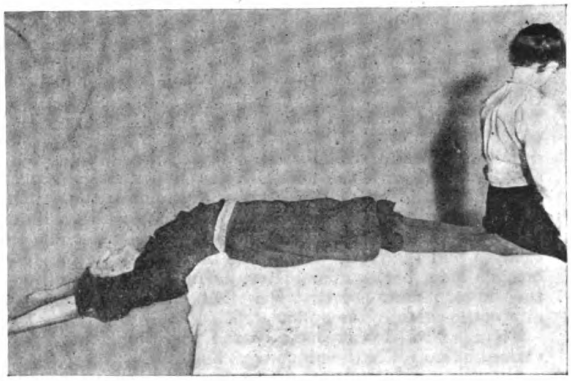
Body flexion backwards and forwards. his exercise requires considerable practice before it can be done *evenly* to the extent shown.

FIG. 12.



Kneeling body movement. It would require many figures to show the details of this exercise. Before it can be carried out satisfactorily more simple degrees of the position have to be practised.

FIG. 12.



Backward bending with legs fixed. If forward bending to a sitting position is required the patient must have the knees bent over the edge of a shorter couch and there fixed.

Exercises to act directly upon the curves.—In order thoroughly to realise the effect of exercises upon a curved spine it is necessary to consider carefully the exact action of the muscles which we propose to bring to our aid and the exact position of the parts which are distorted.

One exercise which has been recommended for acting directly upon the dorsal curve has been devised with the object of drawing out the concave side of the curve by use of the arm of that side, but this exercise tends to increase the twisting of the spine which is the most serious part of the deformity.

The muscles which extend from the arm to the spine are the trapezius, the rhomboidei, and the latissimus dorsi and these are attached to the spinous processes of the vertebræ.

It should be remembered that the spinous processes are directed, in consequence of the rotation of the vertebræ, towards the side of the *concavity* and that the rotation is the part that offers the more serious obstruction to treatment. The effect of this exercise is obviously to draw the spinal processes further in the direction of the concavity and consequently to increase the rotation.

The plan of special exercises which I have devised for acting upon the dorsal rotation consists in the use (1) upon the *convex* side of the curve of the muscles above referred to, with the object of drawing the vertebræ round towards their proper position; and (2) upon the *concave* side of the curve of the muscles which extend from the arm to the front of the body, with the object of drawing backwards that prominent side of the thorax. Although this plan of exercise acts directly only upon the dorsal curve, yet the resistance of the pelvis to the action of the arms tends to twist the lumbar part of the spine in the opposite direction and thus produces the exact action that is required. If more direct action is needed for a lumbar curve the quadratus lumborum may be brought into use upon the *convex* side of this curve, and this is best done with the patient in the recumbent position. The object of this system is to lessen the curves upon their convexities and to rotate the vertebræ back to their normal position.

Slight variations in these exercises must be made to suit individual cases, as there is nearly always some difference in the form and condition of the curves. The general exercises of the erector spinæ muscles of both sides should, as a rule, be carried out in addition to the special exercises now described and avoidance of fatigue and suitable rest should be observed.

In the earlier stages of treatment the special exercises should be conducted while the patient is lying recumbent both in the supine and prone position, but it will perhaps suffice here to describe these exercises as carried out in the sitting position.

For this exercise upon the convexity a hook should, in the first instance, be placed, as a rule, on a level with the top of the patient's shoulder while sitting, but often it is necessary to vary this position higher or lower before the desired effect upon the curve can be attained. It is remarkable how plainly this action when correctly performed, affects the curve. In slight cases the spinous processes may be drawn completely into a straight line at once and the projection of the ribs depressed towards a plane with the opposite side, showing that the vertebræ are rotated into or towards their normal position. Of course, this effect only lasts as long as the muscles are held in contraction, but the value of the exercise is thus proved, and the practical result is eventually a permanent lessening or removal of the rotation (Fig. 1 and Fig. 2).

In the exercise upon the front of the thorax (Fig. 3) the effect is less evident. The patient, in a sitting posture, draws the elastic cord forwards from a fixed point on or about a level with the shoulder on the side of the dorsal concavity, this point being situated behind the patient. This plan brings into use the muscles between the arm and the front of the thorax (the pectoral muscles), which thus tend to pull the front wall of the thorax, unduly prominent on this side, backwards. Here, as in the former instance, the surgeon must see that the effect is beneficial before he allows the exercise to be practised.

Figures 4 to 13 show some of the postures adopted in the various exercises in the recumbent position.

It would be almost impossible to give illustrations of all the exercises which may be used beneficially in the treatment of curvatures of the spine; they have to be varied to meet the requirements of each individual case. Those given above will, however, afford a fair illustration of some of the more important positions produced in this treatment.

Queen Anne-street, W.

100 CONSECUTIVE CASES OF ABDOMINAL SECTION IN HOSPITAL PRACTICE WITHOUT A DEATH.

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SUCH a series of cases as that about to be given is sufficiently rare to merit publication; indeed, I am not aware that a similar series has occurred hitherto in this country—at all events it has not been recorded.

On Oct. 7th, 1897, a patient on whom I had operated for ruptured extra-uterine gestation at the Chelsea Hospital for Women died suddenly on the seventh day from pulmonary embolism when she seemed to be doing perfectly well. From that date up to now (June 10th, 1900) all my sections at the above hospital are included in the following table. The cases, I may add, were the only ones admitted into my wards which required abdominal section. There was no choosing of favourable cases—indeed, the ninety-eighth case was about the worst of the series, being a suppurating ovarian cyst with pedicle tightly twisted three times, and the cyst wall was universally adherent, anteriorly to the parietal peritoneum and in the rest of its extent to the intestines, so intimately that the latter could only be freed by leaving a thin layer of the cyst wall adherent to them.

100 Abdominal Sections performed at the Chelsea Hospital for Women between Oct. 7th, 1897, and June 10th, 1900.

Uterine fibroids:		Suppurating broad ligament cyst	1
hysterectomy	17 \} 20	Tubo-ovarian cysts (two simple and five suppurating)	7
myomectomy	3 \}	Diseased and adherent appendages:	
Ovarian cysts:		right appendage removed	4 \} 12
left	6 \} 23	left appendage removed...	2
right	9	both appendages removed...	4
double	4	adhesions broken down	2
dermoids (one single and three double) ...	4	Ventral hernia	1
Ventro-fixation	7	Exploratory incisions ...	3
Extra-uterine gestation:			100
ruptured	6 \} 11		
unruptured	5		
Pyosalpinx (double)	9		
Hydrosalpinx (one single and three double) ...	4		
Parovarian cysts...	2		

In most of the cases of pyosalpinx and suppurating tubo-ovarian cysts the tumours were so bound down by adhesions that during removal they burst, allowing the purulent contents to escape into the peritoneal cavity. Whenever this occurred the abdomen was thoroughly flushed out with sterilised water. Ventro-fixation was performed either for old-standing prolapse or for retroflexion with adhesions binding the fundus down to the sacrum. The most difficult operations of the series were those for diseased and adherent appendages. The patients had had repeated attacks of peritonitis and they suffered more or less continual abdominal pain, so that they were chronic invalids. In these cases on opening the abdomen all the pelvic organs were usually found to be densely matted together; the tubes and ovaries were matted to one another, to the pelvic wall, and to the intestines, so that usually the greatest difficulty was experienced in their removal. The one case of ventral hernia was in a woman on whom I had performed ovariotomy five years previously when the abdominal walls used to be sewn up with one layer of sutures. Nowadays, by sewing up the peritoneum, the rectal sheath, and the skin separately, ventral hernia is prevented. Exploratory incision without removal of any organ was performed three times. One case proved to be extensive malignant infiltration, the second was chronic cellulitis in the left broad ligament, and in a third a tumour of the size of an orange (probably malignant) was found to be growing in the posterior wall of the bladder.

The results of abdominal section at the Chelsea Hospital

for Women by my colleagues and myself have been so excellent for the last few years that I propose describing in detail the method of procedure. In the first place, the members of the Council deserve the greatest praise for carrying out so thoroughly and at such expense the recommendations of the Medical Committee. They have given us a perfect operating-theatre, complete in all its details, but even more important than that is the fact that they have fitted up a sterilising-room, opening out of the theatre, with boilers, &c., by means of which all instruments, towels, operating-aprons, &c., are rendered completely aseptic so that every possible precaution is taken to prevent the patient being exposed to noxious germs. Given, then, the above surroundings and given a resident medical officer and staff of nurses thoroughly imbued with the vital importance of asepsis, it is not to be wondered at that our mortality is so very small. I will now make a few remarks on certain details.

1. *Preparation of the patient.*—The day before operation the patient's pubes and abdomen are shaved and are then well scrubbed with carbolic soap and a nailbrush, special attention being paid to the umbilicus; a layer of wool soaked in a 1 in 1000 solution of perchloride of mercury is then applied and kept in position by means of a many-tailed binder until the time of operation.

2. *Operator and assistants.*—The hands and arms up to the elbow of the operator and his assistants are thoroughly scrubbed with soap and a nail-brush and then dipped (for at least a minute) in a 1 in 2000 hot solution of perchloride of mercury. A basinful of the same solution is kept at each side of the operating-table so that if during the operation the hands get fouled they can be rinsed in the solution. Personally I always prefer if possible that no other fingers than my own shall enter the peritoneal cavity.

3. *Instruments.*—Just before each operation the special theatre nurse sterilises all the instruments which are likely to be required. They are transferred from the steriliser direct to a glass tray containing plain-boiled water. If during the operation an instrument has to be got from the air-tight instrument-case the nurse at once sterilises it before handing it to the operator. The silk (I use nothing else) after being thoroughly sterilised is kept ready for use in glass bottles full of carbolic solution.

4. *Sponges.*—Although some operators use pads of aseptic wool sewn in gauze bags, I prefer sponges thoroughly cleansed, as they are less irritating to the intestines. During the operation they are simply wrung out of hot sterilised water, and of course if used in purulent cases or where the contents of an ovarian cyst consist of dirty grumous material, they should be destroyed directly after, but in these cases the gauze pads are best as they are inexpensive.

5. *Flushing.*—In all cases where a cyst with purulent or unhealthy grumous contents bursts during the operation I flush the peritoneal cavity thoroughly with plain sterilised water at a temperature of 110° F. but in no other cases. In operations on ruptured tubal pregnancies, after removing the large blood-clots with the hand and carefully mopping out the pelvis with a sponge on a pair of long forceps, I do not flush the peritoneal cavity unless the patient be very collapsed from loss of blood; then the flushing acts as a stimulant.

6. *Drainage.*—Some years ago I used to employ drainage frequently by means of a glass tube. Now I hardly ever drain, unless there be oozing from torn extensive adhesions low down in the pelvis on which a ligature cannot be put and the application of pressure forceps for a few minutes does not stop the oozing. I am confident that it is of the greatest importance to control all oozing before closing the peritoneal cavity and I do not hesitate to prolong the operation somewhat with that object. Drainage is not necessary after flushing out, but whenever it is employed the drain should be a piece of indiarubber tubing or iodoform gauze in those cases where some pressure is required to stop oozing. The drain should, if possible, be removed after 24 hours, though in some cases it might have to be left in for two or three days.

7. *After-treatment of the patient.*—In cases of hysterectomy which are accompanied by a good deal of shock, and in cases where the patients are feeble or collapsed, a nutrient enema of two and a half ounces of beef-tea and half an ounce of brandy should be given within an hour or two and repeated every four or six hours. Nothing is given by the mouth for 24 hours unless there be no sickness and the patient craves for some fluid. She may in that case commence six hours after to take a teaspoonful of hot water every hour. Where the sickness and retching are very persistent and troublesome the administration of half a pint of hot water with 20 grains of bicarbonate of soda dissolved in it will often act most beneficially. Opium in any form should, if possible, not be given. After 24 hours nourishment can be taken (provided there is no sickness). Most patients crave for a cup of tea (about four ounces) with plenty of milk, and every hour afterwards half an ounce of equal parts of milk and hot water can be given. When the sickness continues I stop everything by the mouth and feed per rectum.

The two great dangers after abdominal section are, in my experience, shock and tympanites from intestinal paralysis. The shock is combated by hypodermic injections of three minims of solution of strychnia three times a day. For tympanites my plan is to try to prevent its occurrence by having a soft rectal tube passed up the bowel every four hours, and if after 24 hours flatus is not freely passing (either naturally or by the tube), an enema containing an ounce of oil of turpentine to a pint of hot water is injected high up and, if necessary, is repeated two or three times a day. Once the escape of flatus is satisfactorily established my mind is at rest and the patients almost invariably do well. Nowadays the onset of peritonitis after abdominal section should be practically never met with, unless some unavoidable occurrence (such as the rupture of a pyosalpinx) has happened during the operation, and even then with careful and thorough flushing out the risk is small. I am not a believer in the efficacy of saline aperients, either for tympanites or peritonitis; they certainly have not proved in my hands anything like so effectual as the turpentine enemata.

Such are the methods which were adopted in the series of cases just recorded, but I cannot conclude these cursory remarks without expressing my warmest thanks to my colleague, Dr. Ewen J. Maclean, for his valuable assistance at the operations; to our most excellent and energetic resident medical officer, Dr. Victor Bonney, who was unsparing of himself in his devotion to the after-treatment of the cases, and who, after two years as an indefatigable and courteous officer, is leaving the Chelsea Hospital for Women in order to take up another sphere of work to the great regret of every member of the lay, medical, and nursing staff; and, lastly, my thanks are cordially given to the matron (Miss Heather Bigg) and to the nurses for the excellent manner in which they always perform their important duties.

Note.—Since the above was written there are eight more cases to be added to the list, making altogether 108 successful cases.

Harley-street, W.

SUPPURATIVE PERITONITIS; SPONTANEOUS EVACUATION; RECOVERY.

BY JAMES R. WALLACE, M.D. BRUX., F.R.C.S. IREL.,
SURGEON TO THE HOME HOSPITAL, CALCUTTA.

THE patient was an English girl, four years of age, who was admitted into the Home Hospital on Feb. 18th, 1899, suffering from febrile symptoms, intestinal pain, and diarrhœa, with fœtid evacuations. She was pale, emaciated, and had a marked cachectic appearance. She had suffered now and then from a low form of intermittent fever and occasional diarrhœa, and had been under my care four or five times. On admission the abdomen was found to be tense, tympanitic, and tender. the skin was hot and dry, the temperature was 102° F., and the face was pinched and anxious-looking. The child was peevish and she cried a good deal. Her bowels were relaxed, the motions being watery, slate-coloured, and very fœtid; they consisted of mucus and serum, somewhat fæcal stained; there was a slight cough, but the lungs were quite clear. Urine was passed freely and was of a natural colour. She was given castor-oil emulsion containing two drops of terebene and one of laudanum every four hours, alternated with five drops of mercuric bichloride solution (British Pharmacopœia) in water every four hours. The body was sponged with tepid water every six hours to reduce the

temperature. The abdomen was smeared with belladonna suspended in glycerine. Her diet consisted of raw arrow-root (a teaspoonful of the flour in a wineglassful of water) alternated with strong beef-tea every two hours. Within three days the intestinal fœtor had disappeared, the temperature had fallen to 100°, and the child was discharged from the hospital, at the mother's request, on March 5th, 15 days after admission. She seemed very much improved in condition and was able to walk about, though there was still tenderness on pressure in the umbilical area. Three days later the mother brought her into hospital again, as the fever had returned accompanied by severe abdominal pain and tenderness on pressure. It was now noticed that the umbilicus bulged a good deal forward, and on palpation distinct fluctuation was apparent quite two inches around the umbilicus. The temperature was 101°. A condition of subacute general peritonitis, probably tuberculous in origin, with effusion tending to suppuration, was diagnosed, and laparotomy was recommended. Colonel Havelock H. R. Charles, I.M.S., Professor of Clinical Surgery to the Medical College Hospital, saw the little patient on March 9th. He concurred with the diagnosis and plan of treatment and it was decided to open the abdomen on the following day. As a preparation for it the abdomen was thoroughly cleansed and a layer of sterilised boric cotton was used as a protective over the abdomen and kept in position by a binder of iodoform gauze. On the next day, after removing the binder and cotton dressings, a small portion of the latter was found to be adherent above the umbilicus, and in the effort to remove it the tissue beneath peeled off, and instantly a stream of pus welled up in a jet, quite six inches high, and flowed for about three minutes, till no less than 24 ounces had escaped. It was perfectly healthy in colour and devoid of shreds or clots or flocculi. Gentle pressure over the abdominal wall seemed thoroughly to empty the peritoneal cavity of its purulent contents, and when this was effected the spontaneous aperture above the umbilicus was dusted with iodoform and dressed with boric wool and iodoform gauze. There was immediate improvement in the child's general condition, there being no further rise of temperature, no pain, and no further evidence of the intestinal disturbance. The appetite improved and the child slept and ate well. There was no soaking of the dressings up to the fourth day, when they were removed and the child was made to wear a light flannel binder for another week. She gained flesh rapidly, and in a fortnight she was able to get about as briskly and gleefully as though she had not been ill at all. She was discharged from hospital on March 27th—i.e., 17 days after the spontaneous rupture of the abdominal wall. It is now nearly 14 months since she left the hospital and she has not had a day's illness during this time. When I last saw her—i.e., on May 8th—I was struck with her remarkably healthy and robust appearance. This case would seem to corroborate the modern belief that tuberculous peritonitis is curable by laparotomy and aseptic irrigation, on the theory that while in the one instance the morbid products are removed by direct lavage, in the other, as in this case, the degenerated tuberculous matter was completely thrown off in the form of healthy pus.

Calcutta.

CONTAGIOUS CATARRH OR ROUP IN FOWLS, AND DIPHTHERIA IN MAN.

BY J. GORDON SHARP, M.D. EDIN.

Distinction between gapes and roup.—Two diseases of fowls—namely, "gapes" and "roup"—are often confounded, but the two are distinct and at the outset I must make this point clear. Gapes is caused by the presence of a nematode worm—*syngamus trachealis* (*sclerostoma syngamus*)—in the windpipe. The disease is found not only in the domestic fowl but also in the lapwing, the magpie, and the pigeon. The disease receives its name from the gaping attitude assumed by the affected animal. The eggs of the worm probably live in the soil. Gapes does not further concern us at present. Roup, on the other hand, probably depends on a micro-organism. This, then, is the disease or diseases which especially concern us at present. I say "disease or diseases," for it is not possible to say definitely whether the name "roup" covers only one or more than one disease. The name is given to a condition common among poultry, especially among those which are kept in towns and in overcrowded, damp, and badly ventilated hen or poultry runs. So far as I am aware very little has been written on the subject from the scientific standpoint although every hen-keeper possesses a specific for the condition which generally fails to cure his own birds, however successful it may be, or may have been, with the birds of others. The name of the disorder would appear to be given because of the peculiar sound which the bird emits, although my observations lead me to the view that the sound only appears in the cases in which the disease attacks the windpipe. In such a case the sound may be due to the air passing over the fibrinous exudation. Where the membrane occupies the mouth only or the mouth and alimentary tract no such sound is heard. The sound is a rough rasping one and the name "roup" describes it very faithfully. The laity describe a "dry roup" and a "wet roup." Dry roup is commoner in old birds and is not very fatal, while wet roup is commoner in young birds and is highly fatal. Dry roup answers to the condition in children spoken of as "croupy," while wet roup may resemble membranous croup—at least, it does so in its effects. Roup further resembles diphtheria in that it may kill with great suddenness, and epidemics of roup, like epidemics of diphtheria, vary in severity and malignancy. At one time we find that the disease breaks out in a coop and attacks only two or three birds and the deaths may be limited, while no other coop in the neighbourhood is marked out for attack. The next epidemic may be as severe as the former was mild and all save the old birds may be cleared out in the course of a week and the disease may spread to all the coops in the neighbourhood and be equally fatal. Roup is most common in autumn and spring but may be prevalent at other times provided the weather be mild and moist.

A short history of some epidemics.—In 1893 I had experience of the disease in a district where outbreaks occasionally occur and where likewise diphtheria in the human subject is endemic or almost endemic. Here the disease was confined to one hencoop, which was completely cleared out by it. The disease did not spread, but this may be due to the fact that the house was removed some distance from others. The owners of the fowls did not have diphtheria, but diphtheria did appear in the nearest houses to this particular house. This is all one can say. I may here say something about the character of the soil of the district. The surface soil is made up of a sandy loam, while the soil and subsoil consist of a bed of permeable clay.

In the same district in June, 1895, there was an extensive outbreak of roup. 57 hens and chickens died in one yard, 27 in another, 15 in a third, and 15 in a fourth, besides large numbers in other yards, but as I am not sure of the exact details I mention no numbers. These coops were all within a radius of half a mile and the disease started at the foot of a rising ground and slowly spread upwards. How far the disease might have spread it is impossible to say had not the various proprietors disposed of the remaining healthy birds and whitewashed their henhouses and left them untenanted for several weeks. In one of the families at least severe cases of sore-throat occurred, but I could not say that it was diphtheria. Soon after this outbreak among the fowls—but certainly after the epidemic had ceased—two or three cases of true diphtheria were seen in the families of those who had possessed affected animals. For the present I make no deductions, I merely state the facts.

So far I have been reasoning from roup in fowls up to diphtheria in man and for a moment I turn to consider the converse, or the relationship of diphtheria in man to roup in fowls.

In the district already mentioned during 1899 there was an extensive outbreak of diphtheria affecting both children and adults. The epidemic started at the end of January and extended into February, when it abated till the middle of June and continued till the end of December. During all this time, I think I may safely say, not a single case of roup occurred in the area covered by the diphtheria outbreak.

In 1896 I investigated another limited outbreak of roup which took place in another district removed some four miles from the one already mentioned. The owner had about 20 hens, several of which had died during the past two months. The disease had spread to the neighbouring hen-run (divided by a high brick wall), but I failed to get an examination of the fowls in this yard. None of the members

of the family had suffered from sore-throat, and diphtheria was hardly known in the district.

Later (in 1896) I inquired into another outbreak of roup in this district. In this outbreak hens and pigeons were attacked and the death-rate had been high and chiefly among young birds. None of the family had suffered from sore-throat and diphtheria was hardly known in the district.

Morbid anatomy.—The following particulars may be taken as typical of the conditions found in all the outbreaks. One bantam hen standing about, or walking lazily when aroused, I examined carefully. The mouth was red, swollen, and highly inflamed, and at the angle on one side was a piece of sloughing tissue which I removed, and part of which I examined under the microscope after staining with picro-carmine solution. The epithelium was healthy in some parts, while in others it showed a granular disintegration. Large cells with one, two, or three nuclei were also seen in the field and some of the cells showed nuclei almost extruded. The mouth contained on certain parts of its surface a fine membrane, a bacteriological description of which follows. The bird from which these specimens were obtained had a very unhealthy appearance, but it emitted no roupy noise. In another hen-run one bird which made a very roupy noise was examined. The mouth was congested and covered with a whitish sticky membrane. The entrance to the air-passages was deeply congested and swollen and this latter probably accounted for the roupy noise. In other birds the membrane was tough, whitish-grey, and possessed a foul odour; in others the mouth, nostrils, gullet, and entrance to the windpipe were deeply injected and were covered by a yellowish tough membrane; in others, again, the eyes appeared to suffer severely. In none of the cases was any paralysis observed, but this may have been owing to the rapidity of the fatal result.

Bacteriology of the membrane.—Without entering into details one may say that a micro-organism was found which after the most careful observations could not be distinguished from the Klebs-Löffler bacillus. But it cannot have been a virulent microbe, for the persons handling the affected fowls and without any special precautions did not directly contract the disease. This is an important point, for although, morphologically, the microbe isolated could not be distinguished from the micro-organism of true human diphtheria yet it did not seem to set up the disease in those brought into close contact with it. Further, it must be stated that a bacillus resembling the Klebs-Löffler micro-organism has been found in the mouth of healthy fowls.[1] On the other hand, it must also be stated that according to many reliable observers the Klebs-Löffler bacillus (or one morphologically indistinguishable from it) is often found in the throats of perfectly healthy people.[2]

Conclusions and deductions.—1. Roup-like diphtheria (including the somewhat indefinite term "croup") varies in its malignancy, sometimes being mild with only one or two deaths in a large hen-run, while the next epidemic may almost clear out the whole coop. 2. The disease does not appear to be transmissible to man, for those handling the affected birds without any precautions do not suffer from any disease resembling diphtheria. 3. Paralysis was, according to my observations, absent in roup cases. 4. The disease is evidently a highly contagious catarrh and may correspond to the *morve* or fowl glanders of the French.[3] 5. Roup probably differs entirely from "fowl diphtheria," so called. 6. As we have already seen, bird fanciers distinguish between a "dry" roup and a "wet" roup. Dry roup is most likely a simple benign catarrh corresponding to the recurring croup affecting children, especially those inhabiting valleys and near a river bank. Wet roup, on the other hand, in its malignancy resembles diphtheria and membranous croup. 7. The micro-organism of roup (the wet variety or malignant variety) probably lives for a considerable time at least in the earth near the surface[4] and thus it is readily spread from animal to animal (as well as by direct contact with affected birds). 8. Conditions of soil and surroundings favourable to the spread of diphtheria would likewise appear to favour the spread of roup in fowls.

Leeds.

[1] Dr. Allan MacFadyen and Dr. Hewlett, Brit. Med. Jour., April 21st, 1900, p. 994.

[2] Park and Beebe, quoted by Osler, Principles and Practice of Medicine, second edition, pp. 103 and 104. O hers have also discovered the microbes in throats which were apparently healthy.

[3] M. Gallez fils made a report to the Belgian Academy of Medicine on "The Relation of Diseases of Fowls to Diphtheria." I have not seen the report itself but the following summary of it is given in THE LANCET of April 18th, 1896, p. 1082: "There are two perfectly distinct diseases to which such birds as domestic fowls are subject. First a contagious catarrh, called also *morve* or fowl glanders, characterised by a glairy secretion from the mucous membrane of the mouth, nostrils, and eyes, and also by rapid emaciation and paralysis of the legs. It is very contagious and very fatal and may give rise to diphtheria in the human subject. Its primary cause is a bacillus similar to Löffler's but far less virulent. ..... This disease differs from the second one which is known as fowl diphtheria both in its symptoms and in its etiology but has nothing corresponding to human diphtheria except its name."

[4] I found the Klebs-Löffler microbe (or one indistinguishable from it) in organically laden soil (see Brit. Med. Jour., August 22nd, 1896).

HYDATID CYST IN A NATIVE OF INDIA.

BY W. J. BUCHANAN, B.A., M.B. DUB.,
MAJOR I.M.S.; SUPERINTENDENT, CENTRAL JAIL, BHAGALPUR.

THE following case is published not on account of any clinical interest which it may have, but solely to put on record the fact that hydatid cysts are found, though very rarely, in natives of India who have never left their homes.

A native of the district of Bhagalpur was sent to jail in August, 1896, pending trial for rioting and murder. He complained at once of fever and pain in the right side and was admitted to hospital. On examining him I discovered a large abscess-like tumour in the right flank. No point of fluctuation being found I put in an aspirator needle and evacuated about a pint of highly fœtid thin pus-like fluid. The cavity of the cyst or abscess was then laid open, drained, and washed out with antiseptic lotions. In spite of this the patient did not improve and his temperature remained high (from 102° to 103° F.) up to the time of his death two days after. Death, I believe, was due to septic poisoning from the contents of the suppurating cyst. The abscess did not communicate with the peritoneal cavity.

The post-mortem examination made a few hours after death showed a large abscess cavity extending from the mid-axillary line, below the costal arch, up to the spinal column. All the other organs were found to be normal, but on removing the liver a yellow-white patch of cartilage-like colour was seen on the upper diaphragmatic surface of the right lobe of the liver. On cutting into this a considerable quantity of thin clear limpid fluid poured out containing numerous small cysts of a mother-of-pearl colour. The parent cyst was about as large as an infant's skull. Recognising it to be an hydatid cyst and knowing the extreme rarity of this affection in natives of India I did not further disturb the parts, but sent the liver to the professor of pathology at the Medical College, Calcutta, Dr. F. J. Drury, who reported to me as follows: "It is undoubtedly an hydatid cyst, containing a number of daughter and granddaughter cysts and numerous degenerated scolices." The abscess appeared to me to be a cyst which had suppurated. No cysts were found in any other organ.

Though not unknown, it is very rare to find this disease in India. Several cases have been recorded, but generally in Europeans or natives of India who have lived for some time in other countries. There are four specimens in the Calcutta Medical Museum, two from Europeans and two from persons of unrecorded nationality. Dr. Drury found hydatids post mortem in the body of an Eurasian who had lived in Australia. The Lahore Medical College Museum also contains a few specimens, but the nationality of the patients from whom they were taken is not known. Chevers[1] writes: "Our only evidence that hydatid disease can *originate* in India rests upon the debatable case of a low caste woman of Bhopal (Central India) who died with hydatids of the spleen." In this case, the woman being of the "sweeper" caste, who take care of and feed dogs, it is easy to understand the source of infection. Other cases are cited by Chevers, but in none of them is there clear evidence that the disease could not have been acquired out of India. It is this point which gives special interest to the present case, for I have ascertained from the deceased patient's family that *he never left his native home* except for a few months some years ago when he worked at the Raneegunge coal-mines in a neighbouring district.

The comparative exemption of natives of India from hydatid disease is strange as Dr. Cleghorn many years ago proved that tænia echinococcus very frequently occurred in cattle and sheep slaughtered for food in the Punjab. The same writer even started a theory that many cases of liver

[1] Diseases of India, p. 624.

abscess *might* be due to suppurative changes in hydatid cysts previously existing in the liver. This, however, has never been proved. Davidson in his "Geographical Pathology" makes no mention of India in his account of this disease and, strangely, the articles in Quain's Dictionary on this subject give no details as to the distribution of the parasite. The above case, however, proves beyond a doubt that hydatid cyst can occur in a native of India who has never left his own country.

Bhagalpur.

NOTE ON A NEW MEDIUM FOR THE GROWTH AND DIFFERENTIATION OF THE BACILLUS COLI COMMUNIS AND THE BACILLUS TYPHI ABDOMINALIS.

BY ALFRED THEODORE MACCONKEY.

(*From the Thompson-Yates Laboratories.*)

IN this medium advantage is taken of two well-known facts: (1) that the salts of bile are precipitated by acids, and (2) that bacillus coli communis produces acid in the presence of lactose while bacillus typhi abdominalis does not. The composition of the medium is sodium glycocholate,[1] 0·5 per cent.; peptone, 1·5 per cent.; lactose, 0·3 to 0·5 per cent.; agar, 1·5 per cent.; and tap-water, q. s. The lactose is added after filtration.

If stab cultures be made in this medium with bacillus coli communis and bacillus typhi abdominalis and incubated at 42° C. for from 24 to 48 hours it will be found that the tube inoculated with bacillus coli communis has become cloudy while the tube containing bacillus typhi abdominalis remains quite clear. If glucose be used instead of lactose both tubes become cloudy, but the cloudiness due to bacillus coli communis begins from below and that due to bacillus typhi abdominalis from above. In plates made with the glucose medium incubated for 48 hours at 42° C. and then left for from three to four days exposed to the light at room temperature the colonies gradually become orange coloured.

Though my experiments are not quite concluded I venture to draw the attention of bacteriologists to this medium because it has a more marked inhibiting effect than carbolised media upon the growth of ordinary soil and water organisms and may prove useful to those who are engaged in examining water, soils, and food-stuffs.

[1] The sodium glycocholate was supplied by Messrs. Baird and Tatlock and is, I understand, a mixture of the glycocholate and taurocholate.

THE EPILEPTICS AT WITHINGTON.—The Chorlton Board of Guardians are not at ease about the sane epileptic patients in their charge. From want of accommodation they are at present compelled to occupy the same wards as the imbecile and insane patients. This is obviously a state of things that should be remedied as soon as possible, for to some sane people, even though paupers, such association would be absolutely cruel. Dr. Rhodes said that the guardians were not responsible and that the blame should be laid on the Local Government Board who "were in default through their delay in giving sanction to the scheme which would make provision for these unfortunate people." Other places had the same complaint to make. Few will be found to contradict his further statement that "the methods of the Local Government Board were far too slow." He said he called a few days before at their offices and complained of the manner in which the Board treated the guardians, giving quite "a bit of his mind" to the, no doubt, astonished officials—i.e., if they could be astonished, for by this time such complaints must have lost all their novelty. "He considered the present methods of the Local Government Board were neither satisfactory nor even courteous to the guardians and were certainly not creditable to the former authority. He hoped the guardians would not further delay the provision of the additional accommodation at Withington workhouse. The treatment of epileptics was a matter concerning not merely the guardians of the Chorlton Union but almost every board in the country."

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ROYAL FREE HOSPITAL.

A CASE OF OBSTRUCTION DUE TO NEW GROWTH OF THE SIGMOID FLEXURE; INGUINAL COLOTOMY, FOLLOWED LATER BY RESECTION OF THE GROWTH; RE-ESTABLISHMENT OF THE INTESTINAL TRACT; RECOVERY.

(Under the care of Mr. W. H. BATTLE.)

AT the present day the treatment of malignant growths of the large intestine presents a very great contrast to that which was recognised as advisable even a few years ago. We seldom receive any intimation that a malignant growth is forming in the colon until symptoms of subacute or chronic intestinal obstruction arise. When such a case presents itself what treatment should be followed? Twenty, or even ten, years ago it was customary to remain satisfied with the performance of a colotomy, no attempt even being made to interfere with the primary cause of obstruction. At the present time much better results are obtainable. If the symptoms of obstruction are very severe a preliminary colotomy may be advisable, but in the less acute cases by far the best treatment is to resect the affected portion of bowel and re-establish the intestinal channel.

A man, aged 41 years, was admitted into the Royal Free Hospital on March 11th, 1900, complaining of intestinal obstruction. A fortnight before admission he had severe pain all over the abdomen and on March 1st his bowels were opened, but there had been no motion since, though some flatus had passed. As the abdominal pain steadily grew worse he took to his bed on the 4th. He was treated by a medical man but the pain did not abate. On the 6th vomiting commenced and had continued at intervals; he described the vomited matter as resembling coffee-grounds. He had been able to take nothing but milk and water since the 5th. There was nothing remarkable in his family history.

On admission the patient looked thin and ill; the abdomen was distended and tympanitic on percussion, but no distinct swelling could be made out and no peristaltic movements were visible. On examination per rectum nothing abnormal was discovered. Obstruction of the large bowel was diagnosed and, in the absence of Mr. Battle, Mr. T. P. Legg, the senior resident medical officer, decided to operate.

The skin of the abdomen having been washed and the patient anæsthetised an incision three inches long was made at right angles to a line drawn from the umbilicus to the anterior superior iliac spine, one-third of the distance from the spine, with the centre of the incision on the line. The incision was deepened until the peritoneum was reached; when this had been incised the large intestine was found and the sigmoid flexure was drawn out into the wound. The bowel was greatly distended and was secured to the edges of the wound by two stitches which did not penetrate the intestinal wall. Another stitch drew together the edges of the incision under the bowel, passing through the mesentery; this was in order to form a well-marked spur. The bowel was then covered with protective and gauze and the wound was dressed. On the next day the patient felt a little better and had no vomiting, but the bowels did not act. On March 13th he vomited a little. The intestine was opened and a Paul's tube was inserted for drainage; his temperature had not exceeded 100° F. Much fæcal matter came away, but he vomited no more. The patient's condition steadily improved and the wound looked well. By April 5th he was allowed to get up every day.

On April 6th Mr. Battle decided to explore the abdomen for the purpose of discovering the cause of the obstruction and removing it if possible. The skin having been cleansed

Mr. Battle made a median incision, four inches in length, between the umbilicus and the pubes; the recti were separated and the peritoneum was incised. The operator's hand was then introduced and a hard mass was felt at the lower part of the sigmoid flexure, with some scattered hard mesenteric glands. The growth was brought outside the wound and as it was distinctly limited it was decided to remove it. The wound all round the exposed piece of bowel was packed with gauze and clamps of rubber-tubing were passed through holes in the mesentery and fastened with pressure forceps; two of these clamps were placed on each side of the growth and an inch apart. The bowel was then divided with scissors between each pair of clamps and the growth with some of the corresponding portion of mesentery was removed. There was some amount of hæmorrhage during the division of the mesentery, but it was soon stopped with pressure forceps. The divided vessels were then tied and the wound was packed afresh with gauze and the cut ends of the bowel were washed. These ends were then inverted and sewn up with Lembert's sutures. The pieces of bowel were then placed side by side with the ends in opposite directions and so placed that the posterior aspect of one piece lay against the anterior aspect of the other. Then the serous coats were united by continuous Lembert sutures for two inches in the long axis of the bowel, the ends of the silk being left long for future use. An incision of two inches in length was made in each piece of bowel parallel to the seam and passing through all the coats of the intestine. The adjoining edges of the incisions were united by continuous sutures passing through the mucous and muscular coats. Then a needle was threaded on to the long end of silk left from the first seam and the remaining portion of the suturing of the serous coat was performed by Lembert's method. The bowel was washed and replaced in the abdomen. The abdominal wall was then closed in successive layers and the wound was dressed with cyanide gauze. A length of about six inches of the bowel was removed. On section it was found that the lumen was almost closed; it proved to be a columnar-celled carcinoma.

The patient did well after the operation and free escape of fæcal matter occurred from the rectum through a tube which had been placed there to prevent any accumulation. He steadily progressed and on April 23rd a curved piece of wood covered by rubber tubing was introduced into the colotomy wound to press on the "spur." It caused a little pain, but the spur became much less obvious. The bowel was washed out daily both through the anus and through the colotomy wound. He was allowed to get up every day. On May 5th a different instrument was employed to exert pressure on the spur and in a few days solid motions were passed through the rectum. On May 15th Mr. Battle decided to close the colotomy opening. After the patient was anæsthetised and the skin around the wound had been washed an oblique incision was made above and another below the opening, and these were then joined so as to surround the artificial anus. By careful dissection the edges of the opening were dissected up without opening the general peritoneal cavity. Then the opening in the mucous membrane of the bowel was closed with 16 silk interrupted sutures. The sub-peritoneal tissue was united over the stitches and the muscles and skin were sutured separately. A drainage-tube was inserted.

After the operation the patient progressed satisfactorily. A small quantity of pus escaped for a few days from the tube and after the latter was removed a small collection of pus was found and opened, but later the wound healed and on March 5th the patient left the hospital completely recovered. He was seen at the hospital on June 29th, having recently returned from a convalescent home. He looked bronzed and well, having gained seven pounds in weight during his stay at the home. The bowels acted regularly and without difficulty; there was a small sinus in the site of the former colotomy opening from which there had been a little fæcal-smelling discharge.

Remarks by Mr. BATTLE.—On account of the distension of the abdomen and general condition of the patient no search was made for the cause of the obstruction when colotomy was performed. It appeared probable that this cause was a malignant stricture of the large bowel, probably the upper part of the rectum or sigmoid flexure, and it seemed a pity to let a man with the possibilities for further usefulness of this patient pass out of observation condemned to the life of an invalid, with a prospect of death in a few months from extension of growth to other parts, when it might be possible to lengthen life by removal of the growth and make it much more comfortable by a lateral anastomosis and closure of the colotomy wound. The details of the case do not differ much from those given in the description of similar cases treated in this way by me, and I need not refer to them. The apparatus made for getting rid of the spur is perhaps of interest, as it has proved useful. It consists when completed of a T-shaped instrument which can be easily made in the wards without special apparatus. Two pieces of ordinary firewood are taken, a long one (about three inches in length) and a short one (about two inches). The long one is drilled longitudinally through its centre by means of a red hot skewer; the short one is shaped like a bow. Both are covered with drainage tubing, a double piece of thread encircling the smaller is carried from its convex border up the centre of the longer one. The smaller piece is then placed astride the spur of the colotomy opening and the long arm is fastened to it by pulling on the string which is secured so as to complete the T. Pressure is applied by means of the dressings and body bandage. It is inexpensive, easily made, permits fæcal matter to pass it, and effectively acts on the spur. I have tried other methods of getting rid of the spur after colotomy, but none have given me quite such satisfactory results.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

A CASE OF PNEUMONIC PLAGUE TREATED BY LARGE DOSES OF CARBOLIC ACID; RECOVERY.

(Under the care of Mr. J. BELL, Assistant Superintendent.)

As we have on some previous occasions pointed out, carbolic acid is much less poisonous than it is usually considered to be. The toxic symptoms which appear when the drug is taken in an undiluted form are almost entirely referable to the local caustic action. When taken with free dilution phenol gives rise to very few symptoms indeed; in many cases even the darkening of the urine ("carboluria") may not be present. With regard to the question of its therapeutic value in plague, it is as yet impossible to from an opinion, and we await with much interest the result of the extended trial of carbolic acid in the treatment of plague which Mr. Bell tells us he is carrying out.

A healthy Greek sailor, aged 24 years, was admitted into the Government Civil Hospital, Hong-Kong, on April 17th, with gonorrhœa. His temperature was 101°F. and save for the local condition he seemed to be well and made no complaint. His temperature for the next two days kept slowly rising and his tongue became more furred till the morning of the 20th when he was very apathetic, the temperature being 105° and the tongue very dry and furred; there were no buboes. The principal civil medical officer (Dr. J. A. Lowson) now saw the patient and agreed that there was a probability that he was suffering from plague. His lungs were full of coarse râles all over, but there was no dulness. Shortly after the consultation he began to spit thick bloody sputum, which on examination was found to be full of typical bacilli. As he was too ill to be moved to the Infectious Diseases Hospital he was at once isolated and put on a suitable diet with stimulants. Hypodermic injections of digitalis and strychnia were made every four hours and 12 grains of pure carbolic acid in solution were given every three hours. He continued to be very ill all day, the pulse was very quick and intermittent, he was delirious, and the temperature ranged between 105° and 106·4°. On the next day there was a marked though slow change for the better. His temperature slowly fell to 102° and only rose to 103·4° in the evening. The tongue was more moist, though it was still very furred, and the breath was offensive. Injections were not required so frequently as his pulse was stronger and not so quick, varying from 94 to 102. Bacilli were still in the sputum both morning and evening. His temperature slowly fell each day till the 24th, when it became normal. The sputum soon ceased to contain blood, though it was very free for 48 hours. His tongue remained moist and slowly cleaned and the patient expressed himself as feeling much better in every way. On the 24th there was no sputum and the lungs were quite clear. The carbolic acid was decreased after 48 hours to four hourly doses and was stopped on the 24th, from which date the patient convalesced rather rapidly. It was ascertained through his friends that he contracted the original trouble

at a house in the infected area some 14 days previously to his admittance to hospital.

Remarks by Mr. BELL.—This form of plague is extremely fatal and I know of no cure here. The case came under treatment early and he was a strong healthy patient, but the effect of the carbolic acid was most marked, and I report the case in the hope that others will at once try it, especially on Europeans, who come under treatment as a rule early. It is now being tried on every case admitted to the Plague Hospital, and as soon as 50 cases have been under treatment the results will be communicated. In all this patient had 280 grains of carbolic acid without any symptoms of poisoning by the drug. The original trouble for which he came to hospital was unaffected both by the plague and its treatment.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

The Bacteriology of Dysentery, Yellow Fever, and Diphtheria.—The Way in which Bones Break.—The Relation of Mosquitoes to Malaria.—The Composition and Action of Brown-Séquard's Fluid.—Neutralisation of Culture Media.

A MEETING of this society was held on June 30th in the Pathological Laboratories of the University of Cambridge by the invitation of Professor SIMS WOODHEAD, Dr. W. OSLER occupying the chair.

Professor SIMON A. FLEXNER (Philadelphia) made a communication on the Pathology of Tropical Dysentery. He said that an acute and a chronic form could be distinguished on clinical and pathological grounds. The acute form might terminate fatally in from 48 to 72 hours or it might be recovered from or become chronic. The chronic dysentery *per se* of the tropics was amœbic in nature. The acute variety was not caused by amœbæ; but from the stools a bacillus had been isolated differing from the normal intestinal flora and showing specific properties. It agglutinated with the blood serum of dysenteric cases. Its properties placed it very near the bacillus typhosus, from which organism it could be distinguished by biological and physiological peculiarities. The bacillus which was obtained from cases of dysentery occurring in and about Manila apparently was identical with an organism isolated by Shiga from the disease endemic in Japan. From a case of dysentery contracted in Puerto Rico the same organism had been obtained.

Professor FLEXNER also made some remarks on the Supposed Bacillus of Yellow Fever. The widespread fatty degenerations produced in the viscera in this disease were not special to this organism. Other organisms produced these changes and also hyaline necroses, just as the yellow fever bacillus did.

Dr. J. GRIFFITH (Cambridge) gave a demonstration on the Way in which Bones Break. He referred chiefly to the method of breaking by torsion. That was the easiest method of breaking a bone. He illustrated his remarks in the case of the femur, the ribs, and the clavicle and the tibia. A spiral fracture resulted from torsion. If the long axis of the bone was bent as well as twisted the spiral would be shorter.

Dr. GEORGE H. F. NUTTALL (Cambridge) gave a demonstration upon the Relation of Mosquitoes to Malaria. The demonstration consisted in the exhibition of the developmental changes undergone by avian and human parasites in species of culex and anopheles respectively, these being illustrated by means of specimens, photo-micrographs, and drawings. Living specimens of anopheles maculipennis, caught by Dr. Nuttall in the vicinity of Cambridge, as also of culex, were shown in tanks, and their biological characters were referred to. Maps showing the geographical distribution of malaria over the world and its former prevalence in England were exhibited, and the present geographical distribution of the genus anopheles, as far as was known, was described. A decided agreement between the former distribution of malaria in England and the distribution of anopheles (anopheles maculipennis, anopheles bifurcatus, anopheles nigripes) at the present time was observable. The studies regarding this distribution were, however, not as yet concluded. The development of human malarial parasites had been observed in nine species of anopheles in different parts of the world (India, Africa, Italy, and the United States), whereas all experiments made with species of culex, at least ten (in Italy, Africa, and India), had given negative results. Although it was quite possible that a species of culex might be found which was capable of serving as intermediary hosts to human parasites, the evidence hitherto gathered pointed solely to anopheles as fulfilling this function. The interesting fact that anopheles persisted in England whilst malaria had to all appearances disappeared was a subject for further investigation. The disappearance of the malarial parasites might very well be due to a progressive diminution in the number of anopheles, a plentiful supply of which was absolutely necessary for their continued existence. There might, however, be other factors concerned in their disappearance which still remained to be discovered. The suggestion that it might be due to the anopheles in England not sucking blood was untenable, for Dr. Nuttall had proved the contrary by experiments upon himself.

Dr. LOUIS COBBETT (Cambridge) showed some Cultures of Bacillus Diphtheriæ which had been obtained from the nasal discharge of a pony. The original culture was sent by Dr. Mearns Fraser, medical officer of health of Portsmouth, who while investigating the causation of an attack of diphtheria in a little girl had noticed that her father's pony was suffering from a purulent and slightly sanguineous nasal discharge. Experiments were described which established the identity of the bacillus. The horse had hitherto not been known, among animals, to suffer from diphtheria.

Dr. COBBETT also described experiments showing that Diphtheria Toxin was Excreted in the Urine, both from susceptible and from relatively insusceptible animals—e.g., the guinea-pig and the rat. From these animals, injected with diphtheria toxin, the urine secreted during the next few hours was collected with a catheter and injected subcutaneously into guinea-pigs. It produced an inflammatory swelling at the seat of inoculation, followed by dry necrosis, falling out of the hair, and in one instance death. Control experiments were made with the same urine to which a little antitoxin had been added. Other control experiments also were made with the urine of normal animals.

Dr. W. E. DIXON (Cambridge) made a communication on the Composition and Action of Brown-Séquard's Fluid. He gave an abstract of the results of experiments which he had performed by injections of orchitic extract of different animals. The composition of orchitic extract of all animals was practically identical. The active principles consisted chiefly of two bodies—(1) nucleo-albumin; and (2) spermine. The former he showed was very toxic, producing great cardiac inhibition reflexly through the cardiac nerve centres. The latter, spermine, which was also present in considerable quantity in semen, produced its effect principally by producing congestion of the abdominal viscera, including both the testes and ovaries.

Dr. J. W. H. EYRE made a communication on the Neutralisation of Culture Media. He remarked on the uncertainty of litmus paper and of litmus solution. He advocated a standard medium among English bacteriologists by the use of phenyl-thalein as an indicator of the alkalinity of culture media.

Votes of thanks to Professor Sims Woodhead and the University authorities and to those who had communicated their researches terminated the meeting.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens and Micro-photographs.—Suppression of Urine following Cystitis.—Cæsarean Section followed by Sub-peritoneal Hysterectomy.—Cleansing the Peritoneum during Cœliotomy.—Eclampsia treated by Saline Effusion and Veratrum Viride.

A MEETING of this society was held on June 27th, Dr. R. MILNE MURRAY, the President, being in the chair.

Professor A. R. SIMPSON showed (1) a Dermoid Cyst of the Ovary which formed the channel of a Fæcal Fistula; and (2) two Fibroid Uteri removed by Panhysterectomy.

Dr. J. LAMOND LACKIE showed an Early Extra-uterine Gestation.

Dr. J. HAIG FERGUSON showed a Uterus removed by Vaginal Hysterectomy for Cancer of the Cervix.

Mr. J. STUART NAIRNE (Glasgow) showed a Uterus with Placenta *in situ* removed from a Dwarf by Cæsarean Section at full term.

Dr. N. T. BREWIS showed (1) a Subperitoneal Fibroid

removed from the Uterus; and (2) an Appendix removed just on the point of bursting.

Dr. JAMES FOULIS exhibited Micro-photographs of Sections of the Embryo and Yelk Sac of the Deer showing the double layer of the amnion continuous with the somatopleure.

Dr. LAMOND LACKIE read a paper on a case of Suppression of Urine following Cystitis. The patient first came under observation eight years ago when she had all the symptoms of chronic cystitis. The usual treatment by irrigation, diet, and drugs was adopted without effect and the pain during micturition continued in an aggravated degree. The urethra was dilated by Hegar's bougies so that the bladder might be explored. This gave complete relief of all the symptoms, but, unfortunately, the patient never regained control over the act of micturition. By the aid of a portable urinal, however, she became fairly comfortable. Although repeatedly advised to do so she always refused to submit to any further treatment to cure the incontinence as she dreaded a return of her former symptoms. In March of this year Dr. Lackie was called to see her and was informed that except for some sickness she was quite well, but she had not passed any urine for nine days. Diuretics were given and hot-air baths were used with the result that 24 hours afterwards urine commenced to flow freely. For eight days the patient improved when suddenly excessive sickness set in and complete suppression of urine supervened. She had none of the usual symptoms of uræmia which are supposed to be always present in non-obstructive suppression. The patient gradually became comatose and died 48 hours after the onset of the second attack of anuria. Post-mortem examination showed that the bladder was reduced to the size of a small tube and that the right kidney was in a condition of acute septic nephritis, whereas the tissue of the left kidney was entirely replaced by tuberculous material. In conclusion Dr. Lackie discussed the literature of the subject.

Dr. N. T. BREWIS read notes of a case of Cæsarean Section followed by Sub-peritoneal Hysterectomy. It was performed at term for contracted pelvis. The patient was pregnant for the fifth time. Her first child was stillborn at seven months, delivery being brought about by forceps and great force being required to effect it. Two early miscarriages followed and then came a labour at full time which was completed by basilysis. The true conjugate measured from two and a half to two and three-quarter inches. The question of the particular operation to be adopted in this case was discussed. Symphysiotomy was out of the question because it had been premised that measures would be taken to prevent a future conception. One of the following operations might be chosen: (1) Sänger's Cæsarean section; (2) Porro-Cæsarean section; (3) Cæsarean section followed by panhysterectomy; or (4) Cæsarean section followed by sub-peritoneal hysterectomy. Dr. Brewis had performed the Porro operation some years ago in two cases and panhysterectomy four times for new growths between the fourth and sixth months of pregnancy with success. The latter operation was attended with no special difficulty and was as easily performed as the Porro operation. The subsequent risks of hæmorrhage and sepsis, he considered, were greater with the Porro operation. He would restrict Porro-Cæsarean section to cases where the patient was in an exhausted state and where the operator had not proper assistance, as it was an operation which could be done very quickly. He decided against improved Cæsarean section on account of the danger of the subsequent gaping of the uterine wound, hæmorrhage, and peritonitis, and because the patient was liable to all the risks associated with the puerperium. There was little to decide between Cæsarean section followed by panhysterectomy and that by subperitoneal hysterectomy. The latter method was selected owing to his having had experience of the technique in removing fibroids. In this case the child was born alive and the mother made an easy recovery.

Dr. N. T. BREWIS also read a paper on Cleansing the Peritoneum during Cœliotomy. Irrigation was now less frequently resorted to than formerly, as surgeons had more confidence in their technique and in the power of the peritoneum to dispose of fluids and minute solid particles and to resist the invasion of pyogenic bacteria. There was, however, special danger of peritoneal contamination in the bursting of a pyosalpinx, ovarian abscess, or similar condition during operation. In removing pus sacs of the appendages the patient was placed in the Trendelenburg position. On opening the peritoneal cavity numerous adhesions would probably be found between the omentum and pelvic organs, intestines, and parietal peritoneum. These being separated would be drawn up and packed off with gauze pads, so that the only part of the intestinal tract left in the pelvis was the rectum. The pus sacs could now be liberated and brought out through the abdominal wound. Careful handling was necessary to prevent rupture, and with this object the sac might be aspirated before it was drawn up. In this way the operator would in many cases be able to successfully remove the diseased parts without contaminating the peritoneum. But in spite of precautions pus would escape by rupture of thin walls or from swellings where its presence was unsuspected. Was the surgeon then to consider the pus sterile and unlikely to produce serious results and simply to trust to sponging; or was he to look upon the presence of even a small quantity of pus as dangerous and to do all in his power to get completely rid of it? Most surgeons adopted the latter view. The plan adopted should not spread the infection and the irrigation should thus be confined to the peritoneal area already contaminated. Care should be taken to prevent the water from flowing up among the intestines and distributing the infection. Whenever pus was seen to be escaping from a ruptured sac the part should be covered over with a large gauze pad. Then the general cavity of the peritoneum was carefully packed off and protected in a similar manner. The diseased structures were then removed. A long pair of forceps or blunt-pointed scissors were then passed into the vagina and their points were pushed through the posterior fornix into the pouch of Douglas; the opening was enlarged by separating the blades. The pelvis was then lowered and its cavity was irrigated from above by introducing the end of the douche through the abdominal wound. The stream of water or normal saline solution washed out the pelvis and escaped through the opening at the bottom of the pouch of Douglas into the vagina and out at the vulva. By this method there was no chance of infection being carried up into the general peritoneal cavity and it permitted of the most thorough cleansing.—Mr. J. STUART NAIRNE, Dr. F. W. N. HAULTAIN, Dr. J. W. BALLANTYNE, Dr. J. FOULIS, Dr. W. FORDYCE, and the PRESIDENT discussed the papers.

Dr. J. W. BALLANTYNE read a clinical note on a case of Eclampsia treated by Saline Infusion and Veratrum Viride. The patient was at the sixth month of her second pregnancy; her first had passed off normally without any appearance of dropsy or abnormal symptoms. For a week before the fits she had noticed that her urine was unusually pale and for a month she had suffered from some swelling of the legs. Shortly before the first fit she experienced a severe pain in the epigastrium followed by violent headache. The urine passed previously to the fit contained two-thirds of albumin and nothing was found on microscopical examination. The condition was treated with enemata of bromide of potassium and chloral hydrate and hypodermic injections of veratrum viride, and the convulsions were controlled by the inhalation of chloroform. A pint and a half of saline infusion were injected into the loose tissue below the breasts. Shortly afterwards the urine was drawn off by catheter, the patient being comatose, and was found to amount to several ounces; it contained blood and more than two-thirds albumin, with numerous epithelial and granular tube-casts. As the condition was grave it was thought advisable to procure abortion. This was done by inserting and leaving a bougie in the uterus; neither Champetier de Ribes's nor Barnes's bag would pass the internal os. Labour pains came on very slowly and the child was born on the next day. In all 18 fits occurred. The fits had subsided and the patient had regained consciousness before the labour had properly started. As the fœtus was born alive fœtal death could not be invoked as a cause of the cessation of the fits. The patient steadily improved and in a week the urine contained only a trace of albumin and in 16 days it was normal. An interesting point with regard to the urine was noticed. Specimens were preserved of urine passed before the onset of the convulsions, during the fits while the patient was comatose, after the delivery, and daily for the next four days. All were kept in corked bottles with no special precautions. Three weeks afterwards the last four were found to be alkaline in reaction and then showed signs of decomposition; later specimens showed more marked evidences of decomposition. The first three specimens, however, which were much older than the others, were still all acid; the first one, although acid, was now beginning to show slight signs of

decomposition; the second one, drawn off during the eclampsia, was quite undecomposed, although nearly a month in the bottle; and the third, which was also acid, was equally sweet.—In the discussion it was suggested that the non-putrefaction might be due to some special recondite substance in the urine associated with the occurrence of eclampsia and excreted by the kidney; also that it might be due to the presence of chloral in the urine, but the first specimen was obtained before any drug was given.—The PRESIDENT and Dr. FOULIS discussed the paper.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Dupuytren's Contraction of the Palmar Fascia.—Operation for Cleft Palate.—Truss Gauge.

A MEETING of this section was held on May 11th, Mr. R. L. SWAN, the president, being in the chair.

Dr. J. KNOTT read a paper on Dupuytren's Contraction of the Palmar Fascia. He had recently observed a series of cases in elderly soldiers, most of whom gave no history of local injury or irritation. One had suggested that the prolonged holding of the rifle had something to do with the flexion. One had received a bullet wound in the groove between the thenar and anti-thenar eminences of the right hand. The cicatrix was limited to this region, yet it proved the starting-point for the contraction of the whole palmar fascia, the condition afterwards developing on the left side, as it had done in all the cases which he had seen. He had recently met with two strikingly contrasted cases — one in a free-living man who presented the extreme degree of flexion in the ring finger, the little finger, and the middle finger of both hands; the other in a teetotaller, in whose case the deformity was but slight but perfectly typical. Dr. Knott looked upon the process as essentially of the nature of gouty or rheumatic-gouty inflammation. He had operated on two cases with a fair degree of success, but from the nature of the conditions he considered a "perfect cure" impossible in any case.—Mr. E. H. BENNETT remarked that he had the condition, which had developed in his right hand and was beginning to develop in the left also. He could appreciate the justice of the remark that it commences in the ring finger. Being a racket player he might attribute it to the irritation caused by the butt-end of the racket, but this explanation would not apply to the left side, and its symmetrical development therefore puzzled him. He had dissected many preparations, but could discover no satisfactory explanation of its causation.

Mr. TAYLOR described his New Operation for Cleft Palate, drawing special attention to the anatomical facts that the principal vessel distributed to the hard palate reaches it at its posterior part, having emerged from the posterior palatine foramen at the inner side of the alveolus of the last molar tooth, and that in the palate this vessel takes a curved course close to the alveolar border of the maxilla, its main offshoots proceeding towards the middle line from its inner concave border. He stated that his operation was essentially indicated for clefts of the complete variety—namely, those which advanced quite up to or near the teeth in front. For the operation the patient was put in Rose's position on a low operating table. A Smith's gag was introduced into the mouth, and the edges of the cleft were pared freely. Blood and saliva were removed by a suction apparatus and as far as possible sponging was dispensed with. A curved incision was made on each side close to the alveolar margin of the palate from the level of the last molar tooth behind, and terminating in front of the middle line behind the incisor teeth. The posterior palatine artery was thus included in the flap. The latter was reflected on each side by means of a rugine, and not by any of the various forms of raspatory which are usually recommended. The flap, thus completely lifted up from before backwards, was held back and the junction of the soft with the hard palate was divided with a knife or with a pair of curved scissors. Bleeding was easily controlled by digital pressure. Silkworm gut or silver wire was employed in bringing the edges of the flaps together and Mr. Taylor laid great stress upon the facilities afforded by the mobility of the flaps in carrying out this step of the operation. The free ends of the flaps in front were securely fixed to the tissue of the gum behind the incisor teeth, care having been taken in marking out the flaps to leave enough for this purpose. Should it be necessary a lateral incision might be made on each side at the junction of the hard and the soft palate, and at the inner side of the hamular process, so as to relieve tension and secure rest to the palate during the process of healing. — Mr. E. H. BENNETT, Dr. G. J. JOHNSTON, Mr. J. LENTAIGNE and others discussed the paper.

Mr. T. KELLY of Enniscorthy described the Truss Gauge, an instrument consisting of two overlapping steel truss springs. On the surfaces where this overlapping took place divisions were marked, and in each division there was a corresponding character or number. In the case with each set there was a bundle of cards with divisions printed to correspond to the division on the truss gauge, so that the necessary dimensions could be filled in and transmitted to the instrument maker.

SECTION OF ANATOMY AND PHYSIOLOGY.

Cranio-cerebral Topography.—Nasal Fossæ.—Configuration of the Heart.—Lymph Circulation.

A meeting of this section was held on June 1st, Professor D. J. CUNNINGHAM being in the chair.

Dr. E. H. TAYLOR read a paper on Recent Researches on Cranio-cerebral Topography conducted by himself and Dr. W. S. Haughton. They recommended the employment of the following landmarks, which were easily located and were of undoubted utility: the centre of the naso-frontal groove or nasion; the external angular process of the frontal bone; the depression immediately above it, or the orbito-temporo angle; the external auditory meatus; the pre-auricular point; the zygoma; the external occipital protuberance or inion; and a straight line connecting the nasion and the inion. The procedure adopted was as follows. Several subjects, of ages varying from one year to 60 years, were injected with a 10 per cent. solution of formalin. By this means the tissues were well hardened and could be readily cut *en bloc*. The head in each case was removed from the trunk and was divided accurately in the sagittal plane. The cerebral hemispheres were then removed, and this was easily done in consequence of the very firm consistency of the brain substance. Before removal, however, their exact position inside the skull was carefully noted. The pia mater was removed and strips of very soft and pliable tin wire were introduced into the principal fissures. The corresponding half of the skull was now brought down over the hemisphere, which, by its mesial aspect, lay on a smooth slab of glass. Skiagrams were then taken of each half of the head and this part of the investigation was conducted by Dr. Haughton. In all cases good views were obtained, and as the result of the information which they afforded a method was adopted for mapping out the principal fissures, of which the following is a summary. There are three fundamental fissures which it is necessary to localise, as they separate the four main lobes of the brain—namely, the fissure of Silvius, the fissure of Rolando, and the external parieto-occipital fissure. The distance between the nasion and inion is first carefully estimated and is divided into four equal parts. From the orbito-temporal angle a line is drawn to the junction of the third and fourth segments of this line (naso-iniac). It corresponds to the posterior limb of the Sylvian fissure for the greater part of its extent, and is, therefore, called the Sylvian line. The Sylvian point is the term employed to indicate the level at which the main stem of the fissure reaches the outer aspect of the hemisphere and divides into its anterior, vertical, and posterior limbs. It corresponds to the intersection of the Sylvian line with another drawn from the junction of the first and second segments of the naso-iniac line to the pre-auricular point. In certain of the heads examined it would have been more correct to have made this line terminate opposite the centre of the external auditory meatus. The posterior extremity of the Sylvian line overlies the external parieto-occipital fissure. This point represents 75 per cent. of the distance between the nasion and the inion. The general direction of the fissure of Rolando is found by connecting the two following points by a straight line. The upper point is on the middle line of the head and three-quarters of an inch behind the centre of the naso-iniac line, or as near as possible 55 per cent. of the naso-iniac distance. The lower point corresponds to the intersection of the Sylvian line with another line starting from the pre-auricular point and perpendicular to the upper

borders of the zygoma, or to a line connecting the centre of the infra-orbital margin with the centre of the external auditory meatus.—Professor CUNNINGHAM and Dr. DAWSON discussed the paper.

Dr. FAGAN gave a lantern demonstration of a series of normal and pathological Nasal Fossæ prepared to show the various parts of these cavities and their relations to the surrounding structures.

Dr. CHARLES J. PATTEN read a paper on the Configuration of the Heart in Man and some other Mammalian Groups. The communication dealt chiefly with the modifications in form which have taken place in the heart of man following the erect posture. In specially hardened specimens the conical shape of the human heart had almost disappeared. In many quadrupeds which carried the trunk prone the true conical shape of the heart persisted.

Mr. J. S. ASHE read a note on the Lymph Circulation, in which he advanced the view that one of the forces which helped to carry on the lymph circulation was the dilatation of the aorta which took place at each systole of the heart, pressing on the thoracic duct and increasing the pressure in the posterior mediastinum. His theory was illustrated by a schema which showed by means of elastic tubes the suggested effect of the dilatation of the aorta on the thoracic duct.

ULSTER MEDICAL SOCIETY.—The annual meeting of this society was held in the Belfast Museum on Thursday, June 21st, the President, Dr. James Graham, being in the chair. After the reading of the minutes the various reports were presented and passed. From these it appeared that there were seven meetings held during the past session with an average attendance of 36 members on each occasion. There are now 148 members on the roll of the society, and there is financially a balance in hand of over £55. The following office-bearers were then elected for the session 1900–1901:—President, Professor W. H. Thompson; Vice-presidents, Dr. E. C. Bigger and Dr. R. W. Leslie; Council, Dr. W. Calwell, Dr. H. McKisack, Professor Byers, Dr. John Campbell, Dr. A. Dempsey, and Dr. J. Colville; treasurer, Dr. John McCaw; pathological secretaries, Dr. J. Lorrain Smith and Dr. T. Houston; librarian, Dr. T. S. Kirk; secretary, Mr. Robert Campbell. A discussion took place on a report of a committee appointed by the North of Ireland Branch of the British Medical Association and the Ulster Medical Society in reference to the formation of an Ulster Board for the examination of nurses, but it was decided to refer the whole subject back to the councils of these two societies for further consideration. On the motion of Professor Byers a very cordial vote of thanks was accorded to the retiring secretary, Dr. James Colville, who for the past three years has devoted much time and attention to the affairs of the society.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The following have been elected as office-bearers for the ensuing year:—President: Mr. John Ackery. Vice-Presidents: resident, Mr. W. A. Maggs, Mr. Arthur S. Underwood, Mr. F. J. Bennett; non-resident, Mr. J. Henry Whatford (Eastbourne), Mr. G. Brunton (Leeds), Mr. W. S. Woodburn (Glasgow). Treasurer: Mr. W. H. Woodruff. Librarian: Mr. H. Baldwin. Curator: Mr. Storer Bennett. Editor of Transactions: Mr. J. F. Colyer. Honorary Secretaries: Mr. J. H. Mummery (Foreign), Mr. C. F. Rilot (Council), Mr. A. Hopewell Smith (Society). Councillors: resident, Mr. E. Lloyd Williams, Mr. W. J. England, Mr. J. O. Butcher, Mr. J. H. Reinhardt, Mr. H. G. Read, Mr. H. Lloyd Williams, Mr. W. Rushton, Mr. R. Wynne Rouw, Mr. G. Northcroft; non-resident, Mr. Walter Harrison (Brighton), Mr. Alexander Kirby (Bedford), Mr. Martin Henry (Folkestone), Mr. D. Corbett, jun. (Dublin), Mr. Rees Price (Glasgow), Mr. G. O. Whittaker (Manchester), Mr. T. Mansell (Birkenhead), Mr. W. A. Rhodes (Cambridge), Mr. W. Glaisby (York).

BRISTOL EYE HOSPITAL.—On June 28th and two following days a very successful carnival was held at the Zoological Gardens, Clifton, in aid of the funds of the Bristol Eye Hospital. The carnival was opened by the Dowager Duchess of Beaufort and it is hoped that a considerable sum has been raised for the institution.

Reviews and Notices of Books.

Recollections of My Life. By Surgeon-General Sir JOSEPH FAYRER, Bart., K.C.S.I. London: William Blackwood and Sons. 1900. Price 21*s*.

THIS volume, which is most appropriately dedicated to Lady Fayrer in remembrance of 45 years spent together, is a brilliant record of experiences the equal of which have befallen few members of our profession. It contains the memories of a varied and eventful life, and from the way in which it is written we feel it must have given the author as much pleasure to put together as it does to the reader to peruse. The book will no doubt have a large circulation among the general public, and we can recommend it strongly to Sir Joseph Fayrer's civil brethren, who will thus have very clearly brought before them the great responsibilities attaching to the higher places in medical official life. By the medical officers of the army both at home and abroad the book will be read and treasured as the record of the life-work of a brother-officer who has been peculiarly successful in a higher sense than the one which usually appeals most strongly to human nature.

In some 500 pages Sir Joseph Fayrer has given us a record of the most notable incidents in which he has borne a part. The reader rises from his study of this book impressed with the thoroughness of Sir Joseph Fayrer's life-work, with the high ideal which he as a medical officer has ever sought to attain, with the feeling of how loyal he has been to the great profession of which he is proud to be a member, and how constant he has ever been in promoting the true dignity of the calling which he considers most noble. The story of his life is told in simple language and in a way which makes those who know the author almost feel that he is indeed speaking to them. In other words, the book is not merely a record of the man's doings, but also of the man himself—of his strong individuality.

The son and grandson of naval officers, Sir Joseph Fayrer in early days was attracted by the sea. His father, who retired from the navy with the rank of commander, was afterwards one of the pioneers of steam navigation and commanded the *Great Liverpool*, which was then the largest ocean-going steamer. At the age of 16 years young Fayrer was appointed a midshipman in the West Indian Mail Steam-packet Service and sailed under Captain Hart to the West Indies and South America, but in his nineteenth year, while at Bermuda during an epidemic of yellow fever, he became strongly impressed with the importance of the medical profession, seeing how highly it was valued and how great an influence its members exercised for good. In August, 1844, he started for England and became a pupil at the Charing-cross School of Medicine, where his chief friends were W. G. Hunter (now Sir William Guyer Hunter, M.D., K.C.M.G., Q.H.S.), subsequently Surgeon-General of the Bombay Army, and the late Professor Huxley. In July, 1847, having passed his examination at the Royal College of Surgeons of England, he was commissioned to H.M.S. *Victory* for service at Haslar Hospital, where one of his comrades was Andrew Clark, afterwards President of the Royal College of Physicians of London. In the month of October, 1847, having been allowed to resign his commission temporarily, he left England as physician to Lord Mount-Edgcumbe, and with him he travelled on the continent for a few years. While with the earl, in February, 1849, he received the degree of M.D. from the University of Rome, being the only graduate of the University who was not a Roman Catholic. It was at Rome that he had the good fortune to afford medical aid to one of Lady Malcolm's daughters, thereby securing the interest which subsequently obtained him his appointment

in India. Towards the end of the year 1849, through the interest of Lord Mount-Edgcumbe, he obtained a commission in the Ordnance Medical Department, then presided over by Sir John Webb, but after four months at Woolwich the service was reduced in numbers and then it was that, through the interest of Lady Malcolm, Sir R. Campbell, a Director of the Honourable East India Company, gave him an Indian appointment and he proceeded to Bengal as an assistant surgeon. On June 29th, 1850, he left Gravesend in the *Camperdown* for Calcutta, and he commenced his Indian service at Fort William on Oct. 9th, 1850. In April, 1852, he sailed for Rangoon as one of the medical officers forming the hospital staff of the Burmah Field Force and was present at the escalading of the Thilawa stockade. During the war he was literally field surgeon to the Burmese army. As a reward, in July, 1853, Lord Dalhousie wrote and offered him the Residency Surgeoncy at Lucknow, which he said he had reserved to bestow upon the assistant surgeon who rendered the most approved services during the war with Burmah. When he joined his appointment Colonel Sleeman was the Resident, and he duly instructed Fayrer in the ceremonial and etiquette which are deemed of such importance in a native court. His designation in his early days at Lucknow was "Residency Surgeon, Superintendent of the King's Hospital, and Postmaster"; he was also in charge of the Martiniere School and Superintendent of the Char Bagh, a large public garden. Sir William Sleeman was in due course succeeded by Outram, whose arrival was celebrated with great pomp. In September, 1854, Fayrer was appointed an honorary Assistant Resident, and thus had political combined with other duties.

It was at Lucknow, on Oct. 4th, 1855, that Fayrer married a daughter of Brigadier-General A. Spens, and it was about this time that Outram, charged with instructions from the Governor-General in Council, carried into effect the last important act of Lord Dalhousie's administration—the reorganisation of the Oudh Government, which necessitated the deposition of the King, and henceforward Oudh became a British province. Under the new *régime* Outram recommended that Fayrer should be made a Deputy Commissioner, but the Governor-General wrote to him suggesting that, as he had done so well in his profession, it would be a pity to give it up. In consequence he was appointed Civil Surgeon of Lucknow and Superintendent of Charitable Institutions. Part of his work at this time was to reorganise the postal arrangements and extend them over the whole province. Sir Joseph Fayrer relates many incidents connected with his professional life while at the court of Oudh—many of them are full of humour and all are well told.

There is much in this work which will please the sportsman, for Sir Joseph Fayrer relates tales of shooting expeditions in which all wild animals, from the lordly elephant to the humble snipe, formed a quarry. Many and varied also are his observations of animal and vegetable nature in the jungle and Terai, the contemplation of which evidently added a freshness and charm to his everyday life.

As Sir Joseph Fayrer is one of the survivors of the Lucknow garrison during the ever-memorable siege, the reader naturally turns to the story of those days and is not surprised to find that he has devoted more than 100 pages to the insurrection in Lucknow and Oudh and the siege of the Residency. Here every line is worth reading, for the descriptions are vivid and the excellent maps and plans enable the reader to follow with ease each detail and incident of those memorable days. Fayrer's work in those days as physician, hygienist, and soldier was indeed stupendous. He devotes but small space to the final act in the drama of the life of that great Anglo-Indian, Sir Henry Lawrence, for of this he has written elsewhere more fully, but he tells enough to enable his readers to follow the course of events on that saddest of the days which dawned for Lucknow's heroic defenders. The whole story of those days in Lucknow is both circumstantial and thrilling. Years after Sir Joseph Fayrer tells how he presented the aged survivors of his own garrison to the Prince of Wales, to whom also he pointed out the old positions and the ruins of his former home. Vivid also is the tale of the perilous march of the garrison to Cawnpore after the relief. His strong remarks on the subject of Havelock's deserved "V.C." are a vigorous testimony against the absurd regulations which at times prevent the decoration of brave men with the soldier's most coveted distinction.

In 1858 Fayrer returned to England and went to reside at Edinburgh with a view to take his M.D. degree. He relates that he was allowed a special examination just before returning to India to take up his appointment as Professor of Surgery in the Calcutta University. In the descriptions of his surgical work in Calcutta, of his labours as member of the Syndicate of the University and President of the Faculty of Medicine, as President of the Asiatic Society, and Trustee of the Indian Museum, and of his experimental work which led to the publication of his great work on the "Thanatophidia of India," there is much to interest and attract the reader.

Invested at an early age with the badge of the higher of the Indian Orders of Knighthood he rode with the Companions of the Order at the memorable Chapter when the Duke of Edinburgh was invested as a G.C.S.I. on the Calcutta maidan and at the Viceroy's request accompanied the Duke on his travels through the north-west of India—an opportunity which led to his appointment as physician-in-ordinary to His Royal Highness.

The year 1873 saw Fayrer appointed as a member of the Medical Board at the India Office under the presidency of Sir Ranald Martin, whom he afterwards succeeded, and brought him his election as a Fellow of the Royal College of Physicians of London, a circumstance which subsequently restricted his practice to that of a consulting physician, for etiquette henceforward forbade surgical work in which he had excelled in India and to which he was much attached.

About a hundred pages of the volume are devoted to incidents connected with the Prince of Wales's visit to India. The part that Fayrer played in that great and memorable journey through the Indian Empire is told with a becoming modesty, but leaves the reader impressed with the manner in which he prepared for his arduous and difficult duties and very sensible of the care with which he carried out the charge intrusted to him by the Queen. It was while at Dholpore in Rajputana that the Prince informed him that Her Majesty had telegraphed to the Viceroy saying that he was to be made a Knight Commander of the Star of India, and he afterwards received the accolade and the insignia from the Prince's hands at a Chapter held at Allahabad.

Of the later stages of his career in London and of the important work he carried out as President of the Medical Board and member of the Army Sanitary Committee the reader can obtain due knowledge. One of his most important acts was certainly the firm and consistent support which he gave during many years to the Army Medical School at Netley. Twice in bygone years was its existence threatened and twice was his strong hand put forth to stay the destroying mandate, Sir Joseph Fayrer going the length of privately addressing the Queen through Sir Henry Ponsonby and asking her to avert the danger. He also spoke strongly at a meeting of the Royal College of Physicians of London about the medical services and thereby helped forward the new warrants. On the many honours which have been accorded to Sir Joseph Fayrer by Her Majesty and by universities in this country and abroad we will not dwell; they

are, of course, noted in this volume which is the record of a long official life well spent.

Prefixed to the book is the best portrait of Sir Joseph Fayrer which we remember to have seen, his expression and attitude being faithfully reproduced. The illustrations of the book are excellent, among the most interesting being the pictures of his house at Lucknow before and after the siege. The binding and letter-press of the book add to it an additional charm.

Heart Disease in Childhood and Youth. By CHARLES W. CHAPMAN, M.D. Durh., M.R.C.P. Lond. With an introduction by Sir SAMUEL WILKS, Bart., M.D. Lond., F.R.S. London: The Medical Publishing Co., Limited. 1900. Pp. 98. Price 3*s.* 6*d.*

IN this small book Dr. Chapman has given a clear and interesting account of modern opinions with regard to heart disease in the young. He follows the views of Cheadle and Sturges as to the different clinical course, prognosis, and treatment of the disease in early life. He draws special attention to the frequency with which heart disease is overlooked in children owing to the ease with which compensation occurs and the consequent absence of symptoms, and quotes a number of clinical cases which bear this out. Dr. Chapman's directions with regard to the hygienic management of children who are suffering from heart disease is most sound and judicious. He protests against their being treated as having only a few years to live and strongly urges that where there is good compensation the boy should live an ordinary life, going to school and, under medical supervision, being allowed to take part in the less violent school games and sports. A large number of illustrative clinical records are given, as well as photographs and sphygmograms. Altogether the book forms an interesting and useful contribution to the literature on the diseases of early life.

A protest, however, must be entered against the practice of announcing books as accompanied by an "introduction" by some eminent man. The introduction by Sir Samuel Wilks in this book contains no information with regard to his own views but is merely a short testimonial.

The American Year-book of Medicine and Surgery. Under the general editorial charge of GEORGE M. GOULD, M.D. Medicine. London: Rebman, Limited. 1900. Pp. 656. Price 17*s.* (The two volumes, Medicine and Surgery, 30*s.*)

THE general scope of the American Year-book is so well known that no introductory remarks are needed from us. The excellent standard of the publication is well maintained in this volume and all the subjects are brought fully up to date. In a glance through the pages the reader is at once able to perceive the work which has recently been done by various observers in any particular disease. The plentiful but judicious use of bold type greatly adds to the use of the work for reference, and the wished-for information is soon found.

Dr. Alfred Stengel and Dr. D. L. Edsall (Philadelphia) are responsible for the section on "General Medicine." The article on Typhoid Fever is of great interest; we may especially note the remarks on Combined Typhoid and Malarial Infection, a subject which is now receiving a considerable amount of attention. Another sub-section well worthy of perusal is that on Congenital Lesions of the Throat.

The section on Pediatrics is edited by Dr. Louis Stair and Dr. Alfred Hand of Philadelphia. The subjects to which attention has been paid in greatest measure are those of hygiene, infant-feeding, and the disturbances of the digestive tract.

Dr. David Riesman of Philadelphia has put together the section on Pathology. He draws especial attention to Birch-Hirschfeld's valuable observations on primary pulmonary tuberculosis, enlarging on this writer's statement that "pulmonary tuberculosis in its first stage is, as a rule, a mucous membrane tuberculosis located in a medium-sized apical bronchus." The more recent discoveries in bacteriology are also duly chronicled and a large amount of attention is paid to toxins, antitoxins, and agglutination.

Dr. Archibald Church is the editor of the section on Nervous and Mental Diseases and gives a good summary of the work performed during the year 1899 in addition to the usual extracts collected from medical literature. Dr. Louis A. Duhring and Dr. Milton B. Hartzell of Philadelphia have collected the information on Cutaneous Diseases and Syphilis, while Dr. R. W. Wilcox of New York and Dr. A. A. Stevens of Philadelphia are responsible for the section on Materia Medica, Experimental Therapeutics, and Pharmacology. They remark that the trend of therapeutic investigation during last year was rather toward a working out of details and following out of theories prepared than in presenting new measures, and that praiseworthy attempts have been made in the direction of harmonising the results of laboratory work and bedside study. Dr. G. N. Stewart of Ohio has produced an interesting collection of the advances made in Physiology, while Dr. Wyatt Johnston of Montreal has collected some valuable statistics from writings on Legal Medicine. The section on Public Hygiene and Preventive Medicine is by Dr. S. W. Abbott of Boston, and the one on Physiologic Chemistry is by Dr. Walter Jones and Dr. Reid Hunt of Baltimore.

LIBRARY TABLE.

The Pasteurisation and Sterilisation of Milk. By ALBERT E. BELL, F.I.C., F.C.S. London: Rebman, Limited. Pp. 41. Price 1*s.* 6*d.*—This unpretentious little book is a reiteration of the well-worn arguments in favour of the pasteurisation and sterilisation of milk. Since milk is known to be a means of spreading disease there can be little doubt of the great advantages of a sterilised milk-supply, but as our only method adopted is that in which the milk is submitted to the action of heat it cannot be doubted that some important changes in the composition of the milk take place also in this process. The precise nature of these changes and their effect upon the dietetic value of milk are still wrapped in some mystery. The author describes several forms of apparatus both on a large and small scale which are well adapted for the sterilisation of milk and he details also the organisms which occur in milk and which give rise to disease. He might have extended his observations on the effect of sterilisation upon milk inasmuch as the subject has been somewhat widely discussed during the past year. One sentence which occurs on page 41 should have been a little more positive. It is stated that "it is therefore most probable that the milk sold in large towns which is a mixture of milk from numerous cows contains tubercle bacilli." Quite recently, it is added, the experiments and researches made by Dr. Obermüller established this fact beyond all doubt. If the author will refer to our columns he will find that the fact has been established again and again at times which can hardly be described as "quite recently." The book will be read by the lay reader with advantage since it points out the dangers arising from infected milk and the advantages of sterilised milk.

A Pocket-book for Chemists. By THOMAS BAYLEY, Assoc. R.C.Sc.I. Seventh edition, enlarged and revised. London: E. and F. N. Spon, Limited. 1900. Pp. 559. Price 5*s.*—We shall not be surprised if this book reaches many more editions than the present number, seeing that it is so useful. Indeed, to the chemical manufacturer, the metallurgist, the dyer, the distiller, the brewer, the sugar

refiner, the photographer, and the medical man in the quest of analytical data it is a *sine quâ non*. The present edition has been quite brought up to modern requirements. Although a pocket volume it contains an enormous number of data which must have entailed considerable work, while the task of editing and revising must have been no small one. We cordially congratulate the author not only on the excellent plan of arrangement but also upon the accuracy which characterises the pages of data and formulæ. This is no small compliment considering the great number of formulæ, figures, and mathematical data with which the pocket-book abounds. To the busy practical chemist the book is of greater value than a dictionary, for reference is easier and the subjects are limited to practical work.

A Text-book of Physiological Chemistry. By OLOF HAMMARSTEN. Authorised translation from the author's revised fourth German edition by JOHN A. MANDEL. Third edition. New York: John Wiley and Sons. London: Chapman and Hall. 1900. Pp. 628. Price 17*s*.—This work was reviewed in THE LANCET of March 18th, 1899, when the second edition was under consideration which was a translation of the third German edition and there are no essential changes either in plan or material in the present edition. But of course the subject has been brought completely into accord with the modern developments of science. The number of pages in the present edition, which is called "enlarged," is reduced by 80, which is due rather to altered paragraphing and arrangement of type than to the condensation of discussion. The translation is admirably done, and is clear and intelligible. The order in which the subjects are treated betokens also a systematic faculty. We still find no reference in the section on the Respiratory Processes to the elaborate work of the late (as we must now write) Dr. Marcet, F.R.S., although the work of German collaborateurs is freely cited. Hammarsten's original work has been frequently translated into other languages besides our own, of which several editions have appeared, a fact which is an indisputable argument in its favour as a book that is much sought after as an educational help. An admirable feature of the work is the copious references given in the foot-notes to original papers on some of the great physiological problems. The index, also, is very complete. The book may be recommended to the student commencing this subject, and besides, as a source of reference, to those who have completed their ordinary curriculum.

A Glossary of Botanic Terms. By BENJAMIN DAYDON JACKSON. London: Duckworth and Co. Philadelphia: J. B. Lippincott Company. 1900. Pp. 326. Price 6*s*.—Botanical science has accumulated such a vast number of technical terms, many of which are only occasionally met with, that a glossary of terms is really necessary to the right understanding of modern works on botany. The book under notice gives the derivation and accentuation of the words and in addition to the glossary contains an appendix giving a list of signs and abbreviations, a bibliography, and other supplementary matter. Bearing in mind the use of such a book it is a pity that a page of *errata* should have been necessary, and also that the list of additional words could not have been incorporated in the main list. These things will, no doubt, be put right in a second edition, but their existence in the first edition does not add to the convenience of the book, which, however, should prove of use in the reference library of any one interested in the science of botany.

Lehrbuch der Histologie und der Mikroskopischen Anatomie des Menschlichen Körpers. (Text-book of the Histology and Microscopical Anatomy of the Human Body.) Von Dr. Ladislaus Szymonowicz, ausserordentlichem Professor der Histologie und Embryologie an der Universität Lemberg. Lieferung III. Würzburg. 1900. London: Williams and Norgate. Preis M.3.—The third part of Dr. Szymonowicz's text-book includes about 60 pages of the text and 11 beautifully executed drawings in addition to some 50 figures scattered throughout the different pages of the work, in illustration of the thorough manner in which microscopical anatomy is taught at Lemberg. The parts of the body which are described and illustrated are the veins, the heart, the lymphatics, the thyroid, the suprarenal capsules and the coccygeal body. These are followed by a minute account of the digestive system from the mouth to the small intestine. The text is very clearly expressed, and the illustrations, mostly original, are most excellently drawn. We may at once say that Professor Szymonowicz's treatise will, when completed, be one of our most valuable works on human histology.

JOURNALS.

The *Veterinarian* for June exposes a singular dearth in its usual number of original clinical case notes. For this to be the case in a journal the strong point of which used always to be its clinical side makes it seem as if the veterinary practitioner was becoming very apathetic. It may be that, as the war in South Africa has removed a large number of rivals from England, he is too busy to jot down notes and write them up into clinical articles in his spare time. This month's number consists almost entirely of extracts from colonial or foreign sources. The first article is taken from the report of Mr. J. A. Gilruth, chief veterinary officer and bacteriologist to the New Zealand Government, and is headed "Tumour Formation in certain of the Domestic Animals." It is an interesting extract and is well illustrated. A summary of the same author's work on Actinomycosis, Parasitic Gastritis, Red-water, Milk Fever, Acute Congestion of the Kidneys, and other diseases of cattle and sheep is also given. A valuable editorial note summarises the recent work of Professor van Gehuchten and M. Nélis, wherein these writers assert that by a microscopical examination of one of the cerebro-spinal ganglia of a supected animal the diagnosis of rabies can be confirmed or refuted in a few hours instead of waiting until the result of inoculation becomes known. The annual report of the Principal of the Royal Veterinary College is concluded, this instalment including the Summary of the Researches made upon South African Horse Sickness and the Curability of Glanders. Mr. John Dollar contributes translations from Professor Cadiot's lectures on Clinical Cases and there is also an article on Tuberculosis Antitoxins by E. Merck of Darmstadt. Scientific extracts under the heading of the Month's Progress and reviews of books conclude the number.

The *Veterinary Journal* for June is even worse off than its contemporary the *Veterinarian* for clinical articles. The June number is almost entirely made up of reports of the proceedings of the various veterinary societies, the account of the quarterly meeting of the Council of the Royal College of Veterinary Surgeons, extracts from foreign or colonial sources, and reviews of books. Amongst the first-named are papers on Influenza, Anæsthetics, and Joint Evil. Dr. Bradford's paper on Rabies is concluded and a list of the successful candidates at the recent professional examinations in Edinburgh is given. As a great deal of this matter has already been published in the weekly organ of the profession it seems a pity that it should be utilised to fill up the monthly journals, particularly as the weekly paper is well known to have a wide circulation. More original work would be better appreciated.

TEIGNMOUTH HOSPITAL.—The fête which was recently held in aid of the funds of the Teignmouth Hospital resulted in the sum of £250 being raised for the institution.

THE LANCET.

LONDON: SATURDAY, JULY 7, 1900.

MR. BURDETT-COUTTS'S letter to the *Times* of June 27th was terrible reading. No wonder it stirred the feelings of the British people and caused the most anxious inquiries to be made in every direction at all calculated to elicit information on the subject—and no wonder also that much of the correspondence which ensued in the press owed its inspiration to the heart rather than to the head. Despite all that human foresight and ingenuity can devise wounds and privation are inseparable from war. Some writers seem to have forgotten this. The real terror of Mr. BURDETT-COUTTS'S letter lay not in his statement that horrors had occurred but in his deliberate allegation that they had occurred from causes which might have been foreseen and which were wholly preventable. The case is one of national concern, one which touches the national sense of honour and humanity, and should be kept altogether above any mere party interest. However painful the subject may be, heated and impassioned discussion is quite out of place on such an occasion. The aim and object of everybody should be to elicit the truth, and the whole truth, in a spirit of independence, and in that spirit we propose to discuss the subject to the best of our ability. It goes without saying that everything which affects the honour and reputation of the medical profession deeply concerns us, and we fearlessly accept the position that the medical service in South Africa is to be held accountable for the trust committed to it. If it can be shown that it was within the power of the medical service to have prevented the terrible scenes described by Mr. BURDETT-COUTTS, or if the things which he alleges to have happened appear on investigation to be attributable to any culpable neglect on its part, then a well-deserved obloquy and punishment should fall upon the culprits. On the other hand, unless war is to be rendered impossible it is surely conceivable that exceptional conditions arising out of the circumstances of a campaign may occur which are practically beyond human control, or which at any rate in the judgment of those in supreme command are of so imperative a nature as to render the vicarious suffering and sacrifice of some unavoidable in order to secure the safety of the remainder or the achievement of strategical success. Decision in such momentous situations falls, and rightly falls, within the province of the Commander-in-Chief and that of his staff. The duty of the medical authorities is to represent the facts and to advise as to what should be done; there their official responsibility ends.

The picture presented to us by Mr. BURDETT-COUTTS of the almost indescribably bad condition of the sufferers from typhoid fever closely packed together in bell tents and marquees—and we purposely select this as the most graphic, tangible, precise and striking instance of alleged neglect—was such as to lead the least sensitive to exclaim: Are the facts correctly stated, and, if so, were these horrors unavoidable under the circumstances and exceptional, or were they more or less typical of the general condition of the medical arrangements? Again, if these things were unavoidable how long did such a state continue and was it remedied with the least practicable delay or not? Such were the questions we asked ourselves at the moment, accepting Mr. BURDETT-COUTTS'S statements as substantially true in the meantime. If neglect can be proved the offenders must be punished. But the fullest inquiry should precede punishment and the military exigencies must not be lost sight of. We rose from a perusal of the debate in the House of Commons with a well-grounded feeling of assurance that the Army Medical Service will turn out after an honest and unbiased investigation to have been both powerless and blameless in this matter. We confine ourselves to the occurrences at Bloemfontein and Kroonstadt, putting aside for the present all other allegations emanating from any places elsewhere. And it seems to us quite irrelevant to the subject to inquire whether there was any want of physicians and nurses, because where the most elementary necessaries for the accommodation, feeding, and treatment of the sick were absent no amount of physicians and nurses could, practically speaking, have been of any avail. Again, while we thoroughly accept as indisputably true all that Sir WILLIAM MAC CORMAC, Mr. TREVES, and others have said about the condition of the hospitals, we may put much of their evidence aside as irrelevant to the present issue, because the results of their personal inspections were only applicable to the times and places at which they were made. We are quite content to accept, for the sake of argument, Mr. BURDETT-COUTTS'S description of what he saw. We only ask that judgment on the whole question may be suspended until more is known.

No fair-minded or reasonable person can hesitate, after reading Mr. WYNDHAM'S speech, to arrive at the conclusion that the provisions made in this country for the hospitals of the army in South Africa were most carefully considered, while the transit of all supplies to the Cape was thoroughly well arranged. We see no reason for altering the opinion which we expressed months ago that everything had been provided for the medical service on a more liberal scale than had ever been attempted before. It is a ridiculous assumption that the medical authorities of the War Office were not thoroughly alive to the fact that there would be a large amount of enteric fever. The experience of every modern campaign on record furnished the information. They could not, of course, foresee the occurrence of the sieges at Ladysmith and elsewhere, or the capture of the waterworks by the Boers at Bloemfontein for example; nor could anyone have foretold the incidence of disease in the form of big outbreaks at any given time or place; but the War Office took care to provide for the occurrence of a large aggregate amount of enteric fever. We can only suppose that Sir WALTER FOSTER'S speech in the House of Commons with reference to the sending out of a small sanitary commission was prompted by political motives, for the efforts of such a commission would, it seems to us, have been completely useless unless the commissioners

had explored, say, Kroonstadt and Bloemfontein some weeks before Lord ROBERTS's arrival. Would not the commissioners have been impeded in their work by the Boers? Such a commission would have been valueless, and its proposal shows that Sir WALTER FOSTER did not know where to look for a clue to the difficulty. Transport is *the* difficulty in every war and it has been pre-eminently so in this one. At the beginning of the campaign the British forces were not only outnumbered, but their plans were frustrated by the mobility of their foes. When Lord ROBERTS assumed command he had a larger and much more mobile force at his back. A number of very rapid and sweeping marches were made, by which the army altogether outmarched its supplies and had to depend upon a single and precarious line of rail. This was frequently interrupted, while his convoys were also captured and his stores raided by the enemy. Lord ROBERTS either might not have gone to Bloemfontein and Pretoria at all or might have doubled the carrying capacity of his railway before doing so. We cannot suppose that either alternative would have been deemed by anyone a satisfactory proceeding on his part. Still, the matter rested with him and with his chief of the staff, who was supposed to have the army transport under his special charge. Whether Mr. BURDETT-COUTTS was right or wrong in his contention that if the railway trucks had been properly utilised all would have been well is a matter which he must settle with the military authorities. Lord KITCHENER is probably the only officer in a position to give full and complete information on the point. It is clear, however, from the extracts which Mr. WYNDHAM read from the diary of the Principal Medical Officer at Cape Town that Surgeon-General W. D. WILSON was thoroughly alive to the importance of getting his general hospitals to Bloemfontein, but was unable to do so on account of the great pressure of traffic.

Mr. BURDETT-COUTTS will pardon us for remarking that he is not the sole and exclusive possessor of feelings of humanity or the only person animated with a keen sense of responsibility in regard to the requirements of the sick. Let it be clearly understood that we fully credit him with having been shocked and distressed by what he saw and with having been actuated by a conscientious sense of duty in the course he has taken; and we most sincerely hope that it will have the effect of leading to the fullest inquiry and be productive of the greatest benefit to the sick and wounded soldier. But we do find fault with him in that he did not, whilst on the spot and enjoying peculiar advantages in the matter of introductions, make a representation to Lord ROBERTS or apply for advice and information to the Central Red Cross Society which has large funds at its disposal and agents and depôts at the seat of war. He should have done either or both of these things before having recourse to the publication of his letter.

WE have recently[1] published a communication by Dr. PAVY on Differentiation in Diabetes. It has long been recognised by physicians that one of the most striking features belonging to diabetes is its varied manifestations in different cases; also that correct prognosis and treatment mainly depend upon an accurate knowledge of the phenomena, clinical and chemical, by which the forms met with in actual practice are characterised. In Dr. PAVY'S article two classes of cases are most ably differentiated, and a study of his remarks will enable practitioners more fully to understand the principles upon which cases of diabetes may be treated and the facts upon which a prognosis may be founded.

As is well known there is a class of case in which the eliminated sugar is solely derived from the food. It constitutes what has been appropriately named the "alimentary" form of diabetes. Dr. PAVY'S observations are chiefly from a practical point of view and therefore he does not enter into a theoretical discussion. He states that in this variety of the disease the carbohydrate matter of the food fails to be dealt with in the system in such a way as to be placed in a proper position for utilisation. As a consequence it becomes discoverable as sugar in the circulation and is thence discharged as waste material with the urine. It is important to remember that in this "alimentary" form of diabetes the abnormal state observed in connexion with the urine consists purely and simply of the presence of dextrose. As a result when the urine is examined quantitatively by cupric oxide reduction and the polarimeter the figures given by the two methods stand in accord or sufficiently so for the difference noted to fall within the limits of error of observation. As a further point in connexion with this kind of urine it is found that when the dextrose has been removed by fermentation with yeast and Fehling's solution no longer gives any reaction the polarimeter also fails to afford any evidence of either right-handed or left-handed optical activity. Simply placing the urine aside in a warm situation for 24 hours with some broken-up German yeast ordinarily suffices for the complete removal of the dextrose. One other point has to be taken note of for a full understanding of the chemical phenomena in connexion with urine in diabetes—namely, that the urine belonging to the "alimentary" form of the disease does not possess the abnormality which leads to the production of a coloured reaction with ferric chloride. Turning now to the second class of case which Dr. PAVY describes we find that the dextrose in the urine, instead of being derived solely from the carbohydrate matter of the food, is also present as a consequence of abnormal proteid disintegration. This is a much more serious matter. By faulty metabolism a tissue breaking-down occurs, attended with the production of sugar associated with other abnormal degradation products. Through this proteid disintegration consequences arise which do not follow on the simple faulty assimilation of carbohydrate matter. Dr. PAVY points out that pernicious results may ensue from the sugar that reaches the system from mal-assimilated carbohydrate matter, but further and graver effects arise from the condition attended with the production of sugar from faulty degradation metabolism. It is to the presence of one or more of these products of disintegration accompanying the sugar that diabetic coma is attributable. Thus a form of danger is engendered which does not attend the abnormal existence of the sugar alone. The term "grave" has usually been adopted in defining this class of case.

[1] THE LANCET, June 16th, 1900, p. 1706, et seq.

After reading Dr. PAVY'S description, however, we agree with him that the conception to which that term gives rise does not felicitously fit in with what is desirable for general use. The term he proposes—"composite"—more accurately meets the circumstances in relation to the existing condition and also stands more appropriately in contrast with the "alimentary" or simple form of the complaint. We think, therefore, that the expression "composite" should be accepted to distinguish that form of diabetes in which evidence is presented of tissue disintegration constituting a partial source of the dextrose eliminated from that in which the dextrose is derived solely from the food. In brief the "composite" form of the disease is characterised by the presence in the urine of sugar, together with the products of faulty tissue breaking-down. Dr. PAVY then goes on to explain what are the series of abnormal products discoverable in the urine in the "composite" form of diabetes. The chain in its successive stages of descent runs as follows: β-oxybutyric acid, diacetic acid, and acetone. It is known that traces of acetone may be met with in normal urine, but the presence of the other principles is usually regarded as pathological. They are indicative of abnormal proteid destruction and their amount may be taken as furnishing a measure of the extent of its occurrence. This is of course an important point, as we are thus enabled to read off in a given case the magnitude of the morbid action in play in the direction in question. Dr. PAVY proceeds to show the manner in which the estimation can be effected by methods adapted for clinical application. We do not propose to dwell in detail on these measures, but we may mention it is the levo-rotatory β-oxybutyric acid that is found and consequently this action takes away from the dextro-rotatory effect produced by dextrose, and thus the results given by estimation with cupric oxide reduction and the polarimeter are not in accord as they are with the "alimentary" form of diabetes; in the "composite" variety a reading is given it may be much below that which would have resulted if the dextrose had stood alone, and consequently correspondingly below the figures given by cupric oxide reduction. By the difference in the result noticed between this test and that afforded by the polarimeter an indication is given of the extent to which abnormal proteid disintegration is occurring. Supplementary information is obtainable by fermenting the dextrose away and then examining with the polarimeter. The optical activity of the oxybutyric acid is then allowed to come into unopposed play and a left-handed rotatory effect is shown, standing proportionate to the amount that is present. Finally, the presence of diacetic acid may be demonstrated by the ferric chloride test.

We have not space to comment further on Dr. PAVY'S interesting and instructive article. We have laid especial stress upon the chemical phenomena of the urine because they are less understood and appreciated than the clinical manifestations of the disease, but are equally important in the treatment. It is true that the examination has to be made by an expert, but at the present time no difficulty need be experienced in having the required analysis carried out at the numerous laboratories established for the purpose. It is obvious from what we have said above that it is of supreme importance that the practitioner should be able to decide as to which variety of the disease he has to deal with in any particular case. If it should prove to be of the "alimentary" form the treatment is simple and the prognosis favourable; should it prove, however, to be of the "composite" form the treatment is more complicated and severe whilst the prognosis is much less favourable. In a recent leading article[2] we drew attention to a paper published in our columns by Dr. SAUNDBY, and Dr. PAVY'S remarks are closely in accord with his. We need not, therefore, dwell again on the subject. We feel, however, that these two writers by their recent communications deserve the thanks of practitioners for bringing before their notice the most modern views as regards the prognosis and treatment of a disease so prevalent as diabetes.

THE Bill to amend the Companies Act, the second reading of which was carried through the House of Commons on June 26th, contains two clauses which, as the Minister in charge of the Bill remarked, are not germane to it. This is doubtless a truism, but whether the clauses be germane or not they are of the utmost importance to the medical profession. The object of the new Bill is, we take it, to render impossible for the future such instances of fraudulent trading under the guise of a company as have of late years shocked the public mind. Parliamentary Bills as a rule say what shall be done and not what shall not be done, and until lately it would have been considered as likely that medical practice should be carried on by a company as that the revision of the Nautical Almanac should be dealt with in the same manner. But the idea has been seriously acted on and various recent instances have occurred of companies, with more or less medical names implying medical function and practice and composed of persons with no real medical qualifications, pretending to practise medicine and to perform duties only legally to be done by practitioners on the Medical Register. Therefore, although the clauses dealing with medical and dental practice by companies may not be strictly germane, yet we contend that in a Bill such as the present the subject may very well be dealt with.

Nothing can be more clear from the various Acts and Charters regulating medical practice than that the Legislature intends that qualification to practise medicine in any or all of its branches is to be a personal matter. It is to apply to individuals and not to companies. There is something especially unsatisfactory in the idea of companies undertaking to carry on the profession and practice of medicine, and it has been recognised on all hands that such practices should be rendered impossible. The only question was as to the best way in which to stop this abuse—whether by a separate Bill of one clause, as in the Bill of the Lord Chancellor last year, or by a clause in the Companies Bill as recommended by a strong committee of the House of Lords. Happily, the latter course has been pursued by the Government, and in the Companies Bill of this session, with the names of Mr. RITCHIE and the Attorney-General

[2] THE LANCET, June 2nd, 1900, p. 1596.

and the Solicitor-General on the back of it, and ordered to be printed on Feb. 12th, we find the following section:—

3. It shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife, and if any company contravenes this enactment it shall be liable, on summary conviction, to a fine not exceeding *five pounds* for every day during which the contravention happens.

We hope to see the Bill with this section included safely through Parliament during the present session. It is true that the medical profession, which is well informed as to the dangerous and audacious attempts by companies to practise medicine, was a little shocked when the President of the Board of Trade on the second reading of the Bill in the House on June 26th suggested, as we have already mentioned, that this section and another with reference to pharmacy might be left out of this Bill as being, though good in themselves, not really germane to it. This was a most disappointing line for Mr. RITCHIE to take at this advanced period of the session in regard to so admirable a part of his own Bill. We cannot doubt that he will reconsider this position and abandon it. He will admit that the chances of getting any such clause through as a separate measure at this late period of the session and after the passing of a Bill dealing generally with the abuses of the Companies Acts will be very slight. Fortunately we have his own authority for approving the principle of Section 3. He is the chief sponsor for the Bill, and in the debate on the second reading he admitted frankly that the amendment of the law which the section provides would be a beneficial alteration. His real object must be to make "companies" respected and to restrict their undertakings within limits that will make them safe and beneficial to the public. We do not gather that he has any strong objection to the clause remaining in the Bill. He said that the Standing Committee to which it has been referred must decide whether it should be proceeded with or struck out and relegated to some other Bill at some other time, but we are glad to learn as we write that the Committee has voted in favour of retaining the section. It would be a mere academic waste of time for the Government after this action of the Committee to argue further for leaving out the clause, the more so as, if we are rightly informed, Mr. RITCHIE has promised its promoters to urge the Lord Chancellor to re-introduce it as a separate measure if it be dropped out of the Bill. Mr. RITCHIE has already left this question practically to the Committee, and though its decision is against him it is only formally so. The decision is against him only in the sense of method and time and not in that of principle. It will gratify not only the General Medical Council and the medical profession, but all who have the reputation of companies at heart, to know that the principle involved in Section 3 has the approval of Mr. RITCHIE and the legal members of the Government and has found a place in the Companies Bill, which is likely to be one of the few measures of a memorable session dealing with domestic and peaceful questions. We venture to hope that he will cheerfully accept the vote of the Committee and give Section 3 the same Government help which he gives to the other portions of the Bill.

Annotations.

"Ne quid nimis."

THE NEW UNIVERSITY OF LONDON.

THE statutes and regulations made for the new University of London by the Commissioners appointed under the University of London Act of 1898 were passed in the House of Commons without opposition on Friday, June 29th. On July 2nd the foundation-stone of a new hall for the teaching of Economics and Political Science, which is a new faculty included in the University by the Commissioners, was laid by the Bishop of London in Clare Market almost on the line of the projected street from Holborn to the Strand. The site has been given by the London County Council, who will also contribute £2500 a year towards the expense of carrying on the work of the school, while Mr. Passmore Edwards has vested the sum of £10,000 in three trustees for the erection of the building. A new start has thus early been made for the future education of the metropolis. We presume that the different bodies interested will soon begin to elect a Senate and that the constitution of the three standing committees—viz., the Academic Council, the Council for External Students, and the Board to Promote the Extension of University Teaching, will at once follow. The members of Convocation and the teachers of the University in its eight faculties of Theology, Arts, Laws, Music, Medicine, Science, Engineering, and Economics and Political Science, are qualified as members of the University by the fact that the statutes are now in force. It is most important to the medical students of London that the Senate of the new University should quickly come into existence, in order that arrangements may be made with the Royal College of Physicians of London and the Royal College of Surgeons of England, or either of them, to conduct jointly with the Senate examinations in such portions of the subjects included in the course of study for a medical degree as may be agreed upon. It is now 12 years since Lord Selborne's Commission was appointed for the hearing of the evidence for and against the formation of a Teaching University in London and to report thereon. The granting of medical degrees by the two Royal Colleges had been discussed by a joint committee and the movement for promoting a Teaching University had been thoroughly considered for some years before the appointment of the Royal Commission. We are naturally anxious that organisation of the new University should not be unduly delayed, for the medical profession has long waited for reform.

THE "LIGHT TREATMENT."

MR. MALCOLM MORRIS has had under treatment by the Finsen electric-light method for more than two months several exceptionally severe cases of lupus vulgaris, and on Saturday afternoon last, June 30th, was able to give a very successful demonstration of the method to a number of medical men interested in the new departure. The premises which Mr. Morris has secured for the purpose of carrying out the "light treatment" are situated at 1A, Berkeley-gardens, Campden-hill, and are fitted up with every requisite for applying the new method. The particular apparatus used at 1A, Berkeley-gardens was procured by Mr. Morris from Copenhagen and has been in this country for nearly two years, but circumstances have prevented the apparatus being put into systematic use until some months ago. The apparatus required for the treatment by means of artificial light consists of three portions. First, a powerful electric

arc lamp is needed of from 55 to 75 ampères current; secondly, means must be provided for cooling the light; and, thirdly, it is essential that the operators should be able readily to concentrate the light in a suitable manner. The electric arc lamp is employed because it is found that its light is not only rich in chemical rays but is also less endowed with heat rays than ordinary sunlight. Further, in this country it is not possible to depend on a regular supply of sunlight which may, however, when available, be substituted for electric light with some necessary variation in the apparatus. For purposes of treatment the light is too hot and it is therefore passed through a form of telescope fitted with lenses of crystal and with distilled water for the purpose of absorbing the heat rays. Jackets of cold water are also so arranged that any chance of complications from the action of heat is avoided. Inasmuch as only a small portion of the diseased surface can be treated at one sitting provision is made for concentrating the light on a small spot a little larger than a florin. To those watching this process carried out it seemed that the attendants manipulated a patient with a view rather of bringing the part to be treated into focus than of focussing the light itself on to the desired place. Though naturally pleased with the favourable course taken in the cases of lupus vulgaris submitted to this treatment Mr. Morris very clearly pointed out to those present that the whole subject must be considered in a tentative way only and they must not allow themselves to make exaggerated statements about curing lupus, though of course the procedure was very satisfactory in many ways. It could be fairly said from the cases demonstrated by Mr. Morris that the method was painless, that no anæsthetic was required, and that there was nothing in it to frighten or repel a patient. Put very briefly a medical man could safely assert that given a powerful electric arc light, with suitable telescopes fixed at the right distance so as to concentrate the light properly cooled on to the patient's skin as he lies on a couch (if the situation of the lupus was convenient for focussing), the results would be in a large proportion of cases exceedingly satisfactory. The drawbacks are that the treatment is a tedious operation, the patient requiring very long and frequent exposure to the light, and that the longer the treatment the less power the light has of piercing the tissues in any particular case. In fact, there seem to be three factors specially detrimental to the success of this method: scar tissue, blood, and pigmentation. Mr. Morris does not appear to accept the theory that the chemical rays act in a remedial manner entirely by their bactericidal power, but space does not permit of discussing this point. The curative agency of these chemical rays does not seem to be confined to lupus vulgaris, for Mr. Morris showed a case of lupus erythematosus in which great improvement had resulted, and he also exhibited a typical case of rodent ulcer in which the hardness had disappeared, leaving only a superficial healing ulcer. The success of the demonstration was added to by some interesting remarks from Dr. A. Barry Blacker and Dr. F. Harrison Low. Mr. Morris was helped by Mr. S. E. Dore, his clinical assistant at St. Mary's Hospital, in carrying out the method of treatment.

SEPTIC SORE-THROAT AND INFECTED MILK.

DR. J. KING WARRY, medical officer of health of Hackney, has forwarded to us a copy of a report which he laid before the Health Committee on June 7th. The report deals with an outbreak of sore-throat which occurred in his district in April and also during a part of May. The disease was of a septic character and appeared to be connected with one particular milk-supply which in the report is designated as X. An analysis of 10 cases showed that in every case there was tonsillitis. In two cases there was also superficial ulceration. In every case there was cervical adenitis and in one case this went on to suppuration. The temperature was raised and the rise persisted for as long as a fortnight after the tonsillitis had disappeared. The temperature was of an intermittent type with profuse sweating. In one case acute septicæmia with fatal pneumonia supervened. In two cases acute nephritis with hæmaturia came on about a week after the commencement of the attack. In one case purpura hæmorrhagica occurred. Dr. Warry sent out a circular to every medical man in the district asking whether he had met with such cases as those of which the symptoms are detailed above and if so whether the milk-supply to the affected patients was from a common source. A bacteriological examination of suspected samples was carried out at the Jenner Institute, but no light was thrown on the matter. The circular resulted in providing details of 151 cases occurring in 88 households, all, with very few exceptions, being in Upper Clapton and Stamford Hill. Of these 138 cases occurred in 75 households, all of which were supplied with milk by X. Dr. Warry inquired of X from whom he got his milk, but X declined to say, being within his legal rights in so doing. "In some way," concludes Dr. Warry, "the milk supplied by X was the cause of the septic sore-throat disease."

THE EAST SUFFOLK HOSPITAL.

AT the anniversary Court of Governors of the East Suffolk Hospital, which was held on June 27th, a most important resolution was passed by the narrow majority of one which in future may have very serious results for the honorary medical staff. Hitherto the honorary medical staff have been elected for life and the elective body has consisted of the governors, or rather of some 400 members of the general body of governors. By the new rule members of the medical staff were to be elected for only ten years with the option of re-election at the end of the first ten years for a like period, and in addition the election was to be taken out of the hands of the 400 governors and transferred to the members of the board of management, who number 80. The motion was put by the Rev. T. M. Morris, who said that he spoke as the representative of the late board of management. Dr. W. A. Elliston, in opposing the proposed alteration, said that if carried it would cause a great deal of friction. Besides this the proposal did not come from the whole 80 members of the board of management, but only from the 12 members of it who were elected annually as a weekly board. The proposed new rule would simply put the medical staff in the position of being practically servants to the board of management. Personally he thought that there should be an age-limit, and for his own part he should be quite ready to retire at the usual retiring age—namely, 60 years. The proposal to disfranchise the governors in favour of the board of management simply meant the curtailing of the privileges of the governors and that would be disastrous for the funds of the hospital. The medical staff had quite made up their minds on the matter. Dr. R. K. Casley, in endorsing Dr. Elliston's views, said that a medical man's judgment was better at the end of ten years than when first elected. Some people thought that a change of clergyman at the end of ten years, or even of three years, was desirable. A hospital existed for the benefit of the patients and not as a dumping-ground for various young medical men. Eventually the proposal was carried by 19 votes to 18. The chairman then put to the meeting certain alterations which the rule just carried entailed, among others one which would make the whole of the medical staff members of the elective body, but eventually the matter was left over to be decided at a future meeting of governors. It must be remembered that the essence of a hospital consists of three things—money, patients, and

medical men. The last two are interdependent, and without either a hospital is non-existent. But although a hospital cannot get on without funds and subscribers it probably could get on without a lay board of management, and this is a fact which many boards of management seem to forget.

THE POSITION AT THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

AS a result of the statement which has been issued to the governors by the medical and surgical staff of the National Hospital for the Paralysed and Epileptic we understand that a full inquiry will be instituted without delay. We have received a letter from the medical committee conveying their desire to settle the questions at ssue between themselves and the board of management without appeal to the public. Under these circumstances we refrain from publishing either the statements of the staff or the rejoinder made by the board, and content ourselves at this juncture with saying that we trust that under no circumstances will the staff forego their just demand for representation on the governing body of the institution which owes its public utility to their efforts.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE programme of fêtes which we published in our issue of June 23rd, p. 1821, has been slightly modified owing to the wish expressed by the President of the French Republic that he should close the Congress. The programme will therefore now run as follows. On August 2nd Dr. Lannelongue, the President of the Council, will give an evening fête in the name of the Government of the Republic. On August 3rd members of the Congress will be invited to an evening fête by the President of the Congress. On August 5th the fête given by the Bureau and Organising Committee of the Congress will be held in the Palais du Senat and the gardens of the Luxemburg. On August 7th the municipal council will hold its fête in the Hôtel de Ville. And, finally, on August 9th the President of the Republic will give his reception in the Elysée.

EXEMPTION OF PARALYSED LIMBS FROM THE SYPHILITIC EXANTHEM.

AT the meeting of the Société Médicale des Hôpitaux of Paris on June 15th M. Danlos related the following case. A man, aged 23 years, contracted syphilis. Six weeks after the appearance of the chancre a papular eruption appeared on the trunk, which took about three weeks to become generalised. Then the patient entered hospital with a confluent papulo-acneiform eruption which was very abundant on the trunk and less marked on the arms and left leg. The face was only slightly affected. The right lower limb was completely free from the eruption. On the right buttock and right side of the abdomen the lesions were numerous, but below the groin and the gluteo-femoral fold there was not one. In infancy the patient had suffered from infantile paralysis and the development of the right lower limb had been greatly checked. It was eight centimetres less in length than the left. The knee was semi-flexed and the foot was in a condition of equino-varus. All the tissues of the limb were decidedly atrophied except the skin which appeared to be normal. The temperature was lower on the right than on the left side. When the surrounding temperature fell the limb readily became purple. In spite of this it was, according to the patient, always moist. When the patient stood for a short time it became manifestly redder than the sound limb. The immunity from the eruption evidently depended on the atrophic condition of the limb. Similar cases have been recorded. In 1896 M. Jolly brought an almost exactly similar case before the society. Dr. Boulogne published a case in his *Thèse de Lille*, 1897, which differed in the fact that the paralysis was infantile spasmodic hemiplegia, and another in which the eruption was not the syphilitic exanthem but tuberculo-ulcerative syphilides, lesions which, however, are usually localised. Immunity of paralysed limbs to specific eruptions is not constant. M. Danlos observed in a man, aged 61 years, the subject of old hemiplegia, that the secondary syphilitic eruption was a little more abundant on the paralysed side. In the discussion which followed M. Merklen referred to a case of small-pox in a child the subject of infantile paralysis in which the pustules did not develop on the atrophied limb, and also to a case of psoriasis in which a limb, atrophied from infantile paralysis was exempt from the eruption. As to the explanation of such cases, nervous influence, alteration in the structure of the skin, defective circulation, and lowering of temperature may all be invoked, but definite proof as to the cause is wanting.

POST-GRADUATE CLINICAL STUDY IN THE METROPOLIS.

THE endeavour of the metropolitan schools of medicine to supply some sort of post-graduate teaching in London has proved far more successful than was at first anticipated. It was felt that the patients had already reached the limit of their endurance in the way of examination and the teachers the limit of their endurance in the way of teaching; for this reason it was decided to admit qualified medical men to the ordinary clinical instruction and clinical advantages of the medical schools, rather than to organise an independent post-graduate course. In this way it has been possible to throw open the best clinical material of the metropolis by issuing tickets at an almost nominal fee conferring the right to attend the practice of all departments of nine of the large metropolitan hospitals. Not a few of those who have come for a flying visit from Canada and the United States, after testing the scheme for a period of three months or more, have thought it worth while to stay a year or so as ordinary students to obtain the diploma of the Conjoint Board. Detailed information and prospectus may be obtained from the honorary secretary, West Wing, Examination Hall, Victoria-embankment, W.C., by letter or by interview between the hours of 12.30 P.M. and 3 P.M. daily, excepting Saturdays.

THE PLAGUE IN SAN FRANCISCO.

SOME two months ago rumours were current that plague had broken out in the Chinese quarter of San Francisco and reports which from time to time came to hand from that city, although vague, conveyed the impression that the true situation was being concealed and that the disease prevailed much more extensively than was generally supposed. Owing to this belief a feeling of dread sprung up throughout the United States that the plague had indeed gained a foothold in San Francisco and the fear was freely expressed that unless the most stringent measures were taken the pestilence, as in Australia, might be disseminated along the Pacific coast. In order to ascertain the exact position of affairs and to relieve the minds of the American public the *New York Herald* induced Dr. George F. Shrady of New York to proceed to San Francisco to make a careful inquiry into the matter. Dr. Shrady, after a stay of a week in San Francisco, during which time he visited every section of Chinatown under the escort of the police and health authorities, and after assisting in a necropsy on the body of a Chinaman suspected of dying from plague, came to the conclusion that, while there could be no doubt that the malady was, and had been, present in a

sporadic form, the scare was absolutely unwarranted, and that to all intents and purposes all fear of a widespread epidemic was ridiculous and unfounded. With regard to the condition of Chinatown and the duty of the San Francisco health authorities Dr. Shrady has this to say: "It matters not what money it may cost or what labour may be involved, the Board of Health of San Francisco has upon its shoulders a solemn duty which it must perform. The excitement created by the plague has called to the attention of the authorities the outrageously unhealthy state of Chinatown. Neither the people of San Francisco nor the authorities who represent them can afford to wait. Chinatown is known throughout the world as one of the filthiest quarters in existence, and San Francisco will not be relieved from the suspicion of other cities and States until it has removed this plague spot." It would therefore appear that the alarm caused by the occurrence of plague in San Francisco will really prove to be a blessing in disguise. Unsavoury Chinatown will doubtless be thoroughly cleansed and a district which has always been a menace to the whole city will be placed in a proper sanitary condition.

BARKER ANATOMICAL PRIZE.

STUDENTS who are expert dissectors will be interested in the announcement that the Barker Anatomical Prize of £21 is offered for competition and is open to any student whose name is on the anatomical class-list of any school in the United Kingdom. The subject appointed is a dissection of the fifth nerve, especially with reference to the Gasserian ganglion. The preparations must be sent to the Curator of the Museum, Royal College of Surgeons in Ireland, Dublin, before March 31st, 1901, each being marked with a fictitious signature and accompanied by a sealed envelope bearing outside the same signature and containing the competitor's name, together with a declaration that the work has been carried out by himself. The printed form necessary for the declaration can be obtained from the Curator. The cost and risks of transport must be borne by the student.

THE CLOSING OF PUBLIC ELEMENTARY SCHOOLS.

THE procedure to be adopted in order to enforce the closing of public elementary schools is so simple and can so speedily be brought into action that it is surprising to find not only members but even clerks of School Boards who appear to be quite unacquainted with the precise requirements of the Education Code. An instance in point reaches us from a district in South Wales where measles is now epidemic. The head-master of the Board school found his attendance had fallen from 97 pupils to 17 and he appeared before the School Board armed with an "order" from the local medical man to close the school. The Board was about to pass a motion to close when their clerk stated that such a motion was quite unnecessary but an "order" must be obtained from the medical officer of health of the district, whereupon the head-master and the clerk were deputed to wait upon this official who without demur gave the required document. Article 88 of the Education Code reads:—

"The managers must at once comply with any notice of the sanitary authority of the district in which the school is situated, or any two members thereof, acting on the advice of the medical officer of health, requiring them for a specified time, with a view to preventing the spread of disease, or any danger to health likely to arise from the condition of the school, either to close the school or to exclude any scholars from attendance; but after complying they may appeal to the department if they consider the notice to be unreasonable."

It will be observed that the proceedings may be likened to a safe with two keys, both of which are required to open its door. One key is in the possession of the medical officer of health and the other in that of the district council or any two of its members. Either is powerless to act alone, but with joint action a school or a department of a school may be closed at a few hours' notice. The medical officer of health may advise the closing, but can go no further; he certainly cannot issue an "order" to close. The district council or any two of its members can require a school to be closed, but only "acting on the advice of the medical officer of health."

TENDENCY TO HÆMORRHAGES IN EXOPHTHALMIC GOITRE.

IN a recent number of the *Neurologisches Centralblatt* (April 15th) Dr. J. Popoff reports two fresh cases of exophthalmic goitre with pronounced tendencies to hæmorrhage from the mucous membranes. He regards this as a valuable symptom in early stages of the disease and has observed such a tendency in three cases out of six or seven. The cases recorded in his present article are as follows. Case 1. A woman of middle age observed after losing her teeth that hæmorrhages occurred from her nose and gums, vagina, and mucous membranes generally. She was accordingly admitted to hospital, in which she remained for 31 days, and during this time she suffered from three attacks of bleeding from the mucous membranes and large hæmorrhagic extravasations into the skin. She gradually improved under treatment and the hæmorrhages ceased entirely. Case 2. The patient was a young woman, aged 27 years, who suffered from similar hæmorrhages at the commencement of exophthalmic goitre. During her residence in hospital, extending over a period of five weeks, she had no less than six severe recurrent hæmorrhagic attacks. Both patients were subject to slight and commencing exophthalmos, and Dr. Popoff is inclined to include the hæmorrhagic tendency among the earlier diagnostic signs of exophthalmic goitre.

OBSERVATIONS ON TUBERCULOSIS IN ITS EARLY STAGES.

A NUMBER of interesting papers constituting a symposium on the above subject was presented by various physicians at the American Medical Congress held at Atlantic City, N.J., from June 5th to June 8th. Dr. J. M. Anders of Philadelphia stated that the pre-bacillary stage of phthisis was one of long duration and extended to the time when the bacilli had invaded the lungs and could be detected in the sputa. During this pre-bacillary stage diagnosis was to be made by three methods: (1) the use of the x rays; (2) the application of the tuberculin test; and (3) a careful study of the history, symptoms, and physical signs. Among the most important indications of the last class was a two hours' temperature record which would show elevation of temperature at a given hour daily. Dr. S. Solis-Cohen of Philadelphia stated that in the incipient stage of tuberculosis the time of the highest temperature was between 12 noon and 2 P.M., except in cases of inverse temperature. Dr. Victor C. Vaughan of Ann Arbor, Michigan, said that the temperature of tuberculosis in its early stages was more characteristic than that of typhoid fever, though many things might cause it to vary. Rest was one of the great benefits of sanatorium treatment. When the temperature was not high a moderate amount of out-door exercise might be indulged in. He further pointed out that many patients suffering from argyria as the result of the use of silver in the treatment of epilepsy developed tuberculosis. This view, however, was controverted by others. Dr. Delancey Rochester of Buffalo thought that the spread of the disease among tailors and seamstresses might in a measure be accounted for by the fact that they had a habit of wetting

the thread in the mouth. Dr. W. Freudenthal of New York City stated that in 1500 cases of tuberculosis present in persons following various occupations tailors were the most frequently affected, those who worked in "sweat shops" or who lived in dark, unventilated rooms being particularly attacked. Dr. C. P. Ambler contended that cases of pulmonary tuberculosis should not be reported as cured until a long time had elapsed. Thus of 46 cases classed as A 35 were regarded as cured. These numbers referred to the present condition of cases treated during 1898 which were reported at the annual meeting of the American Medical Congress in 1899. Again, of 28 cases classed as B six were apparently cured, and of 32 cases classed as C, nine were greatly improved. The treatment adopted was as follows: hygienic supervision, climatic influences, medication, and serum-therapy. Cases apparently cured under serum-therapy were less liable to relapse. Dr. Mayo of New York believed that no tuberculous patient would throw off the liability to the disease, no matter how long he might live, but if a tuberculous patient were relieved of his symptoms for a year he was practically well. Dr. Upshur illustrated the importance of hygiene by citing the case of the negro in the Southern States; when a slave he was practically free from consumption, but at present in the first and second generations since slavery was abolished the march of consumption was so great "as to warrant the feeling that the solution of the social problem lay in consumption," which bade fair to reduce the negro to the same unimportant position in the country as the Red Indian occupied.

SIR W. FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR.

SIR WALTER FOSTER'S speech in the House of Commons on the occasion of the debate on June 29th on the treatment of the sick in South Africa does not seem to have been fully reported in the papers. He is stated by some who were present and had the privilege of listening to him to have made some statements which certainly appear to require elucidation, for, taken as they stand, they are calculated to raise the eyebrows of astonishment, as the Germans say. Sir Walter Foster is alleged to have stated that the opinion of the late Professor de Chaumont with regard to the provision of hospital accommodation for an army in the field was that it should be calculated at 25 per cent. As we have been unsuccessful in our attempts to verify this perhaps Sir Walter Foster would be kind enough to furnish a reference to the publication from which he obtained the record of this opinion on the part of Professor de Chaumont. He also stated that in his (Sir W. Foster's) judgment, had prevision been exercised and due provision made the case mortality of enteric fever might have been brought down to 12 per cent. Does he really mean to say that the mortality during a campaign should be less than what it is in hospitals at home where every agency for good is available? If so, he should lose no time in instructing the medical officers, not only of the British, but of all European, armies how this improvement is to be effected, especially under the conditions of war where the sick have in any case to be relegated from the front to hospitals in the rear. We think we recollect that it was the late Sir William Jenner's opinion that the movement of typhoid fever cases was injurious, in which we fancy most medical authorities would be inclined to concur, but this, to mention only one of the things incidental to war, is unavoidable. Moreover, Sir W. Foster seems to have implied or suggested by his remarks that medical officers are in the habit of recording enteric fever as "simple continued fever," with the object of minimising the number of cases of the former. He surely could not have meant this. That cases of enteric fever are occasionally so recorded is a well-known fact, but from no such motive as that implied. Not to mention such cases as are of a mild (ambulant) type, Sir W. Foster's experience must have been of an exceptional character if he has not encountered many in which the true nature of the fever is not (and cannot be) determined with any accuracy in the initial stages of the disease. As a matter of fact, however, it is a common practice among medical officers to regard and return every fever case with a rise of temperature lasting over six days as one of enteric fever. It is easy to understand, however, that as the subsequent "change of disease" (in the statistical returns) entails a certain amount of clerical labour in order to maintain the accuracy of the statistical returns (which members of the House of Commons, including Sir W. Foster, often call for), it frequently happens no doubt that the change is not made, especially in the hurry and pressure of war. But it is obvious that if a small proportion even of the cases of simple continued fever were returned as enteric fever the present death-rate of the latter would be reduced to that extent and be more favourable than it is. The present death-rate of 21½ per cent. may consequently be regarded as an extreme ratio, for it is capable of large discount seeing that simple continued fever is hardly ever fatal. As to what an independent authority in the shape of a small commission could have effected under the circumstances that obtained in South Africa we are at a loss to understand. From a sanitary point of view they could manifestly have done nothing until the British forces had invaded and taken a place, when their operations would have been too late, and they could not have delayed or altered any essential military operations, or prevented the army from altogether outmarching its supplies, or have increased the amount of available transport by rail, or otherwise prevented the enemy from making raids upon it, or fouling the rivers and sources of water-supply, or capturing the waterworks. They might no doubt have represented this and that and "intervened in regard to questions between military commanders and medical officers" if the theatre of war had been a small one or had they been ubiquitous; but could they have got up hospitals and supplies where needed without the means of doing so and would they not have been, in fact, the proverbial "fifth wheel" to an already embarrassed and overladen coach?

TREATMENT OF MEMBRANOUS COLITIS.

THE *Medical News* of New York of June 2nd contains a valuable paper by Dr. W. H. Thomson on the treatment of the very troublesome disease, membranous colitis. He finds that nothing is so soothing to the tenesmus as free irrigation of the colon with normal saline solution, to which may be added oil of peppermint, five drops to the pint. From three to five gallons at 100° F. may be used once in 12 hours with Kemp's rectal irrigator, care being taken that all the fluid returns. Once a week a pint of hot water containing from 30 to 40 grains of nitrate of silver may be used. But this irrigation is not curative, as it is in many cases of chronic catarrhal or ulcerative colitis. One remedy, Dr. Thomson finds, changes the disordered nutrition of the mucous membrane—castor oil in what he calls "alterative doses." He gives from half a drachm to a drachm of the oil in an emulsion either half an hour before or an hour after meals. This remedy should be continued for months and an intermission should be allowed only when the oil seems to increase the dyspeptic symptoms. Nitrate of silver in quarter-grain doses combined in pill or capsule with nine grains of turpentine resin, taken three times a day, is sometimes of much service. After six weeks sulphate of copper in quarter-grain doses may be substituted for the nitrate of silver. If dyspeptic symptoms exist five

grains of resorcin in solution with tincture of nux vomica may be given half an hour before meals and supplemented by 10 grains of sodium benzoate and 10 grains of bismuth salicylate in capsules an hour after meals as intestinal antiseptics. The chronic constipation (on which the disease depends) should be treated by salines. From one to two drachms of phosphate of soda with 10 grains of salicylate of soda should be given every morning in a tumblerful of water as hot as the patient can sip it. After a time the same quantity of sulphate of magnesium may be substituted. Daily massage of the abdomen is useful. As to diet beans, spinach, woody vegetables, and oatmeal, must be excluded, and the patients should be encouraged to take meat, poultry, eggs, koumiss, peptonised milk, and most cereals. Change of air in the country is the best remedy for constipation and it beneficially affects the disease. When all other means fail colotomy, as recommended by Dr. Hale White, may effect a cure.

THE PROPOSED INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON.

THE publication of a *précis* of the proceedings relating to the proposed meeting of the International Congress of Obstetrics and Gynæcology in London in the current number of the *British Gynæcological Journal* has enabled those who were but imperfectly acquainted with the facts to form a fairly clear conception of the part taken by the British Gynæcological Society in this matter. It is greatly to be regretted that a perusal of the *précis* does not tend to show that the action of the Gynæcological Society was altogether free from blame. In view of the special nature of the relations existing between the Gynæcological and Obstetrical Societies the council of the younger society would have been well advised had they shown an earlier and greater desire for coöperation not only with the senior society, but, what is of far more importance, with those gentlemen who are the representatives of obstetric medicine in the medical schools of the metropolis. The summoning of an international congress to the capital of the British Empire should not be the work of any one society, however representative it may be. The fiasco which has resulted and which has unhappily only tended to accentuate the differences between the two societies, would never have occurred had the invitation to the organising committee of the Congress been sent, not by any one society, but by a committee representing the leading obstetricians and gynæcologists, not alone of London, but of Great Britain and Ireland. There can be no doubt but that under such circumstances both metropolitan and provincial practitioners would have loyally coöperated and the Congress could not have failed to be a success. Under the present conditions we trust that the Organising Committee of the Congress at their meeting on August 2nd will see that any attempt to hold a meeting in London in 1902 cannot but be a failure and will adopt the only course that at present appears to be open to them—e.g., that of postponing any such meeting in this city for some years. In the present issue of THE LANCET is published a letter from Professor Sinclair of Manchester upon the subject. As a leading provincial obstetrician and as a member of both societies he is able to regard the whole matter without prejudice. We would commend a perusal of this very temperate letter to the members of the Organising Committee of the British Gynæcological Society. As we have said, we believe the best method of promoting a meeting of the International Congress of Obstetrics and Gynæcology in London would be to form a provisional committee of the leading obstetricians and gynæcologists of England, Scotland, and Ireland. Such a committee could well include everyone of a representative character without regard to his official position in any society. With such a committee once called together it would be easy to settle details, to elect a president, and to appoint smaller committees to carry out the arrangements necessary to ensure the success of the Congress. The present unfortunate position is due to the fact that the Fellows of one society have thought fit to move in the matter in their capacity as representatives of that particular society. It is important to note that the meeting held at Dr. Playfair's house was not one of the Obstetrical Society, but of the teachers of obstetrics and gynæcology to the London medical schools, and that these gentlemen signed the letter refusing to take part in a Congress with regard to which important arrangements had already been made before their coöperation was invited in their capacity as teachers and not as Fellows of the Obstetrical Society. Professor Sinclair is clearly of opinion that the council of the Obstetrical Society were justified in the action they took in the matter, and although we must deeply regret that the necessity for any such action should have arisen, yet we fail to see how in justice to themselves they could have done otherwise. We trust when the time comes for again inviting such a Congress to meet in the metropolis that the present unfortunate occurrence will not be forgotten and that steps will be taken to prevent the possible recurrence of such an *impasse* as exists at the present time.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE fifty-ninth annual meeting of this association will be held in London on Thursday and Friday, July 26th and 27th, at the rooms of the association, 11, Chandos-street, Cavendish-square, W., under the presidency of Dr. Fletcher Beach, who will deliver his presidential address at 2 P.M. on the opening day. Following the President's address Dr. William Wynn Westcott, coroner for North-East London and president of the Society for the Study of Inebriety, will read a paper entitled "Inebriety, its Causes, Results, and Treatment." Dr. W. J. Collins and Dr. E. B. Forman of the Inebriety Committee of the London County Council are expected to speak. On the same evening the annual dinner will take place at the Whitehall Rooms of the Hôtel Métropole at 8 P.M., tickets one guinea each. On the second day papers will be read by Mr. H. Hayes Newington (member of the Sussex County Council and of the Asylum Committee); Dr. W. Ford Robertson, pathologist Scottish Asylums Laboratory, Edinburgh; Dr. J. Shaw Bolton (who will show some Naked-eye Preparations and Specimens from the museum of the Pathological Laboratory of the London Asylums at Claybury); Dr. David Orr, pathologist, Prestwich Asylum, and Dr. Thomas Philip Cowen who will read "A Contribution to the Morbid Anatomy of General Paralysis of the Insane." Dr. George A. Watson will exhibit some lantern slides to demonstrate Juvenile General Paralysis. Dr. J. O. Wakelin Barratt, pathologist, West Riding Asylum; Dr. John Turner; and Dr. Lewis C. Bruce, physician superintendent, and Dr. H. de Maine Alexander, assistant physician, Perth District Asylum, Murthly will contribute Observations upon the Various Physical Changes in the Acute and Subacute Stages of Melancholia. In the afternoon Mr. Cecil F. Beadles will read a paper entitled, "The Insane Jew"; and Dr. W. C. Sullivan, Dr. David Blair, Dr. A. F. Shoyer, and Dr. F. W. Edridge-Green will also read papers. It was agreed at the council meeting held on May 10th in London, after consulting the divisions of the association which reported unanimously upon the matter, that the following resolution should be placed before the annual meeting with a recommendation that a copy thereof be sent to the Local Government Board in the three kingdoms:—

"It is the unanimous recommendation of the Medico-Psychological Association of Great Britain and Ireland that

in union workhouses in which insane persons are detained a properly qualified and trained mental nurse should be employed in the insane wards."

On Saturday, July 28th, the President, Dr. Fletcher Beach, and Mrs. Fletcher Beach will be at home to members and their friends from 4 P.M. to 7 P.M. in the afternoon at Winchester House, Kingston-hill.

THE MEDICAL ACTS AMENDMENT BILL.

WE understand that Professor Sir R. C. Jebb has undertaken the charge of this Bill in the House of Commons. It has the support of the Privy Council and of practically all the universities and should not meet with any serious opposition.

OBSCURE LEGISLATION.

IN discussing questions relating to public health and local government we have frequently called attention to the obscurity of modern legislation, by no means confined to enactments in dealing with these topics, which arises from making one Act of Parliament incorporate by reference the provisions of another, instead of each statute being, as it were, self-contained. We are glad to see that Mr. Gibson Bowles, M.P., in a recent debate upon the Government Bill dealing with agricultural holdings called attention to this practice in forcible terms. The honourable member had apparently good reason to complain, for he stated that the Bill before the House was the most remarkable example of referential and allusive legislation he had ever come across, adding that no one could approach to an understanding of it until he had provided himself with nine other Acts of Parliament. As instances of the cross referencing of which Mr. Gibson Bowles complained he gave such passages as these, which will make clear to our readers the nature of the system against which we protest. "References to the Principal Act and to Sections 29, 30, 32 and 34 thereof shall be construed as references to the Agricultural Holdings Scotland Act (1883) and to Sections 24, 26, 25, and 30 thereof respectively." "Reference to manures in the Principal Act shall be construed as references to the improvements Nos. 24 and 25 in Part 3 of the first schedule of this Act." The House laughed at the sarcasms which the Member for King's Lynn levelled at a system of drafting which it has made its own, but it is no laughing matter for those who have to guide themselves by the light of such cryptograms in the fulfilment of public duties and who desire to do so without incessantly consulting their legal advisers as to the meaning of what need not be obscure. The system of legislating by cross reference instead of by printing sections in full may render a volume of statutes smaller and easier to handle than it would otherwise be, but to those who are not members of the legal profession lucidity in an Act of Parliament is of more value than a slightly diminished avoirdupois.

ARSENICAL PIGMENTATION AND KERATOSIS WITH ASCITES.

IN the *Johns Hopkins Hospital Bulletin* for April Dr. Louis P. Hamburger has recorded a case in which the above conditions were present. A man, aged 42 years, who had been taking for psoriasis from five to eight minims of Fowler's solution three times a day off and on for 10 years, came under observation. His illness began eight months previously with a "cold" and a cough. About a month later his abdomen began to swell and at the end of the day's work he noticed that his legs were swollen. The skin of almost the whole body was of a mottled yellowish-brown colour, small rounded areas of less pigmented skin alternating with more deeply-coloured parts. The face was slightly affected and the complexion was muddy. The hands and feet were not affected. On the palms the skin was diffusely thickened, and here as well as between the fingers were numerous dirty grey warts and callosities, varying in size from that of a pin-head to that of a pea. The soles were similarly affected. The abdomen was distended with fluid and the shins pitted on pressure. Thomas Hunt was probably the first who called attention to arsenical pigmentation. He wrote: "The trunk of the patient first, and, subsequently, all those parts of the body which are by the dress protected from the atmosphere, become covered with a dirt-brown, dingy, unwashed appearance."[1] Palmar and plantar keratosis were described first by Erasmus Wilson in 1868. In 1887 Mr. Hutchinson called attention to several cases and pointed out, further, that the use of arsenic might lead to the production of a peculiar form of cancer. Dr. Hamburger thinks that the ascites present in his case was also due to the arsenic, for Mr. Hutchinson has described a similar but more severe case in which paracentesis was performed three times and recovery followed only on discontinuing the drug.[2] In Geyer's report on an outbreak of arsenical poisoning due to contaminated water several similar cases are quoted.[3] The inference certainly seems justifiable and is, moreover, supported by analogy. For if ingested arsenic will irritate skin and mucous membrane, why not also serous membrane?

DISEASES WHICH SIMULATE APPENDICITIS.

THE difficulties of diagnosis in cases of supposed appendicitis are very great. Many other morbid conditions have been mistaken for inflammation of the appendix, and in some cases even an operation has been performed. On the other hand, real cases of appendicitis have been diagnosed as suffering from some other malady. In the *New York Medical Record* of May 26th there is a paper by Dr. E. J. Janeway of New York, which was read previously at a meeting of the Practitioners' Society, on "Some of the Conditions Simulating Appendicitis." We will mention a few of the principal cases which have come within Dr. Janeway's knowledge or about which he has been informed by physicians. Neuralgia affecting the lower abdominal nerves has in a number of cases given rise to doubt. In two cases in which operations had been performed the appendix was found to be normal and was not removed. In some the neuralgia was the reflexed pain of pneumonia or pleurisy. Another source of difficulty is in conditions of the right kidney, such as hydronephrosis and moveable kidney. Cholecystitis has in several cases been operated on from the belief that peri-appendicular inflammation existed. Ulcers in the gastro-intestinal tract, or catarrh with colic and cancer of the cæcum, have led to the belief in the existence of appendicitis. Fæcal impaction may be mistaken for exudation, and *vice versâ*. In a certain class of cases, not very frequent, a non-malignant ulcer of the hepatic flexure of the colon, with fæcal accumulation and possibly a moveable kidney, may mislead the inexperienced. An important fact is mentioned by Dr. Janeway that he has known the removal of the appendix to be done for the general aches and pains of follicular tonsillitis. It is only fair to add that he has been consulted in two cases of peritonitis from perforation of the appendix which were ushered in by follicular tonsillitis. Abscess of the ovary, retained menstrual fluid with sapræmia causing chill, or retro-peritoneal abscess may mislead. Hypochondriacal patients may fasten on the appendix as a source of evil and may receive the advice to have an operation immediately. Dr. Janeway's paper is of much value as drawing attention to the importance of an exact diagnosis in cases apparently

[1] THE LANCET, vol. i., 1847, p. 92.
[2] Archives of Surgery, vol. vi., p. 389.
[3] Archiv für Dermatologie und Syphilis, 1898, Band xliii., p. 221.

of inflammation of the appendix, and should serve to guard against every case of pain and tenderness in the right iliac fossa being looked upon as appendicitis.

NEALE TESTIMONIAL FUND.

WE are informed that this fund is about to be closed, but subscriptions received on or before Wednesday next, July 11th, will be included in the complete list which will shortly be published. We would remind our readers that subscriptions should be sent to Mr. J. Y. W. MacAlister, 20, Hanover-square, London, W., and it will save much trouble if cheques are made payable to "Bearer" and crossed "National Provincial Bank, Neale Testimonial Account."

STREET NUISANCES.

LONDON is such an unwieldy agglomeration of some dozen separate cities that coherent action is almost impossible. But the London County Council, which has after many complaints shown itself willing to do something to alleviate the sufferings of those who have to work with their brains, on June 29th held a conference with representatives of the vestries at Spring-gardens. A committee was appointed, to consist of one member from every local authority added to the sub-committee of the County Council, to discuss and report to a future conference upon matters which required definite regulations. The meeting then commenced to consider the removal of refuse and litter and we are glad to see that the case of Bond-street was specially mentioned for it is very narrow and between 9.30 and 10 A.M. in a disgraceful condition. This, however, as well as the question of street noises, was referred to the committee. We do not know whether the recently passed regulations upon "flash-lights"[1] were retrospective or not, but to mention only one of these, the intermittent advertisement at the top of Sloane-street is still hard at work or was so, at any rate, on the night of July 4th. Street-shouting, too, though the nuisance abated for some little time after the promulgation of the recent order,[2] is now, in the Strand at least, as bad as ever it was. The "runner" is not only a nuisance on account of his howling, but he makes great additions to the litter in the streets by dropping posters wherever he goes. Piccadilly-circus is a favourite dumping ground. Sir Edward Bradford issued a notice to the police to stop vendors from shouting, but their efforts have so far had singularly little result. The London School Board, too, might well spend a portion of the £2,000,000 or so which it extracts from the ratepayers in kidnapping the under-sized infants who shriek "cricket editions" at untimely hours. Only recently a maddened householder complained with success of the "terrible monotony of the cooing of a noisy animal, to wit, a dove;" surely the monotony of a newsvendor is far worse. However, relief seems to be visible in the distance.

IT is announced that the Queen has been pleased to confer the honour of Knighthood upon Mr. Riley Lord, the Mayor of Newcastle-upon-Tyne, and upon Dr. George Hare Philipson, the President of the University of Durham College of Medicine, Newcastle. Upon Mr. Riley Lord's unceasing and finally successful efforts to secure a new Infirmary for Newcastle we have already commented and we congratulate him heartily upon his good work and its well-deserved recognition. Dr. George Hare Philipson, besides being President of the University of Durham College of Medicine at Newcastle, is Professor of Medicine in the University and Lecturer on Medicine in the College of Medicine. In 1893 he was President of the British Medical Association. He is M.D. of the University of Cambridge and M.D., D.C.L., of the University of Durham, consulting physician to the Newcastle Infirmary, a Justice of the Peace, and representative of the University of Durham College of Medicine on the General Medical Council. His important and responsible position in the world of medicine has secured him many friends who will join with us in felicitating him upon the honour that he has merited and received.

IN our issue of June 23rd we gave a short account of the new pathological laboratories at Oxford and mentioned that last year an anonymous gift of £5000 had been presented to the University towards the erection of the buildings. The donor has now consented that his name should be made known and a decree is to be proposed on July 7th that the thanks of the University be conveyed to Ewan Richards Frazer, M.B., Balliol College, for his munificent donation. Dr. Frazer is a resident of Woolahra, Sydney, N.S.W.

THE honorary degrees of Doctor in Medicine and Master in Surgery of Dublin University were conferred on Sir William Mac Cormac, Bart., K.C.V.O., on June 28th. On the same day Surgeon-General J. Jameson, C.B., Director-General of the Army Medical Department, received the honorary degree of Doctor in Medicine. Both distinguished members of the medical profession were introduced to the Vice-Chancellor by the Orator, Dr. R. Y. Tyrrell, in speeches of excellent Latinity full of happy allusions.

DR. DANIEL JOHN LEECH, Professor of Materia Medica in Owens College, Manchester, died on July 2nd, in his sixty-first year. Dr. Leech represented Victoria University in the General Medical Council, and was Chairman of the Pharmacopœia Committee, but on account of illness was unable to attend the last meeting of the Council.

MR. FREDERICK TREVES, F.R.C.S. Eng., was on June 28th presented with the freedom of Dorchester, his native borough. Mr. Treves, in acknowledging the honour conferred upon him, alluded to the medical arrangements of the war in South Africa, and said that they could look with pride upon the work accomplished.

THE annual distribution of prizes to the students of the Medical School of St. Mary's Hospital will take place on July 13th at 4.30 P.M. The prizes will be presented by Dr. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge.

A TELEGRAM was received at the Colonial Office on Monday last, July 2nd, from Sir Henry Blake, Governor of Hong Kong, stating that 99 cases of bubonic plague with 98 deaths occurred in Hong-Kong last week.

THE annual meeting of the National Association for Promoting the Welfare of the Feeble-Minded will be held at Aubrey House, Campden-hill, W., on Monday next, July 9th, at 4 P.M.

THE appointment of Mr. John Sealy, M.D., as a member of the Legislative Council of the Island of Barbados has been approved by the Queen.

DR. L. S. JAMESON, C.B., has been returned unopposed as member of the House of Assembly of Cape Colony for Kimberley.

THE British Gynæcological Society will meet on Friday, July 13th, at Buxton.

WE are asked to state that the Cambridge Long Vacation Course will be given as usual.

[1] THE LANCET, March 24th, 1900, p. 866.
[2] THE LANCET, Feb. 10th, 1900, p. 399.

THE WAR IN SOUTH AFRICA.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

THE rumours which we have had for some days past that Pretoria had fallen into the hands of Lord Roberts are now officially confirmed, so that it is very unlikely that there will be any necessity for the continued presence of surgeons in South Africa, and in consequence I hope that this may be nearly the last, if not quite the last, letter that I shall have the opportunity of sending to you from Deelfontein. The heavy epidemic of enteric fever which has broken out will, of course, necessitate the keeping open of all the hospitals for a considerable time yet, and among them of this hospital. There are over 700 beds here now and we are just opening accommodation for another 200 patients in tents.

There is a rumour that the Yeomanry will be amongst the first of the troops to be sent home, and we hope to arrange to establish a hospital at Maitland camp which is just outside Cape Town, where they will mass in thousands previously to taking ship, and where in consequence there is sure to be a certain amount of sickness to be dealt with. We have, however, not yet heard what is to be the fate of the splendid institution here. It is such an ideal spot for a hospital, and so much time and trouble have been expended on drainage and sanitary works and on the elaborate system of water-supply as well as on the erection of the huts, that it will be a thousand pities if the whole is not taken over as a going concern by the military or the civil authorities and run for the permanent benefit of the large army of occupation that must be left behind or of suffering humanity in general. The alternative of repacking the 750 iron bedsteads and their hair mattresses and their bedding, and the accumulation of hospital paraphernalia and stores which go to make up a total weight of well over 1000 tons, and of transporting all of this nearly 500 miles to Cape Town and then 6000 miles to England, surely only requires to be mentioned in order to be avoided. The mere fact that nearly all the packing cases had to be used up owing to the scarcity of wood would make it an almost impossible task. Perhaps, however, it is early days yet for such considerations. There is still much sickness to be dealt with and we are very thankful indeed that the committee at home have sent out 10 more nursing sisters who will shortly be due in our camp, and in view of the large percentage of sickness amongst our staff will be extremely welcome.

The routine of work throughout the camp has settled itself down so satisfactorily, and every member of the staff does his or her allotted work so well, that everything goes on in a most peaceful and methodical manner, and it is difficult to realise that it is only two or three weeks since the end of those busy and bustling weeks of development and growth when one hardly ever had a quiet quarter of an hour. The cold weather, also, has brought changes which make life here more pleasant. It has killed all the flies, for one thing, and it has made the meat, about which I grumbled in a former letter, much more palatable, for now it is possible to hang it so long that when cooked one's teeth will go through it. This sounds a small thing in itself, but, as you know, it is very much easier to get work out of people when their food is good. The laundry is doing extremely well under Miss Cheesman's care, associated with whom is one of our medical staff, Dr. Bruce, who superintends all the disinfection of linen from the enteric fever patients and other infectious patients. Our carpenters, freed now from the work of erecting huts, are busy putting up shelves and cupboards and stoves for warming purposes as well as a lean-to just outside each hut, in which all the washing-up is done.

By the bye, we succeeded in reaching our full development of 700 beds, as in a former letter[1] I wrote that we hoped to be able to do, well within five months of the date of the appearance in the *Times* of the letter from Lady Georgiana Curzon and Lady Chesham suggesting the sending out of a hospital for the Yeomanry. I do wish that everybody who responded to that letter by subscriptions and gifts could come and see the hospital as it is now. There are very few things which I should try to hide from their gaze and perhaps the most important of these is the condition of the boots of the *personnel*. The fact is, that leather, except such as is specially prepared, perishes rapidly in this climate, and the combination of sand and boulders is not an amicable one for boot-leather; though indeed there are hardly any boulders to be met with now within the camp—they have all been collected by the natives for building walls or for making borders for the system of roads between the huts and the tents. The electric and other lamps which light the way in the streets of our small town exist only in the imagination of the newspaper correspondent whose description we have lately read in one of the London papers.

The smoking concerts continue to attract large audiences, but they take place now inside the large recreation tent which adjoins the church hut and forms the main body of the church on Sundays.

Two Roman Catholic priests and several medical men (both officers of the Royal Army Medical Corps and civilians) have been patients in our officers' wards. When they are well enough the convalescent officers come to our officers' mess. We have by far the biggest mess in the whole of South Africa, there seldom being less than 50 persons present at each meal. We are going to keep Christmas Day on June 25th, for that day will be midwinter, and last night we had a dress rehearsal in the shape of turkey and plum-pudding. It is really very cold now—there are several degrees of frost each night—and we have had to put an oil-stove or a coal-stove in each of the hospital huts.

It has been an unfortunate week for the Yeomanry, for, as you know, the Warwicks were badly cut up in the rebellious districts under Sir Charles Warren, and many of their wounded have arrived here, and then the 13th Battalion had the bad luck to get trapped at Lindley. By the time you get this it will be ancient history and you will know all about the latter misfortune. The only two members of the battalion who were not killed or wounded or taken prisoners are at present in this hospital—namely, an officer who has had enteric fever here but is now convalescent, and a trooper who, after the 13th Battalion of the Imperial Yeomanry (composed, as you know, of those very sporting companies the Duke of Cambridge's Own and the Irish Yeomanry) were surrounded on a kopje near Lindley, was sent to work his way through the Boer lines and fetch reinforcements from Lord Methuen who was in the neighbourhood. After a most exciting journey, partly on foot and partly on commandeered horses, moving each night and lying hidden during the daylight, this trooper got to Lord Methuen and conducted the reinforcements back to Lindley within the time that the officer in command of the Yeomanry had said that he could hold out for; but it seems that the Boers, whose numbers had grown each day from 500 to 2000, had brought some guns into action and had rendered the position untenable. It is a very sad ending for this fine regiment. I have seen a good deal of them since their arrival in South Africa a week or two after we came here, and indeed I travelled part of the way from Bloemfontein to Kroonstad side by side with them, and particularly noticed how well they scouted. I breakfasted in the latter place with them the very day that they set out for Lindley. They were then pointing out the good fortune that had attended their regimental number of "13." They mobilised in England on the 13th day of the month, and three times in South Africa it has happened that they have moved further up country on the 13th. They were such a splendid lot of sportsmen and had borne themselves so well through their more than usually rough time out here that I am sure everybody who knows anything of them will be extremely sorry for their bad luck in getting wiped out just before the end of the campaign; though considering the position they got into it is extremely fortunate that more of them were not killed, and I suppose it cannot be very long before those who were taken prisoners will be released. They will, of course, have lost every single thing they brought with them except the clothes the Boers leave them to stand up in. I think you will find that they will not have so much as a badge left between the whole lot of them, for this is the very first thing that the Boers loot, turning their attention first to the dead, then to the wounded, and then to any prisoners they may take.

Deelfontein, June 11th.

[1] THE LANCET, June 23rd, 1900, p. 1820.

FIELD FORCE—SOUTH AFRICA.

Table showing the Personnel of Medical Units on the Lines of Communication.

Unit and place of mobilisation.	Details.	Remarks.
No. 14 General Hospital (Depôt R.A.M.C., Aldershot).	*Royal Army Medical Corps.* Major S. Butterworth (*a*). Lieutenant F. W. Cotton. " F. M. Parry. " W. J. P. Adye-Curran. " J. G. Foster. " E. G. Ford. " L. M. Purser. " H. B. Fawcus. " T. E. Fielding. *Civil Surgeons.* Mr. W. J. I. Bruce. " W. J. Collins. " J. G. F. Hosken. " A. W. Izard. " M. E. O'Dea. " L. E. Owen. " W. M. Power. " R. B. Williams. *Army Nursing Service Reserve.* Nursing Sister Miss M. A. Blair " " " S. Brown. " " " M. E. Buse. " " " A. E. Byrne. " " " A. D. Cameron. " " " E. P. Carruthers. " " " S. A. Claridge. " " " C. Condell. " " " G. Deacon. " " " F. Donald. " " " C. D. Elmslie. " " " M. A. C. Grant. " " " A. M. McIntosh. " " " E. McIntosh. " " " M. M. McIntosh. " " " M. A. C. Millington. " " " J. E. Phillips. " " " K. M. Picot. " " " G. L. Shelley. " " " A. A. S. Webster. (Three female servants.)	One quartermaster to join the unit in South Africa; one warrant officer and 144 non-commissioned officers and men (including 52 men St. John Ambulance Brigade); one warrant officer to join the unit on its arrival in South Africa; one special cook.

(*a*) Secretary and registrar: to act as officer in charge of the unit until its arrival in Natal.

1. The Principal Medical Officer, Natal, will arrange for a Lieutenant-Colonel of the Royal Army Medical Corps in South Africa to be detailed as officer in charge of the unit.

2. A superintendent or acting superintendent to be selected from the Army Nursing Service in South Africa.

Medical Division, War Office, June 28th, 1900.

FIELD FORCE—SOUTH AFRICA.

Nominal Roll of the Army Nursing Service Reserve detailed for duty with No. 13 General Hospital.

Unit.	Names.	Remarks.
No. 13 General Hospital.	Nursing Sister Miss I. J. Armitstead. " " " L. J. Attree. " " " C. Brown. " " " L. A. Cowley. " " " B. Crocker. " " " J. F. Farrer. " " " G. E. Francis. " " " H. Freer. " " " M. Hay. " " " E. Heaton-Cole. " " " J. Mason. " " " J. McLeish. " " " M. J. McNair. " " " M. C. Reilly. " " " F. Smallwood. " " " J. E. Smith. " " " C. M. Theophilus. " " " L. A. White. " " " E. A. M. Wilson. " " " A. Wishart. (Three female servants.)	

1. In addition to the male subordinates referred to in the table relating to No. 13 General Hospital dated War Office, 13th June, 1900, one special cook has since been despatched for duty with this hospital.

Medical Division, War Office, June 28th, 1900.

A CORRECTION.

A correspondent has pointed out an error which has occurred in one of our letters from the front. In THE LANCET of June 16th, page 1744, first column, three lines from the top, the "Washington-Lyons disinfector" is alluded to. The disinfector which was purchased by the committee was not a "Washington-Lyons" disinfector, but the Equifex saturated-steam disinfector, which was supplied by Messrs. J. Defries and Sons of Gravel-lane, London, E.C.

In the July number of *Science Gossip* is an interesting article by Major B. M. Skinner, R.A.M.C., medical officer in charge of the staff of the 6th Division of the South Africa Field Force, at present at Bloemfontein. It is upon the geology of the region traversed by the army during the march from Enslin to Bloemfontein. Major Skinner, who is a skilled geologist, describes the extraordinary appearance and formation of this inhospitable country. The article is illustrated by diagrams of sections.

THE ANTI-MALARIAL CAMPAIGN IN THE AGRO ROMANO.

As the first systematic attempt on a large scale to grapple with the problem of how best to combat malaria in the light of recent discoveries is about to begin in the Agro Romano the following translation of the instructions issued by the Bureau of Hygiene of Rome to the medical men who are to engage in this campaign will prove of interest. In view of the importance of this great experiment, and in order that the conditions under which it is being carried out may be better understood, we give these instructions in full. They are due, we understand, to the combined labours of Bastianelli, Gualdi, Postemski, and Dionisi.

GENERAL INSTRUCTIONS.

To the medical men stationed in the Agro Romana (*medici stazionari*) is entrusted the duty of preparing the work for the summer and autumn seasons before the arrival of the ambulances. They will coöperate with the ambulance medical officers (*medici ambulanti*) when the latter arrive, aiding them with that readiness and cordiality which ought to subsist between cultivators of the humane art in carrying out their common task. They will instruct their colleagues in such matters as the topography of the sanitary station and the position of the different farm-steadings, and proffer counsel and help in the difficulties which may be encountered both in the obtaining of servants and the procuring of the ordinary necessities of life.

Instructions for May and June.—1. The resident medical men will make an individual census of all permanent residents attached to the farms, as well as of their families. The particulars required of each person will be entered in the schedule for that purpose. 2. The schedule will be forwarded to the central office before June 15th. 3. The resident medical men will at the same time begin the treatment of all cases of relapses of malaria amongst these persons as well as among the mowers of hay and the reapers that may come to their knowledge, in accordance with the rule laid down in Table B (near the end.)

Instructions for July.—The ambulance medical officer, already informed by means of the schedule prepared by the resident medical man regarding the persons attached to the different agricultural and pastoral farm-steadings, will endeavour to become personally acquainted with the chief managers (stewards and factors) and the people in their charge, paying special attention to the cowherds, buffalo-herds, and horse-herds who are resident all the year through. He will commence the treatment of malarial patients and will continue it when begun by his colleague and advise as to the requisite prophylactic measures. A special table is given at the end showing the indications to be followed for treatment and for prophylaxis. During the first few days of the month begins the work of the threshing-floor (threshing of oats and wheat) directed by a manager who has under his orders the following persons—viz., one or two sub-managers, one overseer (foreman of the labourers), one herdsman, and sometimes also a herd-boy, a variable number of labourers (who attend to the transport of the sheaves of oats or wheat from the fields where it is reaped to the place where the threshing

machines are erected), one or two mechanics, one or two gangs of workers (consisting of from 30 to 40 persons for each threshing machine), one gang of builders of straw stacks, and one gang for pressing the straw. The ambulance medical officer will learn from the factor where and at what hour he can most conveniently see the foreman and labourers without disturbing their regular work. The hours most favourable for this are usually from 11 A.M. till 1 o'clock P.M. He will take notes in regard to each of the labourers (about the majority of whom he will already have information from the schedule drawn up by the resident medical man) on the schedule provided for the purpose, and of the conditions of health with respect to malaria. He will proceed actively with the treatment of all malarial patients, administering quinine in the manner indicated in Table B ("Treatment of Relapsing Fevers") and will give directions how infection is to be avoided as explained under "Prophylactic Measures." The labourers sleep in the open air as a rule for several hours at night, usually from 9 o'clock till midnight or 1 o'clock, and in the daytime generally from 12 to 1 o'clock. In regard to the quinine administered he will make notes in the diary annexed to the schedule. The majority of the labourers working at the threshing-machines, at the straw press, and at the building of straw stacks will be inscribed on their proper schedule, in which will also be reported the reply given by them to any questions. The relays of workpeople rest every four hours; the medical officer could therefore obtain the information he requires at 8 A.M., at 12 noon, or at 4 P.M. For these inquiries one day at each of the threshing-floors where the machines are at work should suffice. During the subsequent days the medical officer will inspect the threshing-floors, the cattle-farms, and the farm-steadings at such hour as he may deem most opportune, and he will keep accurate notes of the malarial relapses and of the primary attacks as well as of all therapeutic measures adopted. Every week a medical inspector will come to supervise the treatment in the interest of the patients. Towards the end of July the medical officer will obtain information from the overseers as to the number of the harvesters (men and women) who may have come to the farms and as to the place where they may most easily be found. Of these, also, he will make out a detailed list.[1]

Instructions for August.—During the first days of August the Campagna is nearly deserted. Farm work comes to an end and the more fortunate of the workers return to their homes while those who are fever-stricken repair to the hospitals of Rome. Some gangs engaged in the building of straw stacks or attending to the straw presses remain and a few men come to set fire to the stubble. The fixed population is represented by the overseer and by one or two labourers who reside permanently on the farm. The medical officer must keep a record of those remaining and of the new arrivals who are suffering from fever, treat those suffering from fever, and give all of them instructions as to the prophylactic measures to be observed. Those engaged in herding, who live on the cattle-farms, should be watched with especial attention. On farms where there are marshes marsh grasses are cut during this month. The workers are recruited from those who assist during winter and spring in the suburban vineyards and they remain on the farms for about a month. During this month, too, a supply of rushes is taken from the rush beds and the water-melons are gathered in; and on the sea-shore appear the tents of the mussel-gatherers who nearly all take fever. The medical officer will be able to collect accurate particulars from the overseers so as to follow up these various groups of workpeople who will nearly always require his services. Towards the end of August the labourers begin to return and farm-work gradually re-commences. The manager, the sub-manager, the overseer, the baker, and the mason, often with their families, all resume their avocations. It is indispensable that the medical officer should make notes in the schedules as to the condition of health in each individual case, both of those who have remained and of those who may return, that he treat all patients affected with fever, and that he give full instructions regarding prophylactic measures.

Instructions for September.—In September the work-people who reap the maize arrive. Amongst these will be found the greatest number of cases of fever; nearly all of the sufferers have taken part in the work of the threshing-floor, and some have left the hospital only a few days before. They sleep in the open or in small tents. The medical officer will fill up the schedules for each individual and generally carry out the same instructions as those given for the threshing-floor workers both in regard to treatment and to means of prophylaxis. The number of labourers now continues to increase, because from the first of the month onwards the work of preparing the soil for the sowing begins, while on some farms the first ploughing is now done. Besides the ordinary labourers some other workpeople, generally youths and boys, assist at this work, some of whom have come to the Campagna for the first time. Their task is to free the ground from obstacles which might interfere with the passage of the plough. It is possible for these people, if they choose, to sleep under cover. All the foregoing classes of persons must have their state of health inquired into and be made to adopt the measures enumerated in the tables.[2]

Instructions for October.—In this month, in addition to the fixed population, who all return so as to number the same as in the spring, gangs of workmen arrive (mostly from Aquila and Romagna) for the purpose of attending to the construction and repair of the canals or water-furrows, and bands of boys also come who look after the seed. These usually live in houses. The flocks of sheep gradually return in full number to the Agro Romano during October. The chief herdsman, the shepherds, and the other attendants looking after these number on an average about one to every 250 sheep. The medical officer will make a detailed list of these attendants; as a rule, by taking advantage of Sunday he will be able to accomplish this task in a few days, even on the large farms. He will do his best to obtain the adoption of the prophylactic measures recommended and he will attend to the treatment of the settled population and eventually also of the new arrivals.

PROPHYLACTIC MEASURES.

1. *General recommendations.*—Impress upon the workmen continually the advisability of never sleeping unless in closed shelters, houses, huts, tents, or under moveable mosquito nets. Even for a short nap during the day straw ricks and bushes are to be avoided.

2. *Recommendations to persons living in farm-buildings.*—Urge especially upon the manager of the farm whose circumstances will allow it the use of well-made mosquito nets. The ideal plan would be to fix in the windows wire nets painted white with meshes of two millimetres. Care must be taken at the same time that no mosquitoes enter by the doors, and that if they do they be destroyed. Distribute freely the larvicide powder,[3] pastilles, &c., to be burnt, with closed windows, every evening before bedtime. Hunt the mosquito constantly by burning damp straw, eucalyptus leaves, mint, or tobacco leaves in the room with windows closed; the mosquitoes lodge against window-panes or below the furniture, where they should be searched for and killed. It is useful to keep basins in the rooms with sugared water, especially where the mosquito net is used.

3. *Directions for persons living in huts and under tents.*—Numerous mosquitoes are apt to collect in the small huts of the encampments, the medical officer should therefore insist strongly upon prophylactic measures while the work of the threshing-floor is going on. The entrance to the tent should be furnished with a shutter of wire net, muslin, or linen. The inmates should sleep completely covered and perhaps wear a veil or special mask to protect more especially the head and hands. In the evening insecticide powders or pastilles should be burnt in the hut or under the tent. These will be supplied by the medical officer. Smoke thoroughly with damp straw or other suitable combustible material.

RULES FOR THE TREATMENT OF PRIMARY MALARIAL INFECTIONS.[4]

The administration of quinine in tabloids each containing half a gramme of the sulphate should be recommended

[1] The drawing up of this schedule must be done during the medical officer's visit, as it takes very little time.

[2] In the second half of this month the flocks of sheep belonging to the farms nearer the city begin to return to the Agro Romano from their summer pastures. When this happens the shepherds and other men employed on the pastoral farms should have due attention.

[3] Zanzolina (a mixture of "larvicide"—made by the firm of Weilerter-Meer, Therdingen—unopened flowers of chrysanthemum cinerari solium and valerian root); quantity, one or two spoonfuls. Also powdered chrysanthemum flowers with nitre, &c.

[4] These rules are given for the sake of obtaining a desirable degree of uniformity in the treatment, and do not pretend to formulate as yet a definitive method of treatment.

during the subsidence or at the end of the febrile attack. The quantity administered should be two grammes daily for three successive days and one gramme daily for other four days. Tabloids sufficient for a week's treatment are to be given in a small box with appropriate directions to each patient. After the remedy has been suspended for five days it will be well to follow the directions for relapsing cases even although there be no return of the fever. Hypodermic injections are only to be employed in exceptional cases. The medical officer is recommended to supervise the treatment of primary æstival infections in which the fever of the first attacks should be suppressed as far as possible, experience having proved the importance for prophylaxis of early treatment.

RULES FOR THE TREATMENT OF RELAPSING MALARIAL FEVERS.

The administration of sulphate of quinine should be carried out as follows:—

After the last febrile attack, or during its decline, two grammes of the quinine in four tabloids are to be given. The following day the same doses are repeated. During the next five days one gramme of sulphate of quinine in two tabloids is administered, after which the treatment is to be suspended for a week. The following week the administration is to be resumed, the patient being supplied with the same quantity of quinine as in the first week, and the quantity taken regulated as before. When the fever no longer returns the daily dose should be reduced by one half. The administration is then to be again suspended for a week. In the fifth week the same amount is to be given in the same way as in the third week, and so also during the seventh week. As a rule it is not necessary to continue the administration beyond the seventh week. During the weeks in which the quinine is suspended, he may, if he thinks proper, administer "Bacelli's mixture"[5] or capsules and tabloids containing iron.

For convenience of reference the above rules may be stated in the following tabular form:—

TABLES FOR THE ADMINISTRTION OF QUININE.

A. In Primary Malarial Fevers.

(Tabloids of 50 centigrammes.)

First	day (near end of febrile attack),	4	tabloids; total,	2	grammes.
Second	,, ...	4	,, ,,	2	,,
Third	,, ...	4	,, ,,	2	,,
Fourth	,, ...	2	,, ,,	1	gramme *
Fifth	,, ...	2	,, ,,	1	,,
Sixth	,, ...	2	,, ,,	1	,,
Seventh	,, ...	2	,, ,,	1	,,

Suspend the administration for five days, then continue as in Table B.

B. In Relapsing Malarial Fevers.

First	day (at end of febrile attack),	4	tabloids; total,	2	grammes.
Second	,, ...	4	,, ,,	2	,,
Third	,, ...	4	,, ,,	2	,,
Fourth	,, ...	2	,, ,,	1	gramme *
Fifth	,, ...	2	,, ,,	1	,,
Sixth	,, ...	2	,, ,,	1	,,
Seventh	,, ...	2	,, ,,	1	,,

Second week.—Suspend quinine; daily observations, &c. (in anæmic persons five tablespoonfuls of "Bacelli's mixture").

Third week.—Repeat treatment as in first week, but if no return of fever reduce dose by one-half.

Fourth week.—Suspend quinine; daily observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Fifth week.—Repeat treatment as in third week, with the same precaution.

Sixth week.—Suspend quinine; observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Seventh week.—Repeat treatment as in fifth week. End of treatment if no return of fever.

* If on the fourth day after commencing treatment the fever does not disappear continue with doses of two grammes. In exceptional cases use hypodermic injections.

Observations.—The treatment of the fever, whether primary or secondary, should be commenced according to the scheme laid down, even when the last attack has occurred some days previously. Whenever the fever asserts itself it is best to recommence the treatment as for the first day and to continue according to the rules prescribed. The total dose of quinine should be given within two hours—i.e., at intervals of half hour, three quarters of an hour, or one hour, according to the fractions. A glass of water should, if possible, be drunk after every tabloid, acidulated by preference with lemon or vinegar. In children the doses should be reduced in proportion to age.

Hypodermic and intravenous injections.—Hypodermic injections are reserved for cases of intolerance of quinine by the stomach and for cases of pernicious fever. In these cases two hypodermic injections are made, each of one gramme of the bi-hydrochlorate of quinine dissolved in five grammes of distilled and sterilised water. A large syringe is employed, the lateral regions of the abdomen being chosen and the skin washed with gauze and absolute alcohol. The needle should also be sterilised with absolute alcohol or by boiling in a test-tube. The hypodermic solutions in sterilised vials, each containing one gramme of bi-hydrochlorate, will be supplied to the medical officer. The patient must then be conveyed to the temporary hospital or to the city. In the hospital injections of camphorated oil and caffeine will be made. During the two subsequent days two grammes of quinine must be given daily either by injection or by the mouth (one tabloid of half a gramme every hour). The intravenous injections according to Bacelli's method will be made in extreme cases in the sanitary station hospital. For these injections boiled solutions of neutral hydrochlorate of quinine at a temperature of 40° C. should be employed exclusively in doses of one gramme in 10 cubic centimetres of chloride of sodium solution (0·75 per cent.).

[5] "Bacelli's mixture" contains the following ingredients: sulphate of quinine, 3 grammes; tartaric acid, 3 grammes; arseniate of soda, 5 centigrammes; distilled water, 300 grammes. The dose for an adult is one tablespoonful

ST. BARTHOLOMEW'S HOSPITAL AND CHRIST'S HOSPITAL.

FOR the past 15 years negotiations have been proceeding between the authorities of St. Bartholomew's Hospital and those of Christ's Hospital with regard to the former institution acquiring some or all of the land upon which the latter stands. Negotiations have now come to a dead-lock and on July 2nd a special court of the Governors of St. Bartholomew's Hospital was held to consider the situation. His Royal Highness the PRINCE OF WALES, President of the hospital, was in the chair and a full report drawn up by the treasurer and almoners was presented to the meeting. As this report was very lengthy, Sir SYDNEY WATERLOW recapitulated its main points in his speech as follows:—

As far back as the year 1885 the treasurer of Christ's Hospital wrote on behalf of his governing body stating that they would not fail to confer with the governors of this hospital in reference to the portion of their land which they desired to acquire. In the year 1890, after the constitution of Christ's Hospital had been revised, the new governing body resolved that negotiations be entered into with the governors of St. Bartholomew's Hospital to take as much of the Christ's Hospital site as they wished to have on the principle of arbitration with an umpire. We thus have the old governing body and the new governing body agreeing to sell us the land by arbitration. If this had been an agreement between two honourable commercial men there cannot be a doubt but it would have been regarded as binding, morally if not legally, but the governors of Christ's Hospital by their letter of November last entirely repudiate their agreement of 1893 and refuse to sell to us the land which we require for the enlargement of our hospital. The necessity for this enlargement is shown most clearly and distinctly by the letter from the medical and surgical staff dated November last in which they practically ask us to buy the whole site of Christ's Hospital. Personally I do not think that the purchase of the whole site would be a very speculative undertaking. ..... I hold in my hand the return of the sums available for hospital purposes during the last 30 years after paying all expenses. In 1869 our net revenue was £38,462, and in 1899 £72,454, or an increase of £34,000, thus nearly doubling our income in 30 years in face of great losses sustained upon many thousand acres of agricultural property in Essex, Lincolnshire, Kent, and elsewhere. Remembering that so large a portion of our property consists of houses and land in the great metropolis this increase is certainly worth at least 33 years' purchase and this would add £1,132,000 to our property in 30 years. ..... We cannot, I think, close this discussion without assuming for a moment that Parliament may not give us compulsory powers to purchase the land we require and that the governors of Christ's Hospital may not agree upon any terms that we can

accept. What position shall we be placed in? Well, it seems to me that we shall have but two alternatives, either to divide our work, separating to some extent the educational and scientific work from the nursing and treatment of sick patients. We possess some acres of small houses about a quarter of a mile north of this hospital where we might build a new hospital for some of the patients and where we might carry on the out-patients' work. This would be rather an advantage to the patients as the new hospital would be nearer their homes. If this course were not thought desirable there is another alternative. We might pull down all the older buildings, many of which are very dilapidated and the four blocks containing the patients. We should perhaps have to give up the church, the official residences, and the ground around them, and by rebuilding the hospital on modern lines with all the best modern appliances we could no doubt increase the accommodation from 30 to 40 per cent. Money could be borrowed. Let us try to imbue our hearts with the faith and hope which stimulated our great founder, Rahere, who in the year 1123, nearly eight centuries ago, started this hospital which from the beginning was "a hospital for the sick" and he, having no funds, begged at the new gate of the city for moneys to pay the expenses. Let his spirit stimulate us to go on to promote the prosperity of this old and Royal institution, always remembering that if we at any time feel obliged to appeal for more money we shall not make that appeal in vain.

A motion was then brought forward by Sir SYDNEY WATERLOW instructing the treasurer and almoners to adhere to the offer of £117,000 which had already been made for a portion of the site, and failing the acceptance of this that they should endeavour to effect a settlement upon the basis of the resolution of the Council of Almoners of Christ's Hospital which had been passed in December, 1893. Further, if neither of the above-mentioned alternatives should result in a contract to purchase, that Parliament should be applied to to obtain compulsory powers for purchase. This was seconded by Mr. WILLIAM FLUX and supported by the LORD MAYOR and Mr. G. BAKER.

The PRINCE OF WALES, before putting the motion, said that he only wished that the whole site could be bought, but that it was an absolute necessity that the one and a half acres should be acquired for which the sum of £117,000 had been offered. He trusted that the Charity Commissioners would back them up and that Parliament would not refuse. The motion was then put and carried unanimously.

There is but little to add to the simple statement made by Sir Sydney Waterlow. Everyone who has any acquaintance with St. Bartholomew's Hospital knows the urgent need for reconstruction and enlargement. The mortuary and post-mortem room are small, cramped, unwholesome, and quite inadequate for their purposes. The nurses' quarters must be reconstructed and rebuilt. The surgery is far too small and the college where the residents and students live consists of dark insanitary little houses. No one can blame Christ's Hospital for trying to get as much for their site as possible, but a promise is a promise and the authorities of Christ's Hospital have made a promise. Legal force it has none, but morally it is as binding as anything could be and if the almoners of Christ's Hospital break their parole it will not tend towards increasing public confidence in that body. A tyrannous king and an unscrupulous Minister did their best to ruin St. Bartholomew's Hospital when they laid sacrilegious hands upon the great priory of which the hospital had always formed a part, and although on the petition of the citizens of London the hospital was "refounded" and a beggarly pittance of 500 marks per annum given back out of its old revenues, it would be a fitting act for Parliament to step in and insure that Rahere's noble work shall not be again fettered.

THE SEWERAGE OF LEICESTER.

A LONG series of experiments, extending over some thirteen and a half months, upon the bacterial treatment of the sewage of Leicester, at the Beaument Leys farm, have at length been completed. They were carried out under the direction of Mr. E. George Mawbey, M.Inst.C.E., the borough engineer and surveyor. The results of these experiments have been printed in full in the form of a report to the Leicester Highways Committee and the Sewerage and Sewage Works and Farms Committee. This report is accompanied by a large number of coloured diagrams which enable the reader readily to see the analytical results and percentages of improvement arrived at by the several experiments, and besides these there are a plan of the sewage farm and district and many well-arranged analytical tables. The several analyses were made by Mr. S. F. Barford, F.C.S., whose method of working is given in an addendum. The undertaking throughout reflects great credit, not only upon the authors of the report, but upon all who have contributed to render such an inquiry possible. The publication will doubtless prove most advantageous as guides in future developments of the bacterial treatment of sewage.

Leicester has been for some time past in great difficulties with its sewerage system, arising not only from questions of level and the inadequate size of many of the sewers but from the very faulty construction of the older ones, which circumstances combined tend to establish a condition of things most detrimental to health. Owing to the defective sewers an enormous volume of subsoil water has to be pumped in addition to the normal flow of sewage. Many districts are flooded at times of heavy rains. This state of things, aggravated by the heavy character and limited area of the land available for irrigation, has led to the present inquiry. It is now proposed to reconstruct at least some 10 miles of the more defective sewers and to adopt a modified system of bacterial treatment in conjunction with one of irrigation. By these means it is hoped that the authorities will be able to deal effectively with the sewage and to comply with the requirements of the Local Government Board with but a slight additional increase to the present area of their sewage farm. The estimated outlay is placed at about £170,000.

The experiments were conducted with the following plant: (1) an open detritus tank; (2) a closed detritus tank; (3) an open settling tank; (4) the same tank as No. 3, made air-tight with inlets and outlets trapped and worked as a septic tank; (5) a first contact bacteria bed filled with coarse filtering material; (6) old pasture land and land laid out for rye grass for treatment of the effluent; and (7) a second and third contact bacteria bed filled with fine filtering material for final treatment of effluent irrespectively of irrigation. No trial appears to have been made of any anaerobic bacteria bed having an upward action. In the experiments at Finchley sewage farm in 1898 conducted by Dr. H. R. Kenwood, assistant professor of public health in University College, London, and Dr. William Butler a bed or filter of this description was found to be most effective in liquefying the sludge, the best results being obtained by a long rest in the filter. The actual amount of purification that took place was, however, limited. Mr. Mawbey doubtless had reasons for not instituting such a trial; in fact, he states that at Leicester they have no difficulty in disposing of the sludge. The period of rest required might also have proved a drawback to its adoption.

Space will not allow us to follow the many experiments in detail. They amounted to 17 in all. The detritus tank was retained in each case, being sometimes placed under anaerobic conditions. The other tank and beds were used in varying sequence. Briefly, the experiments tended to test four systems: (1) the septic tank system; (2) clarifying by bacteria beds only; (3) a combination of the septic tank with bacteria beds; and (4) a combination of bacteria beds with subsequent irrigation. The results of these experiments have led Mr. Mawbey to recommend his committee to adopt the combined system of bacteria beds with irrigation, forming No. 7 of his series of trials, and taking all the circumstances into consideration no doubt he is well advised in this course.

The following is a short description of experiment No. 7, which was extended over a period of 33 weeks. The crude sewage first flowed through the closed detritus tank, the effluent from which was discharged upon a group of clarifying bacteria beds each taking nearly an hour to fill. In these beds it rested for two hours, and a like period of two hours was occupied in emptying them. Each bed then remained empty for three hours; the entire process occupied about eight hours, thus permitting the beds to be filled three times during the 24 hours. The effluent was then allowed to flow once only over a plot of pasture for a distance of about 80 yards before being discharged into the dike leading to the river.

There were in all 28 sets of analyses made between

Dec. 2nd, 1898, and July 2nd, 1899, the averages of which given in grains per gallon, are as follows.

Matter in suspension.—Crude sewage, 43·7; detritus tank, 20·32; bacteria beds, 4·87; and pasture, 0·385. Final percentage of purification on crude sewage, 99·12.

Albuminoid ammonia.—Crude sewage, 1·182; detritus tank, 0·893; bacteria beds, 0·343; and pasture, 0·156. Final percentage of purification on crude sewage, 86·76.

Oxygen absorbed at 80° F. in four hours.—Crude sewage, 7·442; detritus tank, 5·795; bacteria beds, 2·145; and pasture, 0·663. Final percentage of purification on crude sewage, 91·08.

Nitrogen as nitrates.—Crude sewage, 0·044; detritus tank, 0·044; bacteria beds, 0·068; and pasture, 0·172.

Matter in solution.—Crude sewage, 73 05; detritus tank, 71·15; bacteria beds, 68·3; and pasture, 63·95.

Looking at these results the process of sewage purification is well exemplified. In the passage of the sewage through the closed detritus tank a larger percentage of improvement is seen to have taken place than is to be accounted for merely by sedimentation. A certain loss of chemical stability is evidently acquired which would most likely have been increased had the flow through the tank been still further retarded. The sedimentation was, however, considerable, and the smell from the sludge upon its removal from this closed tank is said to have been horribly offensive. In the aerobic bacteria beds, as might have been expected, the original details of the several analyses show that the amount of albuminoid ammonia and of oxygen absorbed varies greatly. This is of course also the case in the crude sewage, but in the several effluents the variation is also great in the proportional improvement effected, suggesting that at times the beds were being over-worked. It is well known that a bacteria bed of a given area is only capable of showing a certain improvement in its effluent in a given time from sewage of a fixed standard of strength; should this standard vary the character of the effluent varies accordingly. Mr. D. Scott Moncrieff, C.I.E., states that the best results are obtained from a filter when the strength of the sewage supplied to it is most constant. A perusal of the tables relating to the other experiments tends to confirm a previous suspicion—viz., that what is known as the septic tank system is only capable of a limited application. In large manufacturing towns with sewage conditions like those of Bradford, for instance, it might be likely to lead to disappointment.

At the end of the report are printed some interesting notes with illustrations of microscopical work by Dr. A. C. Houston relating to the experiments on London sewage at the Crossness outfall.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6592 births and 3368 deaths were registered during the week ending June 30th. The annual rate of mortality in these towns, which had been 18·0 and 14·9 per 1000 in the two preceding weeks, rose again to 15·1 last week. In London the death-rate was 14·5 per 1000, while it averaged 15·6 in the 32 provincial towns. The lowest death-rates in these towns were 9·0 in West Ham, 9·4 in Portsmouth and in Swansea, and 9·9 in Croydon; the highest rates were 18·1 in Halifax, 18·6 in Wolverhampton, 20·7 in Manchester, 21·3 in Salford, and 22·7 in Liverpool. The 3363 deaths in these towns included 419 which were referred to the principal zymotic diseases, against 427 and 366 in the two preceding weeks; of these 112 resulted from measles, 110 from whooping-cough, 70 from diphtheria, 55 from diarrhœa, 44 from scarlet fever, 27 from "fever" (principally enteric), and one from small-pox. No fatal case of any of these diseases occurred last week in Halifax; in the other towns they caused the lowest death-rates in Brighton, Portsmouth, Plymouth, and Preston; and the highest rates in Derby, Blackburn, Huddersfield, Sheffield, and Sunderland. The greatest mortality from measles occurred in Cardiff, Derby, Huddersfield, Hull, and Sunderland; from scarlet fever in Blackburn and Gateshead; from whooping-cough in Wolverhampton, Derby, Oldham, Sheffield, and Gateshead; from "fever" in Huddersfield; and from diarrhœa in Birkenhead and Blackburn. The 70 deaths from diphtheria included 29 in London, 10 in Sheffield, six in Leicester, and five in Liverpool. One fatal case of small-pox was registered in Salford, but not one in any other of the 33 large towns. There were 16 small-pox patients under treatment in the Metropolitan Asylums Hospitals, on Saturday last, June 30th, against 15 and 13 at the end of the two preceding weeks; eight new cases were admitted during the week, against eight and one in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1832, against 1754, 1766, and 1810 on the three preceding Saturdays. 210 new cases were admitted during the week, against 203, 210, and 219 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 268, 257, and 181 in the three preceding weeks, further declined last week to 180, and were eight below the corrected average. The causes of 40, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bolton, Oldham, Hull, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Swansea, Birmingham, Liverpool, Bradford, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·9 and 16·5 per 1000 in the two preceding weeks, rose again to 17·9 during the week ending June 30th, and was 2·8 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 12·6 in Leith and 13·3 in Aberdeen to 21·9 in Perth and 25 8 in Greenock. The 552 deaths in these towns included 26 which were referred to whooping-cough, 24 to diarrhœa, 18 to measles, seven to scarlet fever, four to "fever," two to small-pox, and two to diphtheria. In all 83 deaths resulted from these principal zymotic diseases, against 78 and 60 in the two preceding weeks. These 83 deaths were equal to an annual rate of 2·7 per 1000, which was 0·8 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 21 and 18 in the two preceding weeks, rose again last week to 26, of which 23 occurred in Glasgow. The deaths from diarrhœa, which had been 22 and 19 in the two preceding weeks, rose again to 24 last week, and included eight in Glasgow, four in Edinburgh, four in Dundee, three in Aberdeen, and three in Greenock. The deaths from measles, which had been 23 and 14 in the two preceding weeks, rose again last week to 18, of which 11 were registered in Glasgow and four in Edinburgh. The fatal cases of scarlet fever, which had been six, six, and two in the three preceding weeks, rose again to seven last week, and included five in Glasgow. The deaths referred to different forms of "fever," which had been two in each of the two preceding weeks, rose last week to four, of which two were registered in Edinburgh. The two fatal cases of small-pox occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 106 to 87 in the three preceding weeks, rose again last week to 97, and were 20 above the number in the corresponding period of last year. The causes of 26, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·8 and 17·9 per 1000 in the two preceding weeks, rose again to 20·0 during the week ending June 30th. During the 13 weeks of the quarter ending Saturday last the death-rate in the city has averaged 25·4 per 1000, the rate during the same period being 17·6 in London and 19·0 in Edinburgh. The 134 deaths belonging to Dublin registered during the week under notice were 14 in excess of the number in the preceding week, and included three which were referred to the principal zymotic diseases, against 10, six, and four in the three preceding weeks; of these, two resulted from whooping-cough and one from diarrhœa. These three deaths were equal to an annual rate of 4·0 per 1000, the zymotic death-rate during the same period being 2·0 in London and 1·9 in Edinburgh. The mortality both from whooping-cough and from diarrhœa exceeded that recorded in the preceding week. The 134 deaths in Dublin last week included 19 of infants under one year of age and 33 of

persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons were slightly in excess of the number in the preceding week. Seven inquest cases and four deaths from violence were registered; and 38, or more than a quarter, of the deaths occurred in public institutions. The causes of eight, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Staff-Surgeon H. Holyoake to the *Vindictive*. Surgeons: G. B. Brown to the *Britomart;* J. W. Bird to the *Bramble;* J. O'Hea to the *St. Vincent* and G. M. Eastment to the *Excellent*, both lent during the manœuvres; G. E. Glynn to the *Vindictive;* and J. H. Lightfoot to the *Boscawen* for the *Wanderer*.

ROYAL ARMY MEDICAL CORPS.

Major F. M. Baker has joined at Woolwich for duty. Captain C. K. Morgan has been granted leave of absence out of India for six months on medical certificate. Colonel William E. Riordan is placed on retired pay. Lieutenant-Colonel James McNamara to be Colonel, vice W. E. Riordan.

MILITIA MEDICAL STAFF CORPS.

Ernest Urquhart Bartholomew to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Engineers: 1st Bedfordshire: Arthur Conning Hartley to be Surgeon-Lieutenant. *Rifle:* The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): Surgeon-Captain John Hugh Alexander Laing resigns his commission and is appointed Captain. 3rd Volunteer Battalion the Lincolnshire Regiment: James Matthews Duncan to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Worcestershire Regiment: Cecil Aloysius Corke to be Surgeon-Lieutenant. 1st Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Captain Charles Samuel Alfred Rigby resigns his commission and is appointed Captain.

TRANSVAAL WAR NOTES.

The first report of the American Hospital Ship (*Maine*) Fund for South Africa from Oct. 27th, 1899, to April 30th, 1900, has just been issued. Besides lists of subscriptions, donations, &c., it contains reproductions of photographs of Lady Randolph Churchill and her son, Surgeon-Lieutenant-Colonel Hensman and the nursing sisters, the surgeons, and the *Maine*.

Civil Surgeons R. B. Williams, W. J. Collins, and Pullin have embarked for South Africa.

Staff Surgeon E. P. Mourilyan, R.N., of the South African Naval Brigade, is returning to England invalided.

Major Whaite, R.A.M.C., Captain Dalton, R.A.M.C., and Lieutenant Cuddon-Fletcher, R.A.M.C., have left South Africa for England invalided.

Civil Surgeons Nicol, Goodman, and Thomas are returning invalided from South Africa.

The Welsh Hospital was ready for the reception of patients on June 1st. The huts, nurses, assistant surgeons, and 13 dressers and orderlies were sent to Springfontein on May 25th and on the last day of that month the late Professor T. Jones, Dr. Lynn Thomas, and Dr. Mills-Roberts arrived. The site of the hospital at Springfontein is 5000 feet above the level of the sea. Letters have been received in Cardiff from the hospital staff describing their quarters as "comfortable and almost luxurious." Patients too have written and spoken in high praise of the hospital.

Twenty nurses selected from the nursing staff of the London Hospital are being sent out to South Africa immediately.

The Prince and Princess of Wales have fitted up a farmhouse close to Sandringham for the use of officers invalided from the war who need convalescent help and have nowhere to go. This home in the first instance will be offered to colonial officers who will be considered as their Royal Highness's guests.

TRANSVAAL WAR CASUALTIES.

Civil Surgeon W. B. Bennett is reported dangerously ill in No. 1 Stationary Hospital, Mooi river.

Major Dodd, R.A.M.C., is seriously ill at the Base Hospital, Maritzburg.

ARMY MEDICAL SCHOOL, NETLEY.

The following is a list of Surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations, June 30th, 1900. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley and the combined numbers are accordingly shown in the list which follows:—

	Marks.		Marks.
* 1. Graham, J. D. ...	6508	10. Macnee, H. R.	5017
† 2. Sprawson, C. A. ...	5875	**11. Deas, L. J. M.	4899
‡ 3. Mackelvie, A.	5495	12. Houston, W. M. ...	4875
§ 4. Lapsley, W.	5417	13. Keys, W. D. A. ...	4645
5. Cazaly, W. H.	5370	14. Young, G. J. G. ...	4534
6. Browne, P. A.	5354	15. Good, J.	4501
‖ 7. Coppinger, W. V. ...	5336	16. Chalmers, A.	4479
¶ 8. Spitteler, A.	5127	17. Hamilton, W. G. ...	4375
9. Oxley, J. C. S.... ...	5025	18. Godkin, S. R.	4314

* Gained the de Chaumont Prize in Hygiene, Hon. Mention in Surgery.

† Gained the Herbert Prize of £20, First Montefiore Prize of £21 and Medal, the Pathology Prize, and Hon. Mention in Hygiene.

‡ Gained the Second Montefiore Prize, and Hon. Mention in Medicine.

§ Gained the Parkes Memorial Prize, Martin Memorial Gold Medal, Hon. Mentions in Pathology and Surgery.

‖ Hon. Mention in Pathology.

¶ Hon. Mention in Medicine.

** Gained the Maclean Prize in Clinical and Ward Work.

Owing to the war in South Africa there was no public distribution of prizes. The prizes were privately distributed by Colonel K. McLeod, M.D. Edin., LL.D. Aberd., Professor of Military and Tropical Medicine.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals Thomas Walter Barrow (retired) at his residence at Woolwich on July 1st in his 83rd year. He entered the army in 1841 and served with the 2nd Queen's Royals in Scinde in 1843. In the Southern Mahratta country in 1844 he was present at the storming and capture of Fort Punella, and he took part in the campaign in the Concan in 1845, when Forts Monahur and Monsautosh were captured. He was also engaged in the Kaffir War of 1852–3. In August, 1864, he proceeded to Bermuda as Principal Medical Officer of a medical relief force in consequence of an epidemic of yellow fever which devastated the troops and population of the islands. For this service he was promoted to the rank of Deputy Inspector-General, the special General Order issued referring to his "highly meritorious services" in connexion with the epidemic. In 1865 he was appointed principal medical officer of Nova Scotia, and in 1866 to the same position at Woolwich and the London district. He retired in 1868.

THE CRISIS IN CHINA.

The following officers are reported as having been landed with Vice-Admiral Sir E. H. Seymour in North China:—Fleet Surgeon: T. M. Sibbald, H.M. battleship *Centurion*. Surgeon: E. D. Macnamara, H.M. cruiser *Endymion*. The *Jelunga*, No. 7 Transport, which left Portsmouth on Saturday, June 30th, with reinforcements for China, had on board the following medical officers:—Staff Surgeon W. E. Home (in medical charge); Surgeon A. Gaskell, Surgeon J. D. S. Milln, and Surgeon R. C. Munday.

Staff-Surgeon J. Mc C. Martin, D.S.O., R.N., and Surgeon N. Roche, have left for China in the P. and O. steamship *Australia*.

The *Jelunga* carries a large supply of field chests, medicines, surgical instruments, Roentgen ray apparatus, ice machines, surgical dressings and appliances, and all other necessaries, so that after discharging the naval force which she is conveying to China, if necessity should arise, she can be converted into a hospital ship on that station for naval purposes.

WARS: PRESENT AND PROSPECTIVE.

The Imperial idea and system are costing this country a large amount in blood and treasure at the present time. Setting aside the South African and Ashanti campaigns we have to take our part in the trouble in China, which promises to be, and is indeed already, a very formidable business. There will inevitably be a great demand for young medical men.

Correspondence.

"Audi alteram partem."

THE PROPOSED MEETING OF THE INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON IN 1902.

To the Editors of THE LANCET.

SIRS,—It is a fair question for discussion whether international medical congresses are of any real service to medical science, but most of us will agree that they may be made pleasant and interesting. They may be even advantageous to individuals in enabling them to form correcting personal impressions of men whose published contributions to special medical literature they have been accustomed to read, and so to assess the value of their work. Assuming that these congresses are worth the trouble of organising, we shall be unanimous in professing to believe that they are the last class of medical assembly in the arrangements of which mere local dislikes and jealousies should come into play, or where places of honour, rightfully bestowed in recognition of distinction upon those most honoured by their countrymen who know them best, should by misadventure or mismanagement be conferred upon mere pushfulness and self-seeking. These reflections, and many others of a like nature, arise from the painful reading which you provided by the publication, in May this year, of the letters of the teachers of obstetrics and gynæcology in London and of the chief official representatives of the British Gynæcological Society anent the proposed International Congress of Obstetrics and Gynæcology to be held in London in 1902. But to all who take an interest in the progress of gynæcological science in England and are desirous of seeing British gynæcology held in honour by the medical profession throughout the United Kingdom, the feeling of pain and regret produced by the quarrel must be greatly deepened by a perusal of a "*précis* of proceedings relating to the proposed meeting of the International Congress, &c.," published in the last number of the *British Gynæcological Journal*. It is a summary of the proceedings of the British Gynæcological Society which culminated in the present unhappy position. Many men who are provincial specialists, or who specialise to the extent of being interested, are asking whether something cannot be done to relieve the tension and remove the deadlock between the two great societies in London, the persistence of which will entail a disastrous *fiasco* and a discredit to British gynæcologists in general if the present project to hold an international congress is not abandoned.

In intervening in the dispute and asking you to permit me to put certain considerations before your readers as a contribution towards the happy solution of existing difficulties I am not unmindful of the possible consequences to the candid friend. But after much cogitation I have reached the conclusion that certain circumstances call upon me to say something on the subject, and I respond to the call in the hope that some others, placed like myself outside the circles where personal considerations may unconsciously exercise a biasing influence, may be encouraged to come forward and lend the assistance of their opinions and advice. I have reason to believe that at the present time I am a member of Council both of the Obstetrical Society of London and of the British Gynæcological Society; I am also on the Council of the North of England Obstetrical and Gynæcological Society. These three societies between them cover the whole of England and to some extent overlap. Many provincial specialists are members of one or other of the London societies; some of my friends are, like myself, members of all three. I attended the International Congress at Geneva in 1896 and that at Amsterdam in August last. There were many opportunities of learning foreign and American opinion and of seeing ourselves as others see us. And these opportunities in my case were still further increased by renewing acquaintance with many American representative men at the congress of American obstetricians and gynæcologists at Indianapolis last September, and hearing their frank but friendly criticisms of the British *Fachgenossen*. Now, in the light of my own personal knowledge of American opinion, and remembering the importance of the American element in every international meeting, I am amazed at the want of consideration given by the Council of the British Gynæcological Society to the repeated spoken and written statements of Dr. Engelmann, president of the American Gynæcological Society, to the effect that "the invitation could be accepted only, and the Congress could be a success only, if the two great societies of Great Britain are united in their desire to see the Congress in their midst."

What then is the present situation? After this clear expression of opinion from the chief official representative of America; after the refusal of the Obstetrical Society to issue a joint invitation to the Congress; after the letter of the past and present lecturers and teachers of obstetrics and gynæcology in the London medical schools unanimously declining to promote or join the Congress; and even after the withdrawal of Professor Simpson from the position of president-elect on the ground that the Organisation Committee of the British Gynæcological Society was not sufficiently representative of metropolitan gynæcology, the council of the British Gynæcological Society still persevere in their unfortunate course. They have assured the permanent secretary of the Congress (Dr. Jacobs of Brussels) "that the Organisation Committee are anxious to do all they can to make the 1902 Congress a success and will continue energetically with the work they have commenced." Then they proceed to place themselves "at the disposal of the founders" and to give these foreign gentlemen the opportunity of reconsidering their acceptance of the invitation. Now, with all respect to my friends of the British Gynæcological Society I maintain that they thereby place themselves in an undignified, not to say ridiculous, position, and if they are as representative as they allege they drag British gynæcology with them. They reject the advice of friendly America, whose much-travelled representative men know us and understand us as we do one another, and they humiliate themselves before an unorganised committee of foreigners—a tribunal *pour rire*—who are notoriously and incurably ignorant of the personality and relative standing of British gynæcologists, and are separated from us by the gulf of alien ethical standards. Furthermore, there is a dilemma. If the invitation is still accepted the congress is bound to be a failure, perhaps as marked as that of Amsterdam, which was shunned by all Germans of distinction. On the other hand, if the invitation is not accepted after all, then the committee of the British Gynæcological Society bring upon themselves a snubbing which the consciousness of their singularly representative position must make all the more grievous and hard to bear.

In my humble opinion the Organisation Committee were in duty bound to make a stand, and in the exercise of their own judgment to come to a decision in this matter regardless of foreign influence. It is eminently a question for British gynæcologists and for them alone. If the actions of the Organisation Committee originated in disinterested public spirit (and how can it be otherwise?) they must seek to coöperate in bringing about a congress successful from both the scientific and social points of view, and they must desire to see in places of distinction on that occasion the colleagues whom *we in England* honour because of their character and work achieved. If this be so then the committee is bound to respond to unmistakeable expressions of opinion which are of weight beyond cavil, to hold all proceedings so far as quashed, to withdraw their invitation, and to join in a movement *de novo* towards the end in view.

The relations between the Obstetrical Society of London and the British Gynæcological Society are pretty well known and appreciated by provincial specialists both in their origin and incidents. But these relations, though largely responsible for the present situation, form too large and general a subject for discussion now. There have been, in the opinion of provincials, grievous faults on both sides. The refusal of the Obstetrical Society to coöperate with the British Gynæcological Society was perhaps too curt and unqualified, and is to be regretted. But those who know the history of the relations between the two societies must feel that, until men have developed a saintly meekness almost incompatible with vigorous action, no other result was to be expected. The Obstetrical Society has never received much encouragement to take part in the proceedings of the International Congress. Members of an inner circle of the British Gynæcological Society have been too frequently nominated, as the best that England could produce, to introduce or take prominent places in the official discussions, and

these have not seldom been men who would never have been selected as representatives by any conceivable parliament of British gynæcologists.

I remember well the presentation of the invitation from Great Britain to the Congress at Geneva. The deputation consisted essentially of two official members of the British Gynæcological Society who were notoriously antagonistic to the Obstetrical Society. And it should be remembered that the invitation presented at Amsterdam was merely a renewal of that given at Geneva. Dr. MacNaughton Jones and his colleagues appear to think that they play a trump card when they call attention to the fact that the invitation was presented at Amsterdam by Dr. Robert Barnes. Still, men have an awkward way of looking at the true inwardness of things, and not at mere formulæ; and the result of that honest examination of the situation was the remonstrances from America and by no means cryptic hints from many other quarters, as to the need for a working arrangement with the Obstetrical Society. These hints were ignored until it was discovered that arrangements which could be made apparently to succeed at meetings in foreign capitals would not suit a congress held in London. Hence, obviously, the too belated proposal of coöperation made to the Obstetrical Society. In some journals which have been sent to me I regret to read injurious references to the action of the lecturers and teachers of obstetrics and gynæcology of the London medical schools. Epithets are not arguments which tend to conciliation. The unanimity of these teachers and their dignified expression of refusal to take part in a congress for which important arrangements had been already completed is an impressive fact which should form food for reflection, not a subject for reviling and sarcastic levities.

The question still remains: Can anything yet be done to put British gynæcology in its proper place in the opinion of the specialists of Europe and America, and to bring about some time the holding of a creditably successful International Congress in England? As a provincial specialist knowing the opinions of many men similarly situated, who, like myself, are not conscious of envy or jealousy even towards London colleagues, I would submit that the time has long gone by when London societies could justly arrogate to themselves the right to speak for British gynæcology. Any truly representative body must have a wider basis. To be practical I would suggest something like the following, if the game be generally thought worth the candle. Let the honorary secretaries of all the existing Societies of Obstetrics and Gynæcology in the United Kingdom of Great Britain and Ireland form a convening committee to start with. It should be the function of this committee to form a grand committee of the members of these societies. Each of the societies could send a sufficient number of delegates to a meeting in London or elsewhere, as might be agreed, to elect an executive committee, or themselves to form an executive committee, to deal with the question of an international congress and other matters. If from this movement a great comprehensive society, on the model of the German Gynæcological Society, were to take shape and development so much the better. It would be premature to suggest further details. If among the specialists in obstetrics and gynæcology of the United Kingdom there is sufficient goodwill the way will be found.

I am, Sirs, yours faithfully,

Manchester, June 30th, 1900. W. J. SINCLAIR.

"THE RELATIONSHIP OF MALARIA AND THE MOSQUITO."

To the Editors of THE LANCET.

SIRS,—The interesting letter by Dr. Dauber in THE LANCET of June 23rd (p. 1834) requires a rather full reply, as his opinions are certainly shared by a considerable number of medical men, both in this country and the tropics. I trust that you can allow me sufficient space to deal with his arguments in some detail.

While admitting that "mosquitoes may frequently act as alternative or intermediary [he means *definitive*] hosts with man of the malaria parasite," he demurs to the dogma that the bite of *Anopheles* constitutes the only mode of infection. I should say at once that no one can as yet be *absolutely certain* that there is no other mode of infection. We differ only as to the degree of probability which attaches to the hypothesis that there is another mode of infection. Koch and the Italians think that there is very little probability at all in favour of this view. Manson and Laveran are more inclined towards it. Your correspondent, with many others, tends to the other extreme and still believes in the miasma *plus* the mosquito. Speaking for myself I must confess that I think it extremely unlikely that there is another route of infection besides the bite of the mosquito; I have met neither with facts nor with what appear to me to be sound arguments in favour of such a thing; while there are many extremely cogent arguments against it. At the same time I keep a perfectly open mind on the subject, and am quite willing to be converted by any good evidence which may be adduced in the future.

No one accustomed to sifting scientific evidence will, I fancy, be quite prepared to accept Dr. Dauber's. In order definitely to prove that a given outbreak of fever is not due to *Anopheles* it must clearly be shown that *Anopheles* were not present when the original infections occurred. It must also be certain that the cases of fever under consideration were first infections and not relapses; and, of course, that the disease was really malarial fever is a point which must have been established by microscopical methods before the case can be admitted into court. But your correspondent gives no precise details of this nature. He talks about "fever" and "swarms of mosquitoes" without specifying what fever and what mosquitoes. His instances appear to be based on very indefinite information. Even if his facts be admitted they often point in just the opposite direction to what he supposes, while he himself seems to think that popular impressions carry the force of experimental evidence. I will take his instances in the order in which he gives them. He quotes in support of his opinions a medical work in which "a chill, a wetting, the turning over of virgin soil, exposure, and fatigue are credited with causing fever as well as direct infection from mosquitoes." I hope that this medical work did not intend to imply that a malarial infection, a parasitic invasion, can be caused by a chill. One might as well say that round worms are produced by a chill. What I suppose the medical work really means is that a *relapse* may be precipitated by a chill, by fatigue, and so on—a thing with which we are familiar in many diseases and which has nothing to do with the original entry of the infecting parasites. I will deal later with the case of the "virgin soil." Dr. Dauber then proceeds to quote a writer in the *Times* who talks about the insalubrity of Pretoria and thinks that "the miasmas at sunset, attended by a bone-piercing cold, are especially dangerous." This is no evidence. The writer in the *Times*, voicing the popular idea, may believe in miasmas if he likes; but this does not go far to prove that they exist. What investigations has the writer in the *Times* made on the subject? As a matter of fact he seems to think that the miasmas arise from the "filthy habits of the genuine Boer"—a novel source for malaria. The writer in the *Times* may be Brown, Jones, or Robinson—the question is whether he knows anything at all about the matter. Next, your correspondent discusses the immunity which is supposed to be enjoyed by those who sleep at some height above the ground. He refuses to accept the explanation given by the theory that the mosquito is "a low flyer," because his own experience is opposed to this theory. Here we have a simple clashing of observation. The Italian observers—as well as myself—who have all been making a special study of mosquitoes for years, are quite convinced that mosquitoes often do prefer ground-floors to upper storeys. Apart from this, the question whether such immunity really exists is open to discussion. I fear we can hardly accept the authority—which Dr. Dauber quotes—of Kingsley's novel of "Westward Ho." If, as your correspondent adds, landing-parties in the navy "are instructed to make elevated platforms with boughs on which to sleep, and are supplied with axes for the purpose," this proves nothing. I have never known Government medical regulations cited as being medical authority of any value. Personally I should prefer the authority of "Westward Ho."

In British Guiana, Dr. Dauber says, "Young men freshly arrived from the temperate climates, although they would be bitten more voraciously than the older residents, yet were not very liable to malarial fever until they had resided about a year in the country." This is a most unfortunate argument, because, like the Irishman's pig, it goes in a precisely opposite direction to that which is intended. Obviously the longer a man has resided in a

mosquito country the greater the number of mosquito bites from which he has suffered from the commencement of his stay there, and the greater therefore his chances of having been bitten by an infected mosquito. If only one mosquito in a thousand is infected (which is quite possible), a man may well reside a year in a place before meeting his fate. On the other hand, if the poison lies in the soil, why are not these young men all infected the moment they land? Dr. Dauber thinks that "fresh arrivals bitten from head to foot and living amongst men constantly down with fever" should become infected at once; he again omits to note whether he refers to the bites of *Culex* or *Anopheles*.

A number of instances are given where malarial fever was supposed to be due to turning up "virgin soil." These are of the usual indefinite kind. Was the fever malarial fever (and not, for instance, ankylostomiasis—which is an earth-borne disease, and is frequently mistaken for malaria)? Were the cases original infections and not relapses due to chill and fatigue caused by the labour? Were *Anopheles* certainly absent? These questions must be answered before the evidence is worth a straw. It is no use quoting Mark Twain and describing public impressions at the time. Dr. Dauber adds that while the troops engaged in excavations at Hong-Kong suffered greatly from malaria the "Argyll and Sutherland Highlanders also stationed there at the same time, who were not engaged in the excavation works, did not suffer similarly"; and he continues with the remark that "It is hard to believe that the mosquitoes could make a differential diagnosis between the Engineers and the Highlanders." Certainly this would be hard to believe if the Engineers and the Highlanders lived intermixed in the same barracks and slept in the same rooms. Are we to understand that this was the case? If not, where is the point of the remark? Everyone who knows anything of the matter is aware that there may be crowds of *Anopheles* in one house or barrack and few in the next (as at the Wilberforce barracks in Sierra Leone), or none at all a few hundred yards away. Your correspondent seems to imagine that mosquitoes are a uniformly diffused entity like a gas. It is quite possible that the Engineers lived in sheds or houses infested with *Anopheles*, while the Highlanders did not; at least this point must be settled before the instance is of any value at all as evidence. Dr. Dauber's reference to the general paucity of mosquitoes at Hong-Kong is rather unfortunate in view of the recent find of *Anopheles* there by Mr. Ladds. His attempt to dispose of their breeding pools by quoting the words of an Engineer officer who says that no pools remain after heavy rain, is also scarcely what we call scientific evidence nowadays, and is moreover summarily discredited by the work of Mr. Ladds—to which I refer your correspondent. Then he quotes an officer of the Ashanti expedition of 1873–74 to the effect that in those parts "there is any amount of malarial fever but practically no mosquitoes." Really, this is the old old story. It was like the story I was told—and by a medical man too—that there are no mosquitoes in Sierra Leone! During the last few months I have heard the same absurd statement about every town on the West Coast of Africa, the fact being, of course, that many people never observe anything at all, not even a mosquito bite. Your correspondent next relates the case of a hospital ship, the *Simoon*, on which after a time malarial fever became endemic, infecting, for instance, the wounded returning from the expedition just mentioned. The *Simoon* was condemned and replaced by the *Victor Emmanuel* which remained healthy. "If mosquitoes were the means of conveying infection in the first vessel," exclaims Dr. Dauber, "why were they not also in the second?" Possibly for the simple reason that there were no mosquitoes, or at least no *Anopheles*, in the second vessel. It must surely be remembered that *Anopheles*, like many other insects, have their seasons. Moreover, the same case would tell equally against the idea that the malaria lay in the air of the locality in which the two vessels were stationed.

Next we hear the case of H.M.S. *Active*, from which a punitive expedition was sent up the Niger in a steamer. The expedition remained quite well until it returned to the *Active*, which then put to sea. Within a week after she had put to sea "nearly all of those who had taken part in the expedition were down with fever of a severe type." What point is there in this story? Dr. Dauber seems to forget that in malarial fever, as in other diseases, there is an incubation period—lasting up to three weeks. I suppose that the members of the expedition were infected before they returned to the *Active* and that the disease appeared in them some time afterwards—that is all. The case appears simple enough. Unless, indeed, the members of the expedition brought some freshly turned virgin soil with them I do not see that it applies to the question at issue. How explain it better on the supposition that malaria exists in the ground, for instance?

The disappearance of malarial fever in England affords your correspondent another text—since mosquitoes, even *Anopheles claviger*, remain in England (which is true) how is it that the fever has disappeared so entirely? Precisely, and the answer gives perhaps one of the most serious blows to the soil theory. It is very well to talk largely and vaguely of the effects of drainage of the soil in England, but let us inquire more particularly. Are we to suppose that every square yard of soil in England has been drained? I suppose that there are a *few* ill-drained fields and ditches still remaining even in England. If so, why have the parasites which by hypothesis live in such places gone so completely? Surely there must be a patch of soil here and there which still contains its hordes of malaria germs. Surely a chance labourer may now and then happen to dig in such spots of ground, and should therefore contract the disease. It will not do; if the germ ever lived in British soil it is most highly improbable that it could have vanished so rapidly and completely as it has vanished. On the other hand, the mosquito theory affords a simple explanation of the phenomenon. According to it both *Anopheles* and malaria cases must be in sufficient numbers for the former to have a reasonable chance of becoming infected from the latter. But what has happened? The fever cases have been consistently reduced with quinine, while simultaneously the *Anopheles* have been reduced by drainage. The chances are now thousands to one against an *Anopheles* ever biting a person suffering from malarial fever in England—more probably millions to one. But I will not anticipate some important researches which I hope will shortly be published on the subject.

Your correspondent does not think that the mosquito theory sufficiently explains the connexion of malaria with rainy seasons or rank vegetation. That is a mere matter of opinion. He says that though mosquitoes teem up the river Parana in South Africa—mosquitoes *probably* of all kinds—yet fever is little prevalent there. This is not definite enough: we must know for certain that *Anopheles* do not exist at the exact spot where malaria prevails before the evidence has any validity. He avers that an offshore wind can induce an outbreak of malarial fever in vessels lying 50 miles from land. The records of such cases would be interesting ones, and I hope that your correspondent will find the time to publish them. Until then we must be excused if we scarcely admit with Dr. Dauber that such instances "prove conclusively that the atmosphere has some intimate connexion with the disease." He adds that he finds it difficult to explain on the mosquito theory how "it is only the *land* breeze which does the mischief." Admitting the statement (which may, however, be doubted) I suppose it may be explained on the ground that the land breeze is more likely to carry the mosquitoes from the land to the ship than is a wind in the opposite direction. Lastly, he says that the paludal, miasmatic, and telluric conditions are still believed in in the British navy. I do not doubt it; they will doubtless be believed in by the British navy for the next hundred years.

I have now examined, I think, all of Dr. Dauber's instances and arguments and have done so at such length chiefly because similar views are continually being expressed by medical men in spite of all refutations. Such views appear to me to have a certain old-world flavour about them—smacking of the pleasant days when direct observation and experiment were not yet necessary in medical science, when we based our conclusions on obsolete text-books, hearsay evidence, and travellers' tales, and when a medical man could gain a reputation in tropical medicine on the strength of possessing a stuffed crocodile in his consulting-room. I do not mean to say that all such views are wrong, but certainly all of them are not right, and what I wish to impress is that they have little value as scientific evidence in the sense in which we now understand it. If the malarial miasma really exists its existence must be demonstrated not by citations of popular beliefs but by exact scientific work. Meantime our position is quite clear. Dr. Dauber blames us for inculcating the destruction of mosquitoes and so on without reference to precautions against the miasma. But this is quite logical. We are sure that *Anopheles* communicate the

disease and we therefore devise measures against them. We know nothing for certain about other modes of infection and we therefore refuse to advise precautions against them. We cannot accept popular beliefs as being in any way equivalent to scientific demonstrations.

As a matter of fact, your correspondent has quite overlooked (although he nearly touches it once) the train of argument which is most fatal to the miasma hypothesis—I mean the arguments based on comparative parasitology. We are now familiar with a very large number of animal parasites and we recognise that their development and life-history proceed in accordance with certain general laws. Those which, like the parasites of malaria, pass between alternate hosts, possess a complicated development which enables them to do so. But there their develcpment ceases. They do not also possess properties or organs which enable them to live in half-a-dozen other media as well. The life-cycle of the parasite of malaria is already complete according to these biological laws, and we have no justification for supposing that it possesses other life-cycles fitting it to live in the soil, or in the marsh, or in the air. We may as well suppose the same thing of tapeworms or trichinæ. The idea that any parasitic organism breeds indefinitely, say in the soil of an uninhabited locality, ready to pounce out upon the first man who happens to dig there, is a zoological absurdity. Moreever, the method of inoculation which nature has discovered for the malaria parasite is so simple and yet efficacious that those who have studied the wonderful arrangements by which it is brought about are not disposed to look with much favour on the clumsy ideas of the miasma and the telluric emanation. I am, Sirs, yours faithfully,

Liverpool, July 1st, 1900. RONALD ROSS.

P.S.—Dr. Dauber's reference to the Parana river region, where mosquitoes "teem in their millions and billions" and yet malaria is so uncommon, seems more unfortunate than I suspected at first. I wrote on the subject to Mr. F. V. Theobald, of the British Museum, who is collecting the known information about mosquitoes, and have just received the reply which he was kind enough to send me. After mentioning the species of *Anopheles* found in that region, he adds: "This is all I can recall. It would thus seem that *Anopheles* are not common in those parts of South America—very different to what we find in the Malay Peninsula, West Coast of Africa, India, &c."

"THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 30th a correspondent over the signature "A.M., M.D., Dub. University" writes: "Although I am unable to discern that the columns of a medical journal are the proper arena for the discussion of the Irish Catholic University question I feel bound to contest your conclusion as set forth in an annotation in THE LANCET of June 23rd, p. 1815, that the proposal to nationalise Trinity College is 'as useless as it is impracticable.'" Now if your correspondent will look again at the annotation he refers to he will see it is entitled "Irish University Education"; that is, the paragraph deals with the question of Irish University education as a whole and not merely with that portion in which Roman Catholics are specially interested. Further, in the discussion of university questions whether they affect the whole or only a portion of the inhabitants of a country, your readers must admit that the interests of the medical faculties, which now constitute such large and important departments of all universities, demand most careful consideration; and where can questions affecting these medical departments be more appropriately discussed than in a medical journal of such great influence and with such a wide circulation as THE LANCET?

Your correspondent takes a very narrow view as to what is meant by the nationalisation of Trinity College, Dublin. He defines it "as the complete de-sectarianising of it"; and he thinks the whole question would be settled if some Government would "proceed to eradicate all traces of sectarianism from the University of Dublin. To effect this latter purpose it would be essential to transfer in its entirety the Divinity school of Trinity College to the outside custody of the Church of Ireland, with a grant to that Church equivalent to that now made to the sectarian education at Maynooth and elsewhere." No doubt, from a Trinity College point of view, this solution of the Irish University question would be an admirable one; that is, Trinity College would continue as it is with the exception that the Divinity school would be transferred to the care of the Church of Ireland and would receive a grant equal to that of Maynooth. In other words, Ireland would possess a new Divinity school for a minority of Irishmen endowed as largely as Maynooth which educates theologically the clergy who minister to the wants of three-fourths of the inhabitants of Ireland. The Divinity school, separated from Trinity College, would thus become one of the most richly endowed theological institutions in the world. Would the British tax-payer calmly submit to pay as much for the education of the clergy for a population of 600,830 members of the Church of Ireland as for 3,549,745 Roman Catholics? Or, to put it in another way, is the theological training of the clergy of 12·8 per cent. of the population of Ireland to cost as much as that of 75·4 per cent.?

But, Sirs, does your correspondent imagine that if Trinity College was desectarianised in the way he suggests the Irish University question would be at all settled? As everyone knows, it is a cardinal doctrine of the Roman Catholic Church that its members accept the teaching of their ecclesiastics as to what is dangerous to faith and morals. The removal of the Divinity school from Trinity College would still leave what your correspondent describes as a "thick Protestant atmosphere" in that place which the Catholic Church teaches is inimical to the faith and morals of her sons, and hence Trinity College would be as much as ever under the ban of that powerful religious organisation.

There is, however, another and most important factor which your correspondent entirely ignores and which will have to be considered in any proposed settlement of Irish university education. If Trinity College is nationalised, not merely in the limited sense of having its Divinity school removed, and becomes a secular institution, how will this change meet the existing state of affairs as it concerns various Colleges and educational centres in Ireland outside Trinity College, what will then be the position of the Queen's Colleges of Belfast, Cork, and Galway, of Magee College, Derry, and of Victoria College, Belfast? How are these great educational institutions to be dealt with in this national university? Are they simply to send their students to Trinity College, Dublin, and close up their halls, or are they to remain as at present, let their students go to Trinity College, Dublin, for examination, and have no share or voice on the governing senate of this new national university? Is the great medical school of Belfast, one of the largest in Ireland, situated in a rapidly increasing city whose population now exceeds that of Dublin, to be quietly absorbed and take a subordinate position in this new national university? Does your correspondent really imagine that in these days of decentralisation, with new universities such as the Victoria, Birmingham, the Welsh, and the London, the hands of the clock are to be put back, and in Ireland everything of an educational nature is to be controlled from Trinity College? Is that institution to be the only place of collegiate education for young Irishmen, and, if so, how are the institutions already existing, such as the Queen's Colleges, Magee College, and Victoria College to stand related to the one national university? Would Scotchmen submit to have one university for the whole of their country situated in Edinburgh? Has not England revolted against university centralisation in London?

If Trinity College is to be really and truly nationalised something more than its mere "de-sectarianisation" will have to be attempted. 1. A truly national university must be so constituted that, as your correspondent writes, its governing body, professors, fellows, and officials, as at present, are almost universally of one religious persuasion. 2. Irish Roman Catholics and the Presbyterians of Ulster must get a fair share in the governing senate, as well as in other matters pertaining to the administration of the new university. 3. Arrangements will have to be made for the due recognition and adequate representation on the new national university of the various colleges and educational institutions outside Trinity College in the provinces of Ireland. 4. A truly national university must meet the requirements and aspirations not of one sex alone, and hence all its degrees and honours must be open alike to women as to men. (Trinity College, in spite of frequent demands, has not advanced even this length, none of its degrees being open to women.)

Now, Sirs, I have attempted to lay down certain conditions which I think in fairness all will agree must be fulfilled if a university in Ireland is to be a truly national one. May I ask will the authorities of Trinity College allow such modifications of that old and venerated educational institution? And if they refused (as it is certain they would) would any of our political parties in the State for one moment attempt to force them to accept such radical changes in the arrangement and government of their College? As a consequence I am compelled to agree with your conclusion that "the proposal to nationalise Trinity College is therefore as useless as it is impracticable."

I am, Sirs, yours faithfully,

July 2nd, 1900. IRISH GRADUATE.

"LYMPHATIC LEUKÆMIA."

To the Editors of THE LANCET.

SIRS,—I am much indebted to Mr. J. Charlton Briscoe for his courteous criticism of my case. The diagnosis was arrived at not solely from an examination of the blood, but from a careful consideration of all the symptoms. The differential diagnosis between acute Bright's disease, tuberculous peritonitis, ulcerative endocarditis, and other possible causes was carefully discussed. There was no enlargement of the lymphatic glands but the dulness in the left hypochondriac and adjacent regions was probably splenic in origin. Hyperplasia of the lymphatic glands is by no means a constant symptom in lymphocythæmia. Muir states that it may be slight or even absent and Osler expressly mentions that in only four out of his series of 26 cases were the glands enlarged. Enlargement of the glands is much more common in lymphadenoma, a disease of an essentially different character. Leucocytosis is usually met with in the lymphatic form of leucocythæmia, but the number of leucocytes fluctuates greatly from time to time and cases are recorded in which it fell to normal. Although in my case the leucocytes were not absolutely in excess they were relatively so compared with the erythrocytes. The ratio before treatment was 1 in 493, whilst after treatment it fell to 1 in 669. I quite admit that in lymphatic leukæmia a prominent feature is the increase of uninucleated leucocytes, lymphocytes, and slightly larger corpuscles such as are normally present in the blood. In my case the report stated that of the leucocytes 43 per cent. were small cells having a single pale nucleus, but so much doubt evidently existed as to their real nature that the information was of no practical value as an aid to diagnosis. With a patient in a critical condition one cannot afford to suspend treatment whilst experts are discussing the value of methylene blue as a staining agent or considering whether certain appearances are or are not "artefacts." In this case there was some pathological condition of the hæmatopoietic tissues, and whether we choose to label it leukæmia or call it by some similar and perhaps equally indefinite name is a matter of little importance. The essential points are that there was a considerable effusion of fluid into the abdomen, that the patient was sinking rapidly, and that she was restored to safety by the performance by Mr. Walter Spencer of an operation for establishing a collateral circulation.

I am, Sirs, yours faithfully,

Welbeck-street, W., July 2nd, 1900. WILLIAM MURRELL.

To the Editors of THE LANCET.

SIRS,—As Mr. Briscoe's letter in THE LANCET of June 30th with regard to Dr. Murrell's case of "lymphocythæmia" directly concerns myself, I hope you will spare me a short space to reply to that portion which refers to the examination of the blood; any questions as to the clinical diagnosis pass beyond my domain. I think that if Mr. Briscoe will refer to the wording of my reports (and these Dr. Murrell has given *in extenso* and has placed in inverted commas), he will recognise that I was in considerable doubt as to the true nature of the cells which he thinks were possibly lymphocytes. Since reading his letter I have again examined the specimen upon which my first report was founded and find no reason to alter my opinion. I am sure that he will agree that the lymphocyte is the least variable of the leucocytes, and that anyone at all acquainted with blood examinations should make the fewest mistakes when they are the cells under consideration. If I may be excused a little pride, may I express my satisfaction that the arrangements I have made in our clinical laboratory are so soon to bear fruit that will extend beyond our walls? For by our arrangements it is possible to exclude the personal element from a pathological diagnosis entirely. If Mr. Briscoe will favour me with a call at the laboratory he will not only be able to form his own opinion upon the cells in the original blood-film, but also will aid in bringing about that agreement as to the nomenclature of the different varieties of colourless cells found in the blood which is so much needed.

I am, Sirs, yours faithfully,

W. S. LAZARUS-BARLOW.

Clinical Laboratory, Westminster Hospital, July 2nd, 1900.

"THE OPPOSITION OF THE GENERAL MEDICAL COUNCIL WITH RESPECT TO THE MIDWIVES BILL."

To the Editors of THE LANCET.

SIRS,—With reference to the letter of the President of the General Medical Council which appears in THE LANCET of June 30th permit me to inform your readers that the promoters of the Midwives Bill declined to place upon the order paper the amendment to which he calls your attention, or any other amendment which might lay them open to a charge of breach of faith with the General Medical Council.

I am, Sirs, yours faithfully,

F. R. HUMPHREYS,

Honorary Secretary of the Midwives Bill Committee.

Buckingham-street, Strand, W.C., July nd, 1900.

THE OPERATIVE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 23rd Mr. Foster Palmer, urging "early operation in cases of undoubted tubercle of the lung," proclaims that medical treatment of this disease is "vague, empirical, and uncertain," and that surgery alone "offers a really good prospect of success." He argues that when any other organ of the human body is attacked by the tubercle bacillus extirpation is the usual and successful remedy; and straightway he apparently concludes that when the lung becomes tuberculous a similar result must follow a similar operation. It is to be hoped that the future surgery of the lungs will be placed on a far more satisfactory pathological basis. For is it not certain that in almost all cases of adult pulmonary tuberculosis the affection of the lung is secondary to tuberculosis of some other tissue, most frequently to that of the bronchial lymphatic glands? And consequently will not surgical operations on the lung, such as Mr. Palmer describes, prove as useless as if he were to remove the tuberculous index-finger of a patient already suffering from tuberculosis of the wrist-joint?

I am, Sirs, yours faithfully,

Switzerland, June 25th, 1900. CHARLES S. MYERS.

"THE CAUSE OF CARIES OF THE TEETH."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 30th there appeared an annotation on The Cause of Caries of the Teeth in which my theory is characterised as "highly improbable." Yet as far as I am aware there has been *no* case recorded either of rapid and extensive caries of the teeth or of complete freedom from the disease which does not lend support to the theory. The writer says: "That the structure of the tooth plays a most important part in the resistance to caries is within the knowledge of a dental practitioner with even a small experience." This current assumption is repudiated by some of our most acute observers and experienced practitioners (Dr. Black, Mr. Leon Williams, and others). At one time I, too, shared this prevalent belief. When a tooth is soft and non-resistant to an instrument at a part which does not appear to be attacked by caries this condition is usually brought about in the following way. In the mannitic fermentation of sugar the mannite or gum formed clings to the enamel and together with the acids generated in the fermentation gives rise to a general decalcification of the enamel which is not pigmented nor sharply localised and so escapes observation. In the crevices of such teeth

amylaceous and other food particles are apt to lodge. In these situations the caries being further advanced, definitely located, and associated with pigmentation, is easily and distinctly observable.

Perhaps the above explanation may help my critic to reconsider his statement that "the true cause of caries has yet to be discovered and is not quite so simple as Dr. Wallace would lead us to believe." Why not? When the true cause of anything is discovered it generally appears simple. I think, too, it is hardly correct to say that I have "advanced an *ingenious* theory" which is admittedly "so simple." The seriousness and importance of the subject demand that the theory should be put to the test of direct observation rather than be subjected to destructive criticism founded merely on current beliefs.

My critic thinks that "there is something, so far not recognised or understood, which plays a most important part in the liability of teeth to be attacked by caries." If he will only test the theory (as any medical man or dentist can easily do) in a few typical cases of extensive and rapid caries and in a few cases of complete or almost complete freedom from it, I think he will recognise and understand the something which plays that most important part.

I am, Sirs, yours faithfully,

Kingston-on-Thames, July 2nd, 1900. J. SIM WALLACE.

CHELTINE FOODS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 30th you published a letter from which it appears that the makers of these foods now claim that the starch contained in them has been so modified that it is not convertible into diabetic sugar during digestion. Will you permit me to point out that by the action of the amylolytic enzymes of the digestive secretions the poly-saccharids—starch and the dextrins—are not converted into diabetic sugar or dextrose, but into the di-saccharid maltose; so that the claim put forward for the Cheltine foods might equally be made for any amylaceous food. Developing the makers' thesis a stage further one would be led to conclude, in opposition to all experience, that starch is a suitable food for diabetic patients. I am, Sirs, your faithfully,

Cambridge, July 4th, 1900. W. E. DIXON.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Monsoon.—The Unparalleled Extent of the Famine.—Diminished Plague Figures.—The Extermination of Rats by Disease.—Calcium Chloride in Plague Inoculation.—The Standardisation of Haffkine's Prophylactic.—Enteric Fever in the British Army in India.—Rabies.

THE monsoon has reached India and promises a normal amount of rainfall. The conditions are favourable in the west as well as in the east, and anxiety as to the prospects in the famine districts has thus been immensely relieved. Anything like immediate improvement, however, in the numbers under famine relief is hardly to be expected. At the present time there are nearly 6,000,000 persons being aided by charity and the areas affected in the South Punjab, East Sind, Rajputana, Central India, Berar, the Central Provinces, Deccan, Bombay coast districts, Kathiawar, and Gujerat, cover between 600,000 and 700,000 square miles.

The famine of 1876–78 surpassed every previous one in intensity, but the present one is far worse both in severity and extent. The drought of 1899 was unique; not only has the recent drought extended over a wider area, but the tracts affected have been more completely dried up.

With the marked diminution in the plague mortality all interest in and anxiety about it seem to have subsided. For the week ending June 9th only 417 deaths were recorded for the whole of India. Of these Bombay city returned 131 (this is probably much under the correct figures), Karachi 12, Bombay Presidency 57, Calcutta 138, Bengal Presidency 54, and Aden 8. Bombay city continues to return a very high death-rate. It is said that illness of every description abounds, but allowing for a certain amount of cholera, small-pox, and unusual fatality in other diseases the death-rate of over 70 per 1000 and the excess of 547 in the total mortality are too high, and can only be explained by a continuance of the plague epidemic. I am sorry to say that the number of weekly inoculations has much decreased. The heightened birth-rate suggests that the women have not according to custom left the city for their native country. This is probably due to the famine.

Reports from the populous districts in and around Sylhet show that blackwater fever has been assuming the proportions almost of an epidemic. Although it is not so rapid in its fatal effects as plague, very few cases are said to recover. Treatment seems to be of little avail.

The extermination of rats is a difficult work in India owing to the opposition of the natives, so that the experiments recently conducted on the European continent are of especial interest. The object aimed at was the introduction into the rat community of a fatal form of disease which was at the same time harmless to human beings. This has apparently been very successfully accomplished. Into a Paris sewer were introduced 200 healthy rats, and pieces of bread impregnated with the virus of a disease which had previously been proved very fatal to rats were scattered about. Other food was also supplied. In eight days the epidemic broke out and dead bodies were found in considerable numbers. On the twenty-eighth day only eight out of the 200 rats remained alive. The experiment was repeated in Hamburg, Copenhagen, and elsewhere with equally good results. It was found also that even if the poisoned food was laid in open places, such as grain warehouses, either a disappearance of the rats occurred or a great diminution in their number took place. In view of the probable spread of plague by rats it may almost be hoped that this new epidemic will spread all through the rat population in every part of the world. It is by no means certain, however, that rats are the chief means of the dissemination of this disease.

An interesting report on the Haffkine prophylactic has been submitted by Captain Stevenson, I.M.S. Amongst other points he refers to the effect of calcium chloride on the febrile reaction and shows that given both before and after the inoculations it has a good effect. The best results were obtained when the calcium chloride was given a few days before the inoculation as well as after it. Yersin's serum was tried at Mauritius, but the reports were unfavourable.

It is satisfactory to learn that attempts are now being made in the Plague Research Laboratory, Bombay, to standardise Haffkine's prophylactic. Improvements have been effected in the manufacture of the fluid, and since occupying the new premises at Parel no less than 530 brews, or 160,000 doses, have been tested and all were found to be sterile.

The increasing prevalence of enteric fever in India as far as the British army is concerned is shown by the following table:—

Year.	Admissions per 1000 strength.	Year.	Admissions per 1000 strength.
1890	18·5	1895	26·3
1891	20·4	1896	25·5
1892	22·1	1897	32·4
1893	30·1	1898	36·9
1894	20·9		

In spite of every attention to the water-supply and sanitation in the cantonments enteric fever has largely increased. The case death-rate is still very high also, being 24 per cent. It is obvious that the water-supply is not the main or the most important vehicle for the infection. In some places the water is purified, in others it is left untouched, and at some stations there was more fever after purification than before. Boiled water is tasteless and not always cool, and Tommy Atkins will not drink it. The immediate question is not why enteric fever should be prevalent, but why its occurrence has so greatly increased during the past few years. The admission rate for officers in 1898 was no less than 40 per 1000, as against 34 per 1000 in the previous year. This rate is higher than for non-commissioned officers and men, and it shows that the theory of the men contracting enteric fever in the bazaars requires considerable modification.

As the Pasteur Institute at Kasauli is not yet in working order it has been found necessary to send four more soldiers and a child to the Pasteur Institute at Paris.

June 16th.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

Russian Temperance Reform and the Pavilion of the State Monopoly of Alcohol.

AT this moment, when so many international congresses are meeting in Paris to discuss various methods and phases of social reform, there is one exhibit that specially commends itself to those who seek to promote the physical and moral wellbeing of the masses. Throughout the northern half of Europe the prevalence of intemperance is generally considered one of the greatest obstacles to social reform. So great indeed is this evil that it has led to what many would qualify as an exaggerated reaction; one which, for the sake of abolishing that which is unreasonable would also prohibit that which is reasonable, and thus the intemperance of over-indulgence is met by an intemperate desire to enforce total abstinence. But if this be the experience of such countries as Great Britain and the United States of America what must be the state of such a country as Russia? There the vast majority of the population is composed of a simple-minded, good-natured, but totally ignorant peasantry. In their misdt, like a swarm of vampires, there were innumerable dramshop keepers where alcohol insufficiently rectified and of the coarsest description was served out to poor people who had not sufficient knowledge to know that they were drinking what was little better than rank poison. The diseases due to alcoholism were, therefore, widespread, entailing the loss of moral self-control. Clothes, furniture, homesteads, future harvests, implements and cattle, anything and everything that the dram-seller consented to accept as a sufficient pledge was given or signed over for the sake of alcohol. The people were bartering themselves away into a condition of servitude, indeed of slavery, to the dram-seller. Such was the state of ruin induced by alcohol that there were many places where the taxes remained unpaid and no amount of severity on the part of the tax-collectors could extract from the peasantry what they no longer possessed. This financial ruin, of course, also entailed physical and moral degradation. Fortunately the Russian Government, as an autocracy, was better able to deal with the problem than a country where the Government depends on electors who are in a large measure controlled or influenced by public-house keepers, brewers, and distillers. The Russian Government also, and very wisely, deemed that it was its duty to deal with things as they are and not according to the conceptions of some as yet very distant ideal. It had not to decide whether, in the abstract, total abstinence from alcohol was best for the human race, but with the very obvious fact that there are hardly any total abstainers in Russia. Therefore, as people will drink, the practical thing to do is to see that what they drink shall be as free as possible from injurious ingredients. For this purpose a system of inspectorship would have been totally inadequate. The only solution was to create a State monopoly in alcohol. Of course, a great deal has been said against State monopolies, and economists, especially of the older or Manchester school, are loud in their advocacy of the advantages of competition. The problem therefore consisted in effecting a compromise, of retaining some of the advantages of competition in combination with the advantages of a State monopoly. It is the results of this experiment carried out on a gigantic scale which can be studied at the Exhibition in the Pavilion of the Russian Régie of Alcohol situated close to and on the western side of the Eiffel Tower.

M. Gennadi Kartzoff, director of this Pavilion, very courteously placed himself at my disposal and lengthily explained every detail. Indeed, he also remarked that so much had been written in England against Russia that he was especially gratified to find there were English journalists who were willing to study what efforts at reform had been made in his country. It was after the famine of 1891 that the Emperor Alexander III. felt that it was absolutely necessary to attempt a radical reform and in 1894 it was decided to establish a monopoly of alcohol as an experiment. The provinces of Perm, Oufa, Orenburg, and Samara were selected for this purpose. The success was of so decisive a character that the monopoly has been extended to 25 other provinces in the south, south-west, north-west, and in the kingdom of Poland. Perhaps the most remarkable and original feature of the scheme is that private distilleries are not abolished. The State does not monopolise the manufacture of alcohol, it only monopolises the sale of alcohol. Formerly the distiller dealt directly with the dramshop keepers. He had to send out commercial travellers, there were occasional bad debts, and it was difficult to foresee how much alcohol would be sold; in a word, he had to face all the risks common to such undertakings. Now, on the contrary, the Government informs the distiller how much alcohol will be required during the forthcoming year. The distiller is certain to be paid for the same; he has not to deal with a multitude of more or less doubtful customers and he escapes from the risk of producing too much or too little. On the other hand, he still competes with other distillers so as to secure large orders from the one customer, the State. Most of the alcohol bought by the State is the raw unrectified product of distillation. A very ingenious sealed meter is provided by the State for the use of distillers. A large float in the cylinder which receives the liquid indicates and registers its alcoholic strength. From this cylinder the alcohol flows into a drum which revolves and empties itself when weighed down by the filling of one of its partitions. Thus quantity and strength are automatically registered. The alcohol is then conveyed from the private distillery to the State depôt, where it is analysed by the Savalle test, with sulphuric acid for amylic alcohol and with fuchsinosulphuric for aldehydes or with aniline for furfurol and with permanganate of potassium to determine its degree of oxidation. The whole of this process is shown at the Pavilion which, on a reduced scale, is the exact reproduction of a Russian State depôt for receiving, rectifying, and for the sale of, alcohol. The water, also, used for diluting the alcohol, is analysed, and according to the result of this analysis is treated chemically or distilled so that the water shall be uniform in its composition and purity. In all cases the water is absolutely sterilised.

A great point is made of the fact that whatever may be done with the alcohol it is never touched by the human hand and one source of contamination is thus done away with. The pipes and the soldering of the pipes that serve to convey the alcohol from vat to vat or from filter to filter are exhibited, and the attention of the visitor is drawn to this important consideration. By a syphon arrangement and an air-pump the alcohol is raised from the ground floor to the second floor, from thence by gravitation it can flow through the filters, &c. There is a special apparatus with an electric motor to ensure the satisfactory mixing of the alcohol with water, and it is then kept in a reservoir till the time comes for transforming it into brandy. The brandy is then raised into a cylinder where pressure is brought to bear so that it can pass first through four charcoal filters. Then so as to remove any particles of charcoal it is passed through two sand filters. As this process causes some slight loss of alcoholic strength the liquid, now perfectly clear, is collected in another vat where it is brought up to its normal strength, generally 40 degrees. All this is done mechanically, and so also is the bottling which now ensues. The dirty bottles are placed on a wheel the lower portion of which is submerged in a vat of water. The weight of the bottles as they are placed on one side of this wheel causes it to revolve, bringing up on the opposite side of the wheel the bottles that have been some time in the water. With the aid of a brush the labels are then easily removed. The bottle is then stood neck downwards over an upright pipe. By pushing a handle at the side of the table in one direction water is squirted inside the bottle; by pushing the handle in the opposite direction the water and sand are violently discharged. If this does not suffice the bottle can be affixed to a revolving brush which removes any hard substance adhering inside. Then there is a table with a little measured reservoir above. Eight rubber tubes are introduced in the necks of eight bottles. On turning a handle to the right the four bottles on that side receive the exact amount of brandy they should contain, and while the handle is turned to the left to fill the bottles on that side the first four are removed and empty ones are put in their place. The bottle is then placed under the corking machine. By pressing a lever, not only is the cork forced into the bottle, but a little piece of vegetable parchment is brought under the cork, which it surrounds and covers, preventing any contact between the cork and the alcohol. Thus the cork does not decompose in the bottle and cannot spoil the brandy. This is also important from an antiseptic point of view, as it is difficult to guarantee that the corks are aseptic. Dr.

Roux of the Pasteur Institute was much impressed by this contrivance and said it was the best thing of the sort he had seen. In the corking of the bottles, as in every other detail, everything is, as already stated, done by machinery, the alcohol is never in contact with anything that has been touched by the hands of the workers.

Finally, there is an exact reproduction of a Russian depôt for the retail sale of brandy, or *vodki* as it is called. It consists of a counter well protected with strong wire so that no one can reach over towards the bottles which are on shelves behind. In front there is only a little standing room for the customers, there are no glasses, and no one is allowed to drink on the premises. The attendants are employed by the Government, they receive fixed salaries, they are in no wise interested in pushing the sale, and they are forbidden to give credit. One of the great objects was to abolish the village taverns or dramshops which have been the ruin of so many peasants. On the other hand, the utility of the tavern as a place of social intercourse could not be denied, consequently out of the profits made by the monopoly of the sale of alcohol no less than 826,000 subsidies, amounting to 1,500.000 roubles, were granted to temperance committees in 1897. The mission of these committees is to create establishments where all the advantages of social intercourse can be enjoyed without the necessity of drinking alcohol. Therefore they establish cheap restaurants, reading-rooms, libraries, and halls for popular lectures, concerts, &c., and this they are now able to do out of the profits from the sale of alcoholic liquors. But though the low-class taprooms or public-houses have been abolished still inns and restaurants are necessary. Therefore the retailing of alcohol to be drunk on the premises is sanctioned at railway stations, in hotels, high-road inns, and such places, but this is done in such a manner that innkeepers have no interest in pushing the sale of alcohol. They only receive a commission of 10 per cent. on the *vodki* they sell. If a higher commission is given it is because they have a long way to go to the nearest State depôt. But it will be said that the innkeepers could refill the bottles with some spurious alcohol brought from an illicit distillery. To meet this, the sale of *vodki* on draught is absolutely prohibited. Every purchaser must have an entire bottle, so bottles that only hold enough for one drink are provided. These contain six centilitres of *vodki*, and the retail price in Russia of these bottles is equal to about seven farthings of English money. On the bottle a label indicates the quantity and the alcoholic strength of the *vodki*. The cork is sealed with the Imperial arms. The price at which it is to be retailed is also stated so that the innkeepers cannot in any way increase the profit he is to make. Apart also from these printed statements the colour of the wax indicates the strength and value of the contents of the bottle. Deception is not practicable and if it were practicable the penalty is 15 years in Siberia. The State takes back the empty bottles if they retain their labels and the number of the factory. The State alone has the right to fill the bottles and the Imperial seal is the guarantee of the purity of their contents. As the profit on the sale of alcohol is only about 10 per cent. no one is particularly interested in pushing the trade, and therefore there is no attempt to increase the demand. Also it is strictly a ready-money trade, so that drunkards cannot get into debt with the publican. Nevertheless, but for the small bottles some form of fraud might still be possible. If a publican can draw the cork from a bottle and pour out only a part of its contents there is no knowing with what he may refill the bottle. The Russian innkeeper, however, must serve an entire bottle to his customer; the consumer alone has the right to break the seal, and to serve a bottle with a broken seal is a penal offence. This rule can be easily observed, as there are bottles small enough to contain sufficient for one drink only.

The results of this great reform have been beneficent, financially and morally. The State sells a litre of alcohol for 3 francs 92 centimes. The cost of production, including excise duty, indemnities to towns which by the abolishing of the licensing system have lost a source of income, &c., amounts to 3·26 centimes. No indemnity whatsoever was paid to the dramshop keepers. Many of them were very rich and in any case had done harm enough to debar themselves from any claim for compensation. In 1897 the 66 centimes of net profit per litre of alcohol brought in a revenue of 47,000,000 francs. But what is even more advantageous, districts that were ten years in arrears in the payment of direct taxation are now clear and are paying regularly all their taxes. The Emperor Alexander III. in discussing this scheme had said that any reduction of indirect revenue due to the taxing of alcohol would be compensated by an increase in direct taxation arising from the greater prosperity of the people. This anticipation has been realised. Drunkenness has been very greatly reduced, there are less crime and debauchery, and there is a consequent distinct improvement in public health. The deposits made in the savings-banks have increased in a marked manner, and this improvement would have been even more emphatic but for the very serious famines that have prevailed in different parts of Russia.

To sum up, the position stands thus. The retailer makes less profit out of the sale of alcohol than he does out of anything else which he may have to sell; therefore he is not at all desirous to induce his customers to drink, he would much prefer to sell them food, coffee, or tea. Then as the alcohol is absolutely pure it is not so injurious to the consumer. As all the low-class dramshops are abolished the peasantry are no longer induced to run into debt for the sake of drink; but, on the other hand, the temperance committees receive funds from the State which enable them to provide rational enjoyment for the peasantry. The results are a notable decrease in drunkenness and crime and a corresponding increase in public revenue by the more regular payment of direct taxation and in private prosperity, as indicated by the increase of deposits made in the savings-banks.

Now, without going all the way to Russia to study the details, technical processes, administrative complications, &c., of this great and radical reform, the entire subject can be thoroughly investigated here in Paris and within a few yards of the Eiffel Tower. This, indeed, is a unique opportunity. All those who devote so much time to studying and discussing the great question of temperance reform, the prevention of the diseases due to alcoholism, &c., have now within easy reach a practical, complete, technical, and general example and illustration of one of the boldest, the most far-reaching and systematic efforts that any modern European Government has ever ventured to make when seeking to grapple with this terrible and menacing problem.

Paris, July 1st.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague at Sydney for the week ending May 19th are as follows: remaining at the beginning of the week, 86; admitted, 23; discharged, 0; died, nine; remaining at the end of the week, 100. The totals up to the end of the week are as follows: cases, 239; deaths, 82; recovered, 57; "contacts," 1351; "contacts" remaining, 140; cases among "contacts," seven.

The second series of inoculations, begun last week, proceeds slowly though steadily. An average number for each of the past nine days is 200. No excitement and comparatively little interest in it are manifested. Two factors, however, have to be considered besides the great abatement in the panic with which the public were stricken at the date of the former inoculations. The present series has been carefully organised and steps have been taken to secure inoculation of the remaining workers in, and inhabitants of, the first infected area, a considerable proportion of whom were inoculated on the earlier occasion. Candidates now have to apply for tickets, which are dated for some day later than that of application, and they must present themselves on that day or procure a fresh ticket. Business firms may make application for their employés by letter and receive by post tickets dated for different days, so as not unduly to interrupt business. Government departments may follow the same course or, if they choose to provide themselves with a medical man, may be supplied with enough prophylactic to inoculate all of the staff who desire it. Tickets are allocated to days in limited numbers; half of the number are distributed by post as just mentioned, the other half are reserved for applicants in person. Tickets are distributed to persons and by post every morning; inoculations are performed every afternoon. Two afternoons a week are reserved for women and children. The city townhall furnishes a place; the staff consists of two medical men, two preparators (medical students), and two clerks.

The number of persons in whom plague has developed after inoculation has been 11. One was attacked on the day of inoculation, one each on the first, second, and third days therefrom, three on the fourth day, and one each on the fifth, seventh, fourteenth, and thirty-second days. All of these recovered, and most of them had conspicuously light attacks. One other patient who died said that he had been inoculated, but his name did not appear in the lists; his family knew nothing of it, but a fellow clerk said that he thought he had been inoculated, because though he never told him so directly, he had expressed an intention of submitting himself, did take leave one afternoon, and for two or three days thereafter complained of his arm. The informant seemed certain that he had been inoculated. No reason for this secrecy coming to light, it seemed possible that he gave a false name to the registering clerk.

Of the total deaths mentioned above 27 have occurred before removal to isolation; eight occurred at one or other of the general hospitals where their cases were identified, though they had either already died before official inspection or were too ill for removal; and 19 died at their residences. Sometimes the cause of death in these cases was uncertified and the cases were brought to notice by a coroner; sometimes the patient was seen alive by a member of the medical staff but died soon afterwards; sometimes very acute cases were reported by medical men but died before they could be examined; and occasionally the unexpected occurrence of death first gave the medical attendant reason to think of plague and caused him to refer the case to the medical staff. In five of the 27 cases the date of attack could not be ascertained; the remainder died on days after attack from the first to the eighth as follows: 1, 3, 7, 3, 2, 2, 2, 2. In all cases of predecease the diagnosis was made by post-mortem and bacteriological examination.

Chinese have now been attacked in eight instances; seven of the patients have died. The dates of discovery were April 9th, 16th, 23rd, and 26th, and May 8th, 9th, 15th, and 17th. Possibly the latter dates offer a hint of tendency in the disease to take hold of these Asiatics. At all events, special search-parties have been organised by the Department of Public Health and next week they will go through the three small Chinese quarters which exist in Sydney. In all the cases there is strong reason to believe that the patient had been removed from some better or more populous residence to the unimportant place in which he was found. In one such case the sufferer was found in a room attached to a mission chapel where no one lived; another patient asserted that he had been tramping over the country in search of work and had arrived in Sydney by train from a remote station the day he fell ill and was discovered—a story which his appearance belied and which was easily shown to be false by the police and by the guards of the only trains by which he could have travelled. Especial care was taken to procure substantial evidence of the facts, although it is apparent that a tramp could not have acquired plague in the bush under existing conditions.

Two litres of Yersin-Roux serum arrived in bottles holding 20 cubic centimetres each and the use of it was commenced at the end of last week. The results could not be mentioned in sufficient detail in this communication, were they complete; they seem, however, to bid fair to be satisfactory, and it may be noted that all patients thus far treated have a pulse of much greater strength than is usual at the corresponding date of illness in untreated cases be they mild or severe. From this it may be inferred that the serum is an efficient antitoxin at least.

May 21st.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University of Birmingham.

HER MAJESTY in pursuance of the provisions of the Charter of the new university has been pleased to appoint Oliver J. Lodge, D.Sc., LL.D., F.R.S., Professor of Experimental Physics in the University College, Liverpool, to be Principal of the University of Birmingham. This appointment has given general satisfaction to all interested in the university. Dr. Lodge's reputation is a wide and substantial one. His work on electricity and light and his researches in the field of experimental physics and allied subjects have made his name familiar and popular as a writer and teacher of the first order. Having just completed his forty-ninth year Dr. Lodge may look forward to his reign in this new sphere with hopefulness and confidence, while his colleagues will rest assured that they will have the association of an eminent and active director in all questions affecting the progress and distinction of the University. In illustration of the activity of the students at present engaged at Mason College a meeting was held on June 12th for the purpose of forming a University company of Volunteers. The Dean of the Medical Faculty—Dr. B. C. A. Windle—presided and much enthusiasm was exhibited. The object is to get a sufficient number of drills completed before August 6th and then to appear as a complete company on Salisbury Plain.

A New Asylum.

An inquiry under the auspices of the Local Government Board was held on June 21st for the purpose of borrowing £249,250 for the building a new asylum at Hollymoor. The Town Clerk explained the objects of the inquiry and gave details of the necessity and the approximate cost. He stated that the authorised accommodation for patients at the existing asylums of Winson Green, and at Rubery Hill was for 1429, but as the members had been for some time increasing this was found to be insufficient. Thus the number of patients in the two asylums in 1891 was 1205, in 1900, 1528. The increase was stated to be normal in proportion to the increase of population, amounting to about 40 per annum. To meet the increase temporary provisions were made in 1897 by a lease of Sandwell Hall at a rental of £300 per annum, giving accommodation for 150 male patients. Another building had also been provided for a time to meet the difficulties of the increase which would be for female patients. It was pointed out that all these additional premises were held on limited leases only and that the necessity of permanent buildings was obvious from the statistics adduced. The expense will be a heavy tax upon the ratepayers, for though the Government, recognising that lunacy is a national and not a local misfortune, contribute towards the maintenance of the inmates the cost of the new buildings must be borne by local taxation; fortunately this extends over a series of years.

Inebriate Homes.

Corngreaves Hall, near Birmingham, was the scene of an animated gathering on June 13th, when it was formally opened as an inebriate home for women. The building has been acquired by the Worcester Diocesan Church of England Temperance Society. It is intended for the reception of inebriate women of any denomination, the age-limit being from 20 to 45 years. No person will be admitted for less than 12 months and patients are strongly advised to enter for two years. Accommodation is provided for 30 patients and arrangements are made for three grades, payment being accordingly. Employment and recreation will be duly provided. Under the present able administration the results are looked forward to with cheerfulness and hope. The board has appointed two representatives from Birmingham on the management, taken from the justices of the city roll.

Hospital Saturday.

The sum paid into the bank for this year's contributions amounts to £16,111, as compared with £16,521 last year. This falls short of the £20,000 asked for, but under existing circumstances it must be regarded as a valuable contribution.

July 3rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

A New Hospital in Liverpool for the Treatment of Tropical Diseases.

IT is proposed to erect a new hospital in Liverpool for the special treatment of tropical diseases, as the accommodation provided in the Thompson-Yates Ward at the Royal Southern Hospital has become too limited for the number of cases applying for treatment. At the banquet at the Adelphi

Hotel on June 25th in honour of Dr. H. E. Durham and Dr. Walter Myers, on the eve of their departure for the Amazon, subscriptions amounting to about £2500 were announced towards that object. It was certainly a happy thought which suggested to Mr. Alfred L. Jones, who presided, the association of the name of Miss Mary Kingsley, the intrepid traveller and friend of the negro, with the new hospital. No more fitting memorial to perpetuate that lady's name can be conceived than that of connecting her name with an undertaking which is intended to benefit the lands she loved so well.

The Thompson-Yates Laboratory Reports.

The first issue of the Thompson-Yates' Laboratory Reports, vols. i. and ii., 1900, has just appeared from the University Press of Liverpool. The reports consist of two large quarto volumes, handsomely designed and furnished with numerous coloured plates and illustrations. The first volume, which consists of 238 pages, contains the account of the opening of the laboratories in October, 1898, by Lord Lister, P.R.S., who was accompanied on that occasion by Professor Virchow and a distinguished gathering of scientific and representative men. An address delivered before the medical students of University College, Liverpool, by the donor of the laboratories, the Rev. S. A. Thompson-Yates, will also be found in the first volume. In the second volume, which contains 265 pages, reports are given of the various departments, including the report of the first malarial expedition to West Africa by Major R. Ross, I.M.S., Dr. H. E. Annett, and Mr. E. E. Austen, which clearly indicate the many ways in which the University teaching in the schools of physiology and pathology is directly applicable to the needs of the community, including the wide sphere of our colonies, both as regards the prevention and cure of disease at home and abroad and the advancement of commerce. They are intended to promote learning and record research in the various branches of physiology and pathology, and thus to carry out the wishes of the founders of the two schools. They also contain reprints from various authors and medical journals. The editors are Professor Rubert Boyce and Professor C. S. Sherrington, both of University College, Liverpool, assisted by junior members of the staff of the schools of pathology and physiology.

July 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Chair of Systematic Medicine in the University of Glasgow.

THE Chair of Systematic Medicine in the University of Glasgow, vacant by the resignation of Sir William Gairdner, has been filled by Her Majesty the Queen having been pleased to appoint, upon the recommendation of the Secretary for Scotland, Professor McCall Anderson, the Professor of Clinical Medicine in the University. Dr. McCall Anderson is M.D. of the University, and F.F.P.S. of Glasgow. He is physician to the Glasgow Western Infirmary and consulting physician to sundry other Glasgow medical institutions. He is the author of various medical works, chiefly dealing with diseases of the skin.

The Forthcoming Health Congress in Aberdeen.

The Public Health Congress, at which 716 delegates have now promised to be present, to be held at Aberdeen under the auspices of the Royal Institute of Public Health, will extend from Thursday, August 2nd, to Tuesday, August 7th. It is intended to open the proceedings with an address by the President, the Earl of Aberdeen, in the Mitchell Hall, Marischal College, and it is expected that the delegates will be entertained by the corporation at a reception and a luncheon. Saturday will be devoted to excursions to Balmoral, &c. On Sunday the Congress as a body will attend service in the West Parish Church to be conducted by Principal Marshall Lang, Aberdeen University. Three special papers will be read to all the members—viz., one on "Disinfection" by Professor Delépine of Owens College, Manchester; one on "Sewage" by Professor Percy Frankland, F.R.S., Birmingham; and one on "The Origin and Treatment of Malarial Fever," by Dr. Patrick Manson, medical adviser to the Colonial Office. Numerous papers have also been promised for the sectional meetings, including one on "Fever Hospital Construction," by the city architect of Edinburgh; one on "Modern Workshops," by Miss Paterson, H.M. Inspector of Factories; and several on the housing of the working classes, meat inspection, ambulance work, vaccination, infant mortality, notification of measles, &c. There will also be submitted and discussed a report on the inquiry made into the chemical and bacteriological condition of the air in the London Board Schools.

Illness of Professor Ogston.

Much regret is felt in Aberdeen at the fact of Professor Alexander Ogston being "down" with fever at Bloemfontein Hospital. It is not yet known whether the fever is enteric, but Professor Ogston was no doubt exposed more to infection than other acting army surgeons as he was not attached to any particular hospital but took a general survey of the medical arrangements at the seat of war in South Africa.

July 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

THE Council of the Royal College of Surgeons in Ireland have by a circular letter to the Fellows dated June 25th called attention to a resolution which was adopted at the annual meeting of the College held on June 2nd. The resolution stated—

That in the opinion of this meeting of the College the practice of canvassing for the offices of President, Vice-President, or Members of Council should cease.

That it be a direction to the Council to ascertain by means of a circular sent to each of the Fellows whether they would wish, with the object of discouraging canvassing, that the Council should immediately after an election to the office of President or Vice-President recommend to the College the name of one Fellow for election to the next ensuing vacancy in each of these chairs.

For the purpose of carrying out the direction contained in the above resolution a short voting-paper has just been sent to each of the Fellows so that he may state his opinion—for or against—the method suggested in the resolution of preventing canvassing for the Presidency and Vice-Presidency of the College. The method adopted by the general meeting of obtaining the opinion of the College as to canvassing is obviously open to two objections. It does not include any provision to prevent canvassing for the Membership of the Council, and secondly, it gives no opportunity to a Fellow who is opposed to canvassing but dislikes the proposed means for preventing it to give an expression to his views.

New Medical Deputy Lieutenant.

The *Dublin Gazette* announces the appointment as Deputy Lieutenant of the City and County of Londonderry of Joseph Byrne, F.R.C.S.Irel., of Londonderry, his commission bearing date June 13th, 1900.

The Belfast Workhouse.

At the usual meeting of the Belfast Board of Guardians on June 19th a letter was read from the Local Government Board, based on a sworn inquiry, held by one of their inspectors, Mr. Robert Agnew, which certainly is a terrible indictment of the management of that extraordinary place. The letter states that it has been amply proved that, as regards the expenditure of such a large amount as £8367 upon buildings, repairs, and fittings in connexion with the Belfast Union Workhouse between August, 1897, and December, 1899, the general regulations (such as that any work or repairs to be executed in the workhouse exceeding the cost of £20 in one sum shall be contracted for by the guardians according to rules laid down) have been to a great degree ignored or evaded and broken. Upon a careful consideration of the evidence and after a close examination of the procedure adopted in making payments, it appears clear to the Local Government Board that a system was followed so as to make it appear that the law and regulations were being adhered to, while, as a matter of fact, they were being systematically broken. So impressed are the Local Government Board with the serious condition of affairs that they have decided to dismiss the master, but they will withhold the sealed order to this effect for a week in order to give him an opportunity of resigning his position immediately. (This he has now done, submitting a medical certificate to

the effect that he was physically unable to grapple with the duties of his office.) The Local Government Board also regard the conduct of two other minor officials with extreme disapproval. It need hardly be said that this extraordinarily severe censure of the Belfast Workhouse by the Local Government Board has produced a very marked effect on the general public who have now lost all confidence in the management of the Belfast Workhouse, and this feeling of public dissatisfaction has been deepened by the guardians in the coolest possible way approving of an expenditure of £13,500 for the purpose of providing a new board-room and clerks' offices in the workhouse. It is hoped that the Local Government Board will stop this most useless expenditure. Again, it is stated in the press that another scheme is being put forward by the guardians for the erection of new school buildings for the workhouse children on a site at the foot of Mount Divis, outside the present workhouse altogether, and it is presumed these may cost £100,000, while the present school buildings inside the workhouse would cost £25,000. Fortunately, without a new Act of Parliament such extravagance cannot be perpetrated. The Local Government Board say that the management of the Belfast Workhouse has been characterised by "gross irregularities" and "gross carelessness," and that there is inefficient supervision by responsible officials; but can the guardians themselves be acquitted of all blame for the lamentable state of a great public institution? One of the leading Belfast morning newspapers says: "It is the chattering incompetence of many of the guardians themselves that has long made the board the scandal and disgrace of Belfast, and we hope the ratepayers will take due note of what is going on and will vigorously apply the policy of the 'sweeping brush' at the next election."

Royal University Graduates' Association.

The first annual meeting of the Royal University Graduates' Association (the objects of which were stated in THE LANCET of June 16th, p. 1760) was held in Belfast on June 25th, the President, Dr. W. A. McKeown, occupying the chair. In their report the council state that the association has received the support of a large number of the graduates of the University, all the faculties being well represented, but they regret to find that so many have neglected to register as members of Convocation. Some improvement has been made in the University examinations, and the question of the appointment of extern examiners (so strongly advocated by the association) is now under the consideration of the Senate. Financially there is a balance in the treasurer's hands. The President, in moving the adoption of the report, said the action of the association had been directed by the principle that university education should not be under clerical control. The election of Dr. Walton Browne by the graduates to a place on the Senate of the Royal University had helped to secure a measure of fair play to the students of provincial schools and some improvement in the conduct of the examinations. He said many graduates had not joined the association because of the fundamental rule, not only pledging opposition to sectarian universities, but to provincial universities. It had been said why should the great medical school of Belfast be kept in leading-strings to Dublin? He (Dr. McKeown) sympathised with that argument and no one disliked more thoroughly the Dublin influence or was more desirous to reduce it to its legitimate proportions than himself, and in any reorganisation of the University it was a plank of their platform that if institutions were to be represented on the examining boards that representation must be regulated according to the importance of the respective institutions as estimated by the average number of graduate students for a period of years. The objection of the association to sectarian universities was on principle and admitted of no compromise, while that to a provincial university was a matter of experience and might alter with time and circumstance. For example, if the numbers of university students largely increased in Belfast, if funds were available for a university on so liberal a scale as to secure and hold the very best teachers and put the university above the temptation of increasing its students by lowering the standard, then he (Dr. McKeown) would be the very last person to oppose, but on the contrary, would strongly advocate the establishment of a local university, provided that in its organisation there was not even an appearance of sectarianism. Dr. McKeown then gave a very interesting address on Irish University education, in which he opposed very strongly Mr. Balfour's proposed settlement and again brought forward his own plan of local government for the Queen's Colleges with separation from State connexion and a reorganisation of the Royal University as a means of settling the question. Resolutions having been passed against the establishment of State-endowed sectarian universities, deprecating the destruction of the Royal University, advocating the appointment of extern examiners, and expressing satisfaction that the papers issued by the Foreign and Colonial Offices showed that there was no precedent in foreign countries or in the Colonies for the establishment of sectarian universities (on Mr. Balfour's lines), the office-bearers for the ensuing year were appointed. At the request of the meeting Dr. McKeown's interesting presidential address is to be printed.

July 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Right of Property in Medical Records.

AT a recent meeting of the Society of Legal Medicine M. Brouardel brought forward a most interesting point in reference to a matter upon which he had been consulted. A medical man died and his only son, also a medical man, entered into possession of his late father's house and carried on the practice. He was anxious to consult certain notes and observations accumulated by his father which were stored away in the consulting room. But his step-mother (*belle-mère*) as co-heiress refused to let the son make use of the notes, ostensibly on the plea that she was anxious to avoid any violation of professional secrecy. M. Brouardel was of opinion that there would be no violation of secrecy, but simply a continuation of the trust from the first medical man to the second who succeeded and who would take over the medical observations collected by his predecessor. A legal expert, however—namely, M. Danet—held a different opinion and thought that all the notes and case-books should be burned. In face of this difference of opinion the question should be left to the courts to decide. In the course of the discussion at the Society of Legal Medicine M. Ladreit de la Charrière gave it as his opinion that a man who sells his practice has no right to communicate details as to the past medical history of his clients because they may choose to go to some other medical man than the purchaser of the practice. M. Rocher said that French law did not recognise the sale of practices. *A fortiori* then a medical man had no right to hand over to his successor details of patients without their consent. He agreed with M. Danet that the documents should be burned. M. Brouardel protested against this view, for if whenever a practitioner died all his notes were to be destroyed great injury would be done to the patients themselves and science would be deprived of a very valuable mine of collected knowledge. The matter was in the end remitted to a special committee, on the motion of M. Brouardel.

Prophylaxis of Typhoid Fever in Paris.

The Council of Hygiene and Public Health have unanimously passed the following rules which were formulated by M. Roy des Barres in his report upon typhoid fever in Paris during 1899 and the early months of 1900. 1. Steps shall be taken to ensure the formation of a sufficient protection zone round the gathering-grounds of spring waters. 2. The head waters are to be strictly examined so as to eliminate as far as possible any source of infection. 3. Throughout their course these waters shall be kept covered in. 4. The necessity for a final purification of the water shall be kept in mind whether this be done by filtration or some other process, such as using ozone, and experiments as to the best means for sterilisation in bulk shall be set on foot. 5. Filtered river water and spring water shall not be mixed as a rule, but if at any time such admixture shall become necessary means shall be taken for clearly setting forth the details of the admixture and the probable length of time for which such mixed supply shall last. 6. Every district supplied shall be informed as soon as there shall be any change made in the source of supply. In addition, the Council of Hygiene and Public Health of the Department of the Seine have passed a resolution to the effect that the administration shall as soon as possible supply with drinking water the public

parks and gardens, together with the restaurants contained therein. Fountains and conduits are to be specially labeled so that it can be seen at once which supply drinking water and which supply water for cleansing or gardening purposes only. The Prefect of the Seine has accordingly ordered that enamelled plaques bearing the words "drinking water" or "river water" shall be immediately affixed to all the fountains in the parks and squares.

The Action of Artificial Abscess in Experimentally Produced Anthrax.

M. Fochier and M. Mérieux of Lyons communicated to the Society of Biology at a meeting held on June 23rd the results of some experiments which they had made as to the effect of an artificially produced abscess in the case of animals inoculated with anthrax. If a rabbit is simultaneously inoculated with a virulent anthrax culture and with essence of turpentine in a dose of 0·25 of a cubic centimetre it either survives altogether or takes a much longer time to die than a control animal which dies at the end of a period lasting on an average for about 66 hours. The results of the turpentine injection are, as a rule, in harmony with the inflammatory reaction which it produces. If given 24 hours before the anthrax culture it produces far less marked effects than if given simultaneously. Given some hours after the anthrax culture its effects varied much. Intra-muscular injection gave less good results than subcutaneous injection. When the animals which survived were killed and examined they showed no signs, either macroscopically or bacteriologically, of anthrax. If a surviving animal was again inoculated it succumbed with undoubted signs of anthrax although the symptoms were less marked than in an ordinary animal. If the turpentine were injected into the dorsal region and the anthrax into the abdominal region M. Fochier and M. Mérieux noticed that there appeared, close to the œdema produced by the anthrax culture, another zone of gelatinous œdema which was apparently a sign of defensive action on the part of the organism. Also in animals thus treated the anthrax œdema sometimes did not appear or, at any rate, was less marked than in a control animal, and in those animals that died very few bacilli were found in the spleen and in some instances cultures made from them remained sterile. The artificial abscess, when it burst spontaneously, either did not become infected or, if it did, hæmorrhagic ulcerations were produced which without doubt contributed towards the death of the animal.

July 3rd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Laboratory Work of the Board of Health of Ontario for 1899.

THE provincial bacteriologist, Dr. J. J. Mackenzie, gives the results of his past year's work in the annual report of the board, which has but recently been handed to the profession. During the year the total number of specimens examined in the laboratory amounted to 1370, made up as follows: suspected sputum, 629; suspected exudate, 375; suspected typhoid blood, 164; waters for bacteriological examination, 16; waters for chemical examination, 29; miscellaneous samples, 52; and suspected rabies, 5. Out of something like 2400 physicians in the province of Ontario alone 300 physicians sent in 1100 of these specimens. The report shows as regards the examinations for suspected tuberculosis that 32 cases were diagnosed positively within two months of the presumed date of onset of the disease. From this is emphasised the importance of an early examination of the sputum, especially so when one remembers the success by modern methods which follows early diagnosis. As to the 375 diphtheria swabs, 147 of these gave positive cultures. The advantages of the early administration of antitoxin are also dwelt upon. There were four cases of suspected cerebro-spinal meningitis, only one of which showed the diplococcus intracellularis meningitidis, which was a fatal case with an illness of 48 hours. Among the miscellaneous investigations of the laboratory was a study of the character of a bacillus found in grass which resembles the tubercle bacillus. It is pointed out in the report that the occurrence of this bacillus in butter has undoubtedly given rise to error, as it is apt to be reported as the bacillus of tuberculosis. Its growth in culture media differs, however, from that of the bacillus of tuberculosis as it is more luxuriant and rapid. This organism was found in several specimens of hay, and from one the bacteriologist was successful in isolating it in pure culture. It was also demonstrated in the resulting cultures that the form was identical with Rabinowitch's butter bacillus; and experiments on animals showed it to have a very slight degree of virulence. Dr. Mackenzie was further able to show that its peculiar staining characters are due, as in the bacillus of tuberculosis, to a fatty envelope, but found that, contrary to what occurs in the bacillus of tuberculosis, this fatty envelope can be readily dissolved off with alcohol, so that after boiling in alcohol for ten minutes the organism no longer takes the peculiar stain but stains like any other form.

Alum Baking Powders.

From the Department of Inland Revenue at the capital, Ottawa, has just been issued a bulletin of some 39 pages which gives the results of the work of the Dominion chemists for some time past. No similar bulletin has been issued from the department on the same subject since 1880. It contains the details of the analysis of 156 samples of these powders purchased throughout the Dominion; and of this number only 44 samples are entirely free from alum. That is to say, over 70 per cent. of the baking powders sold and used in this country contain alum. A very large part of the bulletin is taken up with a study of the scientific evidence bearing upon the physiological effects of alum, especially that evidence which has accumulated since 1880. The conclusions reached are very outspoken and decided so far as alum itself is concerned. Whilst many manufacturers and some chemists claim that in a well-made alum powder no alum as such remains in the bread, but hydrate and phosphate of alumina, still the characters of these products have also been carefully and thoroughly gone into and the following conclusions arrived at: "The question of the harmlessness of hydrate of alumina has, however, not been proven, and the most that can be said for it is that the case is still unsettled. The health of a nation is too serious a matter to be imperilled lightly and if it be impossible to secure prohibitory legislation against alum baking powders it is all the more desirable that manufacturers of these powders should be required to state their composition on the package, so that consumers may know what they buy and use. Until it is demonstrated that hydrate of alumina is harmless in food the use of alum baking powders is attended with a very serious risk; while not even the proving of these substances harmless would establish the safety of these powders, since, for reasons already mentioned, it is quite uncertain that the reaction is completed in the bread."

Special Hospital Accommodation for Inebriates.

For some years past an effort has been put forth by leading members of the profession in Ontario, assisted by prominent lay gentlemen, to bring the Ontario Government to a sense of their duty in providing accommodation for the special treatment of those unfortunates addicted to the liquor habit. Their labours are apparently in the immediate future to be crowned with success. At the last session of the local legislature an influential delegation waited on the Premier of the province, the Hon. Dr. G. W. Ross, with the result that a Bill has been drafted for introduction into the House in the next session. This Bill will provide for the immediate appointment of a superintendent, a medical man who has devoted some attention to the treatment of the chronic inebriate. He will at once proceed to organise cottage hospitals throughout the province or to see that special wards are set apart in the general hospitals already existing for the proper care and treatment of these patients. The legislation will further provide that in towns of 20,000 and over special commissioners shall be appointed to look after this work, whose duty will be to induce inebriates to undergo treatment and to visit and encourage them while they are undergoing treatment. Steps will also have to be taken to make provision for their employment and to endeavour to change their environment and to place them on a higher plane of life and living. The Government will also be asked to make a per diem grant in addition to the regular hospital grant. The scheme has been approved of by practically all the leading medical societies throughout the country.

June 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Another Anti-vivisection Bill in the United States.

IN THE LANCET of Feb. 24th (p. 583) I referred to the Anti-vivisection Bill introduced by Senator Gallinger in the district of Columbia, having for its nominal object the prevention of cruelty to animals. Owing to the opposition against this Bill of the most prominent scientific and medical men in the country, including Dr. Osler, Professor Welch, Professor Bowditch, Professor Eliot, and Dr. Keen (President of the American Medical Association), Senator Gallinger was induced to hold a meeting at which both sides of the question might be fairly placed before the public and the whole matter discussed at length. This meeting was held on Feb. 21st at Washington and, as may be imagined, was both instructive and interesting. The case for the vivisectionists was presented in the most convincing manner by Dr. Hare, Dr. Keen, Professor Welch, and Professor Bowditch. Dr. Welch's arguments were especially to the point. He contended that there was no necessity whatever for further legislation in regard to vivisection as the existing law permits only "properly" conducted scientific experiments or investigations, which experiments are to be performed only under the authority of the faculty of some regularly incorporated medical college, university, or scientific society. He also drew attention to perhaps the most serious fault of the Bill which put into the hands of men who need not be, and are not likely to be, physicians or men of science, arbitrary powers requiring for their use skilled knowledge concerning matters of the highest importance to medicine and biological science and to the welfare of mankind. The determined stand made against the Gallinger Bill has had the effect of compelling its authors to amend it to a certain extent, but the only concessions of importance introduced into the Bill drafted in its place relate to exclusion of cold-blooded animals, the omission of two classes of special certificates, and a wider choice in the selection of anæsthetics. In some respects the restrictions are made more severe and the most obnoxious features of the Bill are left unchanged. Professor Eliot of Harvard University expresses the sentiments of the majority of scientific and medical men in this country with regard to all such legislation in the following remarks: "1. To interfere with or retard the progress of medical discovery is an inhuman thing. Within 15 years medical research has made rapid progress, almost exclusively through the use of the lower animals, and what such research has done for the diagnosis and treatment of diphtheria it can probably do in time for tuberculosis, erysipelas, cerebro-spinal meningitis, and cancer, to name only four horrible scourges of mankind which are known to be of germ origin. 2. The human race makes use of animals without the smallest compunction as articles of food and as labourers. It kills them, confines them, gelds them, and interferes in all manner of ways with their natural lives. The liberty we take with the animal creation in using utterly insignificant members of them for scientific researches is infinitesimal compared with the other liberties we take with animals, and it is that use of animals from which the human race has most to hope. 3. The few medical investigators cannot probably be supervised or inspected or controlled by any of the ordinary processes of Government supervision. Neither can they be properly licensed, because there is no competent supervising or licensing body. The Government may properly license a plumber, because it can provide the proper examination boards for plumbers; it can properly license young men to practise medicine, because it can provide the proper examination boards for that profession and these boards can testify to the fitness of candidates; but the Government cannot provide any board of officials competent to testify to the fitness of the medical investigators. 4. The advocates of anti-vivisection laws consider themselves more humane and merciful than the opponents of such laws. To my thinking these unthinking advocates are really cruel to our race. How many cats or guinea-pigs would you or I sacrifice to save the life of our child or to win a chance of saving the life of our child? The diphtheria antitoxin has already saved the lives of many thousands of human beings, yet it is produced through a moderate amount of inconvenience and suffering inflicted upon horses and through the sacrifice of a moderate number of guinea-pigs. Who are the merciful people—the few physicians who superintend the making of the antitoxin and make sure of its quality, or the people who cry out against the infliction of any suffering on animals on behalf of mankind? It is of course possible to legislate against an improper use of vivisection. For instance, it should not be allowed in secondary schools or before college classes for purposes of demonstration only, but any attempt to interfere with the necessary processes of medical investigation is, in my judgment, in the highest degree inexpedient and is fundamentally inhuman." The anti-vivisection party in the United States has been endeavouring to make capital of the supposition that the restrictive laws against vivisection passed some years ago in Great Britain have fulfilled the purpose for which they were enacted and are in harmony with the views of the majority of the scientific and medical men of that country. Dr. Welch, in his address of Feb. 21st showed that such was not the case and demonstrated his point by the contrary evidence of Sir John Simon, Lord Lister, Sir T. Grainger Stewart, Sir T. Lauder Brunton, and Sir Michael Foster. In fact the experience of Great Britain as to the results of restrictive legislation with regard to vivisection will act as an incentive to scientific and medical men to oppose as strenuously as possible the imposition of similar laws in the United States.

June 30th.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to noon on Wednesday:—

	£	s.	d.
Christ Church, Lancaster Gate	1519	0	0
Miss M. E. Druce	100	0	0
F. C. D.	100	0	0
Christ Church, Mayfair	174	0	0
Holy Trinity, Roehampton	73	0	0
St. Thomas's, Portman-square	80	0	0
St. James's, Hatcham	97	0	0
St. Augustine's, Highbury	57	0	0
All Saints, Orpington	34	0	0
St. Paul's, Onslow-square	475	0	0
St. Stephen's, Ealing	85	0	0
St. George's, Perry Hill	40	0	0
St. Saviour's, Upper Chelsea	159	0	0
St. Matthew's, Bayswater	142	0	0
Clapham Parish Church	70	0	0
Holy Trinity, Paddington	85	0	0
St. Andrew's, West Kensington	85	0	0
St. Mark's, Hamilton-terrace	223	0	0
Immanuel Church, Streatham-common	72	0	0
St. Michael's, Highgate	82	0	0
St. Matthew's, Denmark-hill	143	0	0
St. Mark's, Highgate	76	0	0
St. Mary Aldermary and St. Thomas Apostle	25	0	0
St. Paul's, Beckenham	145	0	0
St. James's, Piccadilly	88	0	0

The total up to noon on Wednesday last was £31,000. The collection made at Christ Church, Lancaster-gate, is the largest amount ever received from one congregation since the establishment of the Fund.

POPLAR HOSPITAL FOR ACCIDENTS.—The annual festival dinner in aid of the funds of this hospital was held at the Holborn Restaurant on July 2nd, Mr. F. J. Mirrielees presiding. Colonel J. L. du Plat Taylor, replying to the toast of "The Navy, Army, and Auxiliary Forces," said that his son in South Africa had assured him that there were no complaints to make against the hospitals there. It would be better, he thought, if those who had fault to find would communicate with headquarters instead of writing letters to the *Times*. The chairman in proposing "Success to the Poplar Hospital," read a characteristic letter from Mr. Rudyard Kipling, who promised a contribution of £5. The Drapers' Company had given £14,000 for the purpose of providing 20 additional beds for medical cases, and had bestowed an endowment of £1000 per annum. The committee were now appealing for assistance with a view to increase the number of beds. Donations and subscriptions to the amount of about £3900 were announced.

Obituary.

THOMAS JONES, M.B., B.S. LOND., F.R.C.S. ENG.,

SURGEON TO THE MANCHESTER ROYAL INFIRMARY; PROFESSOR OF SURGERY, OWENS COLLEGE.

WE deeply regret to have to record the death of Professor Thomas Jones at Springfontein, South Africa, under peculiarly sad circumstances. It will be remembered that when it was decided to send out a Welsh hospital to South Africa, Professor Jones consented to undertake the management of it, and he left England on April 14th, together with the other members of the hospital staff. On landing at Cape Town he at once proceeded to Bloemfontein, where he remained for several weeks pending the establishment of the hospital at Springfontein in the Orange River Colony, which he joined towards the end of May. The first intimation of his illness was conveyed in a telegram received on June 16th, stating that he was suffering from nervous prostration. Two days later a message arrived to the effect that he was much better, but the following morning the sad news was received of his death, which had taken place on June 18th, presumably from enteric fever, as a large proportion of the troops under treatment at Springfontein were suffering from this affection. The Manchester contingent of the Welsh Hospital has been strangely unfortunate, for of the five members of the surgical staff who volunteered from this district, two others have also died in South Africa—viz., Dr. Herbert Davies, formerly house surgeon to Professor Jones at the Manchester Royal Infirmary, and also acting in the same capacity in the Welsh Hospital, and Mr. Eames, one of the surgical dressers.

Thomas Jones was born in 1848 in Carmarthenshire, and was educated first at Derlwyn College in that county and afterwards at the Normal College, Swansea. His professional studies were commenced at the Northern Hospital, Liverpool, in 1865, and were continued at Guy's Hospital, London. From an early period in his career his progress was marked by distinction, and he soon gave evidence that he would make for himself a name in the profession which he had decided to follow, for in the examinations for the degree of Bachelor of Medicine of the London University he obtained Honours in Anatomy and Medicine, and the gold medal in Chemistry and Materia Medica. After qualifying he held the office of house surgeon at Guy's Hospital and henceforth devoted himself entirely to the practice of surgery, in which he was destined to rise to such high distinction.

An old Guy's student, one of his contemporaries, writes of him as follows:—

> Probably all old Guy's men who were at the hospital in the late "sixties" and early "seventies" will remember the late Mr. Tom Jones. He was one of the best known students of his year, taking honours in most of the subjects at the London University and carrying off the gold medal in Chemistry at the first M.B. There are many probably who can recall him when dresser to the late Mr. Poland, and somewhat later again as house surgeon. The writer well remembers how well he fitted this latter position and how much he was thought of by the dressers and junior students. He was a perfect mine of information on all sorts of subjects, there was an entire absence of "side" in his manner, and every one liked his cheery disposition and kindly heart. The news of his tragic and untimely death in South Africa comes as a shock to his old fellow-students.

In 1872 Mr. Jones applied for and was elected to the post of house surgeon at the Manchester Royal Infirmary, and from that time he held office continuously at that hospital. From 1873 to 1876 he was pathologist, and from 1876 to 1879 he fulfilled the duties of surgical registrar. In 1875 he obtained the Fellowship of the Royal College of Surgeons of England, and in 1879 he took the degree of Bachelor of Surgery at the University of London with honours. In 1879 he was elected a member of the honorary staff of the Manchester Royal Infirmary, being appointed an assistant surgeon. In 1880, on the death of Mr. S. M. Bradley, he became full surgeon and this office he continued to hold up to the time of his death. In 1874 he was appointed surgeon to the Children's Hospital at Pendlebury, near Manchester, and upon his resignation of that post in 1880 he was made consulting surgeon. In the treatment of surgical diseases of children he always took great interest, and he devoted much time and energy to this institution which at that time had only been recently established. In 1880 he was appointed lecturer on Practical Surgery at the Owens College, and on the resignation of Professor Hare of the chair of Surgery in 1892 he accepted the Professorship of Systematic Surgery. By virtue of the latter office he became Examiner in Surgery to the Victoria University. In addition he also acted as one of the surgeons to the Manchester Cancer Hospital. In 1891 Professor Jones was President of the Manchester Medical Society, in the work of which he had always taken great interest, having been a most active member of the committee from 1875 to 1890. He was also a member of the council of the University College of Wales, in the success of which he was warmly interested and he had contributed generously to its funds.

Professor Jones was a frequent contributor to the medical journals, many of his papers being published in the *Medical Chronicle*, of which he was one of the first and most enthusiastic promoters. His articles were of a highly practical character, being based upon his personal experience and written in a characteristically terse and lucid style. He had always paid special attention to the pathology and treatment of diseases of bone, and in 1887 he published a valuable monograph on this subject which contained the results of his own observations and investigations. We believe that his last contribution to surgical literature was an article upon Injuries and Diseases of the Ankle-joint (written conjointly with Mr. J. E. Platt) which appeared last year in the first volume of the "Encyclopædia Medica" now in course of publication. Professor Jones commenced practice in Manchester on the termination of his tenure of office as house surgeon at the infirmary in 1873 and from the outset he devoted himself entirely to surgery, being one of the first to practise in the provinces as a "pure surgeon." He gradually acquired an extensive consulting practice and for many years he was regarded as one of the leading surgeons in the north of England. He was a most dexterous operator, paying great attention to detail and to the after-treatment of his cases, so that his results were attended by an unusual amount of success. As a teacher Professor Jones had established for himself a great reputation and he was held in high esteem and great respect by the students, with whom he was most popular. He was extremely regular and most indefatigable in his hospital and college duties, rarely allowing the calls of his extensive private practice to interfere with his lectures or classes in the wards.

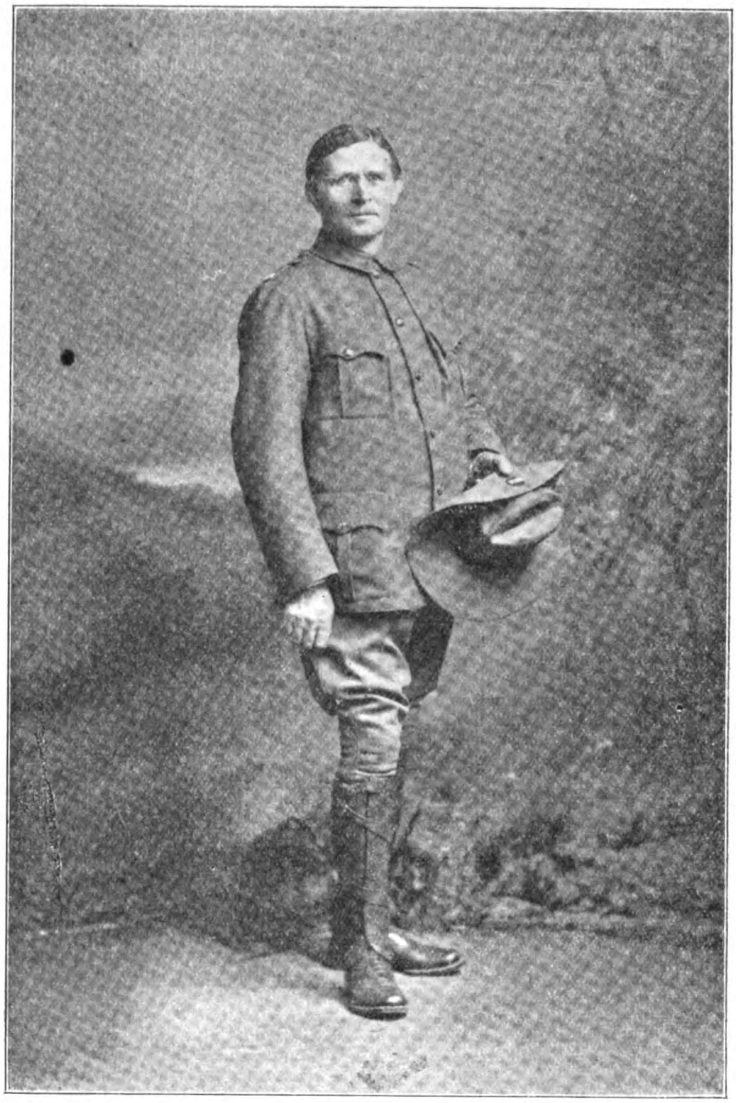
In private life Professor Jones was the most genial and kind hearted of men. The universal esteem in which he was held was shown by the large and representative attendance at the "send-off" dinner previously to his departure for Africa. The Principal of Owens College was in the chair and among those present were the Lord Mayor, the Dean of Manchester, and many other prominent citizens. A few days later when he left Manchester there was another large assemblage at the railway-station of his personal friends, colleagues, and medical students to wish him God-speed and a safe return.

On Saturday, June 23rd, a memorial service was held in Union Chapel, Manchester (of the congregation of which Professor Jones had been a member), and was very largely attended. Members of the Council and of the teaching staff of Owens College, representatives of the board of management, and almost all the members of the honorary staff of the Manchester Royal Infirmary, together with a large number of medical students, assembled at the College shortly before the time appointed for the service and marched thence in procession to the chapel. An impressive address was there delivered by the Rev. Dr. Maclaren, who described the death of Professor Jones as that of a martyr, and said that his name had been added to the long roll of members of his noble profession who had taken their lives in their hands and freely given them away on behalf of others at the call of duty.

Professor Jones married in 1881 the daughter of Mr. Boyd of Cheadle Hulme. With his widow and an only daughter who survive him very widespread sympathy will be felt in the irreparable loss which they have sustained.

An old student who was house surgeon to Professor Jones writes as follows:—

> The sad and untimely death of Professor Thomas Jones will be keenly and universally deplored by all those of us whose good fortune it has been to have received their surgical instruction under his guiding influence. As a teacher he was always held in the profoundest respect by each one of us, his punctuality and his regularity in attending to deliver his lectures and clinical demonstrations soon earned our warmest appreciation, and many a time did we feel that he had seriously inconvenienced himself in order not to disappoint us. His classes were always largely attended, and his methodical, impressive, and painstaking manner in imparting instruction to us and the kindly and courteous way in which he corrected our errors and listened even to our wildest suggestions made us feel that in him we had a most careful, considerate, and successful



THOMAS JONES, M.B., B.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE MANCHESTER ROYAL INFIRMARY, ETC.

teacher, one who thoroughly understood our needs and spared no effort on his part to meet them. And, more than a teacher, we felt him to be our friend in the truest sense—always taking a personal interest in our own individual careers, ever ready to sympathise with us in present misfortunes and to encourage and advise us as to the future, and often has a kindly word from him spurred us on to further efforts, resulting in our ultimate success. His extreme gentleness and consideration towards the patients under his charge, making him beloved by them one and all, has set us a noble example of generous whole-heartedness which we would all do well to follow. When recently it became known that Professor Jones had bravely and cheerfully placed his services at the disposal of the Welsh Hospital, many were the offers from his former students to accompany him to South Africa as his assistants, and proud indeed were the four gentlemen ultimately selected to feel that they were about to help their country's cause under the guidance of one whom they valued and respected so highly. And now, with the hearty "God-speed" with which we took our farewell of the gallant little band still ringing in our ears, comes the sad news that he, of whose unselfish devotion to duty we are all so justly proud, will never return to us again, that his kindly and genial face will never more be seen in the wards with which he will always be so closely associated in our memories, and that we are left to mourn the loss of one who has proved himself a hero in every sense of the word, and our close association and friendship with whom will ever be treasured as one of the pleasantest features of our student days.

HENRY BURFORD NORMAN, F.R.C.S. ENG.

THE announcement of the death of Mr. Burford Norman on June 11th at Chesham, Bucks, has been received with great sorrow by all his friends. His father, Mr. William Norman, was also a medical man and a descendant of an old Somersetshire family—the Normans of Fiveheads. Henry Burford Norman was born on April 11th, 1819, and after a liberal education he commenced his professional training with his father. In 1837 he entered as a student at University College and his companions were Spencer Wells, John Marshall, and John Eric Erichsen. In 1841 he was admitted a Member of the Royal College of Surgeons of England, and soon after was appointed house surgeon to the distinguished Liston. He obtained the Fellowship of the College in 1846 and shortly afterwards he came forward as a candidate for the post of assistant surgeon to University College Hospital, but he was defeated by the late Sir John Erichsen. Mr. Burford Norman then started as an ophthalmic surgeon and he obtained the appointment of surgeon to the North London Eye Hospital. At this period he resided in Duchess-street, Portland-place, W. After a few years of hard work his health became seriously impaired and he was obliged to leave London for rest and retirement. He commenced practice again in 1858 at Portsmouth as the successor of the late distinguished surgeon, Dr. E. J. Scott. In 1861 he was elected on the surgical staff of the Royal Portsmouth Hospital, an appointment which he held with marked distinction for several years. He took a leading part in the foundation of the Portsmouth and South Hants Eye and Ear Infirmary, and filled the position of consulting surgeon to that institution. Mr. Norman was an able and well-known surgeon in Hampshire and he practised with much success for many years. He contributed many valuable papers on surgical topics to the medical journals. He was a Fellow of the Royal Medical and Chirurgical Society and an ex-President of the Harveian Society. Throughout his long career he enjoyed the entire confidence of the medical men of Portsmouth, and on his retirement from practice in 1889 he was entertained at dinner by his professional friends and was presented with a valuable silver service as a token of their regard and esteem.

Mr. Burford Norman was a man of sterling character and ever ready to help in every good and worthy enterprise. He was twice married and has left behind him a widow and six children. Two of his sons are members of the medical profession. By a life guided by broad and charitable sentiments and never-failing courtesy he obtained the affection and confidence of a large circle of friends.

HENRY PEACOCK, F.R.C.S. ENG., M.R.C.P. LOND.

MR. HENRY PEACOCK died at Bath on June 12th in his eighty-eighth year. Mr. Peacock received his medical education at the London Hospital and qualified as M.R.C.S. Eng. in 1837. Two years later he entered the medical service of the Royal Navy. In 1839–40 he was assistant surgeon on H.M.S. *Crocodile*, at that time engaged in suppressing the slave-trade. Mr. Peacock was afterwards appointed medical officer to the dockyard at Chatham, a post which he held for nearly 20 years, and was also staff surgeon to the Royal Dock yard Battalion from its formation until his retirement from the service. Mr. Peacock became F.R.C.S. Eng. in 1852 and 10 years later was admitted a Member of the Royal College of Physicians of London. In 1862 he commenced practice at Sudbrook (Gloucestershire) and was subsequently appointed assistant physician to the Gloucester General Infirmary and medical officer to the Gloucester Provident Dispensary. Mr. Peacock, who had retired from the practice of his profession, had recently resided at Malvern.

ARCHIBALD ADAMS, M.D., M.CH. R.U.I., F.R.C.S. IREL.,

LIEUTENANT-COLONEL INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL ARCHIBALD ADAMS, I.M.S., succumbed to an attack of cholera at Mount Abu on May 20th. He was born on March 20th, 1850. He was educated at the Royal University of Ireland and graduated M.D., M.Ch., in 1872, subsequently taking the Fellowship of the Royal College of Surgeons in Ireland in 1886. He entered the Medical Department of the Navy, passing through the Netley School in the winter session of 1872–73, and served in Africa with the Royal Marines during the Ashanti war of 1873–74, for which he received the medal. In the spring of 1875 he competed for an appointment in the Indian Medical Service and was gazetted a Surgeon on the Madras Establishment on March 31st of that year. He was duly promoted to field rank in 1887, and on March 31st, 1895, attained the rank of Lieutenant-Colonel. Not long after his arrival in India he was posted as medical officer of the Erinpoora force, a local corps under the orders of the Indian Foreign Office, and he continued under the Foreign Office during the remainder of his life. Promotion soon came to him from regimental employment to the important post of Residency Surgeon at the Court of Marwar, where, at the capital, Jodhpore, he resided for some 18 years, supervising all the medical arrangements of that wealthy State and enjoying not only a lucrative practice but also the respect and esteem of a succession of British Residents at the Court and of a circle of native friends which included the two successive Maharajas Jaswant Singh, G.C.S.I., and Sardar Singh. Only last year Lieutenant-Colonel Adams published a medico-topographical and general account of the Western Rajputana States, of which he had a rare knowledge. This work is one of great excellence, showing a mastery of facts and bearing evidence of the industry with which he applied himself to the study of the conditions affecting the health and happiness of the inhabitants of that portion of India in which his lot was cast. His hospitality while at the Court of Jodhpore was remarkable even in the hospitable community of Anglo-Rajputs, and his kindness of heart and skill will long be remembered by a very wide circle of friends who admired the sterling traits of his character.

From Jodhpore Colonel Adams was promoted to be Administrative Officer in Rajputana—a post which is regarded as the blue ribbon of the Foreign Office appointments. He has now fallen at his post of duty, a victim to that fell disease which is following in the wake of famine and is now adding to our great difficulties in India. Lieutenant-Colonel Adams was attacked by the disease at Mount Abu at the time when at Pallanpur (near Abu Road) 25,000 famine-stricken people were in the grip of cholera—and cholera of such a virulent type that some of the victims are said to have succumbed within 10 minutes of the appearance of the symptoms.

Lieutenant-Colonel Adams married only a few years ago a daughter of Lieutenant-Colonel H. B. Abbott, who was many years Political Agent at the Court of Jhallawar. To this lady our thoughts of true sympathy are extended in these days of her sudden bereavement.

CLAUDE CLARKE CLAREMONT, M.R.C.S. ENG., L.S.A.

MR. CLAUDE CLAREMONT, who died at Bognor on May 27th, in the 77th year of his age, was a well-known practitioner in North London and had an exceptionally long record of service as public vaccinator to St. Pancras parish. He received his professional education at University College, London, becoming qualified as M.R.C.S. in 1855 and as L.S.A. in 1859. In 1858 he contributed to THE LANCET an interesting case in which during the extraction of several teeth under chloroform a portion of a tooth slipped into the larynx unperceived by anyone, the first symptom of the

mishap being the fits of coughing and respiratory difficulties produced by the foreign body. The fragment of tooth was expelled on the thirty-fourth day afterwards during a fit of coughing and was found to weigh seven grains. In October, 1899, Mr. Claremont retired from practice and on this occasion a brief notice of his long public service appeared in THE LANCET of Nov. 18th (p. 1392). Mr. Claremont had seven sons, three of whom are medical men, one practising in London, one in Southsea, and one in Norwich.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

THE twelfth election of Fellows to fill the vacancies in the Council of the College under the new regulations was held at the College, Lincoln's Inn-fields, on Thursday, July 5th, between 1.30 P.M. and 4 P.M. The result of the voting was as follows:—

	Votes.	Plumpers.
MR. A. COOPER	304	16
MR. J. WARD COUSINS...	257	16
MR. A. PEARCE GOULD...	253	6
MR. J. TWEEDY	233	2
MR. J. BLAND-SUTTON ...	199	13
MR. R. CLEMENT LUCAS ...	170	32
MR. W. J. WALSHAM... ...	159	1
MR. H. H. CLUTTON... ...	148	11
MR. G. JORDAN LLOYD ...	138	3
MR. C. H. GOLDING-BIRD...	127	5
MR. W. H. BENNETT... ...	121	8
MR. J. A. BLOXAM	83	7

Mr. Tweedy and Mr. Cooper are therefore re-elected and Mr. Ward Cousins and Mr. Pearce Gould elected Members of the Council.

713 Fellows voted, 34 personally and 679 through the post. 4 proxies arrived too late and 3 voting papers were spoiled. The number of candidates, 12 for the four vacancies, made the election remarkable.

Medical News.

MR. BURDETT-COUTTS'S CHARGES: APPOINTMENT OF THE COMMISSION.—Mr. Balfour announced in the House of Commons on Thursday afternoon that Dr. W. S. Church, President of the Royal College of Physicians of London, Professor Daniel John Cunningham, Professor of Anatomy, Trinity College, Dublin, and Lord Justice Romer, would constitute the Commission of Inquiry to investigate the treatment of the sick and wounded in South Africa.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations have been admitted Licentiates in Dental Surgery and have received their diplomas:—

Robert Westmore Allen and John Bennett, Guy's Hospital Dental Department and School; Thomas Algernon Baker, Mason College, Queen's, General, and the Dental Hospital, Birmingham; Mountjoy Henry Bartlett, Wilfrid Boothby Blandy, and Herbert Bristow, Charing Cross and the Dental Hospital of London; Charles James Burton and Arthur Ernest Chaundy, Middlesex and the National Dental Hospital; Giovanni Battista Ciceri, M.D. Pavia, University of Pavia, Italy, and the Dental Hospital of London; Ernest Couchman, Guy's Hospital Dental Department and School; Henry Ormrod Dickin and Edward Entwisle, University College, Royal Infirmary, and Dental Hospital, Liverpool; Alfred Culmer Edwards, Percy Harry Furnivall, Arnold Maurice Gabriel, and John Herbert Greenwood, Guy's Hospital Dental Department and School; Claude Bolton Grenside, Robert Harold Heath, Arthur George Heydon, and Robert Hooper, Charing Cross and the Dental Hospital of London; George Henry Hiorns, Middlesex and the National Dental Hospital; Robert Howard, Ernest Guy Jones, and Samuel Kersh, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; William Jarvis, Leonard Adolphus Charles Knight, and Athol Lucien Lambert, Guy's Hospital Dental Department and School; William Kittow, Charing Cross and the Dental Hospital of London; Everard Foster Lane and Thomas Charles Mills, Middlesex and the Dental Hospital of London; Hector Ernest Laurence, Middlesex and the National Dental Hospital; Rowland Claude Gasson May, Charles Sculthorpe Morris, Kenneth Carrington Ness, and Sydney Lionel Prall, Guy's Hospital Dental Department and School; Percy George Pavitt and George Frederick Prickett, Middlesex and the National Dental Hospital; Walter Leslie Pearse, Charing Cross and the Dental Hospital of London; Horace Reginald Pring, M.R.C.S. Eng., St. Thomas's and the Dental Hospital of London; Ralph Bertram Recordon, William Radley Searle, Harvey Llewellyn Shelton, and Alfred Montague Austin Stevens, Guy's Hospital Dental Department and School; Samuel Henry Roe, Harold Round, and Herbert Steynor Steynor, Mason College, Queen's, General and the Dental Hospital, Birmingham; Ernest George Simmonds, M.R.C.S. Eng., St. Bartholomew's and the National Dental Hospital; Percival Frank Swabey, Albert Edward Toogood, William White, and Reuben Archibald Winder, Charing Cross and the Dental Hospital of London; John Newsome Taylor, University College Royal Infirmary and Dental Hospital, Liverpool; and Jacob Louis Wartski, Guy's Hospital Dental Department and School.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen have passed the Second Examination of the Board in the subjects indicated:—

Monday, July 2nd:

Anatomy and Physiology.—Henry William John Hawthorn, Herbert Frank Marshall, Seymour Gilbert Barling, Cuthbert Keary Gettings, Robert Beatson Dennis Hird, James Archibald McIlroy, and Edward Brown Garrard, Mason University College, Birmingham; Ian Canute Gordon Glassford, Melbourne and Edinburgh Universities; Harry Reginald Burpitt and Hector Jones, University College of South Wales, Cardiff; Edward Aubrey Guy Wilkinson, Oxford University; George Hamilton, Otago University and Middlesex Hospital; William Tudor Webb, University College, Bristol; Harold Joseph Moon, Owens College, Manchester; William Phillips Jones, Firth College, Sheffield; George Raymond, St. Thomas's Hospital; Frank Herbert Wood, George Henry Adam, and William Bradshaw Ainger, St. Bartholomew's Hospital; Norman Bremer Vickers Jacob, London Hospital; Gerald Eade Bellamy, Charing Cross Hospital; and Arthur Frederick Cole, St. Mary's Hospital.

14 gentlemen were referred to their professional studies for three months.

Tuesday, July 3rd:

Anatomy and Physiology.—Wilfrid Ashwell Aldred, Thomas Waycott Chaff, John Wheeler Cleveland, Frederick Spencer Lister, and Harry Theodore Wilson, St. Bartholomew's Hospital; John Avery, Harold Munro Scott, and Cecil Colmer, London Hospital; Herbert Ernest Batten, Edward Guy Anthonisz, and Rupert Butterworth, St. Mary's Hospital; William Athol Desmond King, Middlesex Hospital; Welby Earle Fisher, Philip Henry Seal, and Isidor Tritsch, University College, London; Ernest Ulysses Williams, Sebastian Gilbert Scott, and George Hope Warren, King's College, London; Malcolm Winfrid Shutte and Philip Reginald Humphry, St. George's Hospital; Bernard Higham and James Hornidge Chauncy, St. Thomas's Hospital; Robert Edward Brayne, Walter Woolfe Read, and Guy Leslie Buckridge, Guy's Hospital.

11 gentlemen were referred to their professional studies for three months.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Alessandro Codivilla of Turin has been recognised as *privat-docent* of Surgery.—*Chicago (Rush Medical College):* Dr. Daniel R. Brower has been appointed Professor of Neurology and Psychiatry. Dr. W. H. Welch, of the Johns Hopkins University, has been appointed Professor of Therapeutics and Materia Medica.—*Genoa:* Dr. Carlo Orrecchia of Turin has been recognised as *privat-docent* of Surgery.—*Gratz:* Dr. A. Birnbacher, extraordinary Professor of Ophthalmology, has been appointed ordinary Professor.—*Jena:* Dr. Hartmann has been recognised as *privat-docent* of Surgery.—*Leipsic:* An institute of forensic medicine has been recently established, the charge of which has been intrusted to Professor Kockel.—*Lille:* Dr. Calmette has been appointed Professor of Hygiene and Bacteriology.—*Messina:* Dr. Ernesto Tricomi of Padua has been appointed Professor of Clinical Surgery and Operative Medicine.—*Montpellier:* Dr. Bosc has been appointed Professor of Pathological Anatomy.—*Prague (Bohemian University):* Dr. Franz Scherer, *privat-docent* of Diseases of Infants, has been promoted to an extraordinary Professorship.—*St. Petersburg (Military Medical Academy):* Dr. Blumenau has been recognised as *privat-docent* of Internal Medicine and Dr. Oleinikoff as *privat-docent* of Bacteriology.—*Strasburg:* Dr. Funke has been recognised as *privat-docent* of Midwifery and Gynæcology and Dr. Landolt as *privat-docent* of Ophthalmology.—*Yale:* Dr. Moses C. White, Professor of Pathology for the last 33 years, has become Emeritus Professor; Dr. Bartlett has been appointed to succeed him. Dr. Benjamin Moore, Professor of Physiology, has resigned, having been appointed to the Lectureship in Charing Cross Hospital, London. Dr. Otto G. Ramsay of the Johns Hopkins University has been appointed to the Chair of Obstetrics and Gynæcology.

METROPOLITAN HOSPITAL SATURDAY FUND.—Oct. 13th is the date set apart for the "Special" Hospital Saturday Collection for the current year.

THE LIVINGSTONE MEDICAL COLLEGE.—The committee of this institution has purchased the mansion, which includes about two acres of adjoining woodland, lately in the occupation of the Barclay family of Knotts Green, Leyton, Essex. The college is intended for the primary medical training of candidates for foreign missionary work.

PRESENTATIONS.—Mr. Richard Ellery, L.R.C.P., L.M. Edin., M.R.C.S.Eng., L.S.A., who is leaving Plympton, Devon, after a residence in the village of 35 years, was on June 16th presented with a silver salver together with a list of the subscribers, numbering about 150. Mrs. Ellery was presented with a purse of gold.—On the occasion of his recent marriage the Æsculapian Society of London presented Mr. W. Campbell M'Donnell, L.R.C.P. Lond., M.R.C.S., with a table and chair for his consulting room, a gratifying recognition of his services as honorary secretary to the Society.

GUY'S HOSPITAL PRIZE DAY.—On July 4th at a garden party given by the governors and medical staff of Guy's Hospital, the prizes and medals were presented to the successful students by the Right Hon. the Earl of Pembroke and Montgomery, G.C.V.O. A large company assembled in the theatre in the new school buildings to witness the ceremony, Mr. Cosmo Bonsor, M.P., being in the chair. After Lord Pembroke had given the awards and addressed the students and guests, Dr. Frederick Taylor moved a vote of thanks to his lordship, which was seconded by Dr. Stevenson. A move was then made to the grounds, where the band of the Scots Guards played a lively selection of melodies. The hospital and school buildings were opened for inspection, and refreshments were served in the quadrangle of the surgical buildings.

THE CONVERSAZIONE AT THE POLYCLINIC.—The conversazione given by the president and council of the Medical Graduates' College and Polyclinic on July 4th was a most successful affair. About 900 medical men were present. The occasion was the inauguration of the museum and an oration by Professor Osler of Baltimore on the Teaching of Practical Medicine. The ceremony of inauguration by the President, Sir William Broadbent, Bart., was witnessed by a crowded assembly who accorded Mr. Hutchinson, after whom the museum is named, a hearty reception. The oration was then delivered in the lecture hall by Professor Osler, who spoke for nearly an hour and whose words elicited much applause. The entire building was then thrown open for inspection and, in addition to demonstrations and exhibitions in the different departments, a good programme of music by the London Orchestral Band enlivened the proceedings.

SOCIETY FOR THE STUDY OF CHILDREN'S DISEASES.—On June 11th a well-attended meeting took place at 20, Hanover-square, London, W., for the purpose of discussing the advisability of founding a society for the study of children's diseases. Dr. Arthur E. Sansom occupied the chair. Mr. Clement Lucas proposed and Dr. Fletcher Beach seconded the following motion—viz., "That in the opinion of this meeting it is advisable to form a society for the purpose of studying the diseases of children." The motion was supported by several speakers, including Dr. E. Cautley and Dr. W. C. Chaffey (Brighton) and Mr. J. Jackson Clarke, Mr. F. Churchill, and Mr. Alfred H. Tubby. After some discussion, during the course of which it was stated that the new society would be largely clinical, and that its meetings would probably be held at the various hospitals in London and in the provinces, Mr. Lucas's motion was carried *nem. con.* A provisional committee, consisting of the following gentlemen, was appointed to draw up rules and to make necessary arrangements:—Mr. Henry G. Armstrong (Wellington College), Dr. Henry Ashby (Manchester), Dr. Wayland C. Chaffey (Brighton), Dr. Arthur Downes (Local Government Board), Mr. Walter Edmunds, Dr. Theodore Fisher (Bristol), Mr. Jonathan Hutchinson, sen., Dr. David B. Lees, Mr. Clement Lucas, Mr. Howard Marsh, Dr. Lewis Marshall (Nottingham), Dr. John McCaw (Belfast), Mr. D'Arcy Power, Dr. Humphry D. Rolleston, Dr. Arthur E. Sansom, Dr. George E. Shuttleworth, Dr. Harold J. Stiles (Edinburgh), Dr. George A. Sutherland, Mr. Alfred H. Tubby, Dr. Dawson Williams, and Mr. Sydney Stephenson (honorary secretary *pro tem.*).

MEDICAL MAGISTRATE.—The Lord Chancellor has appointed Mr. C. H. Johnson, M.R.C.S., a Justice of the Peace for the borough of Basingstoke.

DR. JOHN CROPPER was on June 25th returned at the head of the poll at the Port Skewett (Mon.) School Board election.

CENTENARIANS.—Sarah Priest, who is in her 104th year, applied to the Bath Board of Guardians on June 13th for outdoor relief.—Miss M. A. G. Strachan, who celebrated her 100th birthday in February last, died at College-green, Bristol, on June 18th.

A CURIOUS DENTAL ACCIDENT.—A curious accident is reported in the *Indian Medical Record* of June 6th. A boy, aged nine years, whilst attending a cow was horned by it in the face. The effect of the blow was to drive the left central incisor through the alveolar process into the incisor fossa, from which it was easily removed by means of suitable forceps. The remarkable feature about the accident was that the blow inflicted no other injury in the mouth. The tip of the horn must just have caught the cutting edge of the incisor tooth.

THE NEW JENNY LIND INFIRMARY FOR SICK CHILDREN, NORWICH.—On June 30th the Prince and Princess of Wales were present at the formal opening of this institution. The ceremony was performed by the Princess. This infirmary has been erected as a memorial of the Queen's Diamond Jubilee at a cost, including equipment, of £14,000. For the endowment fund the sum of £10,000 has been subscribed, but £4000 are still required. It may be stated that Mr. Otto Goldschmidt, husband of the late Madame Jenny Lind, and their son and daughter witnessed the interesting ceremony.

AMERICAN ODDFELLOWS AND THE FAITH-HEALERS.—The Supreme Lodge of the Knight of Honour of the United States, which is stated to be the most powerful body of Oddfellows in America, has decided to decline as members all persons associated with the body known as Christian Scientists. Statistics in America prove that the mortality amongst the faith-healing fraternity, who decline the services of medical men, is so high that their membership in a society of persons coöperating for mutual general assistance becomes very undesirable.

SHORTHAND FOR MEDICAL STUDENTS.—The Society of Medical Phonographers offers for competition among registered medical students two prizes, each of the value of £5, one for those studying in England and one for those studying in Scotland or Ireland, for proficiency in the groundwork of phonetic shorthand (phonography). A second prize will be given in each case, consisting of one year's free membership of the society and a selection from its shorthand publications. The examination will be held the first week in November simultaneously in London, Edinburgh, and Dublin, and at any provincial medical school in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates are requested to send in their names at as early a date as possible to the examination secretary (Dr. E. B. Gray, Oxford), who will inform them in due course as to the precise date and place of examination at each centre.

LITERARY INTELLIGENCE.—Messrs. Rebman, Limited, announce the following new books as just issued:—"The International Text-book of Surgery," by British and American authors, in two volumes, edited by A. Pearce Gould, M.S. Lond., F.R.C.S. Eng., of the Middlesex Hospital, and J. Collins Warren, M.D., LL.D., of Harvard Medical School; "An Entirely New Cyclopædia of Practical Medicine and Surgery," in one volume, illustrated, by 70 special contributors, compiled under the editorial supervision of Dr. George M. Gould and Dr. Walter L. Pyle of Philadelphia; "A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease," by Dr. Arthur R. Cushny; "The Gross and Minute Anatomy of the Central Nervous System," by Dr. H. C. Gordinier; "Gould's Year-book of Medicine and Surgery for 1900," in two volumes (Medicine and Surgery).—The same publishers also announce the following for early publication: Vol. II. of Professor

Deaver's work on "Surgical Anatomy"; a new book by Mr. A. Marmaduke Sheild entitled "The Causes, Consequences, and Treatment of Nasal Obstruction"; and "A Treatise on the Theory and Practice of Medicine for Students and Practitioners," by Dr. H. W. Syers of the Great Northern Central Hospital, London.

EDINBURGH UNIVERSITY UNION.—On Friday, June 29th, an interesting dinner was given in the Royal Hotel, Edinburgh, by members of the classes of surgery, midwifery, and clinical surgery of the University of Edinburgh. The dinner was in honour of Mr. H. J. Stiles, Dr. W. Fordyce, and Mr. Bowden, the assistants in the above classes, who were retiring from their respective posts. Mr. J. C. Mitchell, D.Sc., presided over a gathering of more than 100 gentlemen, among whom were Dr. G. A. Gibson, Mr. F. M. Caird, Dr. F. W. N. Haultain, and other colleagues of the guests.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual general meeting of this association took place on July 3rd at the Café Royal, Regent-street. Dr. J. R. Gabe was elected President for the forthcoming year and Dr. A. L. Achard Vice-president. Dr. E. G. Younger and Dr. Major Greenwood were unanimously re-elected respectively treasurer and honorary secretary. The members and their friends afterwards dined together. After the usual loyal toasts, Mr. Howard Marsh proposed the "Health of the Association." This was responded to by Dr. Greenwood, who said that the association was not in favour of the reciprocity scheme brought before the General Medical Council at its last session, and that although their members claimed the right to register foreign degrees in addition to English qualifications they were strongly opposed to the registration of practitioners possessing only foreign ones. The President proposed "Our Guests," and the toast was responded to by Dr. Vivian Poore and Dr. Gilbart Smith. The Amphion Gleemen, under the direction of Mr. Sidney Marion, gave a selection of glees and songs during the evening.

NEW PHYSICAL LABORATORY FOR OWENS COLLEGE.—The new physical laboratory of Owens College, Manchester, was opened on June 29th by Lord Rayleigh. The building stands opposite to the College in Coupland-street, contains about 40 rooms, and is provided with a great variety of valuable apparatus and machinery. On the roof there is an observatory with a 10-inch telescope. The electro-chemical and electro-technical departments are specially dedicated to the memory of Dr. John Hopkinson. A sum of £23,000 has been laid out upon the building and a further amount of £10,000 is to be spent upon the equipment. The executors of the late Mr. John Harling have given £5000 for the purpose of endowing a research Fellowship. In declaring the building open Lord Rayleigh said that Professor Arthur Schuster who presides over the laboratory was an old friend of his, and that 20 years years ago they worked together on the subject of electrical units. When he was a young man he had not at his disposal anything approaching the facilities for practical and experimental work which were to-day provided in this laboratory.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Registered Companies and Medical Practice.

ONE of the clauses of the Companies Bill proposes that it shall be unlawful for a registered company to carry on medical practice. Another says that no such company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist unless the business is *bonâ fide* conducted by a manager or assistant who is duly registered. Both these clauses were discussed on Tuesday, July 3rd, when the Bill came before the Grand Committee of the House of Commons on Trade. Mr. RITCHIE the Minister in charge of the Bill, suggested that they should be deleted, giving as his opinion that they were not germane to the Bill and that their appearance in it would jeopardise its passage. Sir HENRY FOWLER defended the clauses as both appropriate and necessary, and the majority of the Committee taking the same view determined by 17 to 12 votes to retain both clauses. Mr. MARKS proposed to insert in the medical clause words to the effect that nothing in it should prevent a company from making a contract with a physician or surgeon for services rendered or to be rendered at the request of the company, or from making any contract with any person in respect of the services of a physician or surgeon who is under contract with the company. The ATTORNEY-GENERAL gave the opinion that the amendment was unnecessary, and Mr. Marks did not press it.

Amendment of the Medical Acts.

The Bill drafted by the General Medical Council for the amendment of the Medical Acts will be introduced into the House of Commons on Friday, July 13th, by Sir RICHARD JEBB, one of the Members for the University of Cambridge. The Bill deals mainly with the disciplinary powers of the General Medical Council and the medic licensing authorities.

HOUSE OF COMMONS.

THURSDAY, JUNE 28TH.

Volunteer Medical Officers.

Sir HOWARD VINCENT asked the Under-Secretary of State for War if, having regard to the fact that the medical experience of a surgeon in the volunteer force could not be increased by his watching men going through field training for 14 days, the pay and allowances of one medical officer for the whole period of camp could be sanctioned and its allotment be left to the commanding officer among such of the surgeons of a regiment whose practice enabled them to be present on certain days.—Mr. WYNDHAM: The suggestion will be considered.

Inoculation of the Troops against Enteric Fever.

Mr. WYNDHAM, replying to a question on this subject, said that the operation was entirely voluntary. There was no idea of making an experiment on the troops going out to South Africa. The credit of suggesting inoculation belonged to the Professor of Pathology at Netley Hospital.

The St. Pancras Lunacy Scandal.

Mr. JOHN BURNS asked the President of the Local Government Board whether he had considered the advisability of holding a Local Government Board inquiry into the irregularities committed by the relieving officers of St. Pancras.—Mr. CHAPLIN: I have directed an investigation by the Local Government Board into this matter. Pending the inquiry I have directed a communication to be made to the metropolitan boards of guardians to the effect that in the opinion of the Board such practices are altogether indefensible.

FRIDAY, JUNE 29TH.

Army Medical Department.

Sir CHARLES DILKE asked the Under-Secretary of State for War whether the report of the Departmental Committee which was sitting in 1898 on the Re-organisation of the Army Medical Department was presented to Parliament, and if not, whether the portion of it which bore on organisation for war could now be laid before Parliament.—Mr. WYNDHAM replied: The Committee to which the right hon. baronet referred only considered the titles to be given to the corps and to the officers and the command to be exercised by the officers. No question of organisation came before it.

Sir Walter Foster's Offer to the War Office.

Sir HENRY FOWLER asked the Under-Secretary of State for War whether, in October last, he received a letter from the honourable Member for Ilkeston (Sir Walter Foster) pointing out that in all probability great loss of life from fever and other maladies, more or less preventable by careful sanitary work, was likely to occur in the South African campaign, and suggesting the appointment of a small sanitary commission, or a commissioner and assistants, to proceed to South Africa to assist the army medical officers in preventing the dangers referred to; whether the honourable Member offered to place his services and his experience as a physician and as secretary of the Local Government Board during the last invasion of cholera, at the disposal of the War Office in an unpaid capacity; and whether the suggestion and offer were declined by the Secretary of State on the ground that the need of special assistance was not the same in sanitary matters as in surgical operations.—Mr. WYNDHAM replied: Yes, sir; the facts are as stated. Army surgeons are not in constant practice as operators, and therefore the Secretary of State was very glad to avail himself of the patriotic offers made by Sir W. Mac Cormac, Mr. Treves, and other specially skilled surgeons. But army medical officers have special training in sanitation of camps and the management of diseases incidental to field service and abundant opportunities of obtaining experience in these matters. It did not, therefore, appear that there was any occasion for the appointment of such a sanitary commission as the hon. Member proposed.

Strength of the Medical Staff in South Africa.

Mr. WYNDHAM, replying to questions on this subject, said that for each increase of the force in South Africa a proportionate increase of medical staff and medical stores had been made. There were now in South Africa, according to their latest information, 466 army medical officers and 440 civilian surgeons, 566 female nurses, and 5668 male nurses and orderlies. These did not include doctors and nurses engaged in South Africa. The supply of beds was on June 16th 5000 in Natal and 13,600 in Cape Colony and other parts, total 18,600 beds in South Africa.

Debate on the Medical Arrangements in South Africa.

The House devoted nearly eight hours of this sitting to a debate on the medical arrangements in South Africa which had been impugned by Mr. Burdett-Coutts in a series of articles in the *Times* and had been the subject of question and answer across the floor of the House at several previous sittings. The debate took place in Committee of Supply, the Government putting up for the purpose a purely nominal supplementary vote for the Army Medical Department. The speeches delivered were too numerous and dealt too much with matters of detail to be reported or even to be summarised in this column and no doubt our readers will have seen reports of them in the

day press. Before the debate began Members had in their hands copies of a telegram from Lord Roberts in which his lordship suggested that a small committee should be deputed to proceed to South Africa in order to inquire into and furnish a full report on the working of the medical arrangements throughout the war, and they had before them the promise of Mr. Balfour that the Government would adopt this suggestion.

MONDAY, JULY 2ND.

Inoculation against Typhoid Fever.

Mr. JOSEPH A. PEASE asked the Under-Secretary of State for War whether the medical expert at Netley Hospital who recommended the inoculation with so-called anti-typhoid serum of troops sent to South Africa had sold serum to the Government; if so, how many doses were purchased from him, and at what price; and whether the doctor had pecuniarily profited by the sale of serum.—Mr. WYNDHAM: No, sir, there is no pecuniary profit.—Mr. PEASE: Were any doses sold?—Mr. WYNDHAM: My information is that there was no sale or profit to anybody concerned.

Outfit Allowance for the Royal Army Medical Corps.

Mr. MACNEILL asked the Financial Secretary to the War Office would he explain why, when all officers of the Reserve rejoining under Paragraph 483, Clause C, of the Royal Pay Warrant (whether ordered on active service or otherwise), had been granted an outfit allowance of £100 to cover the expense of providing themselves with the necessary uniform, exception had alone been made in the case of officers of the Royal Army Medical Corps, and would he say whether the word "officer," used in Part I. of the Royal Warrant, included medical as well as officers of any other corps.—Mr. POWELL WILLIAMS: Outfit allowance will be granted in these cases.

Medical Men and the Housing of the Working Classes.

Sir WALTER FOSTER during the report stage of the Housing of the Working Classes Act (1890) Amendment Bill moved to insert in the Bill the following new clause—viz.: 1. "It shall be the duty of the medical officer of health of every rural sanitary district to represent to the local authority of that district any parish or other area within that district where danger arises to the health of the inhabitants of such parish or area from the insufficiency or unwholesomeness of the existing supply of lodging-houses for the working-classes. 2. If in any rural sanitary district any four or more householders living in or near to any parish or other area in such district complain in writing to the medical officer of health of that district that danger arises to the health of the inhabitants of such parish or area or of such district from the insufficiency or unwholesomeness of the existing supply of lodging-houses for the working-classes in such parish or area he shall forthwith inspect the same and transmit to the local authority the said complaint and his opinion thereon, and if he is of opinion that danger does arise as aforesaid shall represent such parish or area to the local authority, but the absence of any such complaint shall not excuse him from the duty of making a representation under sub-section one of this section when necessary. 3. If within three months after receiving the said complaint and opinion or representation of the medical officer the local authority declines or neglects to take any proceedings to put this part of the Act in force, the householders who signed such complaint may petition the Local Government Board for an inquiry, and the said Board after causing an inquiry to be held may order the local authority to proceed under this part of this Act, and such order shall be binding on the local authority." Sir Walter Foster said he was anxious that there should be some means of calling the attention of the local authority to their neglect of the intentions of the Legislature and he could not think of any more suitable means than the medical officer of health who was familiar with the conditions and circumstances of the locality. With regard to the third sub-section of the clause he was aware that there might be objection to the interference of the Local Government Board and therefore he would be prepared to substitute the County Council.—Mr. CHAPLIN, the Minister in charge of the Bill, intimated that he could not accept the clause. He was advised, and he was satisfied, that much that the hon. Member had in contemplation could be done under the existing law. He attached great importance to the medical officer of health, but he did not think the position of that officer would be improved by this clause. The position of the medical officer of health would have to be considered some day. To make him really efficient he would have to be put in quite a different position from his present position, but the thing would require to be done in a Bill for the amendment of the Public Health Acts; he did not think it could be dealt with in this Bill. With regard to the third sub-section, he had considered the matter very carefully, and he had come to the conclusion that if pressure of this kind was to be brought to bear it should be brought to bear through the County Council and not through the Local Government Board. The former was a representative body and it had the great advantage of local knowledge.—After some further discussion Sir WALTER FOSTER withdrew his proposed new clause, and there was inserted in the Bill a clause empowering the County Council to take action in cases where the rural council had been guilty of default.

PROPOSED EXEMPTION OF HOSPITALS FROM LOCAL RATES.

EVIDENCE BEFORE THE SELECT COMMITTEE.

The Select Committee of the House of Commons appointed to inquire into the proposed exemption from local rates of hospitals and institutions for the education and treatment of idiots and imbeciles met again on Friday, June 29th, with Mr. T. W. RUSSELL, Parliamentary Secretary to the Local Government Board, in the chair, and proceeded with the examination of witnesses.

Sir WILLIAM HART DYKE, M.P. for the Dartford division of Kent, explained that owing presumably to the salubrity of the district of Dartford there had been planted there a large number of charitable institutions, some supported wholly by voluntary contributions and others rate-aided, proceeding directly or indirectly from Acts of Parliament, and he submitted that in the matter of rating a clear distinction should be drawn between institutions planted in such a district on behalf of the inhabitants of a distant community and supported by these inhabitants and institutions designed to meet purely local wants. At the present moment contracts were out for the construction of a small-pox hospital in the district which was to cost over £200,000. If such an institution were exempted from rates he thought the locality would have a distinct grievance and he would remind the Committee that institutions of this description were a nuisance and a detriment to the prosperity of a district. Already they had in the district institutions metropolitan in character and object, such as a home for waifs and strays, convalescent homes, an asylum for idiots, and the City of London Asylum. He thought it would be a great hardship to the Isle of Wight if the Hospital for Consumption at Ventnor were exempted from local rates, seeing that the institution was designed for the use of patients from a distance. In the case of the cottage hospital at Dartford, a local institution, no rates were paid. He would not like to leave the rating of hospitals to the discretion of local authorities, because the result would be uncertain; he would rather have the matter settled once and for all by Parliament. He frankly admitted that the case was not free from difficulty, especially when they had to deal with institutions which were both local and general in their character.

Mr. BARTON, Commissioner of Valuation in Ireland, called in connexion with the evidence given by Mr. Manders of the Irish Office, gave an account of the system of valuation in Ireland. He explained that there were no local valuation committees in Ireland, the whole valuation work of the country being done by his department. He cited the Acts of Parliament which govern that work and which exempt from local rates institutions used exclusively for scientific and charitable purposes. In Dublin, where there were many hospitals, some with paying beds, none paid rates, and the corporation in addition contributed £10,000 or £11,000 every year towards the cost of the maintenance of the hospitals. There was a feeling in Dublin that exemptions had been carried too far and probably some change would be made in the future. He was now engaged in the revision of the valuation of Belfast, and he proposed, subject of course to the appeal of the courts which was always open to those concerned, to make a change in his procedure. He proposed in the case of hospitals with paying beds to make two valuations—one in respect of the paying beds and the other in respect of the free beds. The latter would be free from rates, while the former would have to pay a certain contribution. If he found a case where a hospital with paying beds had a deficit on its working he should in such circumstances only make a nominal charge. This would be an entirely new departure in Ireland. He would value paying beds on a much lower scale than he would value ordinary houses or shops.

The Marquis of BRISTOL gave evidence with regard to the claim for exemption made by the Eastern Counties Asylum for Idiots and Imbeciles, Colchester. He complained of the manner in which the assessment of the asylum had been raised by the local authority, and said he wished to see this institution and similar institutions exempted by Act of Parliament and not left at the mercy of local authorities. This being his view he did not think that a discretionary power vested in the local authorities would meet the case. He considered that such institutions should be free from the school rate and the poor rate, but that they might be called upon to contribute towards the district rate from which they derived some benefit.

Mr. JOHN J. C. TURNER, superintendent and secretary of the asylum, also gave evidence. He stated that institutions for the education, training, and care of idiots and imbeciles had been established by private benevolence and were really voluntary schools for imbecile children as well as homes for adult idiots. They were supported by voluntary contributions and were managed by committees of noblemen and gentlemen who gave their services gratuitously. These institutions were registered under Act 49 & 50 Vict., cap. 25, and existed for the benefit of the poorer classes whose imbecile children if not taken care of and educated therein would in many instances have to be supported out of the poor rates. Such institutions also received cases upon various rates of payment, and in four of these institutions cases were likewise received from boards of guardians upon payment at rates varying from 10*s.* 6*d.* a week. Any profit that might accrue either from private payment or boards of guardian cases went towards the support of free cases. The employés in these institutions, from the superintendent downwards, were all paid by salary, and were not in any way dependent on any profit that might be made from the reception of payment cases. Such institutions received no subsidy from the Treasury or any educational grant, and were heavily handicapped by having to pay local rates, especially school board and poor rates, from which they derived no benefit. Witness handed in the following table of figures with reference to the five institutions in England and the one in Scotland, viz.:—

Institution.	No. of beds.	Assessment.	School Board and poor-rates for 1899.	District rates for 1899.
Earlswood, Surrey	700	£2973	£166 6 8	£426 18 10
Royal Albert Asylum, Lancaster	640	1333	127 0 2	10 17 9
Eastern Counties Asylum, Colchester	235	600	129 17 3	91 16 2
Western Counties Asylum, Starcross	250	501	79 7 3	6 1 9
Midland Counties Asylum, Knowle...	72	216	23 15 3	11 16 8
Scottish National Institution, Larbert	280	508	56 9 4	85 13 11

Mr. HAYWARD, clerk to the Dartford Board of Guardians, was the last witness examined and gave evidence in corroboration of Sir William Hart Dyke. He stipulated that there should be no exemption unless there was local benefit.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADYE, WILLIAM JOHN ALEXANDER, M.R.C.S., L.S.A., has been appointed Medical Officer to the Bradford-on-Avon Workhouse by the Bradford-on-Avon (Gloucestershire) Board of Guardians.

BENNETT, JOHN, M.B., B.Ch. Irel., has been appointed Medical Officer for the Borough of Hyde, Cheshire.

CHILCOTT, E. S., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Itchen Urban District Council.

COOKSON, A. N., M.R.C.S., has been re-appointed Medical Officer of Health for the Nuneaton Sanitary District, Nuneaton Union.

DIXON, A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Eighth Sanitary District of the Preston Union.

EMMETT, RICHARD, M.R.C.S., L.R.C.P., L.S.A., has been appointed Medical Officer to the Portsmouth Post Office, vice F. W. Way, retired.

FERGUSON, R. B., M.D. Camb., L R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the New Southgate District.

FLEMMING, CHARLES E. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the No. 1 District by the Bradford-on-Avon Board of Guardians.

FRASER, P., M.D. Edin., has been re-appointed Medical Officer of Health for Carnarvonshire.

GARNER, J. E., M.D. Aberd., has been re-appointed Medical Officer for the First Sanitary District of the Preston Union.

GILLETT, J. F., M.B., B.C. Camb., has been appointed Medical Officer for the Second Sanitary District of the Andover Union, vice L. W. Oliver, resigned.

GIMSON, K.C., M.B., B.C. Camb., has been appointed Medical Officer to the Urban District Council, Witham.

HAMILTON, D. L., L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Timsbury Sanitary District of the Clutton Union, vice F. Woods, resigned.

HANNAH, E. W. ST. CLAIR, M.B., Ch.B. Aberd., has been appointed House Surgeon to the Kent County Ophthalmic Hospital, Maidstone, vice Percy E. Turner, resigned.

HARGREAVES, J. A., M.B., C.M. Aberd., has been re-appointed Medical Officer of Health by the Wetherby Rural District Council.

LEIGH, WILLIAM WATKIN, L.R.C.P., L.M. Edin., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Llanvabon District by the Pontypridd Board of Guardians.

LIMRICK, W. S., L.R.C.P., L R.C.S. Edin., has been re-appointed Medical Officer of Health for the Great Crosby Urban Sanitary District.

MACKEITH. J. M.B., C.M. Glasg., has been appointed Medical Officer to the Exeter Dispensary.

MARSHALL, C. DEVEREUX, F.R.C.S., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, City-road (Moorfields).

MOXON, HENRY J., L.D.S., R.C.S. Irel., has been appointed Dental Surgeon to the County Council's School at Feltham.

PICKARD, RANSOME, M.S., M.D. Lond., has been appointed Medical Officer to the Exeter Dispensary.

PLATT, J. E., M.S. Lond., F.R.C.S. Eng., M.D. Lond., has been appointed an Honorary Assistant Surgeon to the Royal Infirmary, Manchester, vice G. A. Wright.

SMITH, G. H., M.B., C.M. Aberd., has been appointed Medical Officer of the Workhouse, the Bucklow Union, vice T. J. Appleby, resigned.

THYNE, T., M.D. Edin., F.R.C.S. Eng., has been re-appointed Medical Officer for the Mill Corner and Cockfosters Sanitary District of the Parish of Enfield.

WRIGHT, G. A., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal Infirmary, Manchester, in succession to Thomas Jones, deceased.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum with board and residence.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board), or £80 per annum, with board.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £75 per annum, with board, washing, and apartments.

CENTRAL LONDON SICK ASYLUM DISTRICT HOSPITAL, Cleveland-street, W.—Medical Officer as Locum Tenens. Salary £3 3*s.* weekly, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer for twelve months. Salary £60 per annum. Also Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

CORNWALL COUNTY ASYLUM, Bodmin.—Locum Tenens for one month or more. Terms £3 3*s.* and all found, with second class return fare.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL., Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer as Locum Tenens for a few weeks. Salary £3 3*s.* per week, with furnished apartments and board.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30 for that period, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising to £160 by annual increments of £10, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for twelve months, unmarried. Salary £60, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Physician for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the Hospital.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer. Salary £100 per annum, rising £20 annually to £200, with board, lodging, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer at the Asylum, Willerby. Salary £120 per annum, rising £5 per annum to £150, with board, apartments, and washing. Applications to the Clerk to the Committee of Visitors, Town Hall, Hull.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Four Assistant Surgeons, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80, with board, lodging, and washing.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Infirmary.

METROPOLITAN ASYLUMS BOARD.—Fourth Assistant Medical Officer at the Asylum at Darenth, near Dartford, Kent, unmarried. Salary £150 per annum, rising conditionally to £170, with board, lodging, attendance, and washing subject to statutory deduction. Apply to the Office of the Board, Victoria Embankment, London, E.C.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho-square, London.—Physician to Out-patients.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also Resident Medical Officer for twelve months. Salary £120, with board, residence, and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer. Salary £125, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—A Senior and a Junior House Surgeon for one year. Salary £100 and £75 per annum respectively, with board, residence, and washing.

PARISH OF BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer at the Workhouse Infirmary, for one year. Salary £100, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Apply to the Clerk to the Guardians, Parish Offices, Edmund-street, Birmingham.

PECKHAM HOUSE ASYLUM, S.E.—Locum Tenens for two months.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, with furnished apartments in the Asylum, board, and washing. Applications to the Clerk to the Visiting Committee, Municipal Buildings, Plymouth.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

RUBERY-HILL ASYLUM FOR THE CITY OF BIRMINGHAM, Barnt-green, Worcestershire.—Senior Assistant Medical Officer.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £80 per annum, with board, residence, laundry, &c.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, London.—Demonstrator of Physiology. Salary £150.

ST. MUNGO'S COLLEGE, GLASGOW, FACULTY OF MEDICINE.—Bellahouston Chair of Anatomy. Emoluments £300 per annum.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—House Surgeon for twelve months. Salary £90, with residence, board, and washing. Also Assistant House Surgeon for six months. Salary at the rate of £75, with residence, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy of Certifying Surgeon under the Factory Acts at Saddleworth in the West Riding of the County of York.

UNIVERSITY COLLEGE, Cardiff.—Demonstrator and Assistant Lecturer in Anatomy, and Demonstrator and Assistant Lecturer in Physiology. Salary in each case, £120,

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £80, rising £10 annually to £100, with board, residence, and washing.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year (if approved) to £160, with board (no beer or wine), residence, attendance, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon, for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance

Births, Marriages, and Deaths.

BIRTHS.

BUCKLEY.—On June 27th, at Gillott-road, Edgbaston, Birmingham, the wife of J. R. Buckley, M.B. Lond., M.R.C.S., of a son.

CUTTING.—On June 28th, at Chetwynd House, Stalham, Norfolk, the wife of Ernest Buxton Cutting, M.R.C.S., L.R.C.P., of a son.

DEAN.—On June 24th, at Queen-street, Lancaster, the wife of Charles William Dean, F.R.C.S.E., of a daughter.

DOUGLAS.—On June 28th, the wife of A. R. Douglas, L.R.C.P., L.R.C.S., Resident Medical Officer Royal Albert Asylum, Lancaster, of a son.

GLOVER.—On June 27th, at 17, Belsize-park, Hampstead, the wife of Lewis G. Glover, M.D., of a daughter.

HARDING.—On June 22nd, at Whittlesea, Cambs, the wife of C. H. Harding, M.R.C.S., L.R.C.P. Lond., of a son.

HUTCHINSON.—On July 1st, at Loneside, Haslemere, Surrey, the wife of R. J. Hutchinson, M.R.C.S., L.R.C.P., of a daughter.

JACKSON.—On July 1st, at Grove Lodge, Winchmore-hill, Middlesex, the wife of John W. Jackson, L.R.C.P., M.R.C.S., of a daughter.

MORETON.—On June 28th, at Dunsley, Cotham-park, Bristol, the wife of T. W. E. Moreton, B.A. Cantab., M.R.C.S., L.R.C.P., of Tarvin, Chester, of a son.

NEWBOLT.—July 2nd, at 42, Catharine-street, Liverpool, the wife of George Palmerston Newbolt, M.B., F.R.C.S., of a daughter.

MARRIAGES.

ARNOTT—HEWLETT.—On June 27th, at St. George's (Parish) Church, Beckenham, by the Rev. Henry Arnott, F.R.C.S. Eng., rector (father of the bridegroom), assisted by the Rev. Chas. Green, vicar of St. Paul's, New Beckenham, Neil, eldest son of the Rev. H. Arnott, to Evelyn Mary, eldest daughter of John C. Hewlett, Esq., F.C.S., of Hillside House, Beckenham, Kent, and 40, 41, and 42, Charlotte-street, London, E.C.

ROUNTREE—VAILE.—On June 30th, at St. Peter's, Belsize-park, William Augustine Rountree, M.B., B.Ch., of Haverstock-hill, to Mary Collett (Collie), eldest daughter of T. H. Vaile, of Belsize Park-gardens, Hampstead.

TUKE—FRASER.—At the Roxburghe Hotel, Edinburgh, on 27th June, by the Very Rev. Archibald Scott, D.D., St. George's, and the Rev. Robert Stevenson, M.A., Dunfermline Abbey, Alan L. S. Tuke, M.B., C.M., youngest son of Sir John Batty Tuke, M.P., to Dorothy, only surviving child of the late William Fraser, Inverkeithing, Fife.

DEATHS.

GOULD.—At Whiteknight's Park, Reading, on July 1st, after a very short illness, Catherine Alfreda, the eldest and dearly loved daughter of Alfred Pearce Gould, of 10, Queen Anne-street, London, aged 20.

EWBANK.—On July 2nd, at 5, Berkeley-place, Cheltenham, Henry Ewbank, M.R.C.S., aged 44 years.

LEECH.—On July 2nd, at his residence, Elm House, Whalley Range, in his 61st year, Daniel John Leech, M.D., D.Sc., F.R.C.P., Professor of Materia Medica and Therapeutics in the Owens College, Manchester.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HONOUR AND DIGNITY OF THE MEDICAL PROFESSION.

A CORRESPONDENT writes:—"Notwithstanding the increasing age of the candidates for the medical profession, the increased cost of their education, and the length of time required to obtain a legal qualification, are we really at bottom—socially, professionally, and otherwise—superior to our predecessors in the healing art? There has been far too much nonsense preached at the annual introductory lectures at our medical schools—that we should 'look for our reward hereafter'; that we should 'retrace our steps at the very threshold if we are seeking pecuniary reward,' &c., &c., *ad nauseam*. But after all is said and done, what is a man in any profession or calling, including medicine and even the Church, valued at if he is poor? Is the money, honourably earned, no test whatever of success? Has not many a brilliant man gone down into a pauper's grave? Does anyone shed a tear of regret for the poor, dead or living? Possibly a few may do so, but their tears can be counted and they do not often scald.

"The recent revelations respecting the lunacy scandals in the parish of St. Pancras may come as a surprise, and possibly as a grief, to some. But the foul ulcer is not a new one; it is chronic—shall I say 'spreading'?—for the same scandal has existed for over 30 years in more than one parish in this metropolis to my own certain knowledge, and how many years previously I will not venture to suggest. The entire subject is a most unsavoury one, but it is best not to attempt to hide it or hush it up lest worse befall us and we as a profession have to pass through the same painful portals that another profession—that of the law—is passing through at the present time. It is time carefully to inquire into the management of our own happy home and also into the conduct of some of our own more unworthy brethren ere the bud becomes the decayed and drooping flower. Surely, there should be some kind of court of preliminary inquiry into the conduct and bearing of certain members of our profession before the serious question arises of removing a name from the Medical Register.

"It is not always the poor man who is to blame, but frequently it is the one who ought to be able to keep up the honour and dignity of the profession and who does know better who is the greater offender. True nobility is not a monopoly of the rich. The sharing of fees with relieving officers, the keepers of licensed establishment for the reception of lunatics, drunkards, &c., coroners' officers, policemen, and nurses is not a very dignified or desirable position for a medical man. Even coroners' officers are painted with the same brush; and some time ago one of these men had the audacity to offer me only a part of my legal fee, and at the same time made the excuse that Dr. So-and-So always allowed a discount of 25 per cent. Was this bribe given in order to secure the officer sending cases to this particular doctor? If so the donor was singularly unfortunate as he was only opening the door to bribery, corruption, and public scandal. I once knew of a nurse who retained 5*s.* from a fee of 5 guineas handed to her to be given to a doctor for attending a lady in her confinement. The doctor, who was one of the old school, said nothing to the nurse, but returned at once to the patient and inquired whether she had not made a mistake of 5*s.* in his fee. Again, to come to more recent times, since the General Medical Council have made some weak pronouncement respecting medical men attending certain medical aid societies I know of cases of medical men living in large houses and driving their own carriages who have resigned a few of their more doubtful appointments as medical officers to medical aid societies and the like, fearing the possibility of their conduct reaching the ears of the General Medical Council. This fear is most wholesome, for most offenders of this class are arrant cowards, but at the same time some of these nervous ones have conveyed to the rejected clubites that 'quite privately, you know, I shall be pleased to see you at my surgery for one shilling.' I should like to know why little children such as 'Juvenile Foresters,' 'Juvenile Oddfellows,' and the like should be attended for half the usual fees, such as 6*d.* a quarter and even less? Is the life of a little child only of half the value of that of the parent? Is the time or skill, or even the medicine, of less value than that which is doled out to the parents. I have known the case of two little children living under the same roof and belonging to the same parents one of whom was a Juvenile Forester and the other a Juvenile Oddfellow, and these two little mites have been receiving the distinguished attention of two doubly qualified physicians and surgeons of our Royal Colleges, who have been only too delighted to drive up to their humble cottage with horse and carriage, coachman, cockade, and fur cape and cuffs included, and all for one halfpenny a week. There was a time when we never received less than 1*d.* Need anyone be surprised how these little children will respect us in the years to come.

"Take the case of life-insurance offices. There was a time when no medical man of repute would take a fee of less than one guinea for

examining the life of an insurer, but now that industrial offices accept lives for small sums of insurance these offices plead that they cannot pay such large fees, and in this way our position is assailed and our fees are cut down and undermined. Is the time required of less value when examining the poor? Is there less need of care on our part? Is the fee so small that there is no longer any need for us jealously to defend our written diagnosis, no longer any necessity to defend the honour and dignity of the profession? We really have only ourselves to thank for this gradual, but certain undermining, of our nobility. If the lives of the poor are to be insured, by all means let them be so, but not at the expense of the medical profession. Let these offices take such small sums and lives at their own risk, or else pay some of the enormous funds which are at their disposal to some of our poorer brethren who are trying so hard to keep the wolf from the door, but who frequently find themselves quite unable to do so in consequence of the mean trade-like competition within our ranks."

A GOOD BICYCLE SADDLE.

To the Editors of THE LANCET.

SIRS,—Can you or any of your correspondents tell me the name of a good anatomical saddle for a bicycle where a proper support is given to the buttocks of a rider in the upright (non-stooping) position and where at the same time the thighs are not apt to get chafed?

I am, Sirs, yours faithfully,

June 25th, 1900. B.

SOME OF THE FACTORS LEADING TO A RELATIVELY HIGH PERCENTAGE OF MALE OFFSPRING.

To the Editors of THE LANCET.

SIRS,—After studying more than 300 marriages with the object of discovering some of the conditions likely to give rise to a relatively high percentage of boys I have come to some conclusions which I now give for what they are worth. Possibly some of your readers may have time and opportunity to work out a still larger number of cases and to compare their results with mine. It seems to me that this should not be regarded as a mere matter for curiosity, but as having real practical bearings. I think that if my rules are followed we shall hear less often the complaint of paterfamilias that he has "seven daughters who prophesy" and, alas, not one boy! The conditions thrown into rules are:—1. Do not marry the eldest daughter of a family but rather the youngest. There is a progressive increase of boy-producing power from the eldest up to the youngest daughter. 2. Do not marry one whose age differs much from your own; and do not marry much under or over 30. 3. Do not marry a widow. 4. Do not refuse to marry a cousin or an only daughter. No doubt there are other factors to be taken into account, but here I think we have some rather important ones. I am, Sirs, yours faithfully,

Sutton, June 29th, 1900. GERALD S. WALTON, M.B., C.M. Edin.

AN APPEAL TO BROTHER PRACTITIONERS.

To the Editors of THE LANCET.

SIRS,—Can any of your readers suggest a line of treatment likely to be of use to me? For the last few months I have at times suffered from rheumatism in my right hip-joint, aggravated by long walks or damp weather. I am 59 years old, very temperate, always had good health, weight 14 stone, urine normal. Being fond of shooting I do not want to become an arthritic cripple. Would cider be harmful? I have given it in cases of atonic gout with great benefit.

I am, Sirs, your faithfully,

July 3rd 1900 M.D.

THE TREATMENT OF MORPHINOMANIA.

To the Editors of THE LANCET.

SIRS,—A lay paper recently published a statement that Dr. O. Emmerich of Baden-Baden had discovered a drug useful in morphinomania. Can you or your readers give me any information or refer me to papers written by him?

I am, Sirs, yours faithfully,

ROGER N. GOODMAN, M.D. Cantab.

Kingston-on-Thames, July 1st, 1900.

SHAM DIPLOMAS IN THE UNITED STATES.

WE are accustomed from time to time to see accounts of inquests held upon the bodies of those who have died while under the care of quacks who pose as "qualified" and put after their names such letters as F.C.S.M. or M.B., the latter letters signifying not Medicinæ Baccalaureus but Medical Botanist. This, of course, is the explanation given by the quack. Only, naturally enough, his dupes think the letters refer to the genuine degree and naturally, also, that is what the quack counts upon. In the United States, however, the sham diploma factory flourishes to a greater extent than here, and we rejoice to see that a raid has at length been made upon such an institution which had its local habitation in Chicago. Its late title is the Metropolitan Medical College, and its history, according to the *Chicago Daily Tribune*, is as follows:—The institution was organised in 1895 under the name of the Illinois Health University. The charter for this name was revoked by the board two years later. Immediately the college was re-organised by the same owners under the name of the Independent Medical College. A revocation of this charter in December last resulted in the college being started anew under the name of the Metropolitan Medical College. Finding that the promoters of the institution had seven charters remaining under which the institution could be conducted, Attorney John A. Barnes, counsel for the board, interested the Post-office authorities in the prosecution. The charge upon which the proprietors have been arrested is that of using the mails to defraud. They sold worthless diplomas through the post for sums varying from 25 dollars to 100 dollars, and some of the victims gave evidence in the police-court. We are afraid that a charge of "using the mails to defraud" would not stand on this side of the Atlantic, but if only it could be made to do so there might be some chance of many thieves being brought to book. To say nothing of the innumerable prospectuses of bubble companies there are the circulars of the "Free portrait" swindlers, of quacks such as "Dr." Bell, and the specious promises of the money-lending fraternity. The number of fools is incalculable, but the swindler with brains should not be assisted by the Government in his nefarious trade.

"THE CASE OF THE LATE MR. ALFRED BOURNE."

To the Editors of THE LANCET.

SIRS,—The following is the third list of subscriptions.

I am, Sirs, yours faithfully,

Northallerton, June 26th, 1900. J. A. HUTCHINSON.

	£	s.	d.
Rev. R. J. Steele (Harlsey)	1	0	0
Mrs. Jefferson (Northallerton)	0	10	0
Miss J. Yeoman (Northallerton)	1	0	0
Mr. C. A. Bell (Osmotherley)	0	10	0
Dr. J. H. Buchanan (Thirsk)	1	0	0
Dr. S. Yeoman (Prestwich)	2	2	0
Dr. W. D. Arnison (Newcastle)	1	1	0
Mr. C. K. Morris (Blackheath)	5	5	0
Mr. J. Walker (Harlsey)	0	10	0
Dr. Gibb (Newcastle)	0	10	0
Mr. J. Birkmyre (Port Glasgow)	1	1	0
Mr. A. M. Morris (Wallington)	1	1	0
Mrs. A. de L. Long (Crosby Cote)	5	0	0
Professor Brady (Newcastle)	1	0	0
Mr. C. Evers (Newbiggin)	0	10	6
Sir A. Y. Lawson (Leeds)	1	0	0
Miss G. Atkinson (Northallerton)	0	10	0
The Misses Yeoman (Osmotherley)	2	2	0

THE OPEN-AIR TREATMENT OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Can any of your readers tell me where a servant girl can be treated for early phthisis by the open-air method? Her mistress will pay a reasonable figure weekly for her.

I am, Sirs, yours faithfully,

July 3rd, 1900. J. B.

*** A list of institutions was given in THE LANCET of Sept. 9th (p. 724) and 23rd (p. 851), 1899.—ED. L.

"PULEX IRRITANS."

To the Editors of THE LANCET.

SIRS,—If "C. M. H." will freely spread dry chloride of lime on the floors and then order the floors to be washed with the scrubbing-brush in the ordinary way, he will not only whiten the floors, but will also completely rout the enemy, which will not, like De Wet, renew the attack. I am, Sirs, yours faithfully,

Holland Park Avenue, W., July 4th, 1900. ALFRED E. BARRETT.

Pathology.—Full information with regard to post-graduate study in foreign universities will be found in the Students' Number of THE LANCET for 1899. Foreign degrees are as a rule granted to medical men holding English qualifications only after they have gone through the full foreign curriculum. Some of the foreign universities admit the use of interpreters, but, practically speaking, a knowledge of the language is—and we think should be—essential. Some of the university towns are much more economical to live in than others, but the allowance is a larger one than the foreign student enjoys as a rule. If our correspondent can live as a native he will be well off, but to do this he must have a working knowledge of the language.

Expectant.—There is no rule. The purchaser, we think, generally pays, but the matter is one for mutual arrangement between the parties.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Stalybridge Herald, Sporting and Dramatic News (London), Bullionist, South Wales Daily News, Birmingham Daily Post, Liverpool Daily Post, Jersey Express, East Anglian Daily Times, Newcastle Daily Chronicle, Manchester Guardian, Glasgow Herald, Cornishman, Leeds Mercury, Nottingham Daily Guardian, Birkenhead News, Cheltenham Mercury, Times of India, Pioneer Mail, Architect, Builder, Citizen, Scotsman, Bristol Mercury, Yorkshire Post, Brighton Gazette, Sanitary Record, Medical Review, Madras Standard, Modern Society, Chester Courant, Newbury Weekly News, City Press, Lincolnshire Chronicle, Reading Mercury, Oban*

Times, Jewish Chronicle, Hertfordshire Mercury, Local Government Journal, Surrey Advertiser, Surrey Gazette, Hereford Mercury, Weekly Free Press and Aberdeen Herald, Wiltshire Times, Worcester Herald, Suffolk Chronicle, Peterborough Express, Keighley Herald, Dover Standard, Gloucester Journal, Manchester Courier, Admiralty and Horse Guards Gazette, People (London), Bolton Journal, New Age (London), Kent County Examiner, &c., &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 5th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
June 29	29·95	S.W.	...	121	77	57	59	62	Hazy
,, 30	29·73	S.W.	0·26	111	68	55	56	57	Cloudy
July 1	29·62	W.	...	117	69	57	58	56	Cloudy
,, 2	29·64	S.W.	0·10	93	66	56	57	59	Raining
,, 3	29·74	N.W.	0·28	121	73	57	57	61	Fine
,, 4	30·10	N.E.	0·27	110	71	54	55	59	Cloudy
,, 5	30·04	S.W.	...	78	68	57	57	60	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (11th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (14th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

FRIDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (Buxton).—Specimens will be shown by Mr. Furneaux Jordan, Mr. C. Martin, Mr. Macnaughton Jones, and Mr. C. Ryall. Discussion on Some Untoward Results following Abdominal and Pelvic Operations and the Means requisite to Prevent them (opened by Mr. S. Bishop).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. F. Potter: Post-nasal Growths. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Chest Cases.

TUESDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. B. Cheadle: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.)—3.30 P.M. Dr. A. Turner: Tabes Dorsalis.

WEDNESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. G. Rankin: Consultation. (Medical.)

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. C. H. Fagge: Clinical Demonstration of Selected Surgical Cases. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Auscultatory Percussion as a means of Diagnosis in Thoracic Disease.

THURSDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Spinal Cord Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Medical Cases. (Post-graduate Course.)

FRIDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Tilley: Consultation. (Nose and Throat.)

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, are given in this number of THE LANCET.

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VOLUMES for the first half of the year 1900 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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An Address
ON
THE IMPORTANCE OF POST-GRADUATE STUDY.

Delivered at the Opening of the Museums of the Medical Graduates' College and Polyclinic on July 4th, 1900,

BY WILLIAM OSLER, M.D., F.R.S.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, U.S.A.

MR. PRESIDENT AND GENTLEMEN,—If the licence to practise meant the completion of his education how sad it would be for the practitioner, how distressing to his patients! More clearly than any other the physician should illustrate the truth of Plato's saying that education is a life-long process. The training of the medical school gives a man his direction, points him the way and furnishes a chart, fairly incomplete, for the voyage, but nothing more. Post-graduation study has always been a characteristic feature of our profession. These 300 years the schools of Italy, Holland, France, Austria, and Germany have in turn furnished instruction to the young English practitioners who believed in the catholicity of medicine and who felt the sharp sting of the remark which associates homely wits with home-keeping youths. At first it was the grand tour, and many of the masters spent years in foreign study. In spite of our journals and international societies and increased facilities for travel I am not sure that among the teachers in our art the world over medicine to-day is more cosmopolitan than it was in the seventeenth and eighteenth centuries. We now spend a few months or a year in foreign study, whereas our great-grandfathers thought nothing of two and three years. I have seen the MSS. Journal of Dr. John Morgan (a Pennsylvania colonist), the founder of the first medical school in America (University of Pennsylvania), who, after graduation at Edinburgh, spent three years on the continent and became thoroughly familiar with Italian, Dutch, and French medicine, reaching such distinction as a student that he took his seat as a corresponding member of the Paris Academy of Surgery and was elected a Fellow of the Royal Society. Linacre, Caius, and Harvey remain to-day the models for all students in foreign lands, but the pace they set is a hard one to keep up. In the rapid extension of methods and subjects in medical education during the past quarter of a century post-graduate teaching has come in for a full share of attention. In the United States many special schools have been organised and perhaps more systematic attention has been paid to the subject than anywhere except in Germany. In New York, in Philadelphia, and in Chicago, the polyclinics and post-graduate colleges have been widely appreciated by practitioners and have done much good. Less successful attempts have been made by some of the ordinary medical schools, but the leading ones have now abandoned in great part the teaching of graduates. Personally, I have been engaged in the work for the past 11 years. For the first five years of the organisation of the Johns Hopkins Hospital we admitted only physicians, but since the medical school proper began we have had courses for graduates in the months of May and June. At any time during the year, at the discretion of the professor, a few special students may enter the classes or work in the laboratories. So far as the subject of medicine is concerned it is easy to arrange very attractive courses in routine ward instruction, in physical diagnosis, and in clinical micropsy. I have just finished a six weeks' course of clinical instruction to a class of about 30 general practitioners, and to meet these good earnest students from all parts of the country, some of whom have been in practice 15 or 20 years, stimulates one's optimism as to the outlook in the profession.

Upon the advantage which London offers for graduate study it would be superfluous to dwell, since here is collected a larger number of sick people than in any city in the world. The special hospitals offer unequalled facilities for the study of diseases of the eye, of the skin, of the nervous system, and of the diseases peculiar to women and to children. The absence of concentration of material so convenient in Vienna is counterbalanced by the much more elaborate equipment to be found in the special hospitals. There has been but one thing lacking—the organisation necessary to bring patients and students into intimate association, for which purpose this college for graduates was started. Until recently the physician who came to London felt lost and perplexed, and even if he took out three or four hospital tickets there was but little systematic teaching and he had to pick up information as best he could. Here he finds a local habitation with a comfortable reading-room, a good library, and a well-arranged curriculum embracing all the practical branches of medicine and surgery.

The value of a Museum as a means of practical instruction was first practically demonstrated by John Hunter whose magnificent collection is in itself a college for graduates. So extensive is the material, so admirably arranged, and so well catalogued that to the general practitioner and to the special student it offers a unique field for study. I am surprised that a larger number of physicians do not take advantage of the opportunity there offered to study accurately and systematically the manifold manifestations of disease. To Hunter's example is owing the place which the museum occupies in the medical schools of this country. You have been fortunate in having associated with your College a man with a truly Hunterian mind. In the broad scope of his work, in the untiring zeal with which he has studied the natural phenomena of disease, in his love for specimens and collections, Mr. Jonathan Hutchinson, bears a strong likeness to the immortal Hunter. No individual contributor in this country has made so many careful observations upon so many diseases. He is the only great generalised specialist which the profession has produced, and his works are a storehouse upon which the surgeon, the physician, the neurologist, the dermatologist, and other specialists freely draw. When anything turns up which is anomalous or peculiar, anything upon which the text-books are silent and the systems and cyclopædias are dumb, I tell my students to turn to the volumes of Mr. Hutchinson's "Archives of Surgery," as if it is not mentioned in them we surely have something very much out of the common. It is very fortunate that the collection which he has made will be kept together, as it will be of great service to students from all parts of the world. In one respect it is unique, pictorial and clinical, not anatomical and pathological, and it will remain a worthy monument to the zeal and perseverance of a remarkable man, a man who has secured the homage of a larger number of clinical workers than any Englishman of his generation.

Post-graduate instruction is needed in all classes among us. The school for the young practitioner is a general practice in which the number and variety of cases will enable him at once to put his methods into daily use. A serious defect may warp his course from the outset. Our students study too much under the one set of teachers. In English and American schools they do not move about enough. At a tender age, four or five years give a man a sense of local attachment to place and teachers which is very natural, very nice, but not always the best thing for him. He goes out with a strong bias already in his mind and is ready to cry "I am of Guy's," "I am of Bart's," or "I am an Edinburgh man." To escape from these local trammels, which may badly handicap a man by giving him an arrogant sense of superiority often most manifest when there is least warrant, is very difficult. I knew three brothers, Edinburgh men, good fellows at heart and good practitioners, but for them the science and art of medicine never extended beyond what their old teachers had taught. A Guy's man they could just endure, for the sake, as one of them said, of Bright and Cooper and Addison, but for men of other schools they entertained a supreme and really ludicrous contempt.

There are two great types of practitioners—the routinist and the rationalist—neither common in the pure form. Into the clutches of the demon routine the majority of us ultimately come. The mind, like the body, falls only too readily into the rut of oft-repeated experiences. One evening in the far North-West, beneath the shadows of the Rocky Mountains we camped beside a small lake from which diverging in all directions were deep furrows, each one as straight as an arrow, as far as the eye could reach. They were the deep ruts or tracks which

countless generations of buffaloes had worn in the prairie as they followed each other to and from the water. In our minds countless, oft-repeated experiences wear similar ruts in which we find it is easiest to travel, and out of which many of us never dream of straying. Year by year we follow the same plan in practice, give the same drugs, and settle down into routinists of a most commonplace type. Last year I was called to a town in Pennsylvania and having to wait until late in the evening for the return train, I insisted, as is my wont, that the medical man should carry on his daily work and allow me to help him if possible. An afternoon round among patients chiefly of the mechanic class showed me a shrewd cheery man who in 20 years had gained the confidence and esteem of his patients. Kindly, hopeful words, very sensible directions about diet, and some half-dozen drugs, seemed the essential in his practice. In the evening I saw him dispose of a dozen patients at an out-door dispensary rate; the examination was limited to the pulse, the tongue, and sometimes the throat. The dispensing, which was of the most primitive sort, was done at the table, on which stood four or five tin and paper boxes containing large quantities of calomel, soda, antipyrin, and Dover's powder. Other drugs, he said, were rarely necessary. He never used a stethoscope, he had no microscope or instruments of precision other than the thermometer. In reply to my questions he said "that he rarely had to make an examination. If the patient has fever I send him to bed, if there is œdema I ask for the urine. Of course, I make many mistakes and I sometimes get caught, but not oftener than the other fellows, and when I am in serious doubt I ask for a consultation." This was a man of parts, a graduate from a good school, but early in his career he had become very busy, and gaining the confidence of the people and having much confidence in himself he had unconsciously got into a rut, out of which at 40 only one thing could lift him—a prolonged course of additional study. This is by no means an exaggerated picture of a routinist in general practice. We all have our therapeutic ruts and we all know consultants from whom patients find it very difficult to escape without their favourite prescription, no matter what the malady may be. Men of this stamp gain a certain measure of experience, and if of a practical turn may become experts in mechanical procedures, but to experience in the true sense of the word they never attain. In reality they suffer with the all-prevailing vice of intellectual idleness. It is so much easier to do a penny-in-the-slot sort of practice, in which each symptom is at once met by its appropriate drug than to make a careful examination and really to study the case systematically. Much depends on a man's mental constitution, but much more on the sort of training he has had. If when a student good methods are not acquired it is very hard to get into proper habits of work in practice.

The rationalist, on the other hand, always approaches a patient as a mathematician does a problem. There is something to be found out; in each case, however trivial, there is something novel, and the problems of causation and the question of relief, while not perhaps of equal importance, are of equal interest. He may be just as busy as his idle brother, but he finds time to keep up a technical dexterity in the use of instruments of precision and the stethoscope and the microscope are daily helps in diagnosis. These men are the delight of the consultant. To go into the country and find the diagnosis made in a case of mitral stenosis, a Friedrich's ataxia, a case of leukæmia, or one of myxœdema gives a man a thrill of pleasure such as Comte says he always felt when a student gave him an intelligent set of answers in an examination. It is this class of practitioners for whom the post-graduate courses are helpful and necessary. They alone feel the need of keeping abreast with the times, and men of this type will return every few years, finding that a three months' course of study not only improves and helps them personally but is most beneficial in their practices.

The members of no class in our ranks travel to the waters in deeper or straighter ruts than the specialists. To work for years at diseases of the skin, ophthalmology, gynæcology, &c., necessarily tends to make a man narrow not only as a practitioner but in other relations. One of the best features of British medicine has been the practice of specialties by general surgeons and physicians. It has been better for the men themselves perhaps than for the patients and for the particular branch practised. Nowadays, to master even the smallest specialty requires concentrated effort of years' duration, and to counteract the benumbing influence of isolation a man must scan the wide horizon of pathology and must cultivate ardently the general interests of his profession. The degree of advancement of the specialties in different countries must be borne in mind by our friends and there are few who have been in practice for five or ten years who would not be benefited by a course of study in some foreign country.

After all, no men among us need refreshment and renovation more frequently than those who occupy positions in our schools of learning. Upon none does intellectual staleness steal "with velvet step, unheeded, softly," but not the less relentlessly. Dogmatic to a greater or less degree all successful teaching must be, but year by year, unless watchful, this very dogmatism may react upon the teacher who finds it so much easier to say to-day what he said last year. After a decade he may find it less trouble to draw on home supplies than to go into the open market for wares, perhaps not a whit better, but just a wee bit fresher. After 20 years the new even when true startles, too often repels; after 30, well, he may be out of the race, still on the track perhaps, even running hard, but quite unconscious that the colts have long passed the winning post. These unrefreshed, unregenerate teachers are often powerful instruments of harm and time and again have spread the blight of a blind conservatism in the profession. Safely enthroned in assured positions, men of strong and ardent convictions, with faithful friends and still more faithful students, they too often come within the scathing condemnation of the blind leaders of the blind, of those who would neither themselves enter into the possession of new knowledge nor suffer those who would to enter. The profession has suffered so sorely from this blight of intellectual old fogeyism that I may refer to the most glaring instances in our history. In the scientific annals of this great metropolis there is no occasion more memorable than April 16th, 1616, when Harvey began his revolutionary teaching. Why the long, the more than Horatian delay in publishing his great discovery? He knew his day and generation and even after 12 years of demonstration, which should have disarmed all opposition, we know how coldly the discovery was received, particularly in certain quarters. Harvey, indeed, is reported to have said that he did not think any man above 40 years of age had accepted the new truth. Many of us have lived through and taken part in two other great struggles. The din of battle over the germ theory of disease still rings in our ears. Koch's brilliant demonstration of the tubercle bacillus had a hard up-hill fight to recognition. The vested interests of many minds were naturally against it, and it was only the watchers among us, men like Austin Flint, who were awake when the dawn appeared. It is notorious that the great principles of antiseptic surgery have grown slowly to acceptance, and nowhere more slowly than in the country in which they were announced, the country which has the great honour to claim Lord Lister as a citizen. Old fogeyism of the most malignant type stood in the way, and in some places, strange to say, still stands. Mentally it is possible that surgeons age earlier than physicians. I remember as a student, listening to the introductory lecture of a distinguished surgeon at one of the metropolitan schools the burden of whose discourse was the finality which had been reached by modern surgery. In boldness of conception and in precision of execution, he said, we could scarcely hope to see any further progress. Poor man! Cerebral, renal, and hepatic surgery, to say nothing of other operative advances, followed in rapid succession, and I only quote this as illustrating the state of mental blindness with which we teachers may be smitten.

As Locke says: "Truth scarce ever yet carried it by vote anywhere at its first appearance," and these well-known examples illustrate a law in human knowledge that a truth has to grow to acceptance with the generation in which it is announced. Progress is an outcome of a never-ending struggle of the third and fourth decades against the fifth, sixth, and seventh. Men above 40 are rarely pioneers, rarely the creators in science or in literature. The work of the world has been done by men who had not reached *la crise de quarante ans*. And in our profession wipe out, with but few exceptions, the contributions of men above this age and we remain essentially as we are. Once across this line we teachers and consultants are in constant need of post-graduate study as an antidote against premature

senility. Daily contact with the bright young minds of our associates and assistants, the mental friction of medical societies, and travel are important aids. Would you know the signs by which in man or institution you may recognise old fogeyism? They are three: First, a state of blissful happiness and contentment with things as they are; secondly, a supreme conviction that the condition of other people and other institutions is one of pitiable inferiority; and thirdly, a fear of change, which not alone perplexes but appals.

Conservatism and old fogeyism are totally different things; the motto of the one is "Prove all things and hold fast that which is good," and of the other "Prove nothing but hold fast that which is old." Do not suppose that you have here a monopoly of the article, which is a human, not a national, malady, for we see a very virulent type in America. In its illusiveness and in the disastrous consequences which have often followed its hunting, old fogeyism is a sort of Snark in the medical profession. Before the Boojum, in the form of an entrenched variety, many good men and true have softly and silently vanished away like the beamish nephew of the bellman, sacrificed to intellectual staleness in high places. One of the best correctives is the plan followed at Harvard which compels (?) every teacher to take the Sabbatical year, ensuring in this way rest of the mind if not refreshment. To maintain mental freshness and plasticity requires incessant vigilance; too often, like the dial's hand, it steals from its figure with no pace perceived except by one's friends and they never refer to it. A deep and enduring interest in the manifold problems of medicine and a human interest in the affairs of our brotherhood—if these do not suffice nothing will.

As I stated at the outset, during the past three centuries English students have frequented in turn different countries, drinking deep, deep draughts at the great fountains of learning. Think of the debt we owe to these men and to their foreign masters! Linacre and his successors. Caius, Harvey, and Glisson, brought the new learning from Italy and, moreover, gave to English medicine that smack of culture, that tincture so peculiarly its own. From Holland a succeeding generation drew rich stores of knowledge, and the methods of teaching of the great Boerhaave were quickly adopted by English and by Scotch students. From France came next the new science of Bichat, the new art of Laennec, and the new methods of Louis. To another group the great teachers of Austria contributed accuracy in clinical methods, a zest for the study of special branches and a much-needed, at the time, therapeutic nihilism. The debt of the present generation to Germany can never be paid. Think of the scores who have found inspiration in our common master Virchow; and in the scientific study of disease the Fatherland is still in the van. The great Republic of Medicine knows and has known no national boundaries, and post-graduate study in other lands gives that broad mental outlook and that freedom from the trammels of local prejudice which have ever characterised the true physician.

The course of Empire has opened new fields in which problems new and old have been presented for solution, some of which are of great interest to you "on this side of the water." In any comprehensive survey of the educational field in medicine perhaps the most important single event during the past quarter of a century has been the silent revolution which has taken place in the United States, a revolution which has a direct bearing upon the matter in hand. Everywhere in the schools the entrance requirements have been strengthened, the course of study has been prolonged, and the character of the examinations changed. The hospital equipment has been enormously improved and the clinical facilities have been correspondingly increased. But a still more striking change has been the cultivation of the scientific branches of medicine. 25 years ago physiological laboratories were few and far between; now the output of a score of well-established laboratories supports one of the best journals of physiology in the world. The study of pathology has shown a corresponding growth. The most hopeful feature is a restless discontent which, let us hope, may not be allayed until the revolution is complete in all respects. Meanwhile, to students who wish to have the best that the world offers, let me suggest that the lines of intellectual progress are veering strongly to the West, and I predict that in the twentieth century the young English physicians will find their keenest inspiration in the land of the setting sun.

The Ingleby Lectures

ON

THE COMMONER NEUROSES OF CHILDHOOD, THEIR PATHOLOGY AND TREATMENT.

Delivered at the Mason University College, Birmingham, on June 27th and July 4th, 1900,

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LECTURE II.[1]

Delivered on July 4th.

MR. DEAN AND GENTLEMEN,—Migraine and recurrent paroxysmal headaches which are deficient in the special characteristics that distinguish migraine are common in children, the latter type being particularly frequent. It would be an error to attempt a sharp separation between these two affections, for although the characteristics which mark migraine—viz., the sensory symptoms, the unilateral commencement of the pain, and the sickness and vomiting—are very prominent, yet we find that typical attacks of hemicrania alternate with simple non-migrainous headaches, and that one form may, in any individual sufferer, replace the other in the course of time. Moreover, the vaso-motor symptoms and the fluctuations in the blood pressure which in typical migraine are so pronounced are seldom, if ever, quite absent from recurrent headaches of the simple kind. Precisely the same causes are found to produce both these forms of cephalalgia.

The true character of these headaches is shown by their recurrent character, a slight cause sufficing, in those who are predisposed, to bring on a paroxysm; and it follows that in dealing with cases of this kind we must attack the predisposing factors, if they be accessible to treatment. In the opposite event we must content ourselves with recognising those causes which immediately excite the attacks and instructing the patient to avoid them. Children suffering from this complaint usually show evidence, even in the intervals between the attacks, of being out of health, but in exceptional instances they appear to be in good physical condition. Without going into great detail, the causes which lead to migraine may be stated thus: 1. Heredity, direct or indirect. 2. Overwork, mental or physical. 3. Overstrain of the eyes. 4. Slight injuries. 5. Metallic intoxication, tobacco intoxication, and alcoholic intoxication. 6. Depressed general health arising from either (1) previous disease, (2) respiratory intoxication, (3) disorders of the alimentary tract, or (4) unsuitable diet. 7. Indigestion and constipation without evident impairment of the general health. It will be at once seen that no definite line severs the predisposing from the exciting causes; for in an individual who is led to the verge of migraine by, say, overwork at school a slight extra amount of work will precipitate an attack.

Now, if we consider the toxæmic conditions which predispose to these headaches we are struck by the prevalence of those which arise from unsuitable diet or from other disorders of the alimentary canal. Very often one can elicit a history of constipation, and this or an account of irregularity of the bowels will generally direct us straight to the cause of the trouble. Then we shall on inquiry often be confronted with an account of most unsuitable feeding; the child either has its meals irregularly or they consist of materials quite unfit for its consumption, and very usually the diet is faulty in both these particulars. Even a short experience will convince any observer that in these two conditions, constipation and faulty feeding, are founded a large number of cases of migraine. There may be, on the other hand, a state of catarrh of the gastro-intestinal tract which is not due to errors of diet or constipation, but which results from infective disease. Measles and whooping-cough

[1] Lecture I. was published in THE LANCET of June 30th, 1900, p. 1859.

are particularly liable to leave behind them such a condition. Infective diseases may also lead to migraine by simple enfeebling of the general health without there being any evidence that the alimentary canal is specially affected, and where scarlet fever has been the forerunner of recurrent paroxysmal headaches one should be careful to exclude nephritis, which is often overlooked and may first show its presence by these attacks.

A not uncommon cause of migraine and the related headaches is the respiration of air which is contaminated by repeated breathing, and in cases where careful inquiry fails to elicit alimentary disorders or the history of an infective disease, insufficient ventilation should be thoroughly looked for. That the effect is produced rather by the poisonous material contained in the air than by deficient oxygenation of the blood is shown by the comparative rareness of migraine or paroxysmal headache in those who suffer from cyanosis, the result of chronic cardiac or pulmonary disease. It has been remarked that patients suffering from migraine usually bear evidence of being out of health; but even where the cause is a toxic one this does not hold true universally, and although in the majority of these cases we notice the languor of expression, the coated tongue, and the vascular stigmata, yet the child may look perfectly well. In such cases there is often excessive indicanuria which will guide one to the cause of the trouble. Another feature of these toxæmic patients is that their headaches generally begin in the morning, either before rising or soon after, and the reason of this is the comparative inactivity of the kidneys during sleep and the consequent accumulation of toxic materials in the blood during the night. Where fatigue or overwork bring on the paroxysms, they occur, on the other hand, most frequently during the latter part of the day. Thus the time of occurence of the seizures may help us to some degree in recognising the cause of attacks.

I have only a word to say on the subject of heredity, and that refers to cases in which there is evidence of a gouty inheritance. This means that the tissues are inclined to irregular metabolism even when they are supplied with food which is suitable to children who are free from this tendency. In such cases, therefore, successful preventative treatment will lie in regulation of the diet till it suits the individual.

Epilepsy.—Of the neuroses under consideration epilepsy is the most serious, owing to its great frequency and the difficulty of treating it when the disease has lasted any considerable time, and also in consequence of the dangers which the attacks bring with them. The remarks which I have to make shall not apply to those epilepsies which are produced by gross cerebral disease, nor to those single epileptoid attacks which not infrequently in young children mark the onset of an acute infection.

The main causes of epilepsy may be grouped as follows:—1. Heredity, direct or indirect. 2. Damage to the peripheral nerves, cranial or spinal. 3. Emotion, fright, and shock. 4. Masturbation and retained smegma preputii. 5. Commencing or disturbed menstruation. 6. Congenital syphilis. 7. Uræmia. 8. Alcohol poisoning or lead poisoning. 9. Acute infective diseases. 10. Rickets and teething. 11. Indigestion and gastro-intestinal disorders, including parasitic worms and constipation. It is unnecessary for me to go into detail on each of these points, and I will confine my remarks to the commoner or more important causes.

Emotion.—In children under the age of four years excitement, shock, and fright must be very rare as exciting causes of epilepsy, but in older children this cause is much more frequently operative. It is always necessary, however, to guard against the possible error of assuming this to be the sole cause, for in a number of instances of the disease we shall find that though fright occasioned the first fit, yet one of the predisposing factors such as, e.g., indigestion, was at work long before the fright occurred.

Masturbation.—Masturbation and other irritation of the external genitals is by most authors given as a cause of epilepsy, and I have myself met with a good many instances in which this appeared to be the case. I think, however, that masturbation is a rare cause in boys, and although I have no doubt that it may be effective in producing epilepsy in girls I have never seen a case which could be accepted as satisfactory evidence on the point. Even in boys who masturbate or who suffer from adherent prepuce with retained smegma—which sometimes smells very offensively—and who are the subjects of epilepsy, there have generally been, in my experience, other factors which could not be neglected in the endeavour to get at the true cause of the attacks. In order to illustrate this I will mention a case—that of a boy aged 12 years, of pleasant, frank, intelligent manner, but with a sallow complexion and rather thin and suffering from constipation, who had had several epileptic attacks, two of which were clearly associated with a quantity of indigestible food, and one of which was provoked by want of food beyond the usual interval, coupled with excitement and subsequent overeating. He was subject to irregularity in his meals and to injudicious feeding. He also had a prepuce which was permanently drawn forward and which concealed a good deal of retained smegma; but there was no offensive smell. It was denied that he masturbated, but the father's attention was drawn to the necessity of being on the watch for the vice. Stricter diet and general hygiene and moderate purgation were prescribed. Some weeks later the patient had another seizure and by this time the father had found out that the boy masturbated and that he was troubled with precocious sexual feelings of which he had quite willingly told his father on straightforward questioning. He was circumcised and for many months after that he had been free from seizures. Now, I shall presently have to point out the great importance which in my opinion attaches to digestive disturbances, more particularly as a predisposing cause for epilepsy, and I feel disinclined to overlook the very evident disorder of the alimentary tract which here existed. There was the constipation and the habitual irregularity of the diet both as regards time and quality of the food. On the other hand, there was masturbation, which was probably excited, like the precocious feelings, by the constant irritation to which the glans penis was subjected by the retained secretion. In the light of my present experience I would interpret the case in the following way. A predisposition of the cerebral centres was set up by the prolonged disorder of digestion, and in this state the brain was easily incited to an epileptic discharge by the stimulus of masturbation or at other times by the stimulus of an extra indigestible meal. One other case has been brought to my notice which is very parallel to that just cited. In this latter patient the considerable size of the external genitals contrasted strongly with the generally poor state of bodily development, whilst, as in the first case, the mind was active and bright. It is also worth considering whether in these two boys the immediate cause of the fits may not have been the mental excitement which the masturbation produced. I know of cases—very rare ones, certainly, but still they occur—in which the act of copulation produces in women a state of frenzy or a condition in which they act precisely as do sufferers from masked epilepsy (epilepsia larvata)—i.e., they carry out complicated acts without any evident purpose and without being in the least conscious of them at the time or afterwards. I do not know whether these occurrences happen only in women who are otherwise epileptic or not, but it is this point which has suggested to me the question as regards the excitant of the seizures in the boys just mentioned.

Menstruation.—The incidence of menstruation and the disturbances of this function in young girls are frequently blamed as exciting causes of epilepsy—and probably with justice, for it is undeniable that in many women the commencement of the fits dates from the establishment of the menstrual function. Here, again, it is not quite clear whether the effect is produced in a reflex manner or by the working of the new function upon the emotions. Possibly these two mechanisms act together. My own experience among the women at the infirmary suffering from long-continued epilepsy has shown me, rather contrary to my expectation but in agreement with the experience of others, that the fits are comparatively rarely aggravated at the menstrual periods, and in fact in the majority of these sufferers menstruation had no apparent influence either on the number or the severity of the seizures.

Rickets and teething.—These two causes are taken together because they so frequently co-exist and because in cases where they are jointly present it is difficult to gauge the true importance of each. They may, however, also exist separately. Teething may lead to epileptic fits by means of local irritation and reflex reaction. This will, of course, only occur in those children whose nervous centres are already susceptible to the epileptic discharges either through inherited weakness or through disease, and one of the diseases which is most frequently met with in this connexion is rickets. Now, we know rickets to be a disorder of metabolism and nutrition, and the central nerve-tissues must share in this disorder, with the consequence that

disturbance of their function is brought about; but it is easy to trace rickets a step further back, and we may say with confidence that the cause of rickets lies primarily in faulty diet or in faulty digestion. Rickets, therefore, comes under the more comprehensive heading of diseases of digestion, of which great class of epileptic factors we may say that rickets is a well-defined constituent.

Digestive disturbances.—Tænia, round-worms, and thread-worms may be associated with epilepsy, and I have met with each of these three causes. As before remarked, these worms never inhabit the intestine for long without producing some change in the mucosa of the gut. Very possibly in many cases a diseased state of the intestinal mucosa precedes, and renders possible, the lodgment of the worms. The intestinal change which we generally find is a chronic catarrh, in which thick masses of greyish-white mucus, stiff and difficult to remove, lie on the surface of the mucous membrane, often hiding the worms from view. By degrees, in long-continued cases, the inflammation ends in the formation of cicatrical tissue and thickening of the walls of the gut. The inflamed and altered intestine must be changed both as regards the condition of its secretion and as regards its powers of absorption. It is apparent, therefore, that besides the local presence of the worms there is an organic change in the intestine which may, if extensive, affect the absorption of food-stuffs, and which, even if of no great extent, may lead to interference with the regular course of digestion and to the formation of irregular by-products. These if absorbed will certainly not have the same effect on tissues as healthy food, but will act on them in a toxic manner. In view of the conditions just described one will certainly hesitate to explain the epileptic fits produced by intestinal worms as due to mere reflex irritation.

There are one or two further points of interest in connexion with this subject. It is said, for instance, that threadworms are comparatively rarely found to be the cause of epilepsy. This may be because they escape observation. Not very long ago there was under my care a little girl, aged eight years, who had minor seizures in a strong degree. Inspection of the stools revealed no worms for a week, although the bowels were quite freely moved every day. At the end of a week, however, a good number of threadworms were discovered in the dejecta and the association of the parasites with the seizures was thus established. The worms are therefore apt under some circumstances to escape the notice of even a trained nurse, and much more of an unobservant mother, for a considerable period; or they may be voided per anum, not continuously "with every stool," but at intervals which extend to several days. These are points worth considering when one bears in mind the somewhat severe changes which worms are apt to produce in the intestine and the great frequency with which they are associated with epilepsy. Again, epilepsy produced by worms may be unilateral in distribution, the convulsions not only commencing on one side of the body but remaining limited to that side throughout the whole course of the seizure. The same point may be observed in certain cases of epilepsy produced by overloading of the intestines, of which I shall presently give an instance. The fact is generally recognised that epilepsy caused by intestinal worms is difficult to cure even when the parasites are completely removed by proper anthelmintic treatment. There is, of course, the fallacy which has just been illustrated of the continued presence of threadworms without their being passed or recognised in the fæces, and one may be easily misled into the idea that the parasites have been successfully removed. But even when the intruders have been really got rid of the seizures are apt to continue from a persistence of a morbid condition of the intestinal mucosa which is associated with their presence. There is another reason for the continuation of the seizures—namely, the morbid habit of the nerve-centres, which once acquired is only to be overcome by prolonged treatment, but this point applies to all epilepsies whatever may be their immediate and remote causes.

There are, however, disorders of the gastro-intestinal tract, particularly of the intestine as distinguished from the stomach, other than those set up by worms, which are very frequently both the predisposing and the direct causes of epilepsy. Both in children and in adults instances of the disease meet us for which we fail to find a satisfactory explanation as to either the predisposing factor or the exciting cause. In adult males, in whom these causes are far from infrequent, there is strong evidence to show that chronic alcoholism, even when unaccompanied by kidney disease, is the predisposing factor, whilst the discharge may be produced by an extra dose of the alcoholic poison. In other cases where drink can be excluded I think strongly that the reason for the epilepsy must be sought for, and would be found, in the digestive tract. Unsuitable ingesta which act as poison, like alcohol, may be the provokers, and it is by no means necessary that they should in every instance be such well-recognised toxic agents as alcohol is. In young adolescents and particularly in children it would appear that an excessive meat diet is quite capable of putting the nervous system into what may be called the state of epileptic tension. In other patients there is catarrh of the intestine which, when it fails to attract by any marked signs the attention of the sufferer himself or of the mother, is not complained of and requires skilful questioning to be revealed. Beyond such patients whose appearance does not help us in forming a conclusion as to the cause of the epilepsy there are, however, those of another class who bear marks of their gastro-intestinal disorder which, though plain enough when attention is directed to them, are nevertheless not infrequently overlooked. I have spoken before when dealing with chorea of the frequency of certain facial signs, such as a dull, muddy complexion and furred tongue, as indicating an habitual toxæmia arising from the bowels. It is quite remarkable how often we are confronted with this complex of signs in patients whose complaint is about their epileptic fits; indeed, this state of affairs is so frequent that I have often wondered that no greater stress is laid upon the conjunction. The appearances in question may be briefly described here, since they were only touched upon under the heading of chorea. In pronounced instances the complexion is muddy, the eyes and expression are dull, and dark rings may be found round the orbits. There is a tendency to erythematous, patchy flushing of the skin of the face, neck, and chest. The small vessels on the cheeks are dilated and form vascular stigmata, such as are seen in chronic alcoholic patients and others in whom the degeneration of the blood-vessels is commencing. Often there is a tendency to acne and comedones, when the skin is often greasy-looking and secretes an excess of sebaceous material, especially about the nose. The tongue is usually coated or furred in a greater or smaller degree and the patient suffers from a bad taste, particularly in the morning. The breath frequently has a disagreeable acrid odour which at times may be very offensive—a condition which is in no way connected with any local process in the mouth. Such sufferers are often big and stout and frequently present a coarse appearance, due largely to the acne and seborrhœa. In many of them the appetite is great and even voracious. They are usually constipated, though the history of constipation is often difficult to elicit from them, for it seems as though a moderate degree of constipation becomes so much a part of a patient's life that it no longer presents itself as anything abnormal. The bowels are frequently asserted to be "quite regular" when, as a fact, they are moved every second or third day only; and it is necessary for the physician to assure himself of the physical state of the dejecta before he is justified in accepting the statement of the patient or that of the patient's mother, that there is nothing the matter with the bowels. Particularly I would lay stress on the misleading fact of the bowels being opened twice or three times a day. This generally means not that the stools are loose or copious, but that each evacuation is small, hard, and scanty, so that at each motion only a small portion of the fæcal matter lying in the sigmoid and rectum is removed, and that the true state consequently is one of constipation. On the other hand, it must not be forgotten that true diarrhœa may exist with such a disorder of the intestine and with those facial signs that I have just described. Diarrhœa, however, in my experience is very rare as compared with constipation.

In all probability the constipated condition predisposes to epilepsy by leading to a toxæmia, and not by reflex irritation. For in the first place we have the facial signs and the condition of the tongue pointing to toxæmia, and in the second place it strikes me that one very rarely encounters epilepsy when there is a mere overloading of the stomach, a condition which nevertheless has a strong tendency to set up reflex action. I am not aware of any case in which an overcharged stomach, while the food is still in that viscus, has given rise to an epileptic seizure; and in those cases in which an indigestible meal is blamed, and justly blamed, for the attack the latter does not usually

occur until at least 12 hours after the meal in question, and we know that in children in such cases an enema will often remove pieces of undigested food from the rectum. Now, from the stomach comparatively little, if any, absorption takes place, and the facts just mentioned appear to bear out the suggestion that it is only when the absorption of products of such an indigestible meal is commenced that the fits occur. This of course applies to the exciting cause of the seizure; the predisposing cause is, however, much more important and is *a fortiori* more probably a toxæmia than a state of reflex irritation.

The foundation of digestive disturbances which ultimately become complicated with epilepsy is very commonly laid at school. Thus I have seen many cases of epilepsy in young women who gave a distinct history of severe indigestion commencing while they were at boarding-schools and who never entirely recovered from their indigestion. These patients all showed in addition to their dyspeptic symptoms some evidences of auto-intoxication and with hardly an exception admitted suffering from constipation.

It is to me a remarkable fact that epilepsy is but rarely combined with anæmia. Thus out of 32 cases of women and children in whom epilepsy was connected with marked signs of digestive disorders one only showed anæmia to a degree which was recognisable by the pallor of the conjunctiva and I have not seen a single instance of epilepsy associated with typical chlorosis. When we remember how constantly chlorosis and other anæmias are combined with, and probably are due to, irregular digestion and constipation this exemption of chlorotics is certainly notable and is in want of a plausible explanation. It may of course be that the particular toxic substances which lead to anæmia are without influence on the nervous system and that, *vice versâ*, those that have a profound effect upon the latter leave the blood-forming tissues unaffected, and until we are enabled to isolate or to discriminate by their toxic effects between the several deleterious bodies which are in different circumstances produced in the alimentary canal, this is the only explanation which I can suggest.

There is nothing special in the form which the epileptic attacks assume when they are due to gastro-intestinal intoxication. Major and minor attacks occur with equal frequency and epilepsia larvata is not uncommon; it may even occur that the convulsions so produced are confined to one side of the body after the type of Jacksonian epilepsy. Thus I have seen an infant who on two successive occasions was brought to hospital suffering from marked unilateral convulsions limited to one side. On each occasion grossly unsuitable food proved to be the cause of the seizures and undigested masses were removed by enema from the rectum. Watching this child in its convulsions one would certainly have said that they were due to coarse brain disease, and although I have never seen another case so clear in character, this one seems worth noting, since instances of this kind are probably not altogether exceptional and are apt to mislead one as to the cause of the fit. The time at which the seizures take place is not characteristic in gastro-intestinal epilepsies, for the fits appear with about equal frequency in the day and in the night, and in several cases I have noted that they take place in the early morning, either while the patient is still in bed or during the process of dressing. It is noteworthy that in a considerable proportion of the gastro-intestinal cases no evidence of any hereditary tendency can be obtained.

I trust that I have made it clear that a great proportion of the epilepsies met with in everyday practice are the result of chronic toxæmia arising from the alimentary tract, and that this same auto-intoxication is the true factor in several other conditions which are universally recognised as predisposing causes of epilepsy—as, e.g., intestinal worms and rickets. It is necessary to emphasise the predisposing as contrasted with the exciting cause to which the first or any subsequent fit is attributed. It is not possible to classify the causes of epilepsy into two distinct groups—pre-disposing and exciting—without straining the facts, but in any individual case of the disease we can discern these two factors and the predisposing cause remains the same, whereas the immediate excitants of the fits may vary, and will be, now fatigue, then excitement, or again injury or pain.

Pathology.—The diseases under consideration have, then, the following etiological points in common. They are produced by a group of emotional causes and, on the other hand, by a group of toxic causes, together with each of which hereditary predisposition has an important influence. The toxæmic element is more effective than the emotional in all these maladies excepting saltatory spasm. The further remarks which I have to make on the pathology of these disorders shall be limited to the subject of self-intoxication from the alimentary canal, which has been shown to be a factor of first importance.

We may conveniently divide the gastro-intestinal disorders which lead to toxæmia as follows:—

1. *Excessive amount of food.*—Over-eating has a great effect in setting up disorder of the alimentary canal. The habit is a common one among the children of the lower classes, but it is by no means confined to them. We may explain its action as follows. Normally the glands which produce the digestive juices secrete them in quantities which are capable of dealing with a certain volume of food. Habitual excess of food or too frequent meals will no doubt stimulate the glands to yield a proportionate increase of their secretion for the time being, but such an over-strain, if long continued, is apt to end in glandular inadequacy and consequent incomplete digestion. The incomplete digestive products may be absorbed; or in the absence of a sufficient amount of the digestive fluids bacterial decomposition of the intestinal contents takes place, and the products of the same are taken up by the blood-vessels and lacteals.

2. *Unsuitable food.*—Food unsuitable either to the age of the patient or to his individual digestive capacity is likewise often the cause of those gastro-intestinal conditions which are found associated with the neuroses, and very frequently such dietary errors signalise themselves by producing the facial appearances which have been described. Reference has already been made to the fact that an excess of meat food—and probably the same would hold good of excess of any other proteid material—is apt to be associated both with dreaming, enuresis nocturna, and epilepsy, and I think that when a fault is discovered in the nature of the food it is the proteid constituents which are usually to blame.

3. *A catarrhal condition of the stomach or of the small intestine.*—This may arise from various causes, as, for example, dietary errors, intestinal worms, or infective diseases. This condition may be accompanied by diarrhœa, or, more commonly, by constipation. In speaking of the local effect of intestinal worms I have already detailed the manner in which such catarrhs act and how they may long outlast their original cause.

4. *Constipation.*—Constipation, arising from catarrh of the intestine or faulty diet or from mere habit and encouraged by neglect is undoubtedly one of the most common predisposing causes of all the neuroses here considered, and its effect is produced partly by the delayed elimination of fæcal matter which therefore has a chance of being re-absorbed by the intestine and partly by the encouragement which it is shown that bacterial growth within the intestine receives when the fæces are retained. In the absence of a verbal admission by the patient of any of these digestive disorders we may observe the signs which have been fully described and the significance of which as an index of auto-intoxication has been pointed out, or we may find indicanuria. Indican is derived from indol, which latter is formed in the intestine by the bacterial decomposition of albuminous substances. A very little indican is commonly present even in the urines of healthy persons, but a considerable excess of the same, such as I show you in these specimens, is always accompanied by disturbed general health. We may, therefore, say that excess of indican in the urine is always associated with toxæmia, and this toxæmia arises (with rare exceptions, in which the source is decomposing pus) from the intestinal canal. Indol itself may possibly be toxic, in view of its origin through bacterial action and of the fact that it is unlikely to be a nutrient substance, for all the familiar organic food stuffs contain oxygen, and indol is deficient in this element. Indol is formed from the nitrogenous food stuffs and is so far the only decomposition product of intestinal origin which we have the means of detecting in the urine. But it is quite probable that analogous products are formed from both carbohydrate and fatty articles of diet under the influence of constipation or of intestinal catarrh. If this be so we ought to meet with bodies of the constitution of the alcohols and of the fatty acids, but I am not aware that any such have been certainty detected in the urine, and it is possible that they undergo such changes before they are finally excreted with that fluid as to be no longer recognisable, or that they are completely oxidised in the blood and excreted from the lungs.

Excepting the sign of indicanuria we have no chemical test which proves that auto-intoxication from the alimentary canal is in progress. There is, to be sure, the fact, first described in detail by Bouchard, of the toxic action of the urine, and we might expect to find in the case of self-intoxications special results following the injection of such a patient's urine into the blood of an animal. But so far as I am aware the poisonous effects of the urine of healthy persons have hitherto proved to be identical in nature with those obtained with urine from patients suffering from blood-poisoning, though less in degree, and the only exception to this rule appears to occur when the urines of certain infective diseases—e.g., pneumonia—are employed. This physiological test would, however, not be applicable to the bedside, even if it should in the end prove useful in detecting special poisons in special gastro-intestinal disorders. A point to which I have previously drawn attention is the prominence of the toxæmic symptoms of malaria, languor, and sometimes vertigo, in the early morning, and in this connexion it is highly interesting to note one result of Bouchard's experiments—viz., that the urine secreted during the night is, though more concentrated, materially less toxic than that eliminated during the hours of mental and bodily activity.

TREATMENT.

In view of so many common points in the production of these neuroses their treatment must possess certain common features which shall first be dealt with.

From the stress which has been laid upon disorders of digestion and faulty diet as a cause of nearly all these diseases it follows that correction of dietary errors is one of the main points requiring attention. In the majority of cases in which the feeding is at fault it is advisable to cut down the amount of meat which the child consumes. Meat once a day will nearly always be sufficient, and that once should be at dinner-time in the middle of the day while there are still some hours of muscular activity before the child. It is seldom necessary or advisable to remove meat altogether from the dietary, for it is nearly always an excessive quantity of meat which leads to the trouble, not meat in a small or moderate amount. So long as the meat is good there is, I believe, not much difference between beef, mutton, rabbit, fowl, game, &c., but fish may with advantage be substituted for butcher's meat. Light puddings and green vegetables may be given and potatoes in moderation. In fact, it is not so much a question of prohibiting any article of diet as of regulating the amount. In many children the entire bulk of food requires reducing. In severe cases of enuresis it is sometimes (as in the case which I have quoted) advisable to stop meat altogether for a period and then to allow it again in a very small quantity. Sufficient mastication and moderate rest after meals should be insisted on, as they greatly help digestion, and the child should not leave the house after breakfast until the bowels have been opened.

It is plain, also, that in most cases the action of the bowels demands attention, since the prevention of an auto-intoxication from the intestine depends firstly on regular and sufficient defæcation. As cathartics the saline purgatives are invaluable, at all events to begin the treatment with, and since it is advisable not to give drugs more often than necessary they are best administered in the shape of a single dose of mixed sulphates of soda and magnesia one hour before breakfast, or in a smaller dose last thing at night. Any of the natural aperient waters may be substituted for this mixture. Calomel (or calomel combined with a small quantity of colocynth and rhubarb) is also extremely valuable in this class of cases. Senna, aloes, and other drugs which act mainly on the lower intestine, are less indicated, for it appears that the groups of aperients first named act largely by stimulating the flow of bile and by thus helping the liver to eliminate whatever toxic materials it has removed from the portal blood stream. Whichever drug be given the object to be attained is one large stool, of porridge-like constituency, to be passed preferably before or shortly after breakfast. Again, we want to convert habitual irregularity of the bowels into habitual regularity, and to this end it is necessary to give, not an occasional purge when the bowels have been obstinate for a day or two, but a regular course of this daily treatment, extending over three or four weeks, to be followed by a gradual diminution of the dose, administered first on alternate days, then at longer intervals. This combined with the dietary measures prescribed will usually be followed by complete success in children, and any excess of indican, if present at the onset, usually disappears under these therapeutic measures, but sometimes it continues to be present in considerable quantity, showing that in spite of the purgation an excess of microbial products is absorbed. In such cases the so-called intestinal antiseptics naturally suggest themselves, the chief of which are sulpho-carbolate of soda, salol, phenol, mercurial salts, charcoal, and possibly arsenic. All these, excepting phenol and arsenic, I have tried, and though each has proved useful I cannot say that any one of them can be relied upon to remove the trouble entirely and in all cases. Those which have in my hands proved the most successful are sulpho-carbolate of soda and charcoal. The first is, however, very apt to give rise to headache and must therefore be carefully watched, and on the whole I give the preference to vegetable charcoal given in 30 grain doses twice daily. Perchloride of mercury, the most powerful of antiseptics, has not in my experience had the desired effect—at least, in such doses as I have cared to give to children. Arsenic in comparatively large doses I have not yet tested in this connexion.

Tonics may be of use in certain of these neurotic conditions where there is enfeebled general health due to previous disease, but their utility is far less than that of the remedies which act upon the intestines. They do, however, improve the appetite and probably hasten the general metabolism, and they may therefore be usefully combined with the intestinal drugs. Their employment alone, however, is to be deprecated where there is any active auto-intoxication, for in such cases they do not strike at the root of the trouble and only delay improvement by deferring the employment of the proper remedies.

In conjunction with the measures which I have mentioned above to be applied in all those cases in which self-intoxication is the main cause each one of the neuroses requires some special treatment.

Chorea.—Besides seclusion, darkness, and quiet, undoubtedly the most effective treatment is that by arsenic in doses of about 15 minims of Fowler's solution twice or three times daily, as advised by Dr. Murray. The success of this method is quite another thing than that attained with arsenic in small doses, and is much more quickly gained. Some evidences of poisoning are apt to arise under this medication, notably nausea and vomiting, and when these occur the best thing is to diminish the dose, not to stop the drug.

Enuresis nocturna.—This may be successfully treated, as a rule, by giving bromide of potassium, with either tincture of belladonna or of hyoscyamus, as a nightly dose. It is, moreover, well to administer some alkali, such as citrate of potash, in order to diminish the acidity of the urine, which excessive acid reaction is itself of irritating effect. Of course, should bacteriuria be present it is necessary to locate the cause of the same and to deal with it.

Migraine.—Attacks of migraine which depend upon auto-intoxication may, I believe, be successfully cut short by the administration of a smart emetic, and I have known several adults who have asserted that this course more certainly relieved the attack than any other. Of course, antipyrin sometimes succeeds in these cases, but by no means always. It is not clear how emetics produce their effect, but it may be that some of the toxic material is excreted from the blood by the gastric mucous membrane and re-absorbed, in which case an emetic will remove it. On the other hand, it is possible that the act of vomiting stops the headache by the violent stimulus which it affords to the nervous system. I do not think that emetics are ever useful in those migrainous attacks which result from prolonged overwork of the body or mind.

Tetany.—For the spasm of tetany the bromides, so far as my experience goes, are by far the most efficient remedies when employed together with the proper treatment for the catarrh of the respiratory or intestinal tracts. Galvanisation is recommended, but I have never had occasion to employ this measure, and I cannot help thinking that in most cases it is unnecessary. Quiet and darkness are strong aids to the successful treatment of this affection.

Dreaming and nightmare.—For these symptoms no treatment is required beyond that which deals with the primary cause.

Epilepsy.—Undoubtedly the best drugs to employ in epilepsy are the bromides. I am accustomed to give equal quantities of the potassium and ammonium bromide, the total dose to be determined by the result upon the seizures. This combination tends, I think, to resist the depression

which is apt to ensue when the potassium bromide alone is used for long, and for long these drugs must be administered if any permanent good is to be done. They probably act directly upon the cerebral centres. As I had occasion to point out before, epileptic seizures are very apt to continue even when the predisposing cause has apparently been removed, and their continuance is no doubt due to the fact that a morbid habit of action is acquired by the nerve-structures concerned in the convulsive discharge, a habit which is favoured by every seizure. Taken in hand early and treated with perseverance epilepsy is by no means so hopeless a malady in children as one might be led to believe by seeing it in the adult chronic epileptic. Should intestinal worms appear as the cause of this disease, and the proper anthelmintic remedies be administered with apparent success, one must nevertheless bear in mind the obstinacy of these parasites and the fact that they are generally present in numbers. A child can certainly not be regarded as being free from the intruders until the stool has been repeatedly found clear of the ova, and in the case of tapeworms the head must be found. For oxyuris vermicularis I am in the habit of prescribing infusion of quassia internally, coupled with mild purgatives. For tænia male fern is the most successful drug, provided that it be given when the intestines are empty through fasting and that it be helped by a cathartic remedy; but whichever parasite it may be the altered condition of the intestinal mucous membrane will have to be remembered, and this condition will require careful dieting, and possibly saline purgatives, to be continued over a considerable period of time.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following is the prize list for the summer session, 1900:—Barker Anatomical Prize, £21: J. F. Peart. Carmichael Scholarship, £15: A. Charles. Gold and Silver Medals in Operative Surgery: gold medal, E. A. W. Henley; and silver medals, F. W. Lamb and A. H. B. Hartford. Practical Histology: R. W. Burkitt, first prize (£3) and medal; and R. G. Allen, second prize (£1) and certificate. Practical Chemistry: Miss J. Bell and A. N. Crawford (equal), first prize (£2) and medals. Public Health and Forensic Medicine: J. F. L. Keegan, first prize (£3) and medal; and Miss H. A. Hall and W. R. Meredith (equal), second prizes (£1) and certificates. Materia Medica: A. T. Mulhall, first prize (£3) and medal; and J. R. MacManus, second prize (£1) and certificate. Practical Pharmacy: J. J. Connolly, first prize (£3) and medal; and Miss L. Smith, second prize (£1) and certificate. Biology: B. H. Peters, first prize (£3) and medal; and J. J. Connolly, second prize (£1) and certificate. The preliminary examination for the next session will be held on Sept. 26th and 27th. Regulations and students' guide are now ready.

THE BRISTOL ROYAL INFIRMARY.—The accommodation for nurses at the Bristol Royal Infirmary having been found inadequate the home which was fitted up for some of the nurses in 1886 and enlarged in 1896 has been again considerably enlarged and improved. The entire structure now contains bedroom accommodation for 93 nurses. There are also recreation-rooms, reading-rooms, bath-rooms, &c. The whole of the building is lighted by electricity. By the acquisition of an adjoining piece of ground a garden has been made which is sufficiently large to provide a tennis court and other means of outdoor recreation. The cost of the new building, including an extension of site and furnishing, has been about £8600. The expense of furnishing has been defrayed by the carnival which was held at the Zoological Gardens, Clifton, in 1899, and the committee hope that the residents of Bristol, recognising the need of reasonable comfort for the nurses, will subscribe the requisite funds.

THE NOTIFICATION OF MEASLES.—At the meeting of the Ottery St. Mary District Council held on July 6th one of the members proposed that measles should be made a notifiable disease, but after discussion it was determined to postpone further consideration of the matter for three months and in the meantime to obtain the opinion of the Local Government Board upon the subject.—At the meeting of the New Quay (Cornwall) District Council held on July 7th it was decided to continue the inclusion of measles as a notifiable disease, but that in future the notification should be 1*s.* instead of 2*s.* 6*d.*, the medical men of New Quay having agreed to such a reduction.

The Croonian Lectures

ON

THE DEGENERATION OF THE NEURONE.

Delivered before the Royal College of Physicians of London on June 19th, 21st, 26th, and 28th, 1900,

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

LECTURE IV.[1]

Delivered on June 28th, 1900.

SOME CHRONIC TOXIC CONDITIONS.

MR. PRESIDENT AND GENTLEMEN,—So far I have dealt with experiences relating to poisons producing acute or subacute changes in the nerve-cells. I shall now refer to the effects of chronic poisoning of the system, especially in reference to two factors which are the most potent, the most prevalent, and the most persistent poisons in the production of the degeneration of the neurone and which frequently act in combination, affecting not only the nervous system of the individual but also of the offspring. Such are alcohol and syphilis.

THE CLOSE RELATIONSHIP IN THE ETIOLOGY AND PATHOLOGY OF TABES AND GENERAL PARALYSIS.

Syphilis is the best example of a poison probably, though not proved to be, of microbial origin which has a selective influence upon the nervous system with a remote effect; it is the most important factor in the production of two progressive degenerations of the nervous system, one affecting especially the exogenous afferent spinal neurones—namely, locomotor ataxy; the other affecting the association systems of neurones of the cerebral hemispheres, especially of the frontal and central convolutions—namely, general paralysis of the insane. A striking instance of the selective action of the syphilitic poison is shown in the fact, first pointed out by Sir William Gowers, that only in persons affected with acquired or inherited syphilis is the symptom known as the Argyll-Robertson pupil found; indeed, it is sometimes the only symptom. Seeing that this is the most common objective phenomenon in the two diseases mentioned it strengthens the presumption, based on experience, that the syphilitic poison is the cause of the disease in the majority of instances. It is the opinion of many authorities—and I must say that my experience supports it—that locomotor ataxy and general paralysis are one and the same morbid process, affecting different parts of the nervous system. They are, in my opinion, both a primary and progressive decay of the nervous elements and are etiologically, clinically, and pathologically very closely related. At a discussion held at the Pathological Society of London I supported the view that tabes and general paralysis are one and the same disease affecting different parts of the nervous system. It was asked if this be so, how do you explain the fact that in general paralysis it is the brain, and especially one particular part, which is affected, while in locomotor ataxy it is the cord? Let us consider the effects of poisons like alcohol, lead, ergot, lathyrus, and diseased maize (pellagra). They may produce both peripheral nerve and cord changes together with brain changes in the same individual. It is the individual, his occupation, and habits which determine the seat of the morbid process. In some cases, however, the cord symptoms, on the one hand, predominate and the brain symptoms may be slight, or even absent; on the other hand—and these are the cases of lead and alcoholic poisoning which come into the asylums and are not seen in the hospitals—we have the brain symptoms predominant and the paralytic symptoms often less defined, overshadowed by the brain affection or even absent. So it is with general paralysis. Cases come into the hospitals with Argyll-Robertson pupils, marked paresis, and speech affection, but with the mental symptoms only comparatively slightly developed. Likewise

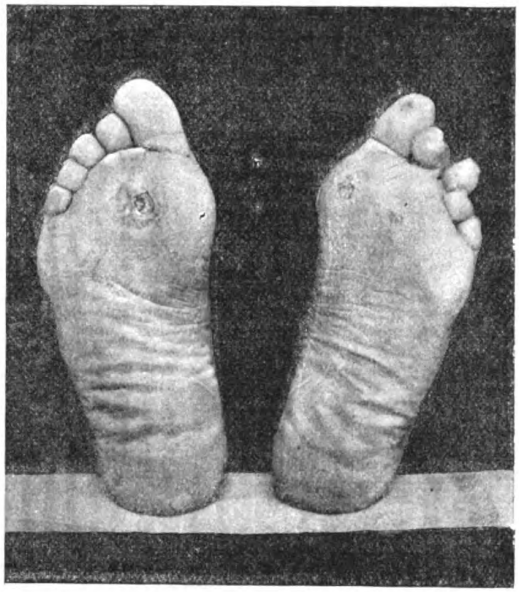
[1] Lectures I., II., and III. were published in THE LANCET of June 23rd and 30th, and July 7th, 1900, respectively.

numerous cases of tabes attend the hospitals for a considerable time and then marked mental symptoms develop, when the case is certified as tabetic general paralysis. In all these degenerative diseases we have more than one factor in operation, and I quite agree with Edinger in his opinion that *stress* will determine the initial localisation of the degenerative process. I do not know that we can learn very much about these primary degenerations from experiments upon animals. However, much valuable knowledge undoubtedly has been obtained by the effects of poisons in producing acute or subacute degeneration of the neurones. Certainly animals have not been inoculated with syphilis. Tuczek, who first described the changes in the nervous system in ergotism and pellagra, was unable to produce these degenerative processes in animals by long-continued feeding with diseased rye, nor have other experimenters been successful with injection of ergotin and sclerotic acid. Likewise, alcohol and lead administered to animals do not produce the characteristic clinical and pathological conditions found in man. Moreover, many other poisons, the products of micro-organisms, produce different effects in man to those produced in animals. The close association of tabes and general paralysis is to my mind clearly shown by the fact that there are a considerable number of cases in which it is difficult to say whether they should be classed from their clinical symptoms and morbid changes found post mortem as tabes with mental symptoms or as cases of tabetic general paralysis. I have seen cases in which the diagnosis of general paralysis has been made because the patients were suffering with mental symptoms indicating that disease—viz., maniacal or melancholic symptoms and delusions associated with ataxy. After a time the mental symptoms have cleared up and the case has then been called tabes. Again, I have frequently seen cases of tabes which begin with all the characteristic phenomena of this disease and then terminate in progressive dementia and paresis, dying in an asylum from general paralysis. Symptoms which are looked upon as characteristic of tabes, such as grey atrophy of the discs, are not at all uncommon in general paralysis (10 per cent.) and I have met even with symmetrical perforating ulcers (Fig. 1) and Charcot's joint. I have recently examined 12 cases of the tabetic form of general paralysis in which the changes in the brain (naked-eye and microscopical) were characteristic of general paralysis and the cords showed the characteristic lesions of tabes. My experience would point to about 10 per cent. of the cases of general paralysis being associated with tabetic cord lesions. The etiological relationship of the two diseases is almost identical; both affections occur usually in the prime of life, are more prevalent among townspeople, affecting men of all grades of society, but as a rule only women of the lower and lower middle class. Again, juvenile general paralysis and juvenile tabes probably occur only in the subjects of congenital syphilis and the sexes are affected with equal frequency. I have met with one case of the latter and 30 cases of the former with 24 post-mortem examinations. In 80 per cent. of the cases of juvenile general paralysis a definite history or signs of syphilis were obtained. A considerable number of cases have now been recorded of married couples being affected with general paralysis. I have recently seen a man who had well-marked signs of syphilis who subsequently died from the tabetic form of general paralysis; his wife, who had healthy children by the first husband and none by this second, is now dying from general paralysis. Dr. T. Buzzard related a similar case at the discussion referred to.

SOME FACTS CONCERNING THE ETIOLOGY AND PATHOLOGY OF GENERAL PARALYSIS.

There are two types among the juvenile general paralytics: (1) in which the syphilitic poison seemed to have produced an arrest or impaired development of the higher centres, so that the child was weak-minded or imbecile; and (2) in which the child was mentally capable, in some cases highly intelligent and active-minded. The cause of the degenerative process in most of these cases seemed to be associated with the increased psychical *activity*, which must of necessity develop after puberty, when new emotions, objects, and ambitions are awakened by the sexual instinct and the struggle for existence. That psychical activity plays a very important part in this disease as affecting adults is clearly shown by the following facts: the sufferers are nearly all townspeople with a quick reaction time, ambitious and energetic, and the first symptom of the disease may be undue mental activity, approaching now and then to that of genius. It might be argued that a large number of these people are from the lowest and least educated classes; still, I am convinced that they belong to the mentally active class. Not only do we find the people affected possess mental activity but also usually sexual proclivity, and it is very difficult to decide whether the increased sexual activity so frequently met with in the early stages of this disease is a cause or an effect. But all forms of mental excitement are associated with fatigue and too often the neurasthenic condition which precedes the more definite symptoms of the organic brain affection leads to alcoholic excesses, and it is often very difficult to decide whether a case is one of *mania à potu* or of general paralysis. The two are frequently combined, and if so the disease runs a more rapid course. The researches of Bonhofer and Trömner have shown that acute degenerative changes may occur in the cortical cells as a result of acute alcoholism; and I have found, and can therefore agree with Jolly, that in cases of alcoholic dementia there exist organic changes affecting the superficial layers of the cortex and causing atrophy of the tangential fibres. It is, then, probable that although alcohol will not of itself produce general paralysis it will materially increase the rapidity of the progress of the disease. Kraft-Ebbing sums up the etiology of this disease in two words—"civilisation" and "syphilisation"; and he brings forward very strong arguments in favour of the important rôle of syphilis. The recent report for the year 1899 by Dr. J. Warnock from the Egyptian Hospital for the Insane entirely upsets this view. He states: "During 1899 57 general paralytics were under care out of a population of 500. The large towns furnished nearly all the cases of this disease, and syphilis was known to be the cause in 29 of the 35 cases admitted. 24 of them were native Egyptians."

FIG. 1.



Why should general paralysis be associated especially with atrophy of the frontal and central convolutions? It has already been pointed out that in these regions venous stasis is most likely to occur. Psychical activity is associated with hyperæmia of the brain and congestion; those portions of the brain in which the mechanical conditions favour this congestion in the most marked degree would be more likely to suffer from the effects of the congestion. The whole cerebrum and spinal cord waste in general paralysis, but certain regions are earlier and more markedly affected than others—viz., the frontal and central convolutions (*vide* Figs. 2, 3, and 4). These are the regions whose veins drain into the longitudinal sinus and in which, therefore, for reasons previously mentioned, congestive stasis is more liable to occur. If it be admitted that owing (in the majority of cases) to the influence of the syphilitic poison the durability of the nervous system has been lowered, increased psychical activity will tend to exhaustion and disturbance

FIG. 2.

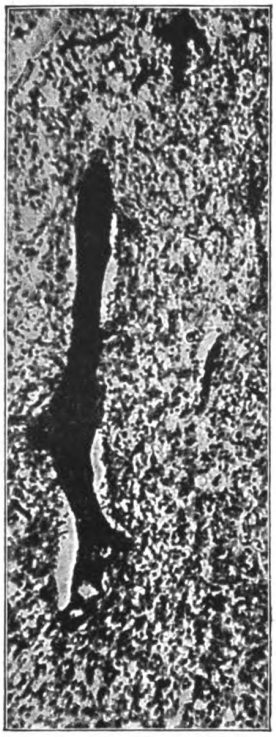


FIG. 4.



FIG. 3.

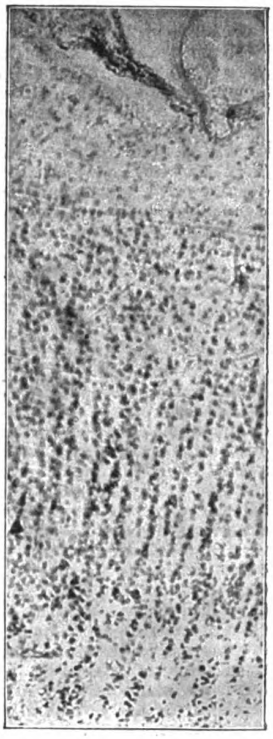


FIG. 5.

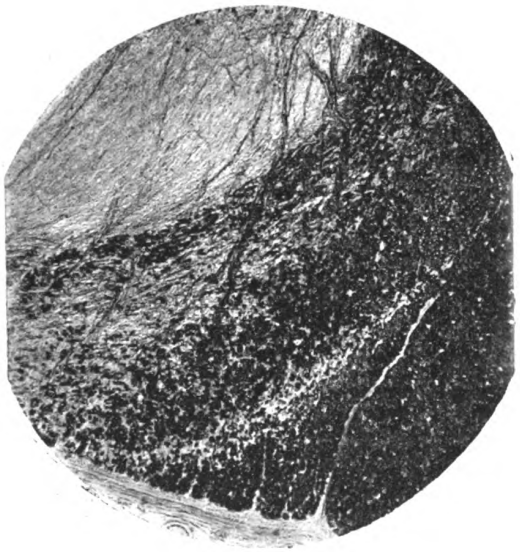


FIG. 6.

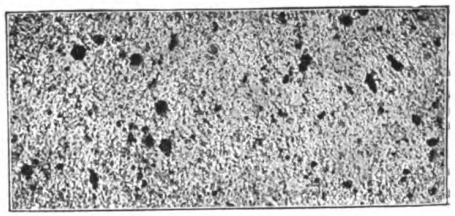
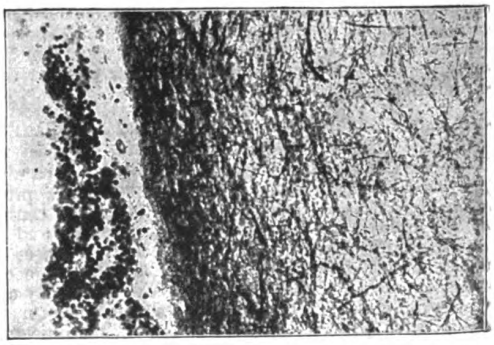


FIG. 7.



of the normal nutritional equilibrium of the neurones. But psychical activity will cause hyperæmia and congestion of the brain, and in regions where there is a tendency to stasis the congestion may persist, especially if it leads to insomnia. A vicious circle becomes established by conditions which tend, on the one hand, to perpetual venous congestion in certain regions, and, on the other hand, to increased excitability of the neurones; these factors mutually interact. It has been argued that in Mohammedan countries where syphilis is rife general paralysis is unknown.

Venous congestion (according to the researches of Waller who has shown that CO_2 increases the excitability of nerve) may lead to hyper-excitability of those regions in which the stasis occurs. Likewise there is probably an impaired supply of arterial blood to the brain for the following reasons. The experiments of François Frank show that excitation of the Rolandic area of the cortex causes contraction of the arterioles and rise of blood-pressure; observations which I have made upon the blood-pressure in general paralysis by Hill's sphygmometer entirely accord with the results obtained by Leonard Hill and Craig. There is a considerable rise in the arterial pressure above the normal and this is increased markedly during the occurrence of seizures, whether congestive or epileptiform. The blue condition of the skin and the coldness of the hands and feet of patients suffering with general paralysis suggest a small amount of blood in the arterial system and a large amount in the venous. Although we find this high arterial pressure there is seldom marked hypertrophy of the left ventricle, and I have found that if a patient has a great number of epileptiform seizures the arterial pressure falls and right heart distension and sometimes a condition of asphyxia arise, with great engorgement of the veins, and death in consequence. The heart muscle in these cases exhibits early and often extensive fatty degeneration, due to a combination of causes—insufficient oxygenation of the blood, auto-intoxication probably from fatigue products, and increased destructive metabolism owing to the much greater resistance to be overcome. Not only the heart but also the striated muscles show this change. I could not find evidence of degeneration of nerves to account for this change, neither do I believe this to be the effective cause, seeing that exactly the same changes in heart, diaphragm, and other striped muscles have been found by me in seven cases of status epilepticus.[2] Some of the latter patients prior to the fits were in perfect health. In connexion with this I may mention that the venous congestion of the brain caused by the status epilepticus produced marked changes in the cells of the cerebral cortex, changes which corresponded with the appearances presented by many of the large pyramidal cells in general paralysis and not unlike those found in experimental anæmia with convulsions. There was great swelling of the cell (œdema), disappearance or disintegration of the Nissl granules, often eccentric position of the nucleus, and dilatation of the peri-neuronal and peri-vascular lymph spaces. Moreover, epilepsy frequently ends in dementia, and we find in such cases atrophy of the tangential super-radial and inter-radial association fibres, a condition which is always found in general paralysis even in the earliest stages before any fits occur. Dr. George Watson, who has looked over a large number of my specimens, reports that in 20 cases which he has examined he found the tangential fibres, the super-radial and inter-radial fibres atrophied in all the 16 cases of general paralysis, but that of these 16 none showed any recent change by the Marchi method; consequently we must suppose the atrophy was of some considerable standing, and probably years before the patient comes to an asylum a regressive change has commenced in these latest morphologically-developed structures. Occasionally I have been able to show that the tangential fibres of Broca's convolution are more atrophied on the left than the right side when the left hemisphere has weighed less than the right. The four cases in which he did not find atrophy of the association systems mentioned were primary degenerations of projection systems—viz., two of amyotrophic lateral sclerosis, one of combined sclerosis, and one of universal syphilitic arteritis. In a considerable number of the cases of general paralysis there was recent degeneration of the radial fibres, especially in those cases where there had been epileptiform seizures. The perivascular lymphatics also contained the fatty products of degeneration. We can thus understand that a number of contributory factors may arise to establish a vicious circle which is continually enlarging until a fatal termination occurs. Such factors may not only lead to rapid destruction of the neurones or nervous elements, but by irritation lead to a proliferative formation of the neuroglia cells, and we can account for the ependymal granulations almost invariably met with in this disease by the irritation caused by an altered cerebro-spinal fluid. They are, however, not found exclusively in general paralysis.

[2] Vide Archives of Neurology, p. 493.

GENERAL PARALYSIS A PRIMARY DEGENERATION.

The morbid process in general paralysis has been considered by Mendel and many other authorities to be a primary meningo-encephalitis. I would advance the following reasons for considering it a primary degeneration of the neurone with secondary meningo-encephalitis:—1. Its relation to tabes dorsalis and the probability of its being the same morbid process due to the same cause (syphilis) commencing in a different part of the nervous system. 2. The existence of the Argyll-Robertson pupil in the majority of cases. 3. The existence of grey atrophy of the discs in a number of cases, much more frequent than can be explained by mere coincidence. The last two symptoms cannot be explained except by a primary atrophy. 4. The evidence of a wasting of the whole nervous system, but out of all proportion to the evidences of inflammation affecting some parts more than others. This wasting must be primary in the nervous system and not secondary to bodily disease, for in no cachectic disease or even in starvation do we find extensive wasting take place. 5. The thickening of the pia-arachnoid membrane is proportional to, and corresponds with, the degree and locality of the atrophy; so it is with tabes. 6. In many cases of tabes, especially those with mental symptoms, atrophy of the tangential and super-radial association fibres of the brain are found quite similar to but often in different situations to general paralysis. 7. In diseases with well-marked meningo-encephalitis, about which there can be no dispute that it is primarily an inflammatory process, we do not find this extreme atrophy. In illustration of this I would call attention to two cases of African lethargy which I had the opportunity of examining and of describing[3] for the first time the histological changes in the central nervous system. Throughout the whole central nervous system in both these cases there was evidence of a profound and widespread chronic inflammatory process. The whole of the perivascular lymphatics were choked up with mononuclear leucocytes. The pia-arachnoid membrane was similarly infiltrated, indicating the existence in the cerebro-spinal fluid or blood of an irritant poison the nature of which I was quite unable to discover, although the most painstaking efforts were made by myself and Dr. Bulloch, both post mortem and during life, to discover a micro-organism. The only abnormal condition that was found in the blood of these negroes, as also in a previous case of Dr. Stephen Mackenzie's (the tissues of which by his courtesy I was able to examine and observed similar histological changes), was the existence of the embryo filaria perstans in the blood. The evidence of this being the cause of the symptoms or of the morbid process found in the nervous system is wholly inadequate. Although there was this chronic inflammation, yet throughout the nervous system there was far less cellular atrophy and nerve-fibre destruction, even in the most advanced case, than one meets with in quite the early stages of general paralysis. In fact, the brains showed little or no atrophy or change to the naked eye; and microscopically there was very little disarrangement of Meynert's columns in one case. The weight of the brains showed little deviation from the normal in one case and none in the other, whereas the bodies were extremely emaciated in both cases. I think this evidence tends to show that there is a primary atrophy in general paralysis and that the inflammatory and vascular changes are secondary complications. Primary degeneration of the neurones may affect the afferent, efferent, or association systems, singly or combined, and in the tabetic form of general paralysis all three may be affected.

[3] Brit. Med. Jour., 1899.

PRIMARY DEGENERATION OF THE AFFERENT SYSTEM OF NEURONES.

In tabes we have an example of degeneration of the

afferent projection system which, for reasons already mentioned, is probably due to nutritional failure on the part of the posterior spinal neurone, by which parts most remote from the centre of nutrition undergo a regressive atrophy. The cells of origin seldom undergo marked changes unless pigmentation can be considered evidence of degeneration, but there seems to be some reason why the cells of the posterior spinal ganglia should be able to maintain a trophic independence. Possibly it may be the existence of the capsule, or possibly the cells receive stimuli from the viscera by sympathetic branches, or, lastly, it may be that they have become more or less independent of the influence of stimuli by the impulses from the periphery travelling directly across the T-shaped process. Again, after section of the posterior spinal roots I did not find any change in the posterior spinal ganglion cells. Moreover, we know that in amputation cases of long duration, although the nerves and posterior roots waste, the spinal ganglion cells undergo little change. It is particularly the central projection of the neurone that undergoes the degenerative process in tabes, and from the experimental evidence above adduced this would not suffice to cause changes in the cell. The peripheral portion of the neurone—viz., the sensory peripheral nerves—have been shown to undergo regressive atrophy and degeneration from the termination towards the centre. We know that the peripheral portion of the T-shaped process is ensheathed by the hollow mesoblastic cells forming the sheath of Schwann, and which we have shown for many reasons probably exercises an indirect trophic influence upon the long axis-cylinder process.

Again, in tabes, the idea that a sclerosis of the posterior columns produced by an irritative proliferation of the glia tissue is the initial morbid process causing a secondary degenerative atrophy is the result of confusion of cause and effect. The overgrowth of the glia tissue is the result of, and proportional to, the primary progressive atrophy of the nervous elements, for we cannot suppose that the glia tissue would electively destroy exogenous fibres, leaving the endogenous intact. In support of this statement I show a photomicrograph of the sixth cervical segment of the spinal cord of a monkey in which the third, fourth, fifth, sixth, and seventh cervical and first, second, and third dorsal posterior spinal roots were cut on the left side. The eighth cervical, which especially supplies the hand, was not cut. This animal was kept alive six months, and it was after a time very difficult to determine upon which side the operation had been performed, as it used each hand equally well, thus behaving entirely different to the animals which had had all the roots cut.[4] The result of this operation is shown in two bands of sclerosis in the posterior column on the side of the divided roots, with an area of normal fibres corresponding to the undivided root lying between (Fig. 5).

It will be observed in this photo-micrograph of the sixth cervical segment that fine fibres are passing across the area of sclerosis to the grey matter of the posterior horn; in not a single section of all the segments of the upper part of the cord could I find the absence of these fibres, which could only be terminal branches of the undivided eighth root. This points to the probability of the overlapping of roots of spinal segments. It certainly shows that sclerosis does not cause atrophy of fibres, for here is a band of fibres lying between two definite bands of sclerosis with delicate fibres passing across the sclerosed area. Obersteiner has maintained that the degeneration of the posterior columns is due to a meningitis affecting the roots at their entry, thereby compressing the accompanying nutrient vessels; but there are so many facts against this theory which will occur to everyone upon consideration that I need not mention them. Suffice it to say that one does not find this same degeneration of the posterior columns in obvious cases of meningitis, syphilitic in origin. Obersteiner figures specimens stained by the Pal method showing as the fibres pass through the membranes to enter the cord disappearance of the staining. This, however, must not be taken as indisputable evidence of degeneration at this particular point because the anterior roots sometimes show a similar defect in staining upon their emergence from the cord. Moreover, the meningitis theory does not explain the changes in the peripheral nerves met with in this disease, nor does it explain the affection of the posterior roots as far back as the ganglion, leaving the anterior roots quite intact. That some anatomical condition of the circulation in the posterior columns may act as a contributory factor, as occurs in the frontal and central convolutions in general paralysis, is possible, especially when one considers the effects of cerebral tumour in the production of degeneration limited to the posterior columns (Hoche, Batten).

[4] Mott and Sherrington: Proceedings of the Royal Society, 1895.

PRIMARY DEGENERATION OF THE EFFERENT SYSTEM.

In amyotrophic lateral sclerosis we have an example of a systemic degeneration affecting the motor efferent system of neurones from cortex to periphery. I have had the opportunity of examining three typical cases of this disease; in all three I have found degeneration of the whole efferent system comprising the cortico-spinal neurone and the spinal muscular neurone, the degeneration being limited to these neurones alone. This was pointed out by Sir William Gowers in the first edition of his manual. Certain groups of the motor spinal neurones we know from clinical and microscopical observation are affected before others—e.g., the postero-external group in the eighth cervical and first dorsal segments of the cord is especially proved to be the seat of the earliest and most severe change in a large number of cases. This is a group of neurones which presides over the small muscles of the hand. I am of opinion that the morbid process in these systemic degenerations commences at the periphery of the neurone and extends back towards the trophic and genetic cells of origin, finally, in prolonged cases, causing the destruction of the cells themselves. The arguments I would advance in favour of this view are that in some cases of amyotrophic lateral sclerosis degeneration could only be followed as far as the pyramids, in others to the crus cerebri, while in other cases, published by Charcot and Marie, Kahler and Pick, and Kowjenikoff, the atrophy had extended to the pyramidal cells of the cortex. In the case referred to by the last observer there was even atrophy of the motor convolutions with thickening of the membranes; this I have also observed in one of the three cases I have above mentioned. In two of the three cases which I have examined there was not only degeneration, discoverable by the Marchi method, of the whole cortico-spinal neurones, but of the lateral branches which pass off from the axis-cylinder processes to enter the corpus callosum (*vide* Fig. 6). This degeneration of the motor fibres in the corpus callosum strongly favours the primary degeneration theory of the origin of the disease being a nutritional degradation of the neurones themselves independent of external vascular or supporting tissue changes. Moreover, in these cases I have found that the tangential, super-, and inter-radial systems of fibres were intact (*vide* Fig. 7). Now, if it were any external condition these neurones would have suffered with the motor neurones. Senator published a case of typical amyotrophic lateral sclerosis in which there was no degeneration found in the pyramidal tracts. We can only explain the symptoms by supposing that there was interruption between the cortico-spinal and spinal muscular neurones, either a failure of junction between the two, or possibly, in view of the opinion of von Monakow and of the recent interesting observations of Schäfer, an atrophy of intermediate cells (of Golgi) (*vide* Fig. 8). Schäfer is of opinion, based upon observations made by the Marchi method on spinal cords of animals on which he had performed hemisection of the spinal cord, that the fibres of the pyramidal tract do not end in the terminal arborisation around the anterior horn (spino-muscular neurones), but are in connexion with intermediate cells situated at the base of the posterior horn; if this doctrine be true a voluntary motor impulse will pass through three sets of neurones instead of two. There is always a considerable amount of cellular atrophy at the base of the posterior horn in amyotrophic lateral sclerosis, therefore the appearances presented by this disease do not negative this theory.

DEGENERATION OF AFFERENT AND EFFERENT SYSTEMS.

Both afferent and efferent tracts of the spinal cord may undergo degeneration, giving rise to the condition known as "combined sclerosis" which is met with in various forms of grave anæmia and in pernicious anæmia, first thus described by Lichtheim and Minnich, also in ergotism, pellagra, and lathyrism. This degeneration cannot be produced experimentally in animals, and we must suppose that some auto-intoxication occurs by which a progressive degeneration affecting primarily the long tract afferent and efferent systems in the cord takes place. I have had the opportunity of examining microscopically three cases of combined sclerosis with grave anæmia, and I found that the process of degeneration was not limited to the spinal cord. In two

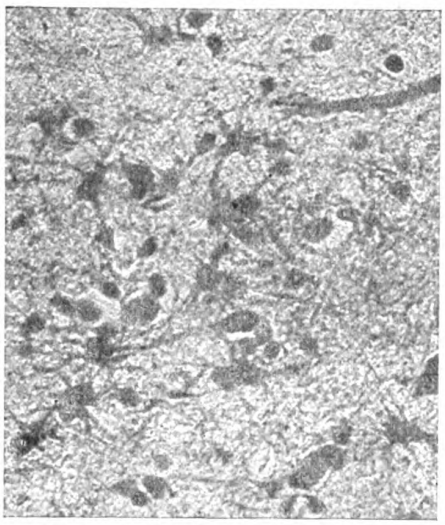
cases which I examined by the Nissl method there were marked changes in the cortical pyramidal cells, and when examined by the Marchi method all these cases showed degeneration in the whole pyramidal system from the cortex downwards, although it was more marked and extensive in the spinal cord than in the pyramid and pons. Likewise, the cells of Clarke's column showed in two cases examined by the Nissl method degenerative changes, and both ventral and dorsal cerebellar tracts were extremely degenerated. The changes, however, in the posterior spinal ganglia were but slight, probably for the same reasons as I have mentioned in referring to tabes.

A valuable paper on Sub-acute Combined Degeneration has recently appeared in *Brain* by Batten, Russell, and Collier. 12 cases are narrated and seven necropsies with microscopical examinations. The authors are of opinion that the disease is a degeneration due to a toxic agent in the blood.

POLYNEURITIS.

Multiple polyneuritis occurs as the result of toxæmia. The poisons which give rise to the condition are numerous, but by far the most common is alcohol, and it is about this that I shall speak more particularly. Alcohol affects not only the peripheral nerves but the brain too, where it produces degenerative changes accounting for the symptoms manifested by the patients during life. A consideration of the extent of surface of the motor and sensory neurones shows that relatively the portions covered with the myelin sheath and sheath of Schwann, as compared with the rest of the neurone, are enormous. For it is obvious that the neurones supplying sensation to the soles of the feet and the motor neurones supplying the muscles of the feet are from three to four feet long, and if we admit that the trophic centres are in the cells of origin at the lower end of the spinal cord, then it is quite obvious that parts so remote from the trophic and genetic centre will suffer from nutritional failure caused by the insidious action of toxic

FIG. 8.



substances such as alcohol. As the effects of the poison become more marked so the functional defect in sensation and movement travel up the legs towards the centres, so that we have in peripheral neuritis an anæsthesia progressing in the manner one puts on a stocking, and as sensation returns in recovery it proceeds as one takes off a stocking, except that there is not a sharp upper border. This would quite accord with the fact that the parts most remote from the centres of nutrition are the first to be affected and the last to recover. Very probably also the parts most remote from the centre of circulation, the heart, are more liable to be affected. Thus, the extremities of the limbs are most affected as regards movement and sensation, and it seems that mineral poisons, arsenic, lead, &c., and alcohol, which are taken into the system for some time before effects are produced, act more particularly on the peripheral nerves. There is very little evidence in these cases of the poison producing interstitial inflammation, neither do we find changes sufficiently marked, as a rule, in the ganglion cells to account for the symptoms. The earliest and most obvious change is a proliferation of the nuclei of the sheath of Schwann, and this condition may be found before microscopical evidence exists of the degeneration of the myelin sheath, as revealed by the Marchi method. This does not, however, show that changes have not taken place in the myelin sheath, for the following reasons. The products of degeneration, we know from experimental section of the nerves, are rapidly absorbed and are by no means so obvious as in the central nervous system. Again, a chemical change may have taken place in the protagon, which has not advanced to a stage in which a non-phosphoretted fat, essential for the Marchi reaction, has been produced. We know that for at least four days after section of the nerve the Marchi reaction is not given, and yet we have no reason to believe that protagon has not been undergoing a chemical change during that period. Again, the nerve fibres are not all affected simultaneously, some fibres being affected more than others. It may be asked, if the poison, which has been accumulating in the system and producing its toxic effects on the nervous system, acts upon the whole neurone, why are changes not seen throughout the whole neurone? and why should the poison not be the effect of irritation of the chain of tubular mesoblastic cells which surround the axis-cylinder process of the neurone? If it were so there is no reason why it should not affect the nerves of all parts of the body equally. I conceive that this proliferation of the nuclei of the sheath of Schwann is due to a disturbance of the normal physiological nutritional interrelationship between the neurone and the cells which ensheath its axis-cylinder process. It is a vital reaction on the part of these cells to the progressive nutritional failure of the neurone which will eventually terminate in destruction of the essential conducting axis-cylinder. In fact, we know that this takes place when a nerve is cut, and it is a provision for repair; therefore it is wrong to look upon this proliferation of nuclei of the sheath as evidence of irritative effects of the poison, but rather as an attempt to repair the destruction caused by the poison.

In three cases of alcoholic neuritis which I have lately examined in conjunction with Mrs. Hamilton Williams, M.B., it was found that many of the nerves did not show very marked evidence of degeneration by the Marchi method; there was, however, considerable nuclear proliferation of the sheath of Schwann, especially marked in the nerves of the lower extremities. In one case in which there was complete paraplegia the ganglion cells of the lumbar-sacral spinal cord showed well-marked chromolytic changes; the Nissl granules in many of the cells of the anterior cornua had entirely disappeared; the nucleus was eccentric and the processes broken off; and some of the cells were vacuolated (*vide* Figs. 9, 10, 11, and 12). Marked degenerative changes were also observable in nearly all the nerves of the limbs by the Marchi method (*vide* Figs. 13 and 14).

From previous experience and from the electrical reactions which the muscles gave during life I should conclude that a great number of the cells would recover under favourable circumstances. The changes in most of the cells resembled rather the condition which one would find after section of a nerve, the reaction phase, mentioned in Lecture II.; in fact, when we consider it, the condition is really very much the same as that produced by section, for the axis-cylinder processes of the sensory and motor nerves have in advanced cases died for a considerable part of their extent, but under favourable circumstances, especially if the poisonous influence be removed and the nutrition of the muscles be maintained by appropriate treatment, there is no reason why, the same as in section of a nerve, regeneration should not take place. The great thing to remember is that the joints should not be allowed to become stiff or the muscles inactive. Passive movements, massage, and galvanism will stimulate the neurones and hasten regeneration, for we have already had abundant evidence to show the important influence stimulus exercises upon the metabolism of the neurones and the degenerating and atrophic effects of non-stimulation. In two of these cases, in which there was marked fatty degeneration of the heart, we found fatty degeneration of the fine myelinated fibres of the vagus (*vide* Fig. 14).

Examination of the brains of all three cases showed a certain amount of atrophy of the tangential systems of fibres, accounting for the dementia which existed in all three cases. There were also changes revealed by the Nissl method in the cortical pyramidal cells, but seeing that there was no degeneration discovered by the Marchi method in the

FIG. 9.

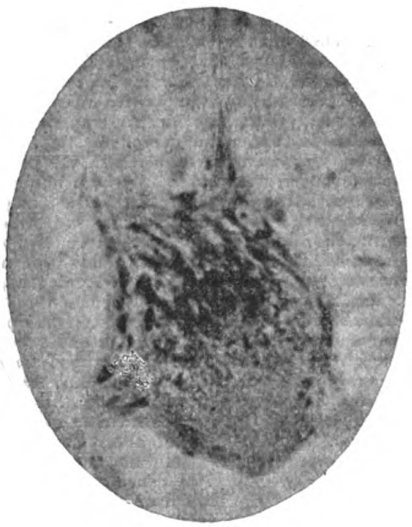


FIG. 10

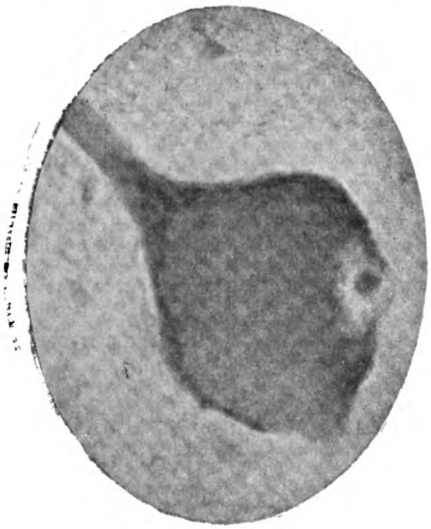


FIG. 11

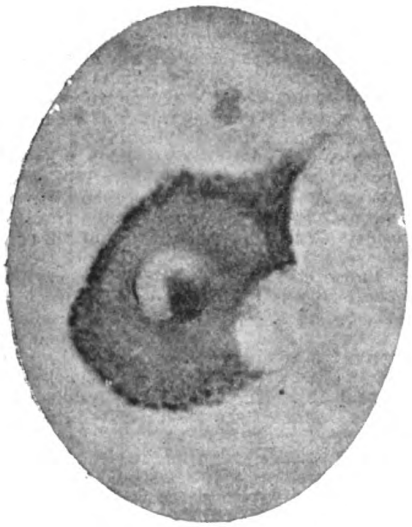


FIG. 12.

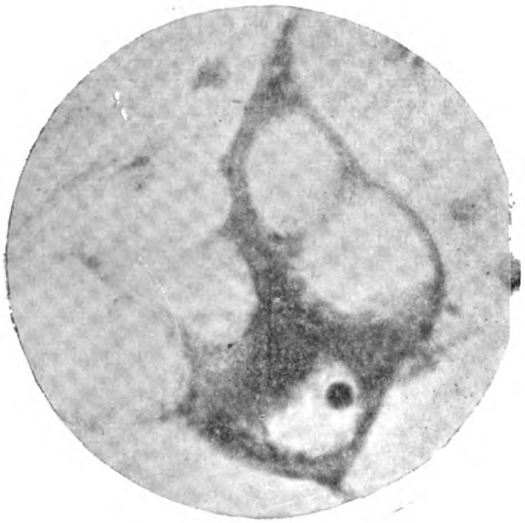


FIG. 13.

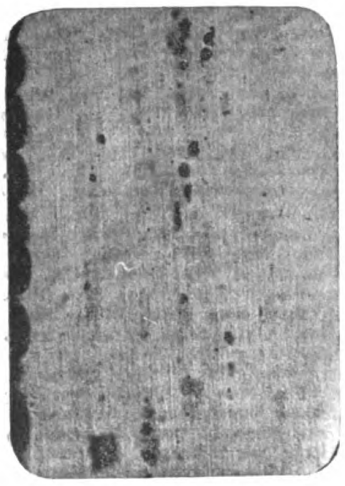


FIG. 14.



spinal cord we cannot assume that these were more than of a functional nature. In one case there were marked congestion and microscopical intra-cerebral hæmorrhages. The condition of the cortex could not be mistaken for general paralysis, for there was not the same overgrowth of glia cells or atrophy, nor was there the same disappearance of Meynert's columns so characteristic of the latter disease.

RELATION OF STIMULUS TO DEGENERATION OF THE NEURONE.

Structure and function are mutually reciprocal and interdependent and we know that a structure which is not used will gradually lose its function, while its nutrition will also suffer and in time atrophy may occur. Consciously and unconsciously a continuous stream of impulses is pouring into the nervous system from without by the sensory channels, which are the avenues of experience and intelligence, and our bodily and psychical life depends upon the existence of such stimuli.

Excess of normal stimulation of itself is seldom the cause of organic disease, although we have examples of psychomotor paralyses in the palsy affecting scriveners, typewriters, pianoforte players, violinists, hammer-men, &c., but whether this is due to an actual degeneration or to a functional depression is not known. If, however, by excessive exercise such a disturbance can take place without any other apparent cause, then undoubtedly stress acting upon structures in a state of nutritional deficiency will lead to a disturbance of the normal physiological equilibrium and a progressive degeneration of those structures which are most remote from the centre of nutrition. Increased functional activity of a part, however, is associated with increased blood-supply, and if the blood contains a toxic substance a larger amount of that toxic substance will be carried to the functionally active part, so that whatever benefit might arise in the way of repair from the additional amount of blood will be neutralised by the excess of poison. Numbers of instances have occurred in my experience in which stress seemed to determine the seat of the degenerative process. I will give a few illustrations. 1. A policeman who was affected with tabes commencing in the arms turned out to be a mounted policeman, and when I pointed out to the students the unusual situation he immediately volunteered the information that the pains began in the arm in which he held the reins. 2. A case of amyotrophic sclerosis affecting a cooper began in the muscles of the right arm with which he wielded a four pound hammer. 3. A man who had alcoholic dementia, paralysis, and wasting of the muscles of the upper extremities, the lower being unaffected, was shown to me as a case of progressive muscular atrophy. I found that he was a porter and the symptoms he presented were determined by his occupation of carrying boxes all day on his shoulders. This patient completely recovered. I will not detain you with a number of further examples, but asylum experience only too well demonstrates the importance of undue mental excitement in causing degeneration of the higher structures of the brain, as in general paralysis. Professor Edinger has emphasised the important influence of stress in determining the seat of nervous degeneration, and his philosophical writings on the subject are worthy of careful consideration; he has, too, endeavoured to prove it experimentally.

Voss was unable to produce degeneration in the spinal cord in rabbits, guinea-pigs, and dogs by injections of pyridine sufficient to produce a severe anæmia; but Edinger repeated these experiments, varying them by inducing stress upon the nervous system by various means, one of which was to place the animals (rats) in a wheel cage. He claims then to have shown: (1) that abnormal stress can produce in animals a degeneration of the posterior columns; (2) that it is possible to produce a predisposition by artificial anæmia by which the influence of stress of much less degree and of much shorter duration can cause this posterior column degeneration; and (3) that this disease stands in close relationship, both as to localisation and cause, to the tabetic degeneration of the posterior columns in man.

RELATION OF HEREDITY TO DEGENERATION OF THE NEURONE.

Of all the causes of nervous disease hereditary predisposition stands pre-eminently first. It may be paternal, maternal, convergent, from grandparents, or, according to Weissmann's theory of the continuity of the germinal plasm, there is no limit to the remoteness of the origin of a neuropathic taint. This doctrine must have been known to the high-born Romans who carried the masks of all their ancestors upon public occasions. In fact, in Lucretius it is stated: "Sometimes, too, the children may spring up like their grandfathers, and often resemble the forms of their grandfather's fathers, because the parents often keep concealed in their bodies many first beginnings mixed in many ways, which first proceeding from the original stock one father hands down to the next father, and then from these Venus produces forms after a manifold chance and repeats not only the features but the voices and hair of forefathers; and the female sex equally springs from the father's seed, and males go forth equally from the mother's body, since these distinctions no more proceed from the fixed seed of one or other parent than our face and bodies and limbs. Again, we perceive that the mind is begotten along with the body and grows up together with it and becomes old along with it." The history of the Roman emperors from Julius Cæsar, one of the greatest geniuses the world has seen, but an epileptic, shows how the endeavour to keep the sacred Julian blood for the dynasty culminated under the influence of a depraved environment in the criminal madness of Tiberius, Messalina, Caligula, and Nero. Strictly speaking, it is the tendency to nervous disease rather than the disease itself which is inherited, and this is frequently spoken of as neuropathic or neuro-psychopathic taint. There are, besides, a number of inherited diseases which, although rare, are of great interest, inasmuch as they affect members of a family, the disease frequently commencing in each individual at about the same age. These are termed "family diseases" and include hereditary ataxia (Friedreich's disease), amaurotic idiocy, hereditary chorea, and paramyoclonus multiplex, an interesting family of cases of which I have recently seen. Two boys and two girls were affected with epilepsy and this clonic choreiform spasm of the muscles; in each it commenced at the age of 15 years. There was no direct hereditary history in the parents of any nervous affection, but an uncle suffered from epilepsy. Presumably, therefore, ancestral germinal plasm possessed the neuropathic predisposition, which possibly under some influence which I was unable to ascertain—e.g., some acute specific fever affecting the members of the family or possibly alcoholism or syphilis in the parents—had supplied the contributory factor to develop the disease. In a healthy nervous system we must suppose that the balance of potential is high and that the sense of fatigue is the natural indication for sleep and repose by which nervous energy may be recuperated. The neuropath may be conceived to possess in some portion of his nervous system communities, groups, and systems of neurones, either of defective durability or with an inherited low potential, readily becoming exhausted and especially liable to functional depression, and which under the influence of contributory factors such as toxic conditions of the blood or undue stress undergo premature degeneration. To explain the inherited neuropathic tendency morphologically we may suppose that there is an inherent defect in the germinal plasm which is concerned in the formation of the neurones.

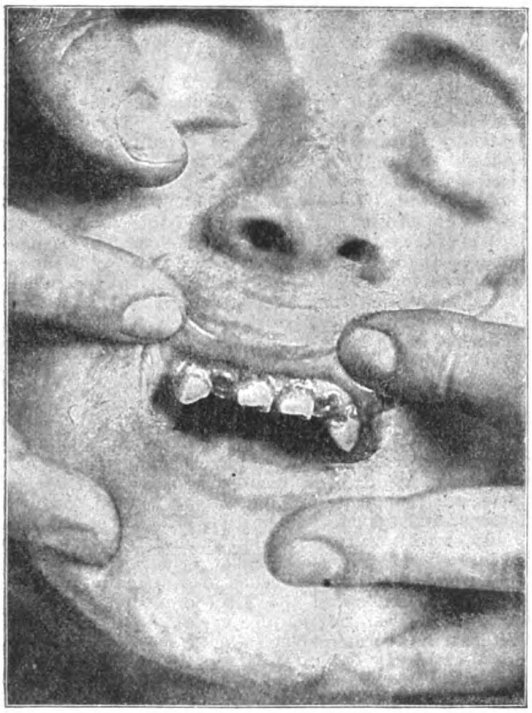
Certain acquired conditions in the parents, affecting them especially at the time of conception, are liable to produce this defect in the germinal plasm; they are acute and chronic alcoholism, syphilis, and tuberculosis. Statistics by Mr. Tredgold relating to 40 cases of congenital imbecility, although not numerous, are valuable because reliable, and in course of time, when he has completed the investigation of this question in all the London county asylums, as he has done at Claybury Asylum, will be of still more value. As far as they go they show that the most important cause of congenital imbecility is inherited neuropathic taint (70 per cent.), generally in some form of insanity,[5] but that alcoholism, syphilis, and tuberculosis are important contributory factors. My own researches on juvenile general paralysis, of which I have now had the opportunity of examining 50 cases, show: (1) that the disease affects both sexes equally; (2) that it may commence at any age from eight to 23 years,[6] according

[5] It is very interesting to note that two of the cases of imbecility with congenital syphilis have become juvenile general paralytics, and in neither of these cases was there a family history of insanity which is independent corroboration of my observations, as neither of these cases are included in my 30 cases.

[6] It is possible that some of the cases occurring in adults in which no history of acquired syphilis can be obtained may still owe the disease to an inherited taint. It is not necessary that they should show external signs of syphilis, for many of the cases which I have recorded were proved to be born of syphilitic parents although manifesting themselves no external signs of disease.

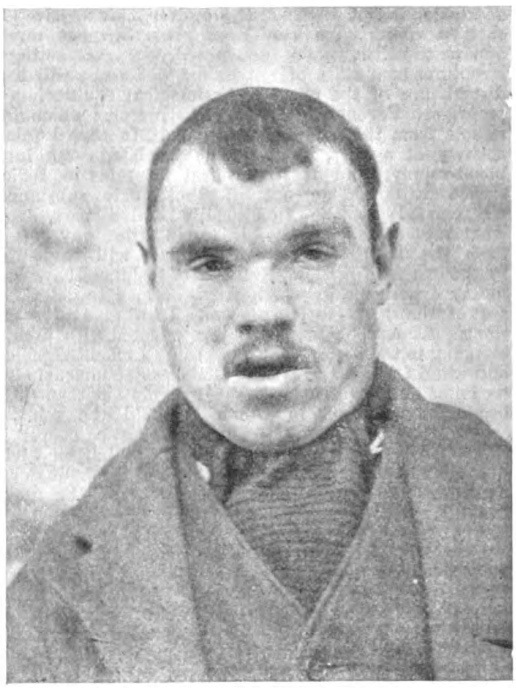
to my statistics; and (3) that in 80 per cent. of the cases there were either undoubted signs or history of congenital syphilis and that in 20 per cent. it could not be excluded. Therefore we may assume that the effect of syphilis on the germinal plasm on one or both of the parents is the essential cause. In the greater proportion of the cases I was unable to obtain a history of insanity or nervous disease in the family, although it was remarkable that in four of the cases and also in one hereditary case of tabes the fathers suffered with general paralysis. The notes of their cases give no evidence of their having acquired syphilis, yet in four out of the five cases there were distinct and well-marked signs in their offspring. From a very careful study of the family histories of these cases I was led to believe that the germinal plasm of the parents, particularly of the father, may be very unequally affected by the syphilitic poison, and it seemed to me that the inherited syphilis was not infrequently the result of spermatic infection only. Many of the mothers never had any illness that they knew of, yet some of their children showed syphilitic teeth, chorio-retinitis, rhagades, and other characteristic signs, while

FIG. 15.



other children appeared perfectly healthy (*vide* Figs. 15 and 16). Generally, however, the history was—miscarriages, still births, syphilitic children, and healthy children in succession. In one family there were three children; the eldest had no external signs of congenital syphilis, but a syphilitic liver was found post mortem. He was an able-bodied seamen, but at the age of 20 years broke down with general paralysis. I consider that this was induced by stress, for he was on duty in the Mediterranean just at the Fashoda crisis and the disease commenced by a fit. The next brother had a characteristic syphilitic nose and teeth but was earning his living as an artisan. The youngest boy is an imbecile in an asylum (*vide* Fig. 16), with characteristic objective signs of congenital syphilis. Another family was interesting in this respect that the eldest daughter of a mother who gave a history of infection showed no signs of syphilis on the body yet died from general paralysis. The next daughter presented well-marked external signs, but at present is healthy otherwise. The majority of the 30 cases gave some interesting details bearing upon this question. Another factor which seemed to have an important bearing upon the occurrence of general paralysis in children of parents suffering with syphilis was the existence of chronic alcoholism in one or both the parents. Thus we see impaired vitality of specialised structures may result from devitalising influences acting upon the germinal plasm of one or both the parents. With regard to the toxic influence of alcohol on the nervous system I have been particularly struck with this fact, that although at least 20 per cent. of the people admitted into the London county asylums yield a history of intemperance as the cause of their mental symptoms, yet I only once remember seeing in the post-mortem room of the asylums a case of well-marked cirrhosis of the liver with ascites. That was in the case of a person celebrated in the police-courts who was convicted nearly 400 times of drunkenness before she was found to be certifiable as incapable of taking care of herself. One must suppose, therefore, that these people who come into the asylum are very susceptible to the toxic influence of alcohol and long before they could drink sufficient to produce cirrhosis of the liver symptoms of alcoholic poisoning of the nervous system arise. In fact, it would rather show that a person who can drink sufficiently long to get a hob-nailed liver has inherited a nervous system of unusual stability. To the mentally unstable alcohol is a poison, and I have been particularly

FIG. 16.



struck with the fact that it acts even in moderate quantities as a poison on women at the climacteric period when potential is low in the nervous system. Another class of individuals often potential to whom alcohol is unquestionably dangerous is the neurasthenic. The sense of fatigue, whether of mind or body, is physiological and protective. It should be responded to by rest; but the active-minded town-dweller who is suffering from nervous exhaustion takes spirits to enable him to make up the deficient energy. He draws, so to speak, a bill on his health which must always be renewed at a higher rate of interest. My own observations and those of Mr. Tredgold, the technical scholar, entirely agree with the observations of numerous authorities who have shown that epilepsy, insanity, imbecility, idiocy, mental weakness, and loss of moral control and will power are frequently the heritage of children born of drunken parents.

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DESCRIPTION OF ILLUSTRATIONS.

FIG. 1.—Symmetrical perforating ulcers from a case of tabetic general paralysis.

FIG. 2.—Section of ascending frontal convolution from a case of general paralysis showing engorgement of vessels, disappearance of Meynert's columns from displacement of the nerve-cells, and overgrowth of glia cells.

FIG. 3.—Section of occipital lobe from same case showing practically normal appearance of the cortex. The Meynert's columns are distinctly seen and there are no vascular changes.

FIG. 4.—Case of juvenile general paralysis from which these preparations were made. Photograph shows Hutchinson's teeth and rhagades round the mouth.

FIG. 5.—Described in text.

FIG. 6.—Section of the corpus callosum from a case of amyotrophic lateral sclerosis showing large black degenerated fibres in transverse section.

FIG. 7.—Section of the superficial cortex cerebri of the Rolandic area stained by Marchi-Pal method showing the super-radial and tangential fibres intact.

FIG. 8.—Section of lower portion of grey matter showing absence of large pyramidal cells and replacement by Deiters' cells. This occurred in little isolated foci of the motor area of the cortex.

FIGS. 9, 10, 11, and 12, are photo-micrographs of cells of the anterior horns of the lumbo-sacral enlargement from a case of a woman with severe alcoholic paraplegia with extensive muscular atrophy and degenerative changes in the muscles and nerves of the legs. Magnification 600.

FIG. 9 shows a cell with commencing chromolytic change.

FIG 10 shows a cell with advanced chromolytic change and eccentric nucleus. Both of these cells resemble the appearances presented by cells after section of a nerve and the change may be due to the morbid process having caused destruction of their axis-cylinder process. They, however, are capable of regenerating the axis-cylinder process, the same as may occur after section of a nerve.

FIGS. 11 and 12 show, on the other hand, morphological changes indicating death of the trophic and genetic centre. We see in Fig. 11 a concavity on one side indicating rupture of the nuclear membrane, and in Fig. 12 there is so much vacuolation of the protoplasm of the cell as to indicate its destruction.

FIG. 13 is a section of the external popliteal nerve, stained by Marchi method. The black degenerated myelin is not very abundant because it has in great part been absorbed, but other stains—e.g., Stroebe—show that hardly any healthy fibres exist. This preparation is from the same case as the cells described above. Magnification 200.

FIG. 14.—Section of the vagus nerve from a case of acute alcoholic neuritis with hæmorrhagic encephalitis and dementia. The patient suffered with very marked signs of cardiac failure and died comparatively suddenly. Marked fatty degeneration of the heart was found post mortem. The section stained by Marchi method shows fine medullated fibres undergoing degeneration. Magnification 600 diameters.

FIG. 15.—Case of tabetic form of juvenile general paralysis which died, aged 20 years, three months after onset of symptoms. The photograph shows characteristic teeth.

FIG. 16.—Photograph of congenital imbecile with depressed bridge of the nose. He also had Hutchinson's teeth. A brother who died from juvenile general paralysis showed no such external signs.

THE EXETER DISPENSARY.—A special meeting of the governors of the Exeter Dispensary was held on June 30th under the presidency of Mr. S. Ward, J.P. It was decided to add two medical officers to the staff of the institution and it was further determined that any member of the medical staff who wished to do so should be allowed to limit the number of patients admitted under him on his day to 20 recommends, provided he did not refuse to admit any urgent cases or those of patients coming from a distance. The governor decided that for the future a trained nurse should be appointed to the dispensary. There were six applications for the posts of surgeons and on a ballot being taken Dr. Ransom Pickard and Dr. J. A. S. MacKeith were elected.

ABERDEEN HOSPITAL SATURDAY.—On Saturday, June 23rd, the fifth annual demonstration under this movement took place in what promised to be splendid weather, broken somewhat by a thunderstorm. In the forenoon there was a monster street procession from the reclaimed land north of the river Dee to Duthie Park, the route being by leading thoroughfares, and the parade being taken part in by the various friendly societies in the city, representatives of trades, cyclists in fancy costume, school-children, and others. Collections were made *en route* from the spectators, and at Duthie Park (where a charge for admission was made) an attractive programme of sports, including a brass band competition, was presented. The attendance was very large, but it will be some time before the financial result is made known.

ON THE CONFUSION OF TWO DIFFERENT DISEASES UNDER THE NAME OF RUBELLA (ROSE-RASH).

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A SUSPICION of the confusion of two different diseases under the name of "rubella" has been entertained by some of those who have had an extensive experience in the eruptive fevers of the young; but while myself suspecting the fact for several years I failed to attain conviction until the advent of an epidemic in April, 1900. These two diseases are not classified in the third edition (being the second revision), 1896, of the "Nomenclature of Diseases" by a joint committee of the Royal College of Physicians of London, but are included under the single terms of "rubella," "rötheln," "German measles," or "epidemic rose-rash." The purport of the present communication is the establishment of the proposition, on definite and analysed grounds, that two clearly distinguishable diseases exist.

It will be admitted that there is a distinct disease called "measles" (morbilli). It will further be accepted that there exists another definite disease termed "scarlet fever" (scarlatina). Another disease usually, though most unfortunately, described as "German measles" (rubella) is also recognised. I hope to prove to the satisfaction of the profession that this disease does not consist of two varieties of one kind, as I have hitherto contended with the profession in general, but that two definite and separate diseases have been confounded under one name. For the law observed in zymotic diseases prevails here, *that an attack of one of these diseases does not protect from an attack of the other.*

By many members of the profession the diseases hitherto classed under the term "rubella" are considered to be of a very trivial nature. But when one frequently hears thas certain children have had three attacks of measles—that it to say, English measles, German measles, and the disease I am about to describe—none of which affords protection against the remainder, and where one at least is, or is likely to be, confounded with scarlet fever, the question assumes an aspect of grave importance both to the young and to the schools where an important portion of their lives is spent. Precise accuracy in distinctions will thus aid in diminishing the prevalence of zymotic disease and tend to enhance professional credit. It was not until the close of the seventeenth century that, mainly through the researches of Sydenham, scarlet fever ceased to be confounded with measles, and now, at the close of the nineteenth century, rose-rash is still confused with measles and with scarlet fever. Finally, on the verge of the twentieth century, we are only just discovering, and not merely surmising, that a "fourth disease," perfectly distinct from measles, rose-rash, and scarlet fever, is to be distinguished. I will not venture to suggest the appropriate name for this disease. I content myself with referring the question of nomenclature to the Royal College of Physicians of London. But whatever term should be ultimately adopted it should obviously preclude any possible confusion with scarlet fever or rose-rash. Pending this authoritative decision I shall tentatively employ the general expression of the "fourth disease."

The fundamental law in medicine—the science of our practice, ably taught by Cullen more than a century ago but now too frequently ignored—affirms that one attack of an eruptive fever entails immunity from a second attack in the same individual during childhood. The "germs" of infectious disease apparently require a virgin soil for development; a prior attack seems so to exhaust the soil or so to transform it chemically by the products of growth that it becomes incapable of furnishing a suitable nidus for the reproduction of the germs. This law is so permanent (for the insignificant exceptions may be regarded as scientific curiosities only) that for the practical guidance of our work it may be considered an absolute and invariable rule. Each disease, moreover, possesses its own characteristic seed which is entirely *sui generis*. But a curious fact in the life-history of these zymotic diseases, at present inexplicable, is that the growth of some germs in the body appears to produce so vital an alteration in the soil as to facilitate the immediate fertilisation and development of the germs of other diseases.

For example, the concurrence, or sequence, of measles and whooping-cough, of scarlet fever and diphtheria, and of measles and diphtheria is well known, and I have observed the marked influence which influenza has exercised upon the concurrent or subsequent development of influenza and epidemic rose-rash and of influenza and mumps.

The question has also occurred to me whether the "fourth disease" which so closely resembles scarlet fever would tend in a series of cases gradually to develop into true scarlet fever. But I have never observed the slightest indication in this direction. I have always found, as soon as I knew my subject, that each disease bred true. There was a well-expressed line of demarcation between the two diseases, and notwithstanding their close superficial resemblance every case was either the true "fourth disease" or true scarlet fever, and I shall presently show the concurrence of these two diseases in the same epidemic. I no more believe in its indefinite distinction than I do in what is called diphtheritic sore-throat; either a disease is diphtheria or it is not. The difficulty lies in the accuracy of our diagnosis and not in the definiteness of the disease. Nothing, however, can be achieved without the capacity of accurate diagnosis and there are no cases in medicine which at times are more puzzling and require the expenditure of more thought and judgment than the zymotic diseases we are discussing—rose-rash, the "fourth disease," and scarlet fever. Their elucidation has bewildered and misled many of the ablest physicians, to our professional discredit and the detriment of the welfare of schools. Yet they are as separable as typhus fever is distinct from typhoid fever. To mistake rose-rash for measles causes infinite trouble, but constant confusion of this "fourth disease" with scarlet fever involves, even admitting the perplexities of diagnosis, a very serious error, for if the patient be suffering from the "fourth disease" a period of isolation, usually of 14 days, and at most 21 days, is sufficient, notwithstanding the desquamation, which is apparently innocuous, while if the malady be scarlet fever a period of close confinement varying from 42 to 56 days is stated to be required in accordance with our present knowledge. Conceive the significance of this difference in an extensive epidemic—an isolation (two-thirds longer time for each case of scarlet fever) of wholly unnecessary seclusion with all its attendant discomforts, loss of time, and pecuniary cost entailed for medical attendance and nursing. The difficulties may be gauged when errors are committed even by those who have seen a multitude of cases. It requires some courage, I admit, to suspend judgment and plead ignorance when a definite diagnosis is important and urgent; but the admission, when the illness has been erroneously assumed to be scarlet fever, that it is merely this "fourth disease" reaches almost the limit of intellectual and moral candour.

The question has occurred to me repeatedly whether on account of its area, season, and non-fatality the very extensive but non-fatal epidemic of scarlet fever which raged throughout the country in the autumn of 1892 and the spring of 1893 was not really to a large extent an epidemic of the "fourth disease," for it not only occurred to a great extent out of its season but in both cases in which I was consulted by the head-masters of two schools at a distance from Rugby the epidemic proved to be the "fourth disease" (which I then deemed a variety of rose-rash) and not scarlet fever. In one epidemic of rose-rash, however, the whole of the cases will resemble measles. In another epidemic of the (supposed) same illness every case will resemble scarlet fever, as occurred in an entire series of instances in the two schools to which I have referred, comprising 16 at one school and 12 at another. It was epidemics such as these which made me seriously reflect and induced me to institute more searching inquiry into the interpretation of their phenomena. We have also this remarkable fact about rose-rash (rubella) that although (and here there can be no shadow of doubt, since the one affords no protection against the other) it is a perfectly distinct disease from measles, from the "fourth disease," and from scarlet fever, and although rose-rash and the "fourth disease" may be concurrently epidemic, yet rose-rash, like measles, usually affects large numbers, while the "fourth disease," like scarlet fever, always occurs to a much more limited extent, probably on account of its being, again like scarlet fever, less infectious at the onset. In 1894 I wrote that it had been suggested that the disease named "rose-rash" comprised in reality two diseases. In my own mind I had frequently raised the question and had searched for cases in evidence, but I had signally failed to establish a single relevant fact to sustain the hypothesis. Increased observation and extended experience have now, however, convinced me to the contrary.

The great difficulties in the elucidation of the facts which distinguish this "fourth disease" from rose-rash have been these: (1) that similar symptoms to a great extent are present in both diseases, with the exception of the dual appearance of the rash; (2) that in the same patient the eruption of rose-rash sometimes resembles measles at the commencement and terminates by the coalescence of the spots in assuming the scarlet fever eruption (this, however, is quite distinct from the *course* of the rash in the "fourth disease"); (3) that these two diseases—rose-rash and the "fourth disease"—frequently occur in the same locality at the same time; and (4) that the period of incubation is almost identical in both diseases. I shall, however, prove by conclusive evidence—what I have only recently established by the occurrence of an epidemic—that an attack of rose-rash does not afford protection against the "fourth disease" and *vice versâ*. So minutely, again, does this "fourth disease" mimic scarlet fever that I am convinced that innumerable cases are ascribed to the latter which belong to the former, and *vice versâ*. I may add that it sometimes demands a series of cases before a conclusive diagnosis can be arrived at, when the result becomes incontrovertible, although when close and accurate observations are made the difficulties usually resolve themselves.

I shall now specify some of the practical difficulties which arise in the elucidation of this "fourth disease."

I.—I cite an epidemic which was stated to be scarlet fever but which proved to be this "fourth disease."

In the year 1892 the head-master of a public school called me in consultation in connexion with 16 cases of an illness which was supposed to be scarlet fever. After a careful investigation of the cases, some of which were in the first stage and others in the last, I was able to prove to my own satisfaction at all events that the disease was that which I then termed the "scarlet fever variety" of rose-rash (rubella) but which I should now designate the "fourth disease." As a difference of opinion existed the head-master, after explaining the position to the parents, wisely afforded them the opportunity of regarding the ailment as scarlet fever or as this "fourth disease," as they might decide. The only trouble occurred with parents who were medical men, all of whom considered it to be scarlet fever. But I never heard of a solitary instance of scarlet fever appearing in any of the lads who went home for the holidays. I did, however, hear of one of the nurses who, after she had left, suffered from what was diagnosed as a genuine case of rose-rash. Now let us estimate the meaning of this verdict to the affected lads themselves. We will consider the period of isolation alone, without introducing the elements of the anxiety and expense. If these cases indicated the "fourth disease" 14 days' isolation was usually amply sufficient if followed by

TABLE I.—*A Concurrent Epidemic of Scarlet Fever and the Fourth Disease.*

No. of case.	Date of appearance of a rash.*	No. of case.	Date of appearance of a rash.*
1	1896, Feb. 4th.	17	1896, March 3rd.
2	,, ,, 18th.	18	,, ,,
3	,, ,, 19th.	19	,, ,, ,,
4	,, ,, ,,	20	,, ,, 4th.
5	,, ,, ,,	21	,, ,, ,,
6	,, ,, ,,	22	,, ,, ,,
7	,, ,, ,,	23	,, ,, 5th.
8	,, ,, ,,	24	,, ,, ,,
9	,, ,, 24th.	25	,, ,, 6th.
10	,, ,, 26th.	26	,, ,, ,,
11	,, ,, 27th.	27	,, ,, ,,
12	,, ,, ,,	28	,, ,, 7th.
13	,, ,, ,,	29	,, ,, 8th.
14	,, March 2nd.	30	,, ,, 9th.
15	,, ,, 3rd.	31	,, ,, 20th.
16	,, ,, ,,		

* The dates of commencement of illness furnished to me in their sequence.

complete disinfection. 16 cases × 14 days = 224 days' isolation; 16 cases × 42 days = 672 days' isolation; or a difference of 448 days.

II.—I next refer to an epidemic of 31 cases of an illness (assumed to be the scarlet fever variety of rose-rash, but really this "fourth disease") which proved to be scarlet fever and the "fourth disease" simultaneously occurring. This epidemic conclusively shows the entity of this "fourth disease" as a distinct and definite malady, separable from scarlet fever and even from a modified scarlet fever.

In the year 1893 the head-master of a private school summoned me to a consultation on account of an epidemic amongst his boys which was regarded as the scarlatina variety of rose-rash (rubella). The head-master was a careful, painstaking man who supplied the date of illness of every boy; and the instances finally amounted to some 31 in number. (Table I.) The medical man in attendance also furnished most valuable assistance at my visit. It was a remarkable series of cases, especially as some of the patients (32·25 per cent.) apparently passed through the same illness twice over. I saw every boy affected at the date of my visit on March 9th, 1896, in every stage of the disease. Two of them were seriously ill and eventually died. Though the most careful investigation was made I had the chagrin of confessing that the problem remained unsolved—the most perplexing and anxious problem I had encountered in a long experience.

It was impossible to acquiesce in this preliminary failure and I undertook to return the next day. Meantime I pondered over my clinical notes and light dawned at last. In following out endless hypotheses I was enabled at length to show that there was a malady which commenced on Feb. 4th, 1893, which was followed by seven cases occurring on Feb. 18th and 19th, involving, therefore, a period of 14 and 15 days. On Feb. 24th another case of illness arose, followed by three others on Feb. 26th and 27th, and having therefore a period of incubation of from two to three days. Following this clue the problem was eventually solved the next day, as shown in Tables II. and III.

TABLE II.

No. of case.	Date of appearance of the rash of the "fourth disease."	Date of appearance of the rash of scarlet fever.
1	1896, Feb. 4th.	—
2	,, ,, 18th.	—
3	,, ,, 19th.	1896, March 13th.
4	,, ,, ,,	—
5	,, ,, ,,	—
6	,, ,, ,,	1896, March 7th.
7	,, ,, ,,	,, ,, 9th.
8	,, ,, ,,	—
9	—	1896, Feb. 24th.
10	—	,, ,, 26th.
11	—	,, ,, 27th.
12	—	,, ,, ,,
13	1896, March 9th.	,, ,, ,,
14	,, ,, 2nd.	—
15	,, ,, 3rd.	1896, March 12th.
16	,, ,, ,,	—
17	,, ,, ,,	—
18	,, ,, ,,	1896, March 9th.
19	—	,, ,, 3rd.
20	1896, March 4th.	,, ,, 8th.
21	,, ,, ,,	,, ,, 11th.
22	,, ,, ,,	,, ,, 13th.
23	,, ,, 5th.	(?).
24	,, ,, ,,	—
25	,, ,, 6th.	—
26	,, ,, ,,	—
27	,, ,, ,,	—
28	—	1896, March 7th.
29	—	,, ,, 9th.
30	1896, March 8th.	—
31	,, ,, 20th.	—

TABLE III.

No. of case.	Date of appearance of rash in cases of the "fourth disease."	Date of appearance of rash in cases of scarlet fever only.	Date of appearance of rash of the "fourth disease" followed by scarlet fever.		Date of appearance of rash of scarlet fever followed by the "fourth disease."	
			"Fourth disease."	Scarlet fever.	Scarlet fever.	"Fourth disease."
	1896.					
1	Feb. 4th.	—	—	—	—	—
2	,, 18th.	—	—	—	—	—
3	—	—	Feb. 19th.	March 13th.	—	—
4	Feb. 19th.	—	—	—	—	—
5	,, ,,	—	—	—	—	—
6	—	—	Feb. 19th.	March 7th.	—	—
7	—	—	,, ,,	,, 9th.	—	—
8	Feb. 19th.	—	—	—	—	—
9	—	Feb. 24th.	—	—	—	—
10	—	,, 26th.	—	—	—	—
11	—	,, 27th.	—	—	—	—
12	—	,, ,,	—	—	—	—
13	—	—	—	—	Feb. 27th.	March 9th
14	March 2nd.	—	—	—	—	—
15	—	—	March 3rd.	March 12th.	—	—
16	March 3rd.	—	—	—	—	—
17	,, ,,	—	—	—	—	—
18	—	—	March 3rd.	March 9th.	—	—
19	—	March 3rd.	—	—	—	—
20	—	—	March 4th.	March 8th.	—	—
21	—	—	,, ,,	,, 11th.	—	—
22	—	—	,, ,,	,, 13th.	—	—
23	—	—	March 5th.	(?)	—	—
24	March 5th.	—	—	—	—	—
25	,, 6th.	—	—	—	—	—
26	,, ,,	—	—	—	—	—
27	,, ,,	—	—	—	—	—
28	—	March 7th.	—	—	—	—
29	—	,, 9th.	—	—	—	—
30	March 8th.	—	—	—	—	—
31	,, 20th.	—	—	—	—	—

NOTE.—No. 9 was said to have had scarlet fever previously, but that illness was evidently the "fourth disease," for although the patient was freely exposed to the infection of the "fourth disease" he escaped it and had true scarlet fever. It was this mistaken diagnosis of his former illness which occasioned so much difficulty at the commencement. No. 22 and No. 28 died.

TABLE IV.

No. of case.	Date of rubella (rose-rash).	Date of the "fourth disease."
33	1896	1900, March 14th.
34	1888	,, ,, 15th.
35	0	,, ,, ,,
36	0	,, ,, 17th.
37	1899	,, ,, ,,
38	0	,, ,, ,,
39	(? Date of attack.)	,, ,, 19th.
40	0	,, ,, ,,
41	0	,, ,, ,,
42	1893	,, ,, 20th.
43	1899	,, ,, 21st.
44	0	,, ,, 22nd.
45	0	,, ,, 26th.
46	0	,, ,, 27th.
47	1893	,, ,, 28th.
48	0	,, ,, 29th.
49	0	,, ,, ,,
50	0	,, April 1st.
51	1896	,, ,, ,,
52	January, 1900.	,, June 1st.

THE DISTINGUISHING CHARACTERISTICS BETWEEN RUBELLA (ROSE-RASH), THE "FOURTH DISEASE," AND SCARLET FEVER.

Rubella (rose-rash).	The "fourth disease."	Scarlet fever.
1. *Premonitory symptoms.*—In many instances none; no headache; no vomiting; no catarrh; no cough; but frequent sore throat. If the attack be severe some malaise, anorexia, and drowsiness will exist.	1. *Premonitory symptoms.*—In many cases none, even with a copious eruption; neither headache, nor vomiting, nor catarrh, nor cough, but frequently slight sore throat. If the attack, however, be severe there may be pronounced malaise for some hours, with headache, anorexia, drowsiness, chilliness, and even considerable backache.	1. *Premonitory symptoms.*—If the attack be slight the patient merely feels tired and usually complains of some amount of sore throat, headache, and chilliness. There may, however, be considerable malaise, with a genuine sense of illness, accompanied by some vomiting.
2. Its *season* is spring and summer.	2. Its *season* is spring and summer.	2. Its *season* is autumn and winter.
3. The *incubation period* is usually 18 days, but with a range of from nine to 21 days.	3. The *incubation period* has a probable range of from nine to 21 days.	3. The *incubation period* is usually from two to three days, but with a range from a few hours to seven days; it very rarely extends beyond the fifth day.
4. The *eruption* is usually the first noticeable symptom. Its appearance is that of minute rosy red dots, not patches. It shows itself first behind the ears and on the scalp and face, especially on the oral circle; from these situations it extends to the neck and the chest and ultimately covers the entire body. The minute dots become larger and gradually coalesce, forming patches of the bat's wing pattern, which so extend and alter in colour as to be indistinguishable from measles.	4. The *eruption* is usually the first noticeable symptom and will cover the whole body with a considerable diffuse rash in a very few hours. The hue is a bright rosy red and the eruption is raised somewhat from the surface of the skin. The sensation of heat of the skin to the touch, even where the rash is very full, is much slighter than in scarlet fever.	4. The *eruption* is diffuse, dusky red, papular in character, and originates behind the ears. It presents a goose-flesh appearance. It does not occur in isolated dots at any stage; nor in patches which are raised and have well-defined margins. It appears early about the clavicles and on the chest and the covered parts of the body. The rash is rarely so full at an early period as in the fourth disease and the skin is markedly burning to the touch.
5. *The throat.*—The fauces look dry, with a dark, motley, red hue.	5. *The throat.*—The fauces are usually swollen and reddish, assuming a velvet appearance, but this condition bears little relation to the extent of the rash.	5. *The throat.*—The appearance of the fauces may vary from the most insignificant affection to an intense dusky redness, with marked swelling, showing sometimes white spots of inspissated secretion; and the severity of the throat affection bears usually a distinct relation to the skin eruption.
6. *The eyes.*—The conjunctivæ are pink red and suffused.	6. *The eyes.*—The conjunctivæ are pink and suffused.	6. *The eyes.*—Normal.
7. *The glands.*—The lymphatic glands throughout the body are enlarged, tender, and hard, like peas, notably the posterior cervical, the axillary, and the inguinal.	7. *The glands.*—The lymphatic glands universally are enlarged, hard, and tender, and feel like peas, though less manifest than in rose-rash. Those mainly affected are the posterior cervical, the axillary, and the inguinal.	7. *The glands.*—The lymphatic glands of the throat and neck can scarcely be detected during the first few days; but subsequently they may be enlarged in proportion to the severity of the faucial affection. This, however, creates no difficulty, as the axillary and inguinal glands are not so involved as in rose-rash.
8. *Desquamation.*—There may, perhaps, be a little branny desquamation, but frequently there is none.	8. *Desquamation.*—The desquamation may be slight, or as complete as possible, even extending to a general peeling of the hands and feet. But the desquamation bears no relation to the intensity of the eruption, for it often happens that a very full eruption may be followed by little or no desquamation, and what does occur disappears in a week or two. On the other hand, a full eruption may be attended by a general peeling as free as in the worst cases of scarlet fever, but mostly in small scales rather than in flakes or sheets. A slight rash is usually accompanied by little or no desquamation. But I have never seen a case of scarlet fever with a full eruption where the desquamation did not occur eventually in sheets, the process lasting many weeks. If a series of cases be observed these abnormalities will be very apparent.	8. *Desquamation.*—The desquamation always bears a ratio to the extent of the eruption. A copious eruption signifies a free desquamation, while a scanty eruption is followed by a sparse peeling, which, however, does not cease for many weeks. It commences invariably by a peeling of the tongue on the fourth day, which extends to the lips and is followed by peeling of the face and behind the ears; one of the easiest places in which to detect the desquamation early is the ear. The desquamation occurs in pieces or shreds rather than scales, and is very free about the hands and feet, lasting for many weeks. At the commencement of the peeling circles of desquamation are formed around the raised papillæ, though I have once seen this state in the fourth disease where the peeling was excessive.
9. *The kidneys.*—They are rarely affected and then only with a trace of of albumin.	9. *The kidneys.*—Rarely affected. Where they are involved the condition is probably that only of the albuminuria of adolescents.	9. *The kidneys.*—Albuminuria is very frequent. The liability to acute nephritis is very decided unless the treatment be appropriate.
10. *Sensations of illness.*—Even with a full eruption as intense as in measles the patient usually states that he does not feel ill, although there may be other indications to the contrary.	10. *Sensations of illness.*—Where the eruption is slight there is no illness of any kind, and where the eruption is copious the feeling of illness is sometimes scarcely apparent, although I have seen boys really ill from this disease.	10. *Sensations of illness.*—In slight cases there is no apparent illness, but I have never seen a case with a severe eruption where the patient was not really, and also sensibly, very ill.
11. *The tongue.*—It is clean or slightly furred and never coated with a thick, white fur, which peels on the fourth day.	11. *The tongue.*—The tongue is clean or slightly furred and never coated with a thick white fur, which peels on the fourth day, leaving the tongue raw.	11. *The tongue.*—If the case be slight there may be no early signs, but in a well-marked case the tongue is coated with a thick white fur which, peeling off from the tip and edges on the fourth day, gradually leaves a raw red tongue, commonly termed the "strawberry" tongue.
12. *The pulse.*—It is normal or slightly increased in frequency, but always bearing a ratio to the temperature.	12. *The pulse.*—In slight cases it is normal and where the case is a well-marked one the pulse is quickened, but bears a ratio to the temperature; that is to say, where the pulse is accelerated the temperature is raised in a proportionate degree.	12. *The pulse.*—Even in slight cases the pulse is accelerated and in severe cases very greatly quickened and always out of all proportion to the height of the fever; that is to say, even with a temperature only just above normal (99° F.) the pulse will be very rapid (120).
13. *The temperature.*—This varies from normal to 103° or 104° F.	13. *The temperature.*—This varies from 98·4° to 103° or 104° F.; but even with a very extensive rash the temperature is not necessarily high.	13. *The temperature.*—This varies from 99° to 106° F., but is never increased in the usual ratio to the pulse. A full rash always means a high temperature.
14. *The course of illness.*—The symptoms, however severe, disappear in a few days, leaving comparatively little feeling of illness; where the eruption is slight there may be no illness whatever.	14. *The course of illness.*—The symptoms, however severe, pass off in a few days, leaving comparatively little feeling of illness.	14. *The course of illness.*—The illness gradually subsides in from four to seven days. Desquamation commences as eruption fades and continues for from six to eight weeks or more, and lasts longest on the hands and feet.

THE DISTINGUISHING CHARACTERISTICS BETWEEN RUBELLA (ROSE-RASH), THE "FOURTH DISEASE," AND SCARLET FEVER—(*Continued*).

Rubella (rose-rash).	The "fourth disease."	Scarlet fever.
15. *The period of infection.*—I do not know any illness which is so infectious in its earliest stage, even before any symptoms are manifest. It results from this cause that schools suffer to so great an extent from the disease when once it has found an entrance. It is less infectious in its later stage.	15. *The period of infection.*—It is not so very infectious in its earliest stage. In its later stage, even while desquamation is taking place, it is not infectious beyond two or three weeks after thorough disinfection.	15. *The period of infection.*—This disease is the least infectious of any illness during its early stage. It therefore allows time for quarantine and isolation and thus can be controlled, so that an epidemic may be prevented more readily than in any other infectious illness. After the first 48 hours the infection is very powerful, but I am not prepared to pronounce upon its duration. Until this can be ascertained the only safe rule is the assumption that it may last as long as desquamation itself, although I am quite clear that this is inaccurate.
16. *Protection.*—The attack affords no protection against measles, the "fourth disease," or scarlet fever.	16. *Protection.*—The attack affords no protection against scarlet fever or rose-rash.	16. *Protection.*—An attack affords no protection against the "fourth disease" or rose-rash.
17. *The duration of infectiveness.*—From 10 to 14 days where efficient disinfection is in force.	17. *The duration of infectiveness.*—From 10 to 14 or even 21 days where efficient disinfection is in force.	17. *The duration of infectiveness.*—From six to eight weeks or more—i.e., when the desquamation has ceased. But I am far from believing that the infection lasts so long after efficient disinfection, though at present I can adduce little proof.
18. *Sequelæ.*—Practically none.	18. *Sequelæ.*—Practically none, but I have seen the submaxillary glands enlarged.	18. *Sequelæ.*—Nephritis; suppuration of the submaxillary lymphatic glands and others; otitis; rheumatism; endocarditis.
19. *Termination.*—Usually complete recovery in a fortnight.	19. *Termination.*—Usually complete recovery in a fortnight.	19. *Termination.*—Usually complete recovery ensues, but sometimes a prolonged convalescence on account of the sequelæ; but the disease shows a high mortality in the very young.
20. *Treatment.*—The patient requires about five days in bed, followed by three days indoors; then about six days in the fresh air; and after complete disinfection he may safely mix with others. *Abortive* cases of rose-rash are frequent and are responsible to a large extent for the spread of this disease. The difficulty is to grasp them, as no actual illness occurs. 1. *Pink eyes.*—There is a group of cases of epidemic roseola which have no symptoms that I have yet ascertained except pink conjunctivæ. And these cases, while capable of passing the illness on to others, are immune against a subsequent attack themselves. 2. There is another group of cases of epidemic roseola which I believe—but I cannot at present advance beyond belief, for I have not yet satisfied myself by actual proof—may occur without showing any symptoms beyond slight feverishness and enlargement of the lymphatic glands throughout the body.	20. *Treatment.*—The patient may be permitted to get up on the fifth or sixth day or as soon as his strength permits, irrespectively of the desquamation and without danger from sequelæ. He then requires three or four days indoors followed by five or six in the fresh air, and may safely join his schoolfellows at the end of from 14 to 21 days, notwithstanding desquamation, provided the disinfection has been thorough.	20. *Treatment.*—Every case of scarlet fever, however slight, requires 21 days of absolute confinement to bed. The patient should be clothed in a flannel night-shirt and the skin daily greased with carbolic or eucalyptus oil. No food should be given for the first week except milk and farinaceous food, however mild the illness, in order to guard against nephritis. The patient should not be permitted to join his friends for six or eight weeks, but I do not think it essential to isolate cases until all desquamation has ceased from the hands and feet, for this process sometimes occupies several additional weeks. I have acted on this assumption for many years without harm, even transferring boys to their own homes. Of course, complete disinfection is imperative.

The above analysis (Tables II. and III.) of this remarkable epidemic conclusively shows: (1) that two distinct infectious diseases were existent in the school at the same time; (2) that these diseases were scarlet fever and what I then termed the scarlet fever variety of rose-rash, but in reality this "fourth disease"; and (3) that the "fourth disease" commenced on Feb. 4th and the scarlet fever on the 24th.

I was further able to discriminate, mainly guided by the periods of incubation, as well as by the existing and the pre-existing symptoms: (1) that some boys had scarlet fever only; (2) that others had the "fourth disease" only; (3) that one had scarlet fever and subsequently the "fourth disease"; and (4) that others had the "fourth disease" followed by scarlet fever.

The satisfaction of unravelling so very intricate a problem was marred by the deaths of the two boys (No. 22 and No. 28) I have mentioned above from scarlet fever.

Since this epidemic I have had another instance of this "fourth disease" in a boy who had previously suffered from scarlet fever in 1894.

CASE 32.—A boy, aged 14 years, was isolated on June 2nd, 1900. Sore-throat and rash appeared on June 3rd. The throat was swollen and velvety. The tongue was furred but not coated. A copious rash ensued which became brick-red as it faded. No desquamation of the tongue or skin occurred, though the latter was rough. The posterior cervical glands were very tender and enlarged. The maximum temperature was 100·4° F., and the maximum pulse was 84. There were, therefore, two cases of the "fourth disease" out of 32 (6·25 per cent.) who had previously had scarlet fever. This epidemic proves incontestably that, besides scarlet fever, there is another malady, which I have provisionally named the "fourth disease," and that the one affords no protection against the other.

III.—The following facts connected with an epidemic of this "fourth disease," where 42·1 per cent. of the patients had already suffered from rose-rash (rubella), demonstrates its distinctive character and consequent classification.

This epidemic occurred at Rugby—commencing on March 13th, 1900, and terminating on April 1st, 1900—and it affected 19 boys. The illness resembled scarlet fever more closely than any other series of cases I had yet seen, due not only to the marvellous resemblance between the rash and that of scarlet fever, but also to the copious desquamation of the skin which in some instances succeeded. It was clearly, however, an epidemic of the "fourth disease" alone. In this series 42·1 per cent. had already suffered from rose-rash (some within the preceding 12 months), so that it was evident that these diseases were different and destitute of mutual protectiveness. On April 3rd the school dispersed for the vacation and each parent was advised that, notwithstanding the resemblance, the malady was not scarlet fever. I only heard of one case occurring during the vacation which was diagnosed as scarlet fever; but one parent—a medical man—whose two sons were at the school suffering from this "fourth disease" was so convinced when he saw them that this malady was scarlet fever that he desired me to keep them in bed, to avoid feeding them, and to examine their urine daily, which I had done, I need scarcely add, in every instance. On May 12th this gentleman addressed to me this exceedingly kind and handsome letter: "I feel I ought to write and thank you,

as a parent, for the firm and correct stand you took about the cases of our boys last term. It required not less courage than knowledge to stand out against the temptation to call those cases scarlet fever and to involve many parents and friends in a prolonged period of anxiety and considerable expense. This was especially so with our boys, both of whom had had German measles (rubella). Our younger son at Rugby desquamated, as you know, as freely as any scarlet fever case and continued desquamating for six or seven weeks. The elder had just a little on the soles of his feet after five or six weeks. They mixed freely with others, including our little boy of three and a half years of age, soon after their return from Rugby."

I append some few notes of the cases and I confess that I never observed such extensive peeling except in scarlet fever, but it is a curious fact, and one that may prove of value, that the two boys who desquamated most had in past years suffered from general eczema and had naturally a rough dry skin.

I now furnish a brief *résumé* of the 19 cases of this series.

1. *Premonitory symptoms.*—There were practically none and no boy admitted illness until the rash appeared, but on inquiry admission of general malaise was elicited.

2. *Vomiting.*—In Case 49 free vomiting occurred in the night and a very full rash was discovered in the morning. This vomiting arose, however, from his having eaten freely of sweets in the evening, which probably disagreed with him as the disease disclosed itself. But as the vomiting was severe and the rash very marked indeed I made a full investigation and watched throughout for evidence of scarlet fever. The maximum temperature throughout his illness was only 99·6° F.

3. *Eruption.*—Really the first symptom to attract the attention of the sufferer was the rash which in nearly every case was very full and quite characteristic of scarlet fever. In fact, if ten experts had inspected the skin and made no other investigation all would have diagnosed the eruption as that of scarlet fever.

4. *Throat.*—The fauces were red and swollen, but occasioned so little discomfort that complaint was rarely made, and the condition was only discovered on inquiry or inspection. However severe appeared the eruption—and in many cases it resembled the worst eruption in scarlet fever—the throat did not assume anything like the same condition as is so usual in scarlet fever.

5. *Desquamation.*—In some cases the skin became merely rough; in most instances there was free desquamation of small scales; while in others the peeling was equal to the worst I have ever noticed in scarlet fever. In Case 34 the skin was detached in large pieces in certain regions; for instance, in the groin and front of the abdomen it peeled off in sheets. Desquamation lasted six or seven weeks. This boy had naturally a rough dry skin and had previously suffered from general eczema. In Case 35 an extent of desquamation occurred which rarely takes place even in scarlet fever. It was detached in sheets from the whole of the body and the toes shed their skin like the finger of a glove in one piece; the heel also peeled almost in one piece and certainly an area of more than an inch square was detached at once. The pieces had to be cut off, as they caught in the bed-clothes and caused pain where the skin was adherent. In Case 39 the skin peeled from the toes in pieces of the size of a shilling and elsewhere in scales. In this "fourth disease" the desquamation bears no relation to the intensity of the eruption; several of these cases with the fullest and intensest eruption were followed by very scanty desquamation. The peeling may continue as long as in scarlet fever although it is apparently innocuous.

6. *The tongue.*—The tongue was furred throughout, which cleaned as all furred tongues do. In no case did the tongue peel on the fourth day, as is so pathognomonic of scarlet fever in both mild and severe attacks.

7. *The glands.*—The lymphatic glands universally were enlarged, hard, and tender, sometimes excessively tender, as in Case 32, but I do not think that they are so markedly affected as in rose-rash. My experience is that the lymphatic glands are always enlarged and tender whenever a copious eruption occurs on the skin from any disease.

8. *Temperature.*—The average temperature was 101° F.; but it ranged from 99·4° to 104·2°. This last temperature occurred in Case 45 where the eruption was scanty, with merely a red, swollen, velvety throat, though the posterior cervical glands were very large and tender. The temperature almost invariably became normal on the third or fourth day.

9. *The pulse.*—In no case, except in Case 45, did it reach 100—a signal contrast to the accelerated pulse of scarlet fever.

10. *The kidneys.*—In no instance did albuminuria arise, although all the sufferers, except the two sons of the medical man I have mentioned, were fed freely as soon as the slight fever (which occurred from the third to the fifth day) had disappeared, and the boys were removed from bed as soon as the rash had subsided, notwithstanding the desquamation.

11. *Incubation period.*—This I was unable to ascertain in the present series of cases, since several of them occurred simultaneously, and I could not discover any connecting links between the sets. My impression is that the illness originated in a boy who was attacked very slightly and who, without my seeing him, continued in his work with it the whole time. I shall hope to ascertain this fact more accurately in some subsequent series. The incubation varies, I believe, from nine days to 21 days.

12. *The duration of infectiveness.*—This lasts from 10 days to 14 days or even 21 days, where efficient disinfection is in operation. The continuation of desquamation is apparently of no moment as a cause of infection or sequelæ.

13. *Previous scarlet fever.*—Previous scarlet fever had not occurred in any instance.

14. *Previous rose-rash.*—Eight boys had already suffered from rose-rash out of this series of 19 cases, or 42·1 per cent.

Since this last series of 19 cases (33 to 51) I have seen one patient (aged eight years) in a private residence (Case 52). This lad developed the malady on June 1st, 1900, when he had suffered from rose-rash, which was prevailing at his school, in January, 1900, so that in 20 consecutive cases of the "fourth disease" nine (or 45 per cent.) had previously had rose-rash (rubella) which is reasonably conclusive evidence that they are two different diseases (Table IV.). Further, it is this malady which, mistaken for scarlet fever, accounts for the prolonged period of incubation which is assigned to the latter disease by some authors; while, on the contrary, it cannot be too emphatically affirmed that the period of incubation of scarlet fever is usually two days, rarely exceeds five days, and never extends beyond seven days.

I conceive that I have now adequately proved that a definite disease exists which I have temporarily designated the "fourth disease." For I have shown:—

1. That although its resemblance is so close to scarlet fever in many features it cannot possess any affinity with that disease inasmuch as both diseases occurred concurrently in the same epidemic.

2. That some of the sufferers had both diseases in the same epidemic.

3. That one patient had scarlet fever followed by the "fourth disease."

4. That several had the "fourth disease" followed by scarlet fever.

5. That although the "fourth disease" has been confused with rose-rash and regarded as a mere variety of rubella, this conclusion is fallacious, since nearly one-half the cases in an epidemic had already had rose-rash within a year or two, which, according to Cullen's established law, is incredible.

6. I have purposely refrained from attaching a name to the disease in order to avoid the anomalous description of the same disease under an indefinite number of terms, as in the case of its ally, which has been variously designated as "rubeola notha," "rötheln," "rubella," "German measles," "epidemic roseola," and "rose-rash." The distinguishing features of rubella, of the "fourth disease," and of scarlet fever will be found in the appended tables.

Rugby.

NEW WORKHOUSE INFIRMARY FOR MERTHYR TYDVIL.—The new workhouse infirmary for Merthyr Tydvil is now completed and is occupied by the patients. The female wards contain 42 beds and there is also a lying-in ward of 10 beds. The men's wards provide accommodation for 70 beds. The expenditure has been over £13,000, exclusive of the furnishing, which amounted to £1300. Mr. Preston Thomas, one of the inspectors under the Local Government Board, at a recent meeting of the Merthyr Board of Guardians congratulated them upon the fact that their infirmary was one of the finest in Wales.

A NOTE ON THE RESULTS OBTAINED BY THE ANTI-TYPHOID INOCULATIONS IN THE BELEAGUERED GARRISON IN LADYSMITH.

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BY the kind permission of Surgeon-General Jameson, M.D., C.B., I am enabled to publish the following officially collected statistics with regard to the results obtained by the anti-typhoid inoculations in the military garrison during the siege of Ladysmith.

TABLE I.—*Results obtained by the Anti-Typhoid Inoculations in the Case of the Officers and Men of the Military Garrison during the Siege of Ladysmith.*

—	Number under observation.	Number of cases of enteric fever.	Proportion in which attacks stand to total number of men in group.	Number of deaths from enteric fever.	Proportion in which deaths stand to total number of men in group.	Proportion in which deaths stand to total number of attacks in group.
Not inoculated	10,529	1489	1 in 7·07	329	1 in 32	1 in 4·52
Inoculated ...	1,705	35	1 in 48·7	8	1 in 213	1 in 4·4

In addition to the above summary of results, obtained on officers and men combined, the figures relating to officers separately are also given in the official statistics. With regard to these last it may be pointed out that quite apart from the fact that these figures relate to a very small group of persons (44 in number) the figures considered as statistics are probably fallacious owing to the fact that the group of inoculated officers (consisting as it must have done almost exclusively of young men at the most susceptible age) is compared with a group of officers which includes all the older and less susceptible men and the men who have already had typhoid fever. The figures referred to are none the less subjoined with a view to conforming to the arrangement adopted in the official statistics.

TABLE II.—*Results obtained by the Anti-Typhoid Inoculations in the Case of the Officers of the Military Garrison during the Siege of Ladysmith.*

—	Number under observation.	Number of cases of enteric fever.	Proportion in which attacks stand to total number of men in group.	Number of deaths from enteric fever.	Proportion in which deaths stand to total number of men in group.
Not inoculated ...	171	43	1 in 4	5	1 in 34·2
Inoculated	44	9	1 in 5	2	1 in 22

In drawing inferences from the figures in this table it is to be borne in mind that the erroneous inclusion or exclusion of a single case, or a difference in the event in the case of any patient included in the category of the inoculated, would sensibly alter the present aspect of the table.

The same circumstance must be borne in mind in connexion with any attempt to base a comparison of the case mortality in inoculated and uninoculated upon the figures in Table I. For it will be manifest that in no circumstances can an estimate of case mortality be safely based on a series of only 35 cases, and least of all would it be permissible to do this under conditions such as those of Ladysmith during the siege, where many other factors in addition to the severity of the attack must have determined the favourable or unfavourable event of the cases. It would, however, appear probable, in view of the figures given in the table, that the case mortality was not influenced by the inoculation. On this subject further light must be awaited, especially as it would appear from certain statements which have emanated from the seat of war that the disease generally runs a milder course in the inoculated.

The question of case mortality is, however, quite subordinate in interest to the question as to how far the figures presented in Table I. enable us to estimate in quantitative terms the reduction in incidence and mortality which can be achieved by the process of anti-typhoid inoculation.

To answer this question it will be necessary to inquire, on the one hand, whether there were any circumstances other than inoculation which may have tended, either to diminish the incidence of typhoid fever among the inoculated in Ladysmith, or unduly to swell the roll of typhoid fever among the inoculated.

In connexion with the former question the only point which comes up for consideration is the question as to whether the inoculated were more favourably circumstanced in the matter of the sanitation of their camps than the uninoculated. No detailed data for the determination of this question are at present available. But this will be seen to be unimportant, in view, first, of the fact that there was in each regiment and corps an uninoculated majority who must equally with the inoculated have benefited or suffered from the sanitary or insanitary condition of the various camps; and, secondly, of the fact that the inoculated who were attacked were drawn from 12 different corps and regiments. It may therefore be assumed that the inoculated and uninoculated were equally exposed to the risk of infection.

The question as to whether there were any circumstances which tended unduly to swell the roll of typhoid fever among the inoculated is one which requires to be treated at somewhat greater length. The following points must be kept in view:—1. So far as is known the men who are set down as inoculated were with hardly an exception only once inoculated. It seems probable from the fact that only two cases among twice inoculated persons have as yet come to my knowledge that second inoculation confers a considerable additional protection. 2. It is possible that certain of the officers who are set down as inoculated may have been inoculated with anti-typhoid serum and not with a vaccine consisting of a sterilised typhoid culture. Two or three instances have been reported to me where this error was committed in the case of officers proceeding to South Africa. In the statistics now in question the date and place of inoculation are in the case of five out of the nine officers attacked set down as unknown. 3. It is possible in the case of the men as distinguished from the officers that re-vaccination against small-pox, which, like anti-enteric inoculation, was in many cases carried out on board the transports may in certain instances have been confused with the latter inoculation. Instances of this confusion have already several times come to my knowledge. 4. Lastly, it is possible that owing to the exigencies of military service or owing to other reasons the full prescribed dose of typhoid vaccine may not in all cases have been injected. Instances of the employment of the vaccine in fourfold reduced doses have come to my knowledge. It is conceivable, but there is nothing either to support or rebut the suggestion, that some reduction of the dose may have been found necessary in the case of the Liverpool Regiment, which was inoculated (presumably, as in the case of other regiments, only very partially inoculated) at Ladysmith on the eve of the outbreak of hostilities. At any rate, it is noticeable that this regiment furnished 13 cases of enteric fever among the inoculated men, whereas the whole rest of the garrison of Ladysmith furnished only an equal number of such cases.

In view of the above points, regarding which there is not at present any information available, it is at present impossible to determine precisely to what extent the inoculated were protected by inoculation. But the results set forth in Table I. would appear to be distinctly encouraging, inasmuch as they show that the proportion, on the one hand, of attacks, and on the other hand of deaths, from typhoid fever was seven times smaller in the inoculated than in the uninoculated. And it may be borne in mind that if the number (no doubt a considerable one) of men who had previously suffered from typhoid fever had been subtracted from the number of the uninoculated, as might quite legitimately have been done, the statistics would have borne an even more favourable aspect.

Netley

ILLUSTRATIONS OF VASECTOMY OR OBLITERATION OF THE SEMINAL DUCTS RELATIVE TO HYPERTROPHY OF THE PROSTATE AND BLADDER ATONY.

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WHEN sufficient grounds were furnished for asserting that the nutrition and growth of the prostate whether normal or hypertrophied might be importantly influenced by obliteration of the seminal ducts or by removal of the testes[1] the first stage may be said to have been reached in a series of observations which will probably prove of increasing value in practical surgery. Though experience is not yet sufficiently ripe upon this point there are good reasons for believing that a vasectomised or castrated male is not liable to undergo hypertrophy of the prostate in the ordinary acceptation of the term. As this point, as now seems probable, becomes more fully determined not only will a fact of great pathological importance be established, but it will be possible to indicate how by means of a simple and safe operation one of the most serious troubles of advanced life may be averted or controlled. I have reserved for this paper some illustrations of vasectomy or, more strictly speaking, of obliteration of the seminal ducts by torsion, as described in my last articles,[2] in its application to the treatment of prostatic hypertrophy. Statistical information gathered from the mere collection of a number of cases having but little in common is not of much assistance in a matter of this kind where the conditions and circumstances are so varied. In taking my results of vasectomy I find they permit of being grouped as follows: First, where the effects are known to have been good, sufficient, and enduring; secondly, where they have been good but restricted to certain conditions; and, thirdly, where they are alleged to have been inadequate or negative. The question of mortality arising from the operation is not one requiring consideration, as in the series of over 100 cases referred to previously[3] I stated that I have never seen harm follow.

The first group may be said to include cases of prostatic obstruction pure and simple without any other structural complication. Here the bladder is in no sense secondarily implicated structurally and is capable on the removal of the obstacle in front of it of both holding and expelling its contents. It is in this class of cases that shrinkage of the enlarged prostate, however induced, speedily leads to the restoration of the function of micturition in the fullest sense of the term. This group is best illustrated by cases where for some special or pressing reason the obliteration of the vasa was brought about at an earlier period in the history of prostatic obstruction than is usual. Hence this group is less numerous than the succeeding one where catheter life or the systematic use of this instrument had been resorted to previously. The following cases are selected.

A man, aged 68 years, who was seen in 1896, was suffering from the ordinary symptoms of enlarged prostate—namely, frequent micturition, more especially at night, some degree of residual urine, and occasionally incontinence, the diagnosis being confirmed by rectal examination. He had been advised to use a catheter but could not do so conveniently as he had lost an arm. Double vasectomy was performed, with an interval of 10 days between each section. I saw him nearly three years afterwards; the prostate was reduced in size. He was quite well and had no occasion for the catheter.

About the same time I divided the vasa of a man, aged 65 years, whose work was greatly interfered with by frequency of micturition due to enlarged prostate. He also had been advised to use a catheter. He was treated in the same way as the patient in the preceding case with a similar result and was examined 18 months afterwards.

In 1897 I saw a man, aged 65 years, who in the course of his occupation travelled much by railway and otherwise. He had an enlarged prostate and much frequency of micturition for which he was advised to use a catheter. As this meant giving up his livelihood vasectomy was practised with good results and 18 months afterwards he reported himself as being quite well without requiring the catheter.

Early in 1898 I saw a patient in consultation in whose case it had been necessary to tie in a catheter for retention of urine caused by a large prostate. This was so intolerable to him that I suggested vasectomy, which was performed. I have heard on several occasions that he still remains in good health and is able to urinate normally. Six months after the operation I found the prostate much reduced in size.

In 1893 I operated upon a man, aged 67 years, for stone by litholapaxy. There was also some enlargement of the prostate. He remained well till 1897 when symptoms of considerable enlargement developed, and though he had no recurrence of stone he gradually became entirely dependent upon the catheter and was liable on slight provocation to attacks of cystitis and epididymitis. The frequent use of the catheter greatly interfered with his capacity and desire for an active outdoor life and he was compelled to give up hunting and other exercises. In 1898 I divided both his vasa in the usual way with the result that his prostate symptoms gradually disappeared and he resumed his hunting during the whole of last winter as he had previously done. He was able to give up his catheter, using it once in the 24 hours for washing out. He had accustomed himself to the latter as a precautionary method against stone, and though the process, he admitted, was hardly necessary he did not like to give it up.

This appears to be the first published series of cases of prostatic hypertrophy treated by operation in which the object of preserving the normal function of micturition as opposed to an artificial one as illustrated by what is known as catheter life, has been successfully demonstrated. Before leaving this group I would observe that in every case it was explained that the section or division of the vasa might interfere with sexual possibilities. It may, I think, be claimed that in all these instances, and in others that might be mentioned, whatever influence, if any, was exercised on the sexual act the natural function of micturition was preserved to the person operated on and the necessity for the permanent use of a catheter averted. When any question has arisen under these circumstances, so far as my experience goes, relative to whether the urinary or the sexual function should receive first and paramount consideration it has invariably been decided by the patient in favour of the former.

I pass to the second group of cases where I have described the effects following as being good but restricted to certain conditions. These include instances where structural changes in the bladder have supervened upon prostatic obstruction and where catheter life, or the necessity for it, has been more or less developed. This group provides by far the greater proportion of cases to which this class of operations has been recently applied. In a previous paper[4] I showed that there were certain structural effects which followed in the wake of prostatic and other forms of obstruction to the escape of urine by the natural passage which were irrecoverable from. These have reference to the bladder as a reservoir capable of self-expulsion. Hence in the consideration of the class of operations of which vasectomy is a type cause and effect must not be confused. The prostate may be rendered in these ways incapable of obstruction any longer, but this by no means implies that the bladder can be made to expel. And yet the realisation of the former by these means has in this way proved in many instances, which I will proceed to illustate, an inestimable boon.

In November, 1895, I operated on a man, aged 70 years, with a very large prostate and increasing difficulty in catheterism which sometimes required hot baths and opiates before it could be effected. He had shaky hands which increased the difficulty. I advised a double vasectomy. 12 months after this he wrote to me: "I certainly am very much better than I was before the operation, and so long as I am quiet and able to carry out my regular treatment I get on very comfortably."

Another case was that of a man, aged 75 years, with a very large prostate and increasing difficulty in passing his instrument. Double vasectomy was performed in 1898. He soon found that he could pass his catheter quite easily and he again wintered abroad last year with much comfort. He had been previously obliged to forego this change by reason of catheter difficulties.

A man, over 60 years of age, whom I saw in consultation

[1] Surgery of the Hypertrophied Prostate, by Dr. J. W. White, Transactions of the American Surgical Association, 1893.
[2] THE LANCET, August 5th, 1899, p. 331, and May 5th, 1900, p. 1275.
[3] THE LANCET, May 5th, 1900, p. 1275.
[4] THE LANCET, May 5th, 1900, p. 1275.

and in whose case I advised vasectomy for enlarged prostate with frequent attacks of epididymitis which confined him to bed, has entirely got rid of the latter painful complication by the obliteration of his ducts and is now again in the active practice of his profession.

The next case to which I shall refer is an instance of the application of vasectomy as an adjunct to other surgical purposes. It was that of a man, aged 70 years, whom I operated upon for stone in the bladder in 1893. The prostate was so large that I had unusual difficulty in performing the ordinary operation of litholapaxy, and after removing a considerable portion of the stone in this way I had to abandon it without effecting a complete removal of the calculus. The patient, however, did well and was much relieved. In the meantime I divided both vasa and after six weeks' interval I repeated the crushing operation. The considerable shrinkage that was thus effected in the size of the prostate rendered this proceeding easy and complete.

For the relief of hæmorrhage arising out of difficult catheterism in connexion with prostatic obstruction vasectomy has been adopted with good effect in rendering the process easy and avoiding bleeding. This is only to be expected as the result of a process which is generally admitted as reducing the blood-supply to the parts involved. Painful catheterism arising from spasm and tension as the instrument enters the prostatic urethra may be usually relieved in this way by the general shrinkage and relaxation of the gland that follows section of the vasa. I have had several illustrations of this. For reasons such as are here illustrated and for others that might be added to the group the obliteration of the vasa has proved of much service, though the voluntary and natural powers of the bladder may have either not been restored, or have been but partially restored. Easy and safe catheterism has in this way been substituted for that which previously was painful if not also dangerous.

I will conclude with a notice of the third group of results of vasectomy, which seems to me to include the most interesting and suggestive of the series that I have here brought under notice. I refer to those instances where the results are alleged to have been, or seem to have been, inadequate or negative.

For the purposes of this paper I have made numerous inquiries by letter, in addition to other sources of information, from patients who have undergone vasectomy since 1893, when I commenced to practise it with some frequency. Amongst these is a man, now aged 81 years, upon whom I performed double vasectomy for prostatic enlargement of some years' standing early in 1897. On writing to me he informed me that he did not think that he had derived much benefit from this operation. The history of his case, however, will hardly bear out this statement. The patient had been under my observation for four years previously to this. He had considerable irritation and spasm, for which the catheter was being constantly employed. There was also so much cystitis that I then drained his bladder by the perineal route with temporary benefit. In 1896, however, his condition in these respects became worse and the bladder became very foul in spite of catheterism and washing out. In addition to this the specific gravity of the urine began to drop so as to vary from 1004 to 1007. As this condition so often precedes renal disease and uræmia in these cases of prostatic obstruction I divided the vasa early in 1897. From that time forward the urine, amongst other changes, gradually returned to a normal density and the general condition of the patient improved, though he continued to be, and still is, largely dependent on the catheter. He uses it much more easily and, as I am told by his friends, is in good general health. He doubtless failed to appreciate the renal improvement, which I have similarly observed in other instances as being probably connected with mechanical reasons. The patient doubtless measured the success of the vasectomy, as others do, relatively as to whether he could or could not dispense with his instrument, without sufficient regard to the less striking contingencies of catheter life. This patient should properly occupy a place in the second group, but I thought it better to take him at his word as one whom vasectomy had not benefited. The substitution of a good contractile bladder for one that obstruction had worn out would probably suffice to complete the cure. I will take one more instance which may properly be considered in this group from the patient's point of view, though, as with the preceding case, I decline to agree with the patient. It has its lesson to teach which may be the more conveniently learnt in this place.

A man, aged 74 years, was operated upon for stone by litholapaxy by me in 1894. The condition was complicated with a large prostate for which he had to use a catheter. The operation was not an easy one by reason of the former. He had two recurrences in the course of the two following years which I mainly attributed to the obstructing prostate, so I divided both vasa in 1896, with an interval of some weeks between each. He has had no recurrence of stone, can pass his catheter quite easily, keeps free from cystitis, goes to Scotland to fish (a sport which he previously had to abandon), and is now not entirely dependent on the catheter. For a man at the age of 80 years I should say that he was in excellent health, and yet because he is not able to dispense with the instrument entirely he is not disposed to admit that vasectomy did him much good. I am not inclined to agree with him and consequently I should put him also in the second group.

My experience in litholapaxy as illustrated in a recent series of 100 cases[5] leads me to believe that vasectomy has proved an important aid in preventing the recurrence of stone after operation when complicated with enlarged prostate. It probably effects this by providing a free and more dependent exit from the bladder as well as by diminishing the large amount of tenacious mucus which the enlarging prostate both provokes and helps to supply and which lessens materially as the gland shrinks.

I can hardly recall an instance of vasectomy or torsion of the vas for hypertrophy of the prostate where good has not followed though it may not at once be appreciated by the patient. It is not always relative as to whether or not the patient can or cannot dispense with the catheter. Nor is credit always given in this group of cases to the fact that though chronic prostatic obstruction had already caused permanent structural damage to the bladder as the organ for expelling urine and not merely containing it, the further progress of an obstructive disease was arrested by obliteration of the vasa and life was thus indefinitely preserved and rendered tolerable. Though in the case of the eye a cataract operation is successful this does not necessarily imply that spectacles can be invariably dispensed with.

In one instance benefit was slow in coming where the obstruction had previously been of a very chronic character and the bladder had become much weakened and fasciculated. It was found six months after a portion of one of the vasa had been excised and the ends ligatured in a loop that the divided ends had reunited and the continuity and use of the duct had been re-established. I have the specimen, which I subsequently excised and then torsed the freshly divided ends separately. Benefit followed upon this. The specimen was carefully examined for me by Mr. J. G. Pardoe. I could hardly think, unless I had seen it, that this was possible; at all events I have not met with another instance.

In conclusion, surgery may be said to be entering upon a new phase of research for therapeutical purposes. Thyroidectomy and oöphorectomy have produced results so remarkable and changes in the organism so profound that complete removal, except for the express purpose of saving life, is in the first instance condemned as totally inadmissible, and in the second instance is deprecated by a large and constantly growing number of surgeons.

The effect of castration on youthful males for the purposes of the harem has been known for centuries. The effect upon adult and aged men has only recently been investigated. In children the results are not dangerous to life; in the aged, apart from the shock of such a severe surgical mutilation, they are, in some cases at all events, dangerous to reason if not to life.

The explanation offered by physiology is the well-known theory of "internal secretion." This theory, proved so strikingly correct in the case of the thyroid, may, although the testis is not a ductless gland, be equally applicable to the latter organ. In any case it is incontestible that most serious results follow total removal of both testes, whereas I can confidently assert from my seven years' experience of the operation that double vasectomy, performed in the manner which I have described in a previous paper,[6] causes no untoward results whatever.

Lower Berkeley-street, W.

[5] THE LANCET, Nov. 12th, 1898, p. 1250.
[6] THE LANCET, May 5th, 1900, p. 1275.

ON IMMUNITY AGAINST PROTEIDS.

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PRELIMINARY ACCOUNT.

IT is assumed in each of the two theories of immunity which are dominant at the present time—viz., Ehrlich's "seitenkette" or side-chain theory and Metchnikoff's phagocytic theory—that immunity is merely a special case of assimilation. According to these views, for every substance assimilated by a living organism there is present somewhere in that organism a specific anti-substance, and in fact the chief difference between them is whether the anti-substances are produced by leucocytes or by other cells of the body. From the standpoint of immunity the toxic action of a toxin is a matter of accident, indeed of indifference, since a toxin does not produce its antitoxin by virtue of its toxic power, but because on introduction into the animal body in such a way that its immediate destruction is avoided it is assimilated. With the object of obtaining evidence as to the validity of this assumption the following experiments were undertaken with a view to ascertaining what changes, if any, are to be observed in the blood serum when proteids of various classes are introduced into the animal body in steadily increasing amounts. In order to avoid destruction by the digestive ferments of the alimentary tract these substances were not given by the mouth, but were injected intra-peritoneally. As experimental animals rabbits were used and the proteids employed were the following: (1) crystallised egg albumen from the white of fowl's egg; (2) serum globulin from the sheep; (3) serum globulin from the bullock; and (4) Witte's "peptone."

1. *Crystallised egg albumen.*—This was prepared from the white of fowl's eggs by the method recommended by Hopkins and Pinkus.[1] According to Hopkins this purified proteid is to be regarded as a single chemical substance. After repeated intra-peritoneal injections of this albumen continued for two months, the serum of rabbits acquired the power of forming a dense precipitate when added to solutions of crystallised egg albumen. The formation of this precipitate occurred at the ordinary temperature of the laboratory, but was accelerated at 37° C.[2] In very many control experiments neither the serum of normal rabbits nor any of the immunised rabbits mentioned below ever had this action. This precipitate is soluble in 2 per cent. sodium chloride solution and the solution gives the ordinary proteid reactions. The serum of a rabbit treated with egg albumen from the fowl forms a slight precipitate with the albumen from the white of duck's eggs, but not nearly so much as is thrown down from solutions of the same strength of fowl's albumen. I was unable to obtain duck's egg-albumen in a crystalline form, and the precipitation which occurred with it is doubtless due to the presence in small quantity in it of the albumen present in fowl's egg or of a closely allied albumen. The serum thus obtained has no precipitating action on the globulin prepared from sheep's serum, nor on that from bullock's serum, nor on serum albumen from the sheep or bullock. It was likewise without precipitating action on Witte's "peptone." By these injections, therefore, a specific anti-body had been produced—an *anti-proteid* or *precipitin* which had the power of throwing down the egg albumen into a solid insoluble state. The chemical nature of this reaction remains to be investigated and we may conveniently call the precipitate formed by the action of the precipitin the *precipitum*.

2. *Serum globulin from the sheep.*—Sheep's serum was half saturated with ammonium sulphate at laboratory temperature; the precipitate after filtering was washed with saturated ammonium sulphate, dissolved by the addition of water, and again precipitated by semi-saturation with ammonium sulphate. After several precipitations the globulin was dried on glass plates at 37° C. In this case also continued intra-peritoneal injection led to the appearance in the serum of a precipitin. This antiglobulin serum had no action on egg albumen or upon Witte's "peptone," although with the similarly prepared globulins from bullock's serum a small precipitum was obtained after 15 hours at 37° C.

The precipitum from sheep's globulin is soluble in 2 per cent. saline solution and gives the ordinary proteid reactions. The serum of the rabbit immunised against sheep's globulin had also acquired another property—namely, that of agglutinating the red corpuscles of the sheep. In order to be sure of removing all traces of serum the defibrinated blood was diluted ten times with saline solution (0·8 per cent.). After centrifugalisation the clear fluid was removed and the process repeated several times. Finally, a suspension was made of one part of blood in 40 of saline solution.[3] The agglutination was unmistakeable after the mixtures had been for an hour in the incubator at 37° C. The agglutinating action was only present in the anti-sheep's globulin serum, it was absent in the sera obtained by immunisation against bullock's globulin, egg albumen (fowl's), Witte's "peptone," and also in sera from normal rabbits. This action is doubtless due to the presence of the same, or of a closely allied, substance in the sheep's red corpuscles and in the "globulin" from sheep's serum as above prepared.

This anti-globulin serum also clumps the washed red corpuscles of the fowl. I have not found this agglutinating power in any other sera obtained from normal or other rabbits. It follows from these facts that the product here called "sheep's globulin" is a mixture of substances. The main portion of the precipitum given by its precipitin is formed from a substance which is not present in the "serum globulin" of the bullock. One substance present in small quantity in the sheep's globulin is, however, also present in bullock's globulin, since the precipitin of sheep's globulin gives a small precipitum with bullock's globulin. This substance common to the two globulins is not present in red corpuscles of the sheep or fowl, since the precipitin for bullock's globulin does not agglutinate these corpuscles. Further, we must suppose that there are two other substances in the serum globulin of the sheep, one present in fowl's red corpuscles and the other present in those of the sheep, since, as the following experiment shows, immunisation against sheep's globulin leads to the appearance in the serum of two distinct agglutinins, for sheep's and for fowl's corpuscles respectively. If the serum of a rabbit immunised against sheep's globulin be allowed to agglutinate washed corpuscles of the sheep the clear fluid left above the corpuscles will not now agglutinate fresh corpuscles of the sheep if sufficient corpuscles have been used on the first instance. But this fluid still has the power of agglutinating fowl's corpuscles. And conversely after anti-globulin has agglutinated fowl's corpuscles, it has lost the power of agglutinating fresh fowl's corpuscles, but will still agglutinate those of the sheep.

3. *Serum globulin from the bullock.*—This product was prepared in the same way as the serum globulin from the sheep. And here, too, a specific precipitin made its appearance in the serum of the immunised animal. And just as the precipitin for sheep's globulin gives rise to a slight precipitum with bullock's globulin, so the precipitin for bullock's globulin causes a slight precipitum with sheep's globulin; in each case the precipitum is very much smaller than that given with the globulin by which the precipitin was produced. As has been mentioned, the precipitin for bullock's globulin did not agglutinate sheep's corpuscles or bullock's corpuscles.

4. *Witte's "peptone."*—Commercial Witte's "peptone" was dissolved in physiological saline solution, boiled, cooled, and filtered. Immunisation led to the appearance of substances in the serum which produced a precipitum in Witte's "peptone" at 37° C. Control experiments gave absolutely negative results. Most remarkable was the fact that the precipitum after careful washing with 0·8 per cent. saline solution and after solution in 2 per cent. saline did not give the biuret reaction, though it gave the other general reactions of proteids. The fluid removed after centrifugalisation gave a distinct biuret reaction. Here, then, the precipitum belonged to an entirely different class of proteids from the original body.

The effect of heat on the precipitins of egg albumen, of

[1] After several washings and re-precipitations the precipitate was dried on plates. A mixture of ammonium sulphate and proteid crystals was thus obtained. Journal of Physiology, vol. xxiii.

[2] It is necessary to remove any excess of ammonium sulphate by dialysis or the precipitation will not take place.

[3] The serum of rabbits lakes the corpuscles of the sheep. This hæmolytic action may be abolished by heating the serum to 50° C. for half an hour. In all the agglutinating experiments mentioned in this paper the sera were thus heated.

the serum globulins of the bullock and sheep was similar in so far that heating to 56° C. for half an hour led to no appreciable weakening of their action. On the precipitins for Witte's "peptone" heating to 56° C. for half an hour had a marked weakening action, although the precipitins were not entirely destroyed. Adding normal rabbit's serum markedly increases the precipitating action of this heated serum, although normal serum itself remained quite clear with the "peptone." In this respect the "peptone" precipitin is similar to the hæmolysins and the bacteriolysins, but the number of substances involved in this reaction is so large that much further investigation is necessary before definitely contrasting this with the other precipitins.

A number of experiments were made to ascertain whether the precipitin is used up in the formation of the precipitum. A mixture of the precipitins of bullock's globulin and egg albumen was added to a solution of egg albumen. After standing at 37° C. for 15 hours the mixture was centrifugalised and the clear fluid was tested for the presence of the precipitins. It was found to give a precipitum with bullock's globulin but to give none with egg albumen. At the same time a control experiment was made with a mixture of the precipitins of egg albumen and bullock's globulin with bullock's globulin. In this case the clear fluid precipitated with egg albumen but not with bullock's globulin. Experiments of a similar kind with the precipitins of egg albumen and sheep's globulin were made, and in this case also one or other of the precipitins disappeared. From these experiments it is concluded that the precipitins are used up in the course of their action, and bearing in mind their specificity this is strong evidence that the action of these bodies is chemical.

In this preliminary account of the precipitins no attempt has been made to arrange the proteids on which they act in a systematic manner. But it is clear that the precipitins gave us a means of distinguishing between various proteids and mixtures of proteids. And at present, at least, this animal test is more delicate than any chemical method of discrimination available.

These experiments give, I think, strong support to the view that the production of immunity is due to processes of assimilation, and they also explain a physiological point which has long been a subject of discussion. When injected into the circulation peptone disappears very quickly from the blood-stream. Practically nothing is known as to the fate of the peptone which thus vanishes. But clearly this disappearance of peptone is exactly paralleled by the disappearance of the tetanus toxin from the blood-stream. In both cases we produce by immunisation a specific anti-substance. And just as in Wassermann's experiment tetanus toxin is neutralised by an emulsion of fresh spinal cord, so experiments are on record in which peptone has been neutralised *in vitro* by pieces of small intestine.[4] The instability of the anti-body for Witte's peptone and its reactivation by normal serum, showing in other words that it can form *precipitoids* analogous to the toxoids, has already been mentioned.

Finally, these experiments give the explanation of certain facts about which a good deal has been written though but little has been determined by experiment. Kraus's precipitates, for instance, and the precipitates formed by adding anti-eel's serum to eel's serum, or white of egg, are examples of the precipitins.[5]

The connexion of these experiments with the mechanism of agglutination remains to be mentioned. Without discussing the question in detail it may be said that three explanations of agglutination have so far been put forward. In the first place Grüber explains it by assuming that the surface of the micro-organisms becomes sticky. In favour of this view are certain microscopical appearances in the case of motile micro-organisms and the swelling up of the membranes of the micro-organisms. Against it, however, is the circumstance that non-motile bacteria and red corpuscles can also be agglutinated, and though stickiness would account for the cells remaining together when once in contact it gives no account of the way in which they are brought together. This view is untenable because agglutination is sometimes very rapid; it may occur, for instance, in a few minutes—that is, too quickly to be explained by diffusion currents or Brownian movements; secondly, because in agglutination work is done for which the viscous theory provides no source of energy; and thirdly, because the cells not only agglutinate but they settle much more rapidly than the control suspensions.

A second explanation is that the cells are brought together by the contraction of a clot. This view must be described as fanciful since even its adherents admit that the clot is invisible both to the naked eye and to high microscopical powers.

The third view is that of Bordet who regards the phenomenon as analogous to the clearing of inorganic suspensions. Bordet ascribes it to "diminished molecular adhesion" between the cells and the fluid bathing them.

It has already been mentioned that the precipitin of sheep's globulin agglutinates washed red corpuscles of the sheep. Now, if sheep's corpuscles be laked by the addition of distilled water this precipitin causes a precipitate to form in these laked corpuscles. Bullock's globulin precipitin, on the other hand, does not agglutinate these corpuscles and it does not give rise to this precipitate with the laked corpuscles. Similarly, other non-agglutinating sera—e.g., anti-egg-albumen, anti-Witte-"peptone," and normal rabbit's sera—give negative results with laked corpuscles of the sheep. Normal horse serum agglutinates rabbit's corpuscles and also gives a precipitate with the laked corpuscles. On the other hand, a solution of a horse serum that had been kept dried for several years did not agglutinate rabbit's corpuscles and did not produce any precipitate in the laked corpuscles.

We see, then, that these sera which *agglutinate the corpuscles also produce a precipitate in the laked corpuscles*, whether these sera contain artificially produced or naturally occurring agglutinins. If this precipitation occurs in laked corpuscles it should also occur in the uninjured corpuscles. And arguing from the production of precipitins against proteids as above described we should, indeed, expect that on immunising against red corpuscles we should obtain a serum which produces a precipitum in the red corpuscle itself—that is, which makes the substance of the red corpuscle less soluble in plasma or serum or salt solution.[6] We are now in a position to explain the agglutination of the red corpuscles. Bordet[7] has shown that this process depends on some change in the corpuscles and also on the nature of the fluid by which they are surrounded. We may have corpuscles that have undergone the change requisite for agglutination but which do not agglutinate, just as for the agglutination of silica and other organic precipitates the fluid bathing them must have certain definite properties. We see the two factors in this process of agglutination in some experiments of Danyse,[8] which, after repetition, I can fully confirm, though I differ from him entirely in his deductions from them. Ammonia in sufficient concentration lakes the red corpuscles of the goose. If a concentration sufficiently low be taken no hæmolysis occurs. Taking a suspension of these corpuscles in physiological saline solution, containing ammonia in amount just insufficient to produce hæmolysis, on adding to the suspension any of the phosphates of sodium, agglutination very rapidly occurs. Ammonia or the sodium phosphate alone do not produce agglutination. The ammonia clearly produces some change in the corpuscles which renders them agglutinable in a suitable medium. Now ammonia forms, as has been known for many years, a product called "histon" from the red corpuscle of the goose (this is not mentioned by Danyse). Histon is soluble in a certain amount of ammonia, forming a viscid solution; with an insufficient quantity it remains undissolved (Kossel).[9] The following table is quoted as an example illustrating these statements. In each tube 20 cubic centimetres of a 1 per cent. suspension of defibrinated goose's blood in saline solution (0·8 per cent.) was placed, and to each tube 2 cubic centimetres of sodium phosphate (Na_2HPO_4, 1 per cent. in 0·8 per cent. saline) was added. Decreasing

[4] Neumeister: Lehrbuch der physiologischen Chemie. Jena, 1893. Zeitschrift für Biologie, München, vol. xxvii.

[5] Bordet: Annales de l'Institut Pasteur, 1899.

[6] Evidence of the similarity at least of the agglutinins and the precipitins is given by the fact that they are uninjured by exposure to 56° C. for half an hour; and secondly, that both kinds of substances disappear in the course of their action. That the anti-bodies to Witte's "peptone" are destroyed at 56° C. does not affect the similarity, for, as above mentioned, the changes resulting in "Witte's peptone" are further reaching than in the case of coagulable proteids.

[7] Loc. cit.

[8] Annales de l'Institut Pasteur, 1899.

[9] Zeitschrift für Physiologischen Chemie, vol. viii., p. 511.

quantities of ammonia were then put in the tubes. Temperature 20° C.

Amount of NH_3 added.	Immediate result.	Result after 15 hours.
1. 2 c.c. N/100	Rapid agglutination in 10 to 15 minutes after mixing.	Complete hæmolysis. Uniformly gelatinous fluid.
2. 1·5		
3. 1·0		
4. 0·8		Hæmolysis gelatinous precipitate at bottom of tubes.
5. 0·6		
6. 0·4		
7. 0·3		
8. 2 c.c. N/1000		
9. 1·5		
10. 1·0		
11. 0·8		Fine precipitate on sides of tubes.
12. 0·6		
13. 0·4		No hæmolysis.
14. 0·3		
15. 0·2		

Ammonia, then, acts as a precipitin on the red corpuscles in a certain strength, forming insoluble histon within the corpuscle. When the medium is rendered suitable by the addition of sodium phosphate the corpuscles agglutinate. Agglutination consists, therefore, of two processes. In the first place a chemical change in the corpuscle by which some proteid becomes insoluble or relatively less soluble in the serum. This corresponds to the action of the precipitins on their corresponding proteids, and, indeed, is an instance of the action of a precipitin under special circumstances. The corpuscle is now ready for the second stage, in which it is carried down as mica can be carried down by alcohol or other inorganic precipitates by the addition of various salts, especially those of acids or bases of a high valency. The latter phenomena are generally regarded as effects of surface tension, and in this connexion one or two known, but so far unconnected, facts in reference to agglutination may be mentioned which are all in favour of surface tension playing a part in the second stage of this process. The striking feature of agglutination is the smaller surface relatively to their mass which the clumped cells possess in comparison with the unclumped cells. This is exactly what would be produced when particles float in a fluid which does not wet them. The surface of the fluid in contact with the particles here tends to be as small as possible. This result is attained by the particles agglutinating. It need hardly be pointed out that the energy of surface tension is ample to account for the work done in agglutination. Now the change brought about by a precipitin is that tending to make the surface of the fluid in contact with the solid as small as possible. If a solid immersed in a fluid be soluble in the fluid the surface between the two tends to increase to a maximum, or, in other words, the solid dissolves. If the solid become less and less soluble the sign of the surface tension changes—that is, the surface between the two tends to become as small as possible.[10] It may further be mentioned that in all cases of agglutination rise of temperature hastens the process.[11]

In conclusion, the precipitin or chemical stage and the surface tension or physical stage are efficient causes of agglutination, though it is possible that in the case of motile micro-organisms an increase in the viscosity of their surfaces also plays a part in the process.

Cambridge.

[10] Hence the assumption of a fatty membrane for the red corpuscles explains rouleaux formation. Shattock (Journal of Pathology and Bacteriology, 1900, No. 111) regards agglutination as an exaggerated rouleaux formation, though he does not discuss the explanation of these processes.

[11] It may be objected that the temperature only influences the first or chemical stage and not the second, surface tension action. In the case of ricin, however, I have found that the second stage is also hastened by rise of temperature. If ricin act on guinea-pig's corpuscles at 37° C. and after 12 hours the fluid be removed the corpuscles can be shaken apart and washed with saline. The corpuscles suspended in saline will agglutinate, although the ricin has been removed, and this agglutination is quicker at 37° C. than at room temperature. Hence rise of temperature influences the second stage of agglutination in this case.

CHRONIC EMPYEMA OF THE FRONTAL SINUS WITH NOTES ON THE TREATMENT OF FOURTEEN CASES.

BY HERBERT TILLEY, M.D. LOND., F.R.C.S. ENG.,

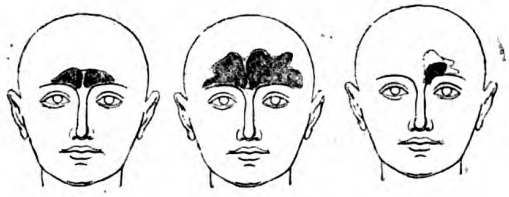
SURGEON TO THE THROAT HOSPITAL, GOLDEN-SQUARE, AND LECTURER ON DISEASES OF THE NOSE AND THROAT, LONDON POST-GRADUATE COLLEGE.

IN that general advance in treatment which has been made in the more special branches of medicine and surgery during the past decade, it may be said without fear of contradiction that a prominent place must be accorded to the improved methods of dealing with diseases of the nose and more especially those met with in connexion with the nasal accessory cavities—e.g., the maxillary antrum, and the ethmoidal, sphenoidal, and frontal sinuses.

The present article deals only with the most frequent chronic affection of the frontal sinus—viz., chronic suppuration or empyema.

To those whose thoughts are not often centred upon the regions under discussion and whose recollections of the anatomy of the nose and its accessory cavities are possibly somewhat vague, it may be well to state a few facts relative to the disposition of these parts and to lay more particular stress upon such of them as are of importance to the surgeon. "The frontal sinuses are contained in the lower part of the frontal bone above the root of the nose and inner ends of the eyebrows" (Quain). They begin to develop about the seventh year but remain small until puberty when they undergo rapid development. 1. They vary much in size even in the same individual and may be absent on one or both sides (Fig. 1, A, represents sinuses of average size). 2. A complete

FIG. 1.



A B C

In diagram A the sinuses are of normal size; in B they are unusually large. C indicates the amount of anterior wall (dark shading) which it is necessary to remove to thoroughly curette a sinus of normal size (indicated by dotted line).

and imperforate bony septum nearly always separates the sinuses in health, but in disease it is not uncommon for the cavities to communicate with one another through a pathological opening in the septum (Fig. 1, B). 3. In exceptional cases the frontal bone may be almost hollowed out by the sinuses so that they extend outwards to the temporal fossæ, upwards to the frontal eminence, and posteriorly almost to the junction of the frontal bone with the small wings of the sphenoid (Fig. 1, B). 4. The external configuration of the forehead or eyebrow gives no clue whatever to the size of the sinuses underneath. 5. The fronto-nasal canal passes through the anterior ethmoidal cells and opens into the middle meatus of the nose at the anterior and upper part of the hiatus semilunaris into which curvilinear depression are also found the ostia or openings of the maxillary antrum and the anterior ethmoidal cells. 6. In many cases the frontal sinus is in almost direct communication with the antrum, as seen in Fig. 2.[1] It will be noted that the fronto-nasal passage terminates very near the antral ostium, from which a fold of mucous membrane extends upwards and inwards, forming a sort of pocket at the bottom of which is the antral opening. Consequently a discharge of pus from the higher sinus would tend to fill the antrum before it appeared in the nasal cavity, so that the antrum may act not only as a generator but also as a recepticle of purulent discharge. 7. The direction and patency of the fronto-nasal canal varies greatly. From above downwards its direction is slightly backwards, and it

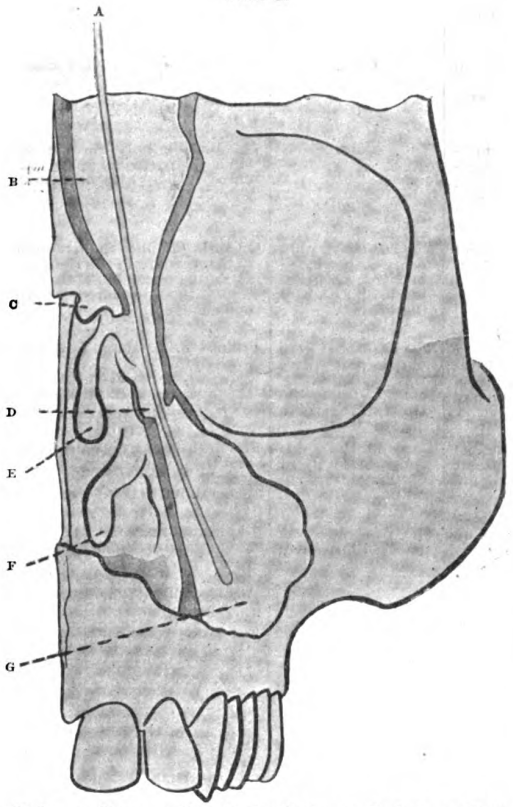
[1] I am indebted to Dr. Filliebrown, Boston, Mass., for permission to use the diagram.

may be so curved or tortuous that it would be impossible to enter the sinus from below without making a false passage. In long-standing cases of chronic suppuration of the sinus or ethmoidal cells it is often quite easy to pass a suitably curved cannula into the frontal sinus from the nose.

The examination of 120 skulls, kindly placed at my disposal by my former teacher, Professor G. D. Thane, showed that if a small quarter-inch trephine is applied to the lower part of the frontal bone included between the middle line and a line drawn vertically upwards from the internal angular process it will in all cases open the sinus on that side if one exists.[2]

Etiology of chronic suppuration.—The history of these cases would seem to indicate that the condition may arise as a sequence of an attack of acute suppuration which does not completely recover, possibly because of inefficient drainage from the sinus. Such acute attacks are not uncommonly of influenzal origin or follow in the wake of an acute rhinitis. In many cases the highest sinus is affected by septic infection from one of the other accessory cavities, such as the antrum or ethmoidal cells. I believe this source of infection is the commonest one, and Fig. 2 shows how easy it is for the upper sinus to be affected from the lower one. Similarly, chronic suppuration occurring in the thin-walled

FIG. 2.



A Probe. B, Sinus. C, Superior turbinate. D, Pocket. E, Middle turbinate. F, Inferior turbinate. G, Antrum.

ethmoidal cells through which the fronto-nasal canal runs would almost certainly infect the frontal sinus, especially if, as is generally the case, coincident inflammatory changes in the middle meatus hamper the free discharge of pus into the nasal cavity.

Symptoms.—The symptoms of chronic frontal sinus empyema are three in number—(1) a purulent, non-fœtid nasal discharge; (2) frontal or supra-orbital headache or feelings of discomfort such as a heavy weight or tension in the forehead; and (3) more or less well-marked nasal obstruction caused by the growth of polypi or other chronic inflammatory products within the nasal cavity.

The first symptom is a constant one. The pus is seen in the middle meatus and it is rarely fœtid. The discharge may be profuse, necessitating the use of from 10 to 12 handkerchiefs a day. The flow is not so much influenced by the patient's position as is the case in antral suppuration.

Headache may be taken to indicate that pus is retained in the sinus under tension. I have never met with this symptom when the drainage into the nose has been free, but have often cured it by removal of polypi or other obstruction from the middle meatal region. External pressure upwards and inwards on the floor of the sinus may be productive of pain when compared with similar pressure on the normal side, but here again much depends upon whether or not the pus is retained under tension.

In cases of long standing the middle meatus is always more or less blocked with chronic inflammatory products such as polypi, granulations, or sodden congested mucous membrane. If these are removed the anterior ethmoidal region is represented by a mass of granulation tissue bathed in pus, amongst which a blunt probe easily detects tiny spicules of bone or abuts against those remnants of the bony skeleton of the ethmoid which have only partially succumbed to the ravages of a rarefying osteitis. From this lateral mass hangs loosely the middle turbinal in which chronic inflammatory changes identical with those just described have also taken place.

In addition to the symptoms already described the patient's troubles may be aggravated by a dry throat, catarrhal deafness, and a sense of depression, apathy, and inability to work mainly caused by the nasal obstruction already referred to and partly to the chronic absorption of septic matter from the nasal mucous membranes.

Chronic frontal sinus empyema is not uncommonly bilateral; in five out of 12 cases here recorded this was the case. Under such circumstances the sinuses may discharge into their corresponding nasal cavity, being separated from one another by an imperforate septum (see Cases 6 and 13), or through a perforation in the septum the cavities may communicate and only empty into one side of the nose (see Case 13).

Diagnosis.—A purulent discharge in the middle meatal region almost invariably indicates suppuration of one or more of the nasal accessory sinuses—antral, ethmoidal, or frontal. Headache and nasal obstruction are also symptoms common to empyema of each of these cavities. Hence in arriving at a differential diagnosis each sinus must be carefully examined in detail and the surgeon will find that not rarely they are simultaneously diseased. Since the maxillary sinus is more frequently diseased than the ethmoidal or frontal, it is a good rule to regard every case presenting the characteristic symptoms as one of antral suppuration until examination proves this presumption to be wrong.

Transillumination of the antrum by means of a small electric lamp held in the mouth will as a general rule afford strong presumptive evidence of the presence or absence of pus in the cavity. If any doubt exists the sinus should be explored by a fine trocar and cannula (Lichtwitz's) passed into it from the nose. This little operation implies a preliminary cocainisation of the anterior half of the inferior meatus and then passing the trocar and cannula between the anterior end of the inferior turbinal and the outer wall of the nose in a direction outwards and backwards until the inner antral wall is pierced. The trocar is removed leaving the cannula in position, and on irrigation with warm saline or boric lotion absolute positive or negative evidence of suppuration is at once obtained. With cocaine, care, and a little dexterity the latter operation can be performed with ease and almost painlessly, while it is the only positive test which we possess in the diagnosis of antral suppuration. If such procedures give negative evidence the source of the purulent discharge must be sought for in the ethmoidal or frontal sinuses. In chronic cases the latter cavities are almost always associated in disease. The clinical signs of ethmoidal suppuration have already been referred to—viz., a purulent discharge in the middle meatus associated with a swollen polypoid or granular degeneration of the mucous membrane of the anterior ethmoidal region, amongst which a blunt probe easily detects areas of exposed bone or even loose spicules of the same in various stages of rarefying osteitis. To examine the frontal sinus the middle meatus should be cleansed with wool mops and an attempt made to pass a suitably curved cannula into the higher sinus, and if successful its cavity may then be irrigated and the nature of the contents ascertained. The presence of the cannula in the sinus may be further assured by placing one end of an aural auscultation-tube on the floor of the sinus and the other in the surgeon's ear; on injecting the lotion

[2] Vide THE LANCET, Sept. 26th, 1896, p. 866.

14 CASES OF CHRONIC EMPYEMA OF THE FRONTAL SINUS.

No.	Sex and age.	Date when seen.	Duration of symptoms.	Sinuses involved.	Treatment.	Result.	Remarks.
1	M., 38 years.	October, 1896.	18 years.*	Double frontal sinuses; double maxillary sinus (empyema).	Alveolar drainage of antra; external radical operation on the frontal sinuses.	Sinuses cured. There was a slight discharge in irrigation of the antra (February, 1900).	The patient nearly died under operation owing to the post-nasal space not having been plugged prior to operation; blood, therefore, flowed freely into the lungs during operation.
2	F., 22 years.	June, 1897.	7 years.	Both frontal sinuses and ethmoids.	External radical operation.	Fatal, after seven months suffering, from chronic septic osteomyelitis.†	This, my only fatal case, was certainly due to imperfect drainage into the nose and tightly stitching up the wound at the close of operation. Suppuration recurred in the sinuses and pus entered the freshly opened diploë of the frontal bone. Seven similar cases have been recorded.
3	F., 37 years.	March, 1898.	5 years.	The left frontal sinus and both maxillary antra.	Radical operation on the left sinus and antrum; intra-nasal opening and irrigation of the right antrum.	Cure.	The drainage in this case was secured by Luc's ‡ method (*vide* infra).
4	F., 19 years.	April, 1899.	5 years.	Both frontal sinuses.	Radical operation on both sinuses at intervals of three months.	Cure.	The drainage in this case was secured by Luc's method.
5	F., 36 years.	May, 1899.	25 years.	The right frontal sinus and the right maxillary antrum.	Removal of mid-turbinal and irrigation of the sinus; alveolar drainage of the antrum.	Cure.	This is the only chronic frontal sinus empyema I have known cured without external operation.
6	M., 35 years.	June, 1899.	10 years.	Both frontal sinuses.	Irrigation of sinuses and intra-nasal treatment.	The headaches were completely cured and the discharge was greatly diminished.	On syringing into the left sinus the fluid returns from the right nostril, showing perforation of the septum. The patient only requires to use one handkerchief a day.
7	M., 52 years.	July, 1899.	9 years.	The right frontal sinus and the right maxillary antrum.	Intra-nasal treatment and sinus irrigation; alveolar drainage of the right antrum.	The headaches were cured but there was a slight discharge from the sinus and antrum.	Profuse hæmorrhage (arterial) followed puncture of the alveolus. It was only checked by plugging the antrum and middle meatus with gauze.
8	F., 27 years.	October, 1899.	3 years.	The left frontal sinus and the left antrum.	External radical operation; alveolar drainage.	Cure of the sinus suppuration; slight discharge from antrum.	The headaches have entirely ceased and the patient has gained 16 lb. in weight since the operation, the general health being excellent.
9	F., 42 years.	October, 1899.	5 years.	The right frontal sinus and antrum.	Radical operation on the sinus; alveolar drainage of the antrum.	The discharge was greatly diminished.	The wound was completely stitched at the close of the operation and the gauze was removed from the nose, followed by irrigation from the nose: an unsatisfactory method.
10	F., 16 years.	December, 1899.	3 years.	The right frontal sinus and antrum.	Radical external operation on the sinus and antrum.	Cure.	The sinus being small, the cavity was practically obliterated by free removal of the anterior bony wall.
11	M., 20 years.	December, 1899.	4 years.	Both frontal sinuses and both maxillary antra.	Radical external operation on the left sinus. Both antra were drained through the alveolus.	Cure.	The sinus being small, was obliterated as in the last case. The resulting depression is scarcely noticeable.
12	F., 30 years.	February, 1900.	3 years.	Both frontal sinuses.	External radical operation.	Relieved, but slight discharge from the sinus continues.	—
13	F., 19 years.	April, 1900.	2 years.	Both frontal sinuses.	External radical operation.	Cure.	The sinuses communicated through the septum. They were very large (Fig. 1B). Although the right sinus was diseased there was never any trace of pus or disease in the right nasal cavity.
14	F., 50 years.	May, 1900.	5 years.	Left frontal sinus and the left maxillary antrum.	External radical operation on the sinus; alveolar drainage of the antrum.	Cure. There was great diminution of the discharge.	The sinus was packed for three days and then syringed out twice daily for a fortnight through a small indiarubber tube passing through the sinus and out of the corresponding nostril.

* *Vide* Brit. Med. Jour., 1897. † *Vide* Brit. Med. Jour., 1899.

‡ Luc's modification of the radical operation involves two special features—(1) draining the sinus by means of a convolvulus tube, the expanded end of which rested in the infundibulum, the lower end projecting from the corresponding nostril; and (2) complete suture of the external wound. The operation is now rarely performed.

mixed with a little air the "bubbling" of the fluid can be distinctly heard within the sinus by the surgeon. Transillumination of the frontal sinus has been shown by Logan Turner to be of little practical value in diagnosis. In old-standing cases the passage of a cannula into the sinus may often be easily carried out, but when it is difficult or impossible it is well to remember that no force should be used in these localities.

In some cases it will perhaps be necessary to remove the diseased ethmoidal cells and anterior portion of the middle turbinal before the continuance of suppuration demonstrates that the source of discharge is in the higher sinus.

When the antrum and the frontal sinus both contain pus it is a nice point to determine whether the first-named cavity acts as a receptacle or generator of pus. In the latter instance, if transillumination gives a very dark shadow under the eye of the affected side we may suspect a thickened and diseased mucous membrane of the antral cavity, indicative of disease originating in that cavity, whereas a lighter shadow would suggest that the sinus was rather a reservoir than a generator of the purulent discharge. Of other diseases, supra-orbital neuralgia with slight swelling of the eyelid is most commonly confounded with frontal sinus empyema, but the absence of nasal symptoms would militate against the latter disease.

Treatment.—Whatever treatment is finally adopted in these cases it is of paramount importance to ensure free drainage from the sinus by removal of all chronic inflammatory growths from the lower end of the fronto-nasal canal. For this purpose the anterior half or more of the middle turbinal, all polypi, granulations, and diseased ethmoidal cells should be removed by means of curette, snare, or forceps. I have no hesitation in saying that many of the failures in the radical operation have been due to the fact that the external operation has been undertaken before free drainage and immunity from re-infection of the sinus have been secured by this important preliminary intra-nasal treatment.

When, however, this has been satisfactorily carried out the further treatment resolves itself into one of two measures: (1) intra-nasal irrigation of the sinus and (2) external radical operation.

1. *Intra-nasal irrigation.*—Little can be said in favour of this as a means of cure. In the first place it rarely succeeds, and what improvement has been noted in some case is probably due to the improved drainage provided by preliminary intra-nasal treatment. Bearing in mind that this irregular sinus is lined by a mucous membrane which has undergone polypoid degeneration and is freely secreting pus we can scarcely expect that irrigation twice or three times a week with a mild antiseptic lotion through a fine cannula will restore it to a normal condition. Furthermore, it is a treatment which can only be carried out by the surgeon himself except in very exceptional cases. I have given the method a fair and prolonged trial in four cases but without any permanent result except in one case (Case 5). The solutions used were boric lotion, hydrogen peroxide, iodoform emulsion, carbolic lotion (1 in 60), and antiseptic alkaline lotions.

A warning.—More than one surgeon has advocated boring into the sinus from the nose. It cannot be too emphatically stated that this method is unjustifiable, bristles with dangers, and has already been responsible for more than one death from meningitis following shortly after the performance of the operation. A glance at the varying anatomy of the region should be sufficient to warn any surgeon of the unwarrantable risks which such a procedure entails. Recently Spiess (Frankfurt) has revived the operation, the manipulation of instruments being carried out under the kindly guidance of the Roentgen rays. To the writer, however, the method seems to add needless difficulties and encumbrances to an unsurgical and unscientific operation which ought not under any circumstances to be contemplated.

2. *External radical operation.*—This involves removal of more or less of the anterior bony wall of the sinus, of its diseased contents, and the provision of free drainage into the nose.

The patient having been anæsthetised, the eyebrow shaved, the skin cleansed, and the posterior choana plugged with a sponge (*vide* Case 1) an incision is made commencing just above the internal palpebral ligament curving upwards and outwards just below the line of the eyebrow to about the junction of the middle and outer thirds of the supra-orbital ridge. The soft parts and periosteum are retracted in the length of the wound and a small disc of bone is removed from the anterior wall of the sinus by means of a chisel and mallet or a quarter-inch trephine. Pus generally exudes at once through the opening as also does the polypoid degenerated mucous membrane. A bent probe is now passed through the opening in the bone to gauge the extent and limits of the sinus. If the cavity is small, and more so if the patient is a male, the surgeon may proceed to remove all the anterior wall so that at the end of the operation the soft parts fall in against the posterior wall and obliterate the sinus. If the sinus is a large one only a portion of the anterior wall should be removed. In this part of the operation care should be taken not to injure the pulley of the superior oblique muscle, which often comes into view. The diseased mucous membrane is next carefully curetted away down to the periosteum and all crevices or extensions of the sinus are searched out with a small curette or sharp spoon. Somewhat free venous hæmorrhage occurs during this part of the operation, but pressure applied by means of small wool sponges soon checks it. The next step is to make a free opening into the nose which can be safely done by means of curved burrs of progressive sizes[3] or with a suitable curette. In this way suppurating anterior ethmoidal cells are destroyed. The communication between the sinus and the nose should at least be capable of admitting an ordinary lead-pencil, because the success of the operation almost entirely depends upon securing free drainage into the nose. It need scarcely be said that great care should be taken in using instruments in these upper ethmoidal regions. The surgeon will find that access to the upper end of the fronto-nasal canal within the sinus is more easily attained if he removes a small portion of the anterior sinus wall situated just above the junction of the frontal and nasal bones (Fig. 1c). This same diagram represents the relative amount of anterior wall which should be removed in order to deal efficiently with a sinus of ordinary dimensions as indicated by the dotted lines. Having thoroughly curetted and dried the sinus it may be swabbed out with zinc chloride 40 grains to one ounce or pure carbolic acid and then packed with a strip of antiseptic gauze. The soft parts are stitched up at once except at the lower angle of the wound through which the end of the gauze projects. In the course of three or four days (if in the meantime the temperature is normal and the wound looks well) about three inches of gauze may be withdrawn and cut off, the process being repeated every third or fourth day until all the gauze is removed and the cavity is lined by healthy granulation tissue when the external wound may be allowed to close.

In three cases I have inserted a small drainage-tube which projects from the inner angle of the external wound (which is stitched up as in the first method) and passes through the nose and out of the external naris. A hole is made in the side of the tube which lies in the sinus so that the latter may be daily irrigated and free drainage provided. The tube can be substituted after the lapse of about ten days for a U-shaped piece of silver wire bent somewhat like a tracheotomy tube so that it keeps open the fronto-nasal canal and can be daily removed for irrigation. Excellent results followed this method, the patients being free from discharge within one month of the operation.

It is unfortunately true that some seven or eight fatal cases of septic osteomyelitis have been recorded after the operation and apparently due to its performance, but it is only fair to say that these have occurred during the evolution of the operation as above described and in all cases they have been due to the fact that free drainage into the nose has not been ensured at the time of the operation, the external wound has been tightly sewn up, and with recurring suppuration the septic matter has been forced into the recently opened diploë of the frontal bone with ultimately fatal results.

In those instances where the antrum also contains pus an alveolar drain should be inserted and the antrum irrigated thoroughly for a few days before the radical operation on the higher sinus is undertaken. If, after the cure of suppuration from the frontal sinus the discharge from the antrum continues in spite of irrigation it may be necessary to explore that cavity in a somewhat similar manner to that described for the upper sinus, and it will often be found to contain a diseased mucous membrane which must be curetted away and the cavity packed or irrigated daily until its lining membrane is healthy.

[3] Made by Meyer and Meltzer, 71, Great Portland-street.

Complications.—Apart from septic inflammation of the frontal bone which ought not to occur, other complications are few and of small importance. It is well, however, to warn the patient beforehand of the possibility of loss of sensation in the skin over the forehead owing to division of the supra-orbital nerve. Temporary diplopia is not uncommon owing to disturbance of or inflammatory exudation around the pulley of the superior oblique muscle. It does not, as a rule, last for more than a week or ten days.

A study of the results attained in the appended list of cases will show that efficient intra-nasal treatment alone will completely relieve headache and nasal obstruction, while in most instances the purulent discharged is diminished. The question therefore arises: "What should determine the surgeon in advising the external radical operation?" The answer will, I think, mainly depend upon the temperament and idiosyncrasies of the patient. Intra-nasal treatment, as in Case 6, may so benefit the patient that he or she may find no inconvenience from a small amount of pus which necessitates the use of only one handkerchief a day, a condition of improvement which the individual referred to speaks of as "cure," although there is a slight discharge of pus from each sinus. Neither can the surgeon regard the improved condition as one calling for immediate radical intervention, much as his surgical instinct may prompt him to regard inimically any pus-producing focus within the body. On the other hand, some patients are particularly sensitive to the presence of any abnormal nasal secretion, and however slight it may be they desire to be entirely rid of the same. Under such circumstances and again where the patient contemplates going abroad or to regions where an occasional skilled examination of the nasal cavities is not obtainable we may advise the external radical operation.

Concerning this procedure it may be said that if due regard is paid to the anatomy of the regions involved and care is taken in carrying out the details already indicated, it is an operation almost free from danger, leaving remarkably little scarring or disfigurement even after extensive removal of bone, and yielding results gratifying alike to both patient and surgeon.

Note.—Since the above article was written I have operated upon three more cases of frontal sinus empyema, the last of which I successfully skin-grafted by Thiersch's method, and the progress of this case leads me to think that this method will give ideal results and greatly minimise the time during which the patient is under treatment.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CASE OF PANCREATIC DIABETES DUE TO CALCULI.

BY E. WILLMER PHILLIPS, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient was a naval pensioner, fifty years of age, and was first seen by me on the evening of Oct. 29th. He was then complaining (1) of passing a little blood per rectum when defecating; (2) a discharge in the interval which stained his shirt; and (3) of great weakness and wasting; he had lost in weight one stone in twelve months. He was a dark, tall, thin man and, except for absence of anæmia, looked as though suffering from malignant disease. There were no abnormal physical signs in his chest and nothing unusual was felt in the abdomen or per rectum. Sometimes he felt restless but lately he had been very drowsy. He had no thirst or polyuria. His tongue was clean and there was no perceptible odour in his breath. His bowels were open twice daily, the motions being very offensive. His pulse was 54 per minute. His urine was of specific gravity 1024; sugar was present, but there was no albumin. On Nov. 1st he passed five pints in 36 hours. On Nov. 3rd analysis showed 8·7 parts of sugar per 1000; no acetone, diacetic, or β-butyric acid was present. I noticed that the stain on his shirt looked greasy (or, as his wife expressed it, "as though vaseline had been smeared over it," and she had great difficulty in washing it out). Upon inquiry she said that the motions were greasy and those I examined were mottled-grey, greasy-looking, and peculiarly offensive; once or twice there was solid fatty material upon cooling.

There were occasional slight pain in the pancreatic region and tenderness upon deep pressure, but nothing could be felt. The optic discs were very white and the man had had temporary amaurosis some time previously. At first he improved slightly upon careful diet, aperients, and pancreatic tabloids, and the extreme drowsiness passed off, but at the end of a month he would eat just what he liked with consequent drowsiness and weakness; one night he became excited and light-headed after a diet of milk, ginger-beer, brandy, sardines, and liver. After these bouts he would starve for a few days and improve, but on the whole the course was one of progressive weakness, aggravated for three weeks by severe hæmorrhage from prolapsed piles. The specific gravity of the urine varied from 1010 to 1032; that passed in the day contained sugar (12·500 per 1000 in May), but that passed at night did not. There was slight peripheral neuritis in the hands and legs. The lung broke down in May and he gradually died from exhaustion on June 14th. There was never any jaundice. I afterwards heard that he had suffered from frequent severe attacks of colic and vomiting for which he was invalided from the navy 20 years ago. Only a partial necropsy was allowed. The liver and kidneys were apparently healthy. The pancreas was hard and its duct was filled with calculi and calcareous matter. The largest mass was situated in the head of the pancreas and was tubular in shape; the next largest was at the splenic end; a third could be felt in the posterior part of the head; the entrance of every branch duct was plugged with concretions. No communication could be found between the pancreatic and common duct or with the duodenum. The substance of the gland was hard but it was not enlarged. It was examined by the Clinical Research Association and the report was as follows: "The pancreas shows great increase of fibrous tissue in parts with atrophy of acini and glandular tubules. A section of moderately large duct shows much shed epithelium from catarrh." The colours of the calculi and débris were chiefly yellowish white and dark grey mixed.

Remarks.—It was evident upon examining the urine and motions that there was obstructive disease of the pancreas, but cases of pancreatic calculi are sufficiently uncommon to merit record. The chief points of interest in this case are first the misleading symptoms for which he sought advice (hæmorrhage and discharge per rectum), and secondly the history of previous severe colic. In a case recorded by Minnich the symptoms of colic, intermittent glycosuria, and fatty motions led to the discovery of pancreatic calculi in the fæces. The peculiar odour of the motions seems to be almost pathognomonic of pancreatic disease; the great prostration and wasting also are more pronounced than in ordinary diabetes.

Southsea.

IMPACTION OF A BEAN WITHIN THE AIR PASSAGES; TRACHEOTOMY; EXPULSION THROUGH THE WOUND; RECOVERY.

BY BRUCE HAMILTON, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case presents features of special interest. A boy, aged 12 years, was playing with dried haricot beans when his elbow was accidentally jerked upwards with the result that a bean which he had been holding in his hand was shot into his mouth; fits of coughing and retching at once commenced.

I saw him within 10 minutes of the occurrence of the accident—viz., at 8.30 P.M. He was complaining of great difficulty in breathing and indicated the supra-sternal notch as the spot where obstruction was most felt. There was no evident laryngeal stridor and the character of the voice may be described best as "ventriloquial." He made many ineffectual attempts to relieve his embarrassment by cramming his fingers down his throat, an act that induced noisy vomiting but failed to give him relief. On examination of the chest no air was found to enter the right lung; the left lung was working naturally. No foreign body was seen in the larynx or trachea. Now and again he coughed up blood-stained mucus. It being

then practically certain that the right bronchus was blocked efforts were made to dislodge the foreign substance. Thumping the back, inversion, violent emesis induced by ipecacuanha wine, alike proved ineffectual, and the boy becoming sleepy he went to bed and slept placidly and uninterruptedly till morning.

Early the following day (12 hours after the accident) a fit of coughing occurred and similar attacks followed at diminishing intervals until at last a continuous struggle for breath terminated with unconsciousness and convulsions. The trachea was opened with one cut of the knife as the patient lay upon the floor where he had fallen, and at once restoration was partially re-established and consciousness returned, but it was not until the incision had been enlarged in a downward direction that a bean, greatly swollen, softened, and ruptured, was expelled through the wound with considerable force. The period of time that elapsed between the first cough in the morning and the onset of convulsions was about 20 minutes. The subsequent history of the case was uneventful.

The right and proper treatment in a case such as that which has been related is immediate tracheotomy, thus obviating the possibility of sudden death from laryngeal spasm should the foreign body become dislodged and be driven upwards; but it is by no means an easy matter to convince the friends of the imperativeness for surgical interference when they see the patient sleeping calmly. In the case in point, though probably there was present some degree of laryngo spasm at the time of operating, as evidenced by the partial restoration of respiration that at once took place after the trachea had been incised, I believe that the spasm was chiefly due to a participation of the adductores vocales in the general convulsive fit consequent upon hypervenosity of the blood rather than to reflex spasm brought about by peripheral irritation of the tracheal nerve-endings. Profuse hæmorrhage followed incision of the skin and may have been a factor in relieving spasm. The reason that asphyxia came on so precipitately towards the last may be partly explained by the nature of the foreign body. The testa would take time to soften and until that had been accomplished no great general increase in size could take place; but once the substance of the cotyledons began to absorb moisture a vast and relatively sudden expansion would occur, and any check upon expansion, such as the walls of the bronchus would have been likely to have exercised, would terminate with the dislocation of the foreign body into the wider lumen of the trachea.

Hampstead, N.W.

A CASE OF ADDISON'S DISEASE; TREATMENT WITH SUPRARENAL EXTRACT; DEATH.

BY EDGAR G. TREVITHICK, M.D. CANTAB.,
PHYSICIAN TO THE CHELTENHAM HOSPITAL.

IN this instance the symptoms of Addison's disease supervened in a man who exhibited in several organs signs of old, but thoroughly and long since arrested, tuberculosis. The bronzing of the skin was observed by the patient's friends two months before his death and became rapidly intensified along with increasing asthenia, chilliness, and gastro-intestinal irritability. Treatment with suprarenal extract was apparently without any avail, but it is only fair to say that this treatment was not instituted until very late in the course of the illness. The following notes give an outline of the case.

The patient was a man, aged 40 years, with a strong family history of tuberculosis. His present illness had begun two months before with darkening of the complexion accompanied or followed by feebleness and nausea. On admission to the Cheltenham General Hospital there was extreme pigmentation of the skin. The scrotum and penis were absolutely black. The face and hands were of a dark brown colour. The skin over the trunk was much pigmented. The legs and the feet were only slightly discoloured. There was some pigmentation on the dorsum of the tongue. The pulse was 66. The temperature was entirely subnormal. The knee-jerks were present. The urine was normal. There was considerable distortion of the spinal column, dating from an attack of spinal caries when 23 years of age. The symptoms most complained of were vomiting, great weakness, and chilliness. Suprarenal extract was administered twice a day without any good effect. Small doses of liquor morphiæ alone appeared of service in checking the vomiting. On the tenth day after admission the temperature, which for several days had never been higher than 97·4° F., suddenly rose to 101°; and with it the pulse-rate, which had averaged 55, increased from 50 to 100. No actual rigor was noticed. But two mornings afterwards the temperature had again fallen to subnormal and the patient was once more complaining much of chilliness. The nurse in charge administered a little stimulant and leaving the bedside was surprised and shocked to find on returning 10 minutes later that death had occurred.

Necropsy.—Signs of old arrested tuberculous disease in the spinal column were found. There were small obsolete strongly encapsuled tuberculous deposits here and there in both lungs and in the bronchial glands. There were no signs of active or even recent tuberculosis in any organ. There was very great displacement of organs due to spinal curvature. The right suprarenal capsule firmly adherent to the under surface of the liver was represented by an olive-shaped mass of dense fibrous tissue. The left capsule was adherent to the tail of the pancreas; it was normal in shape but with its proper substance entirely replaced by fibrous tissue containing several small caseous centres. Owing to spinal curvature the kidneys had fallen away considerably from their normal position and were no longer any guide to the situation of the suprarenals. There was much chronic thickening of the peritoneal and subperitoneal tissue in the neighbourhood of the distorted spinal column and the suprarenals lay in the midst of this sclerosed area. The spleen was diffluent. The liver was very soft and fatty. The heart walls were very thin and soft and rotten.

Cheltenham.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

WESTMINSTER HOSPITAL.

THREE CASES OF PHTHISIS TREATED WITH "TUBERCULIN R."

(Under the care of Dr. W. MURRELL.)

IT is even more important to publish unsuccessful cases than to record those in which improvement has resulted, and especially is this so in connexion with new methods of treatment. Ten years have elapsed since the introduction of Koch's tuberculin, and yet it has not attained to a recognised position in the therapeutics of pulmonary phthisis. It appears to be of very little use in mixed infections or in advanced cases, and the striking beneficial results detailed by Professor Mc Call Anderson in his lecture[1] are certainly exceptional. Professor Anderson gives his patients large doses of cod-liver oil (three ounces a day), and this may account in part for the difference. The reaction produced by Koch's original tuberculin was certainly of some diagnostic value, but with the new tuberculin there is very slight reaction and therefore its use in diagnosis is less.

CASE 1.—An old soldier, aged 41 years, was admitted to Westminster Hospital on August 31st, 1898, suffering from phthisis. He had been ill for three years and during the greater part of that time had been under treatment. His symptoms were cough with muco-purulent expectoration containing tubercle bacilli in abundance, progressive loss of flesh, and night-sweats. His physical signs were deficient movement and dulness over the whole of the right side, with high-pitched breath-sounds accompanied by crepitant râles. Posteriorly there was dulness at the right base up to the angle

[1] THE LANCET of June 16th, page 1703.

of the scapula with feeble breath-sounds and a few soft râles. In the supra-spinous fossa there was cavernous breathing with whispering pectoriloquy. There was no indication of mischief on the left side. The patient had tuberculous disease of the spine in a progressive condition, for which he was wearing a poroplastic jacket. His urine contained a trace of albumin, but no casts were found. His temperature during the first five days was 100° F. at night, but on the following three days was only once above 99°. The "Tuberculin R" treatment was commenced on Sept. 9th. The patient was kept in bed, strict antiseptic precautions were observed, and the temperature was taken every four hours night and day. The following is a list of the injections given:—

No.	Date.	Dose.	Reaction.
1	Sept. 9	$\frac{1}{500}$ mg. in 5 c.c.	99·0° to 100·8° F.
2	,, 12	$\frac{1}{500}$ mg. in 5 c.c.	None.
3	,, 15	$\frac{1}{250}$ mg. in 2 c.c.	98·0° to 100·0° in 7½ hours.
4	,, 16	$\frac{1}{125}$ mg. in 4 c.c.	None.
5	,, 19	$\frac{1}{250}$ mg. in 5 c.c.	None.
6	,, 22	$\frac{1}{10}$ mg. in 2 c.c.	98·0° to 99·8° in 8 hours.
7	,, 27	1 mg. in 1 c.c.	98·6° to 100·2°.
8	,, 30	2 mg. in 2 c.c.	99·0° to 101·2° in 20 hours.
9	Oct. 4	3 mg. in 3 c.c.	99·2° to 101·8° in 12 hours.
10	,, 6	3 mg. in 3 c.c.	99·0° to 101·6° in 24 hours.
11	,, 7	3 mg. in 3 c.c.	99·4° to 101·4° in 16 hours.
12	,, 13	3½ mg. in 3½ c.c.	99·2° to 100·4° in 20 hours.
13	,, 18	4 mg. in 4 c.c.	99·2° to 101·0° in 12 hours.
14	,, 19	4 mg. in 4 c.c.	100·4° to 101·6° in 8 hours.
15	,, 22	4 mg. in 4 c.c.	98·0° to 101·8° in 24 hours.
16	,, 28	3 mg. in 3 c.c.	98·0° to 100·0°.
17	Nov. 10	4 mg. in 4 c.c.	99·0° to 100·8°.
18	,, 18	4 mg. in 4 c.c.	98·0° to 99·6°.
19	,, 27	5 mg. in 5 c.c.	98·0° to 102·4°.
20	Dec. 1	2 mg. in 2 c.c.	None.

From this table it will be seen that in 12 weeks the patient had 20 injections in doses ranging from $\frac{1}{500}$th of a milligramme to five milligrammes. A detailed examination of the condition of the chest was made every week and there was no improvement in the physical signs, but, on the contrary, there was some extension of the mischief at the right apex. The tubercle bacilli were still found in abundance in the expectoration. The general symptoms showed no amelioration and for a considerable period the patient suffered from profuse night-sweats. The only hopeful sign was that the appetite was maintained and that the patient did not lose flesh. He was discharged on Dec. 10th.

CASE 2.—A man, aged 35 years, was admitted to Westminster Hospital on August 5th, 1898. He was in the hospital for pleurisy with effusion on the right side in 1896. He remained well until Christmas, 1897, when he caught a bad cold and since then his cough had never left him. He had night-sweating and there was considerable loss of flesh. On admission the physical signs were impairment of movement at the right apex, dulness on percussion, bronchial breathing in the first and second intercostal spaces, accompanied by moist râles. Moist râles were also heard at the right back up to the angle of the scapula. On the left side there was dulness at the base with moist sounds. Tubercle bacilli were found in abundance in the expectoration. The temperature for four weeks after admission, during which he had only symptomatic treatment, usually reached 103° F. in the evening. On Sept 12th he was given a hypodermic injection of $\frac{1}{500}$th of a milligramme of "tuberculin R" which produced no reaction. On the 14th the dose was repeated without effect and on the 16th it was increased to $\frac{1}{250}$th of a milligramme. On the 22nd at 8 A.M., when the temperature happened to be only 97·0°, he was given $\frac{1}{250}$th of a milligramme and the temperature rose to 99·8°, but whether as the result of the injection it was impossible to determine. On the 27th he was given one milligramme and on the 31st two milligrammes, and again without any positive influence on the temperature. There was no improvement in the physical signs and on Oct. 2nd he took his discharge, his condition being no better than on admission. He died three weeks after leaving the hospital and no post-mortem examination was obtained.

CASE 3.—A man, aged 45 years, was admitted to Westminster Hospital on August 21st, 1897. He stated that he had had a cough since February, 1896, the cough being constant and accompanied by much expectoration. He had a bad attack of hæmoptysis five months before and since then had frequently spat blood, the last time being about a month before admission. He had been steadily losing flesh for over a year, but had not suffered from night-sweats. There was flattening with diminished movement at the right apex in front and the percussion note over the whole of the right side was impaired. At the right apex the breath-sounds were weak and were accompanied by numerous fine râles. In the outer half of the first two intercostal spaces whispering pectoriloquy was obtained. The temperature during the first week usually reached 102° F. in the evening. On August 29th at 11.55 A.M., the temperature being 98°, he was given a hypodermic injection of $\frac{1}{500}$th of a milligramme of tuberculin R. At noon the temperature was 98·8°, and at 1 P.M. 99·6°. It then fell again and at 3 P.M. was 98°. On Sept. 1st at 1.45 P.M. he was given an injection of $\frac{1}{250}$th of a milligramme and at 6 P.M. his temperature was 101·6°. On the 3rd at 9.30 A.M., the temperature being 100°, he was given an injection of $\frac{1}{125}$th of a milligramme and at 10 A.M. the temperature was 101·8°, after which it gradually fell. On the 9th at 6.15 P.M., the temperature being 100°, the patient was given a hypodermic injection of $\frac{1}{83}$rd of a milligramme. At 6.30 the temperature was 101° and at 7 it was 101·8°, after which it gradually fell. The patient was given in all six injections, the maximum being $\frac{1}{50}$th of a milligramme, but there was no improvement either in the symptoms or in the physical signs. His appetite failed to improve, and as he was rapidly losing flesh he was sent home.

Remarks by Dr. MURRELL.—My experience of the treatment of phthisis with tuberculin R has been so limited compared with that of Professor McCall Anderson that it is with some hesitation that I venture to call attention to these cases. My experience would probably have been larger had the results been more favourable. It may be that if cases were carefully selected and only patients in a very early stage treated by this method better results would be secured. Possibly, too, the number of injections was too small, for I believe that in a successful case published by Professor McCall Anderson 47 injections were given in four months. The maximum dose of the new tuberculin is said to be 20 milligrammes, but that is a very large quantity and I have not ventured beyond five milligrammes. The irritation produced at the seat of infection is often a source of trouble and inconvenience to the patient. The expense is a serious consideration and in hospital practice a physician hesitates to recommend his house committee to sanction the employment of a remedy which runs up to 17*s.* a dose. I endeavoured to get it made in England on more reasonable terms, but was told that although the formula was published the exact details were not known. I have no wish to speak unfavourably of tuberculin R and my limited experience would not justify me in doing so, but I am positive that in these particular cases I could have obtained far better results with the formic aldehyde treatment, the details of which I have already published.

MORPETH COTTAGE HOSPITAL.

A CASE OF FRACTURE OF THE LEFT SIDE OF THE SKULL WITH COMPLETE RIGHT HEMIPLEGIA; OPERATION; RECOVERY.

(Under the care of Dr. E. F. L. DE JERSEY.)

IN all cases of depressed fracture of the skull, except in those in young children, it is now the accepted treatment to trephine at once, even in the absence of symptoms and even if the fracture be unaccompanied by a lesion of the scalp. In the following case the coma and the right sided hemiplegia pointed clearly to the lesion on the left motor area, and the fact that pressure over the fracture produced spasm of the right side of the body confirmed the diagnosis. The harmlessness and the value of modern treatment of even extensive fractures of the skull could not be better illustrated than in the case recorded below.

A man, aged 45 years, was admitted into the Morpeth Cottage Hospital on Feb. 22nd, 1900, having been struck on the left side of the head on the 17th with a pole six feet in length and from six to nine inches in diameter. There was complete unconsciousness with right-sided hemiplegia and retention of urine and fæces. The temperature was 102° F. On the day before the patient's admission into the hospital (Feb. 21st) slight crepitation was detected over the left parietal bone at about its centre. There was no external wound or discolouration over the site of the injury, only slight

pitting on pressure. There was slight effusion of blood a little above and in front of the left ear. There were also two black eyes produced by fist-blows. On firm pressure over the site of the fracture spasm of the whole right side of the face and body was produced.

An operation was performed at 3.30 P.M. on Feb. 22nd. An incision was made from a point one inch above the left frontal eminence of the frontal bone and three and three-quarter inches above the left external canthus down to a point half an inch above the lower border of the left parietal bone and two and a half inches above the left external auditory meatus up to a point a little above and behind the left parietal eminence four and a half inches above the left mastoid process and five and a half inches from the starting-point. On raising the flap thus formed an extensive stellate, depressed, fissured, and comminuted fracture was found, the stellate and comminuted portion being situated immediately in front of the left parietal eminence. On raising the depressed and comminuted fragments both the internal and external tables of bone were found to be involved, fragments of bone projecting in all directions into the brain substance, tearing to shreds the dura mater, the arachnoid, and the pia mater lying over the convolutions of the brain. After the removal of the fragments of bone an area of brain two and a half inches by three-quarters of an inch was exposed. From the anterior border of this area in the bone was a fissure extending downwards and forwards into the frontal bone towards the outer border of the left orbit; another fissure extended from the posterior part through the remaining portion of the parietal bone into the occipital bone. This latter fissure was much wider than the anterior one, it being about a quarter of an inch in breadth. Beneath the stellate and comminuted fracture was a large hæmatoma, which was left undisturbed. At a point four inches at right-angles to Reid's line and two inches behind the exterior auditory meatus, being at a point a little posterior to the left parietal eminence, was a cavity extending right into the substance of the brain large enough to admit the little finger quite easily. This cavity corresponded to the upper end of the left Rolandic fissure, thereby involving the upper ends of the left ascending frontal and parietal convolutions, the latter chiefly. This cavity, no doubt, was produced by the injury, but degenerative changes had already set in, as the brain matter round the orifice was quite pulpy and friable. The fracture covered most of the motor area, there being complete right-sided hemiplegia and motor aphasia, showing that the left inferior frontal convolution must have been damaged as well as the parietal convolutions. Some of the difficulty in speech was due to paralysis of the tongue, but after the latter had passed away there was considerable aphasia left. The patient stated when he got the use of his tongue that he could hear everything which was said to him and wished to answer but he could not get his words out. Part of the whole thickness of the parietal bone was replaced, a gauze plug was inserted into the cavity in the brain and brought out under the flap, which was sutured, and a dry dressing was put on. The plug was removed on March 3rd and the wound healed without suppuration.

Before operation the pulse was 40, the breathing was very quiet, almost inaudible, and deep coma was setting in. At 9 P.M. on the evening of the operation the patient was still unconscious but he raised his right leg every now and again. The pulse was quicker and the breathing was stronger. The temperature was 97·5°. He had taken nourishment, and this he had not done before since the injury. He was very restless and kept on raising himself from the pillow. Shoulder bands were put on which kept him still, they being tied to the head of the bed. On Feb. 23rd (the day following the operation) the patient had had a pretty good night though he had been very restless at times. He had said the word "No" and had made signs for a drink. The urine and fæces were passed involuntarily. The temperature was 98·2°.

From the operation the patient steadily improved and never once did the temperature rise above the normal. On Feb. 24th the right arm could be raised slightly. On the 25th the right arm could be moved freely and consciousness was returning. On the 28th the patient tried hard to speak but could not get the words out. He opened his mouth when asked to do so and said small words like "Yes" and "No," but usually he used the latter to questions which were put to him. Consciousness had almost completely returned. On March 7th the patient put out his tongue for the first time. It deviated much to the right. He carried on a little disconnected conversation, there being much motor aphasia. He started taking light solids on this day. On the 12th he gave a statement to the police as to the cause of his injury quite rationally, but with difficulty at times owing to the aphasia. He said that he had a bad memory and could not remember names so well as he could before the injury. On the 16th the patient got up. On April 2nd he walked about the ward quite well and was able to carry on a conversation with very little difficulty. The paralysis had completely disappeared, but there was slight weakness of the right side, specially noticeable by the clench of the two hands. On the 10th the patient was dismissed from the hospital.

Remarks by Dr. DE JERSEY.—The order in which the paralysis disappeared was very prominent. Almost directly after the pressure over the motor area had been relieved movement of the paralysed side returned, starting with the leg, then followed by the upper extremity, the face, and lastly by the tongue. The shoulder movements returned before those of the elbow, and those of the elbow before those of the hand—viz., the finer movements. The upper face being only slightly affected returned to its normal state long before the lower face. The return of the paralysed side to normal brought out very well the fact that the parts which rarely act independently of their fellows on the opposite side are the parts that are usually the least paralysed and consequently are the parts that recover the most quickly.

Before the operation there was retention of urine; after operation there was retention with at times incontinence, the bladder being frequently found above the pubes. The urine was drawn off for five days and the bladder was washed out with a weak solution of boric acid, as there was slight cystitis. Fæces were passed involuntarily for two or three days after the operation; after that there was constipation.

The interesting points in the case are the rapid recovery after the pressure on the brain had been relieved, the signs of relieved pressure appearing before those of shock began to pass off, and consciousness returning comparatively late.

The cavity found at the top of the motor area seemingly has left no bad effects, as also the gaping fissures in the bone extending into the frontal and occipital areas respectively. The fissures were left as approximation of the two sides could not be obtained, although seemingly all wedges of bone likely to cause the gaping were removed. It was thought unwise to make further flaps to discover actually how far these fissures extended, as in all probability no harm would be done by leaving them. This was the case. Another interesting point is the fact that a piece of bone, including both the external and internal table, completely deprived of its periosteum, was replaced and has become firmly adherent to the adjacent bone. Its size was nearly half an inch square.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour, with Remarks upon the Relative Advantages of the "Modern Porro" Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section.

A MEETING of this society was held on July 5th at 20, Hanover-square, W., Mr. ALBAN DORAN, the President, being in the chair.

Dr. AMAND ROUTH read a paper on Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour, with Remarks upon the Relative Advantages of the "Modern Porro" Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section. When the patient was first seen the pelvis was occupied by a large fibroid and the cervix uteri was out of reach above the symphysis. During the thirty-fourth week the pelvic fibroid was rather suddenly drawn up out of the true pelvis and it was hoped that parturition would be naturally performed. As it was found that the head was arrested just above the lower segment of the uterus by two opposing fibroids a Porro-Cæsarean operation was

performed in preference to a panhysterectomy or to Cæsarean section with removal of the appendages. *The operation.*—When the abdomen was opened in the middle line the left broad ligament came into view with the largest fibroid on its right. The incision into the uterus had therefore to be made posteriorly to the left broad ligament and was directly over the placental site. The placenta was stripped off, the membranes were incised, the child was extracted, the placenta and membranes were removed, and the uterus was brought out through the abdominal incision. The operation was then completed by Baer's method. Both mother and child had an uneventful recovery. It was a point worthy of discussion whether supra-vaginal amputation of the uterus (Porro's operation), with retro-peritoneal treatment of the stump, was not safer for the patient in skilled hands than a Sänger-Cæsarean section with sterilisation in all cases of *permanent* obstruction to labour requiring abdominal section, except, perhaps, those due to cancer of the supra-vaginal cervix. When it had been decided that a viable child had to be delivered from a living mother by abdominal section all cases would resolve themselves into three groups: (1) those where hysterectomy (Porro or panhysterectomy) with retention of one or both ovaries was absolutely indicated; (2) those where a Sänger-Cæsarean operation (with or without sterilisation) was absolutely indicated; and (3) those capable of being treated by either operation. It was agreed that a Porro (or panhysterectomy) was absolutely indicated in the following cases: obstructing fibroids, cicatricial stenosis of the vagina where the lochia could not escape, septic endometritis, decomposed fœtus (osteomalacia owing to the fact that removal of the appendages was often curative), uterine hæmorrhage from uterine inertia during Cæsarean section, and after much previous manipulation of the uterus in attempts to extract per vaginam. Sänger-Cæsarean section without sterilisation was, on the other hand, absolutely indicated, instead of a "Porro," where it was considered desirable for the woman to have a chance of another child, and Sänger-Cæsarean section with sterilisation was required (?) in cases of cervical cancer when the supra-vaginal cervix was involved. There only remained, therefore, a third group of cases where a Cæsarean section with sterilisation was usually done, but where it would, in Dr. Routh's opinion, be quite as reasonable to do a modern "Porro." This third group included all cases of sufficient pelvic contraction, and it was in such cases that the relative value of a modern "Porro" operation as compared with a sterilising Sänger-Cæsarean operation demanded serious consideration.

Dr. A. L. GALABIN preferred to call the operation performed by Dr. Routh a Baer-Cæsarean or simply a Cæsarean hysterectomy, as the original operation of Porro was hysterectomy with the uterine stump fixed in the abdominal wound instead of being covered by peritoneum and dropped into the abdomen, as Dr. Routh had done. He thought the best operation had been done and he had performed a Porro's operation in a similar case five years previously. He did not think that pregnancy added to the difficulties of such a hysterectomy, and was led by this experience to recommend it as the best operation when fibroids obstructed labour and also as an alternative to the ordinary Cæsarean section apart from fibroid tumours. In several other cases of pelvic fibroids complicating pregnancy he had found that the fibroids became elevated during the first stage of labour, and had enabled forceps to be used to complete delivery. He asked Dr. Routh whether there was much hæmorrhage before the ovarian and uterine arteries were tied and whether the elastic ligature was used.

Dr. WILLIAM DUNCAN approved of the details of the operation performed by Dr. Routh. He believed that abdominal hysterectomy with intra-peritoneal treatment of the stump was much less dangerous than any Cæsarean section except in cases of cancer of the cervix where he would prefer to treat the stump extra-peritoneally. He preferred to leave both ovaries instead of only one, as he had several times noticed that when one ovary was removed various unpleasant "menopause" symptoms supervened, although never so severely as when both ovaries had been removed.

Dr. PETER HORROCKS said he preferred to speak of Cæsarean section rather than of Sänger-Cæsarean because the evolution of asepsis had led many operators to abandon Sänger's main improvement, which was to sew the peritoneum completely over the deep sutures. Although he believed that Dr. Amand Routh had done quite the best thing in his case he did not think it was possible to formulate rigid rules for all cases, for it often happened that it was found best to do something quite different from what was intended before the operation was begun. Speaking generally, he preferred Cæsarean section to Porro's operation, sterilising the patient by snipping half an inch out of the middle of each Fallopian tube. This operation was, he considered, easier and safer for the patient. If possible, he always left both ovaries when performing hysterectomy, although he had never found that climacteric atrophic changes ensued if only one were left behind.

Dr. W. R. DAKIN believed that if one ovary were left behind after hysterectomy the effect was the same as if both were left. He agreed with Dr. Routh that the woman escaped certain risks if the uterus were removed instead of being merely sutured and the patient sterilised, and alluded especially to the risks of infection of the peritoneum through an imperfectly sutured wound and of adhesions between the uterine and abdominal wounds which might cause strangulation of the bowels. If the woman wished to have a family, all members of which were to be delivered through the abdominal wall, it was another matter. He had observed no greater shock after supra-vaginal hysterectomy in these cases than after an ordinary Cæsarean section, but agreed that it was wise not to decide how the operation was to be finished till the child was actually extracted from the incised uterus. He had recently operated with successful results to both mother and child where the true conjugate was only two and three-quarter inches. In a previous pregnancy labour had to be induced at the sixth month. The patient agreed to an abdominal operation but wished at the same time to be sterilised. At the operation, after extracting the child, he found the uterine vessels were standing out so clearly and were so easy to ligature that he decided it would be a much shorter procedure to remove the body of the uterus, treating the stump by the retro-peritoneal method, than to suture the uterine wound and to ligature and excise a part of each tube. He thought this would be the decision most often arrived at under similar circumstances.

Dr. HERBERT SPENCER agreed that the best operation had been done in this case and he had himself performed Porro's operation under similar circumstances eight years ago. While the intra-abdominal treatment of the stump shortened the convalescence and lessened the risk of hernia it did not always prevent septic peritonitis, by infection of the ligatures through the vagina (Klotz), nor the risk of adhesion of bowel to the seam causing intestinal obstruction, which had occurred in one of his own cases. He did not consider that Porro's operation should be done in all cases of permanent obstruction, such as contracted pelvis. He much preferred the conservative Cæsarean section. He would, however, have nothing to do with sterilisation by tying or cutting the tubes, which, besides exposing the patient to additional risks, was very unreliable in its effects and was at least debateable from the moral standpoint. The conservative Cæsarean section was a very successful one and left no stump for intestines to adhere to, the wound in the puerperal uterus lying up against, and becoming adherent to, the abdominal wall, so that in a subsequent operation the peritoneal cavity was sometimes not opened at all. He had recently performed Cæsarean section under local anæsthesia upon a patient whom he had delivered by Cæsarean section twice previously. As both the children thus delivered had subsequently died the advantage to the mother of having a third, and this time a very healthy, child was obvious. He had also successfully repeated Cæsarean section in another case.

Dr. COLLINGWOOD ANDREWS had had opportunities of comparing the progress of cases of hysterectomy during pregnancy where both the extra- and intra-peritoneal methods of treating the stump had been tried and greatly preferred the latter method.

Mr. A. C. BUTLER-SMYTHE thought that the operation performed by Dr. Routh was only possible in a hospital or where skilled assistance was obtainable. Wherever a Porro's operation was required, as in cases of fibroids, he considered the retro-peritoneal treatment of the stump far preferable to the old method, but he would leave the precise details of the operation to be decided when the abdomen was opened and the child extracted. That was also the time to consider whether the woman should be allowed to run the risk of another pregnancy.

Mr. J. H. TARGETT said he considered that a non-sterilising Cæsarean section was very rarely justifiable, while between a supra-vaginal hysterectomy and a Cæsarean section with sterilisation the balance would usually be in favour of hysterectomy, because it could be more rapidly performed and prevented the risk of hæmorrhage and subsequent sepsis. When the pregnancy was complicated with fibroids the advantages of supra-vaginal hysterectomy were obvious. As evidence of an additional risk in the after-history of cases where Cæsarean section without sterilisation had been done, he showed a specimen of a uterus which he had removed from a woman who had had Cæsarean section performed by him two years and a half previously for impacted shoulder presentation. When re-admitted she was in a state of collapse and when the abdomen was opened the child and placenta were found free in the peritoneal cavity, and there was a large rupture in the anterior uterine wall along the scar of the previous operation. The patient fortunately recovered.

The PRESIDENT believed that the retro-peritoneal operation was best provided that, as in the present case, the obstetrician had already performed it more than once on non-pregnant subjects and in hospital practice with plenty of assistants. Country practitioners with large midwifery practices but without experience of abdominal section have, as in a case within his own knowledge, had excellent results after the old Porro-Cæsarean operation, which was easy and could be done quickly. On that account Lepage performed the old operation in a hospital on a case of labour at term complicated by fibroids where there was free hæmorrhage, saving mother and child. Weiss and Schuhl reported the removal of the uterus in two cases of spontaneous rupture during labour occurring in a hospital. In one case the elastic ligature and pins were used and the patient recovered; in the second, which was lost, the retro-peritoneal operation was undertaken, but this case was septic. Panhysterectomy had the disadvantage of being yet lengthier than retro-peritoneal hysterectomy.

Dr. AMAND ROUTH, in his reply, agreed that the nomenclature was not altogether satisfactory, but thought that all cases of hysterectomy during late pregnancy (except panhysterectomy) were of the nature of a "Porro," the treatment of the stump being a detail capable of many renderings. He did not consider that the old "Porro" operation was suitable for cases of advanced cancer of the cervix owing to the great strain on the friable supra-vaginal cervix, which would almost certainly give way. He did not think it made any difference to the patient's after-history whether one or both ovaries were left. Most of the speakers had, with certain reservations, approved of his view that hysterectomy was in most cases preferable to Cæsarean section with sterilisation, and, as the President stated, if haste was essential the old "Porro" was indicated, otherwise the modern retro-peritoneal hysterectomy. Dr. Herbert Spencer's contention that wherever possible Cæsarean section without sterilisation should be performed, so as to allow another pregnancy to occur, was not in his opinion justifiable. The patient might at full term be far away from skilled assistance and would, moreover, run all the risks mentioned in his paper both during the puerperium and subsequently. The adhesions which Dr. Spencer stated occurred between the uterine and abdominal incisions constituted one of the dangers and involved the risk of intestinal obstruction. He preferred catgut to silk for suturing the muscle of the stump, owing to its quicker absorption, which therefore caused a smaller chance of subsequent infection. He had not found the elastic ligature necessary but had quickly tied or clamped the uterine vessels.

The following specimens were shown:—

Dr. G. F. BLACKER: Frozen Sections of an Early (ten weeks) Pregnant Uterus.

Dr. PETER HORROCKS: A Pregnant Uterus with Fibroids removed at the fifth month by Abdominal Hysterectomy.

Mr. J. H. TARGETT: A Pregnant Uterus Ruptured at Full Term through the Scar of a Previous Cæsarean Section removed by Abdominal Hysterectomy.

Dr. AMAND ROUTH: A Pregnant Uterus with Fibroids removed at Full Term by Abdominal Hysterectomy.

Dr. WILLIAM DUNCAN: Multiple Myxomatous Polypi from the Cervix Uteri.

OPHTHALMOLOGICAL SOCIETY.

"Holes" at the Macula.—Optic Nerve Tumour.—Pseudo-Glioma.—Alveolar Carcinoma of the Eyelid.—Exhibition of Cases and Specimens.

AN ordinary meeting of this society was held on July 6th, Mr. G. ANDERSON CRITCHETT, the President, being in the chair.

Dr. F. M. OGILVIE read a paper on one of the results of Concussion Injuries of the Eye—"Holes" at the Macula. He had collected all the published cases presenting this lesion and he divided them into two large classes: (*a*) those in which there was no detachment of the retina, and (*b*) those in which detachment was present. He showed lantern slides of the appearance of the fundus in all these cases which invariably followed concussion injuries, such as blows from blunt objects, from stones thrown from catapults, and one most interesting case he had previously shown to the society in which the injury was due to a bullet which apparently hit the back of the eye in passing through the back of the orbit. He advanced several theories to account for the holes which, as a rule, were about one and a half dioptres in depth. He summarised the conditions brought about as follows: (1) the lesions were definite and central; (2) they were the direct result of violence; (3) the injury was permanent; (4) the general disturbance of vision was not great; and (5) it was the result of concussion injury only.—Mr. ADAMS FROST endorsed all that Dr. Ogilvie had said regarding the appearance of the lesion, and in view of the fact that no case had as yet been examined pathologically he suggested that possibly a similar condition might be brought about by a like injury in the eyes of animals or in eyes recently excised.

Mr. C. DEVEREUX MARSHALL read further notes of a case of Optic Nerve Tumour previously reported to the society in November, 1899. The patient was a woman, aged 46 years, upon whom he operated at the request of Dr. Poulett Wells on Nov. 30th, 1897, when the contents of the orbit were thoroughly removed. She remained in very fair health until shortly before her death, which took place on May 4th, 1900 (two and a half years later). Owing to the kindness of Mr. Austin Reynolds who attended her up to the time of her death, which occurred very suddenly, Mr. Devereux Marshall was enabled to obtain a post-mortem examination. The necropsy was made on May 6th and the following was the condition found. On removing the calvaria the middle meningeal vessels were found to be distended and the Pacchionian bodies were very large. The cerebral convolutions were very much flattened. The optic chiasma had entirely disappeared and its place was occupied by a large diffuse and very soft tumour of about the size of a bantam's egg. So soft was it that its actual limits could not be defined, and the greater part of it could easily have been washed away with a moderately strong stream of water. The centre of the growth was the right optic tract and it spread along the chiasma, involving the optic tract and optic nerve on the left side, both of which were considerably enlarged. The tumour reached the pons on both sides, invaded the lateral and third ventricles, and on the left side the optic thalamus and corpus striatum. The growth was so very diffuse that it appeared that the third, fourth, fifth, and sixth nerves on both sides were more or less included in it. On both sides the under surfaces of the temporo-sphenoidal lobes were invaded. The tumour was still further broken down by recent hæmorrhage in the vicinity of the left optic tract. No separate deposits were found in the brain and the growth had evidently spread by continuity only. Briefly, the neoplasm seemed to be due to an immense overgrowth of the connective tissue framework of the nerve, mainly the neuroglia, but also of the more fibrous prolongations from the pial sheath. The optic nerve on the opposite side was much enlarged and on examining it microscopically the sections were seen to present precisely similar appearances to those on the right nerve which was described in the first paper. Mr. Devereux Marshall added that in the last volume of the Transactions would be found a paper by Bullar and himself, the basis of which was a case of optic nerve tumour somewhat similar to that described that evening, and at the present time (three years after removal) the patient was alive and well. In that paper the question of prognosis was fully discussed and the conclusion arrived at from published cases was that the disease, although of not

a very malignant type, could by no means be considered innocent and it was advisable to remove it as thoroughly as possible. This remark was justified by the present case where, although removed as completely as possible, the nerve was affected further back than the orbit and this was, of course, the way by which the growth reached the brain.

Mr. PERCY FLEMMING read a paper on three cases of Ophthalmitis (Pseudo-glioma) in Children. Case 1 recovered after a four months' illness, the main symptoms being irregular pyrexia, vomiting, head retraction, and diarrhœa. There was a history of convulsions and ear discharge, but no history of syphilis or acute specific fever. Case 2 died with typical posterior basic meningitis and pus in the right middle-ear. (This patient had an attack of chicken-pox four weeks after the eye became affected.) Case 3 died after an illness very similar to that of Case 1 and post mortem was found to have basic meningitis; the middle-ear was healthy. These cases, considered in relation with others published, might be taken to indicate that meningitis was the common cause of this particular form of ophthalmitis, and, further, that middle-ear disease was a likely cause of the meningitis. The following objections were urged against this view: (1) the fact that these cases in children rarely ended fatally; (2) pseudo-glioma was a rare complication of posterior basic meningitis, as was also optic neuritis; and (3) the usual unilateral character of the affection. Mr. Flemming considered that the eye condition was part of a septicæmic or pyæmic process which in most cases was limited to the eye, such cases recovering, whilst in others the meninges might be affected by the same process, these cases terminating fatally. The otitis might be the starting-point of the infection, and in any case of ophthalmitis (pseudo-glioma) it was most important to have the ear examined and even to puncture the membranes though apparently healthy.

Mr. KENNETH SCOTT and Mr. JOHN GRIFFITH contributed a paper on a case of Alveolar Carcinoma of the Eyelid which was removed from an Egyptian. The specimen on examination proved to be a carcinoma of the Meibomian glands.

The following cases and card specimens were shown:—

Mr. E. W. BREWESTON: A case of Pseudo-glioma.

Mr. W. T. HOLMES SPICER: Sections of Conjunctiva from a case of Spring Catarrh.

Mr. W. H. JESSOP: Tuberculous Ulceration of the Conjunctiva.

Mr. W. ADAMS FROST: Peculiar Crescentic Opacities in the Cornea.

Mr. TREACHER COLLINS: A case of Congenital Notch in each Lower Lid with Defective Development of the Malar Bones.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on June 23th at 20, Hanover-square, W. In the absence of the President, Dr. Payne, Vice-President, took the chair.—Dr. Eddowes showed a Case for Diagnosis. The patient was a girl, aged about 20 years, with a chronic unilateral linear non-pigmented papillomatous eruption starting from the vertebral line between the third and fourth dorsal spines and extending with some lapses of continuity across the right shoulder and down the extensor surface of the right arm on to the dorsum of the hand. It had the appearance of congenital neuropathic papilloma, but there was a very clear history that the eruption began on the hand only at the age of 10 years and was at first completely healed by treatment for eczema, which was the early diagnosis. The eruption had remained in its present condition for some eight years.—A majority of those joining in the discussion considered the case to be of the nature of ichthyosis hystrix, anomalous in its distribution and commencement.—Dr. Stowers showed: (1) A case of Hydroa Æstivale with Photographs of an analogous case previously shown; (2) Local Tuberculous Infection of the Skin in a child aged two and a half years; and (3) a Papulo-squamous Eruption on the Palms of the Hands with ulcerating nodules at the right angle of the mouth and under the right ala nasi, probably syphilitic in origin.—An interesting discussion took place on Unusual Sources of Primary Infection.—Mr. Hitchins showed a case of Maculo-anæsthetic Leprosy in a boy, aged 16 years, a native of South America. The disease was progressing rapidly.—Mr. Pernet exhibited a Microscopic Preparation from the case of Rodent Ulcer shown at the last meeting.—The next meeting of the society will be in October.

Reviews and Notices of Books.

Les Défenses Naturelles de l'Organisme. (*Natural Defensive Mechanisms of the Organism.*) Par M. le Professeur A. CHARRIN. Paris: Masson et Cie. 1898. 8vo, pp. 319.

THESE 21 lectures by Professor Charrin deal with a subject which is receiving much attention at the present moment. After some introductory remarks the author discusses the relationship of the alkalinity of the body fluids to the defensive mechanisms of the individual. In Lectures III., IV., and V. ductless glands with their internal secretions come under review. Thus a full account is given of the functions of the thyroid body and the effects produced by its removal. The relation of the suprarenal bodies to Addison's disease is also discussed, as well as the rôle played by these organs in the infections and their action upon the circulation. Lastly, the important relations of the spleen to the composition of the blood are described and the experimental work in connexion with the spleen and infection is reviewed. Lecture VI., in which are considered the effects of an increased body temperature and the methods possessed by the individuals to counteract them, is of considerable interest. In Lectures VII. to XVI., inclusive, the parts played by various organs in protection against disease are discussed. The stomach affords a striking example. The rarity with which this organ is the seat of infection proper is well recognised. Much importance has been attached in this respect to the acidity of the gastric juice, but it would appear that the active principles of this secretion can also neutralise some toxins. The relation of disease of the pancreas to diabetes is also a subject of special interest. The important part played by the liver in the protective mechanisms of the body are set out in much detail. Under the generative system the question of the internal secretions of the ovaries and testes is discussed. The methods by which harmful products are got rid of by the various organs of elimination deserve and receive here much attention. The subject of the toxicity of the urine is fully considered under this section. The protective mechanisms provided by the nervous system are largely of a reflex character. The last lecture deals with phenomena outside the individual, such as light, warmth, vaccines, &c., which assist in protecting him against disease. The path of entry of micro-organisms and the means of combating them are specially considered. The author points out that it is only when the various defensive mechanisms are defective or have deteriorated that the agents of disease enter upon the scene. This volume of lectures by Professor Charrin is not only extremely interesting, but it is instructive and very suggestive. It brings together in compact form topics upon which the writings are mostly scattered. The subject itself appeals to a wide circle of readers for it interests not only the physiologist and pathologist but also the clinician.

Les Ptoses Viscérales (*Estomac, Intestin, Rein, Foie, Rate*). *Diagnostic et Nosographie* (*Enteroptose, Hépatisme*). (*Displacements of Viscera* (*Stomach, Intestines, Kidneys, Liver, and Spleen*). *Diagnosis and Nosography—Enteroptosis, Hepatism.*) Par FRANTZ GLÉNARD. Paris: Felix Alcan. 1899. 20 francs.

IN this large octavo volume of close on 1000 pages Dr. Glénard gives us his experiences of 20 years of practice at Vichy based on the personal investigation of more than 10,000 patients. The avowed intention of the work is to establish enteroptosis as a definite morbid species, which is shown to include a vast number of diseases at present classified under the several heads—dyspepsia, neuropathies, neurasthenia, diseases of the stomach and intestine, and uterine affections. The enormous importance attributed by the author to functional and other

disorders of the liver in the causation of many of these conditions is evidenced by the fact that more than half the volume is devoted to the consideration of the disorders and displacements of this organ. In this clever and charmingly written book the reader will find a masterly if somewhat diffuse description of the physical examination of the abdomen in its minutest details. The chapter dealing with palpation of the intestine and the recognition of functional atonic narrowing of the large intestine (*entérosténose*) is particularly interesting and suggestive. The signs and symptomatology of the disorders and displacements of the stomach and of dislocations of the kidneys are fully treated, and among numerous clinical records of illustrative cases will be found a valuable epitome of all the recorded cases of floating liver (*hepatoptose*) as well as a series of 80 cases in which ptosis of the liver was associated with moveable kidney. We must refer the reader to the original for the deductions which Dr. Glénard draws from the rich store of clinical observations which he has so carefully collected and analysed.

Anatomie Clinique des Centres Nerveux. (*The Clinical Anatomy of the Nervous Centres.*) Par M. le Dr. GRASSET. Paris: J. B. Baillière et Fils. 1900. Pp. 96.

A KNOWLEDGE of the anatomy of the nervous system is of the first importance to the proper understanding of nervous disease, hence this small work by Dr. GRASSET, who is himself a well-known neurologist, should prove to be of considerable value. In Part I. the neuron, together with the systems which it forms and its connexions, are fully considered and the whole subsequent treatment of the subject is based on the neuron conception. In the description of the superior and inferior psychical centres this doctrine is even applied to the processes underlying the most strictly psychical phenomena. A short account is also included here of the development of the nervous system, as well as some remarks on the subject of myelinisation, or the development of the medullary sheath. In Part II. the motor and sensory cerebro-medullary paths, both direct and indirect, are described. The remaining sections are allotted to the central nervous apparatus for vision, hearing, taste, and speech, and for the circulation, secretions, respiration, and digestion. This small book will be found to contain much useful information which will facilitate the study of nervous disease.

LIBRARY TABLE.

Laboratory Note-book for Chemical Students. By VIVIAN B. LEWES and J. S. S. BRAME. London: A. Constable and Co. 1900. Pp. 170. Price 4*s*.—Chemical work of any kind is of very little use to the student unless it is accompanied by intelligent and systematic note-taking. If this is true of the theoretical portion of chemistry it is doubly so in the case of experimental work, and Messrs. Lewes and Brame are to be congratulated in their attempt to supply a suitable book for the purpose. In their preface the authors state that their Note-book has been compiled without reference to any particular syllabus or examination and that it is intended to cover such practical work as a student should be familiar with if he is to have a good groundwork in the subject of practical chemistry. Although not written in any sense for a special examination there is no doubt that it will be found extremely useful to candidates for the Preliminary Science Examination London, and, indeed, for any other examinations where the preparation of certain gases and salts together with a little elementary volumetric analysis are a *sine quâ non*. The pages are interleaved throughout for the students' own notes. A section of a more advanced character at the end of the book deals with the preliminary examination of water, oils, and explosives, written more especially for the benefit of naval, engineering, and mining students.

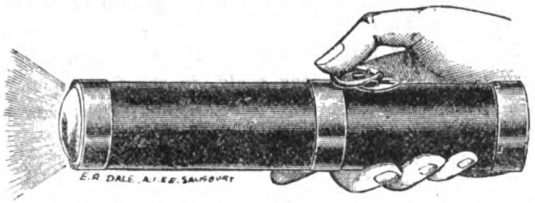
Gynæcological Nursing. By G. A. HAWKINS-AMBLER, F.R.C.S. Edin. London: The Scientific Press, Limited. 1900. Small crown 8vo. Pp. 93. Price 1*s*.—This little book contains a very practical and good account of the special details of gynæcological nursing. The duties of the nurse are given clearly and succinctly and cannot fail to be of service to those who are engaged in such special work. We are surprised to see, however, in the midst of so much that is good a description of the method of passing the catheter by touch, a custom which we thought was fast becoming obsolete. The observations of the author upon the personal hygiene and the special qualifications required from nurses engaged in gynæcological nursing are especially apt and to the point.

The Bubonic Plague. A Popular Lecture by Professor ANDERSON STUART.—Dr. Anderson Stuart has republished in pamphlet form a lecture recently delivered by him in Sydney. It is a clear and brief account of the plague, going as far into the etiology and pathology as the popular nature of the lecture allows, and explaining with a remarkable absence of technical phraseology the work of Yersin, Haffkine, and others. We hope that the lecture has obtained the wide circulation that it deserves, for undoubtedly it is good that people should know the measure of the risk that they run by the non-observance of medical regulations.

New Inventions.

THE "EVER READY" ELECTRIC LIGHT.

THIS is a handy little lamp, made in various sizes from three and a half to five and a half voltage and worked by a dry cell. Contact is made by pressing a ring down upon a spring. The whole is inclosed in a neat case and the cell is stated to have a life sufficient to give from 6000 to 8000 lights before requiring renewal. This of course is a hopelessly vague statement, for the life of the cell will entirely



depend upon the length of time for which the lamp is kept burning. The appliance, however, will be found convenient. It is made by Mr. E. R. Dale, 89, Fisherton-street, Salisbury. Mr. Dale, we see, calls himself a medical electrician as well as an electric light contractor. If this means only that he makes electrical medical apparatus—and we presume that Mr. Dale is not a medical man—he should state the fact in different words.

THE CAMBRIDGE SENTINEL PATENT DOMESTIC MILK STERILISER.

THIS is an ingenious invention for ensuring that milk when being sterilised by heat shall not be boiled—in other words, when the temperature reaches 185° F. the process of heating is stopped. The steriliser is made in two forms. In the one the heating is done by means of a gas stove in which upon the temperature reaching 185° the gas is automatically cut off. The other form which is for use with an ordinary fire cannot, of course, cut off the heat-supply, but when the desired point is reached a bell rings and so calls attention to the fact that a temperature of 185° has been reached. The apparatus is extremely simple and there are no complicated parts to get out of order. The apparatus can be obtained from the Sentinel Co., Limited, Cambridge. The saucepan is made of enamelled iron and the prices vary from 17*s*. 6*d*. for a six-pint pan with stove to 6*s*. 6*d*. for a one pint pan without stove for use on a fire.

THE LANCET.

LONDON: SATURDAY, JULY 14, 1900.

IN order to get a clear notion of the situation which has been brought about by Mr. BURDETT-COUTTS'S letter in the *Times* of June 27th last it is necessary to enter upon a brief description and recapitulation of what has since taken place. The main facts are, in our opinion, sufficiently clear. There was a serious outbreak of enteric fever among the troops in the Orange River Colony during the month of April, and we are content to accept in the meantime, and until it has been disproved, Mr. BURDETT-COUTTS'S statement in regard to what he saw at Bloemfontein on April 28th and subsequently. Bloemfontein, it will be remembered, was occupied by our troops on March 13th. They arrived there in a physically exhausted condition after a series of forced marches and after having altogether distanced their supplies. They became dependent upon a thin and precarious line of transport. An outbreak of enteric fever occurred and the medical service, overwhelmed by the amount and explosive nature of the epidemic, for a time had not the means of coping with it. This gave rise to the overcrowding and the lamentable suffering and occurrences described by Mr. BURDETT-COUTTS. We may set aside all the testimony of correspondents and others descriptive of their experience at other times and places as irrelevant and therefore worthless. The only questions are whether the emergency could, in the first instance, have been prevented, and secondly, whether, having arisen, everything was afterwards done as promptly as practicable to meet it. With regard to the second question Mr. BURDETT-COUTTS plainly implied that in his opinion such was not the case, and he has urged that if one day's trains on the railway had been utilised for getting up hospital stores the whole position of the sick and wounded would have been saved. This is a matter that has to be thoroughly gone into.

In the debate in the House of Commons on June 29th which followed upon the publication of Mr. BURDETT-COUTTS'S letter Mr. WYNDHAM gave a very able and lucid statement in explanation of affairs in South Africa. He spoke in defence of the Government and those concerned as far as the information in his possession enabled him to do so. Mr. BALFOUR, in a speech which was not devoid of asperity, held that the charges raised by Mr. BURDETT-COUTTS involved a question of transport. After Lord ROBERTS had made his remarkable march to Bloemfontein, said Mr. BALFOUR, he had to depend upon a very precarious transport, and the preventability or inevitability of the enteric fever among the troops turned upon how Lord ROBERTS or his subordinates used this transport. Here we may remark that, as far as we can see, there is really no occasion for any persons to shelter themselves behind the well-known popularity of Lord ROBERTS. It is a question of fact about which the commission going to South Africa will have to inquire. If the army medical authorities failed to represent the pressing urgency of the case they must of course take the consequences; whereas if the military authorities assumed the responsibility of overruling them and of using the transport in such a way as to be of no service to the medical service no blame can obviously in that case be attached to the medical service. It is only fair to say that there seems to be no question that the troops were in a miserable plight on their arrival at Bloemfontein—they and their horses were half-starved. Soldiers cannot fight unless they are properly fed and supplied with ammunition, and unless the military machine is in an effective state the safety of the whole force, sick and well, may be jeopardised. It is clear that in an emergency of this kind the medical equipment would have to rank after and not with the food-supply of an army.

Next came the appointment of a commission with the following reference: "To report on the arrangements for the care and treatment of the sick and wounded during the South African campaign." It should be added that Mr. ARNOLD-FORSTER asked, "Does the reference include the power of inquiry into the organisation of the Army Medical Department?" and was told in reply that the question was not referred to the commission but that no doubt the finding would have a bearing on it. The names of three commissioners were originally proposed—viz., Lord Justice ROMER; Dr. W. S. CHURCH, the President of the Royal College of Physicians of London; and Dr. D. J. CUNNINGHAM, Professor of Anatomy and Surgery, Trinity College, Dublin. No objection was raised on the score of their ability. The selection of a lawyer of the great eminence and business qualifications of Lord Justice ROMER, accustomed to and able to instruct those associated with him in the laws of evidence and in the testing and sifting of it, was felt to be very appropriate, while the official positions of the two medical men spoke for their reputations. But the feeling of the House was strongly against having the commission so small, and many Members held it to be a serious mistake on the part of the Government to have allowed a preponderance of medical men on it. Mr. BALFOUR attempted to support his original proposition, but had to yield the point in deference to the opinion of the House and the commission of three was increased to five. There can be no possible objection to the increase of the lay element on the commission, although we cannot see why members of the medical profession should not bring absolutely honest and impartial minds, together with common sense and experience of life, to the task. We have no desire to see any undue preponderance of the medical element on the commission. But we are not satisfied with its constitution and, such being the case, we are bound to state our reasons.

In the first place, there is such a thing as sacrificing efficiency to a fastidious sense of impartiality. There is no representative of the Army Medical Service on the commission who could, by his technical knowledge and

experience of army life, keep the commission informed on all points connected with the organisation, equipment, system, and methods of procedure adopted on field service, the reasons for their existence, and how far they are in conformity or not with those of all other European armies. It may be said that there was no necessity for such an appointment seeing that there were any number of medical officers in South Africa who could be summoned to give their evidence on such matters. This is practically tantamount to saying that the commission would be learning their business during their inquiry, and this is a thing which too many of our commissions are content to do. The special knowledge of a medical officer of ability and independence would be of immense value in facilitating the business of the inquiry and in indicating the nature and bearing of many of the questions that will have to be put. If no such officer is appointed on the commission we think it very desirable that such an officer should be called in as an assessor who need take no part in the deliberations and need not sign the report. If the commission can make any suggestions for improving the organisation of the Royal Army Medical Corps, or for providing a better hospital service than the present one, without gravely prejudicing the mobility of the army on a campaign, we can answer for it that there is no section of the community which will be more grateful to them than the medical profession. Any such suggestions could probably be more thoroughly considered and worked out subsequently. With this very practical end in view it seems to us that the aid of a man with some army experience is an essential matter.

Lord Justice ROMER is, as we have said, an unexceptionable choice. Dr. CHURCH, occupying the highest professional position as President of the Royal College of Physicians of London and as a physician on the staff of a hospital like that of St. Bartholomew's, in addition to enjoying the reputation of being an excellent man of business, unites all the necessary qualifications for the task before him. Concerning the third commissioner as yet selected we have some delicacy in expressing an opinion. No one can recognise more fully than we do the great reputation and scientific attainments and ability of the Professor of Anatomy and Surgery in Trinity College, Dublin, but we feel sure that we shall not be misunderstood in saying that the inquiry in South Africa does not seem to us to be one calling for his special gifts. Rather it demands the exercise of qualities of another kind and occupying a distinctly lower level, and not necessarily a scientific one even. With all possible respect for Professor CUNNINGHAM we must confess that we do not see his especial claim to be a commissioner, and we say this without laying any stress upon his official connexion with the Army Medical Service to which attention has been pointedly drawn. But in addition to the present commissioners we think it highly desirable that the services of a traffic manager of one of our great railways should, if possible, be secured. Such a man is sure to be a man of business capacity and common sense or he would not be where he is—in the position of traffic manager—and his practical experience and intimate acquaintance with systems of railway organisation would be invaluable in an inquiry of this kind. We hope that one at least of the two commissioners to be added will be a man of tried capacity in business affairs, preferably in railway transport.

SINCE the well-known description in the "Surgeon's Daughter" by Sir WALTER SCOTT of the medical practitioner, "from whom Scotland reaps more benefits and to whom she is perhaps more ungrateful than to any other class of men, excepting her schoolmasters," there have been few more eloquently simple accounts of the lot of the Scottish village practitioner than is contained in a memorial to the Local Government Board of Scotland, signed by 40 medical officers of the more remote parishes of the Highlands and Islands of Scotland which we publish in our columns this week (page 129). "Besides," says Sir WALTER SCOTT, "attending to such cases as the village may afford he is day and night at the service of anyone who may command his assistance within a circle of 40 miles in diameter, untraversed by roads in many directions, and including moors, mountains, rivers, and lakes. For such work the village doctor receives at best a very moderate recompense, often one which is totally inadequate, and very frequently none at all." No wonder that MUNGO PARK told Sir WALTER SCOTT that after trying both courses of life he preferred "travelling as a discoverer in Africa to wandering by night and day the wilds of his native land in the capacity of a country medical practitioner."

The memorial of the Scottish medical officers of the more remote Highlands and Islands shows that there is little improvement in the position of the medical man as compared with what it was in MUNGO PARK'S time. The wealth of Scotland has enormously increased. She has spent millions of money in the vindication of religious sentiment or principle. But she has made little advance throughout these remote regions in the treatment of her poor or in the remuneration of the medical men who attend them. This subject is not new to us. We have on several occasions tried to direct the attention of the medical profession of Scotland, as well as that of her statesmen, to the lamentably defective provision in these districts for the care of the poor in respect of nursing and medical attendance. There is, for example, no isolation whatever of infectious cases. The neglect of such provisions by the responsible authorities of Scotland has had a demoralising effect on the people themselves—religious and decent as they are—so that on some occasions and in certain districts those affected with fever have been left to die alone, forsaken by their very relations and with none to give them a drink of water or, in the event of death, to put them into their coffins. Only the medical man. And we cannot altogether acquit the profession itself of blame. A little more assertion of its own claims and a little more publicity thrown upon the discreditable plight of the sick in their wretched and unhygienic homes would have been justified, and might have deprived the authorities of Scotland, imperial or municipal, of any excuse that they may now have for so long leaving enormous districts in ignorance of sanitation and with very imperfect means of battling with tuberculosis and infectious diseases. There is one difference between the Scotland of to-day and

that of Sir WALTER SCOTT and MUNGO PARK. In their time the organised system of relief by poor-laws scarcely existed. Men like the late Dr. CHALMERS believed in the sufficiency of the principle of humanity acting voluntarily and for the most part through churches. But now the legal system of relief of poverty and sickness has been generally introduced, and we must attribute its defects mainly to the municipal and State authorities. Such authorities will doubtless argue that they only represent the community for which they act. And they will argue rightly. Nobody can doubt that if half the enthusiasm were shown by the people of Scotland in the provision of proper medical care for the poor in remote parts that is shown in providing for their spiritual wants their condition in respect of preventable sickness and mortality would be very different from what it is, and the medical men who wander over these wide districts would be more respected and better remunerated than they are.

The memorial may be taken as a sign that the medical officers themselves who are the agents of this system of relief are beginning to realise its defects. There can be but one opinion as to the hardness of their lot, the responsibility of their duties, and the inadequacy of their pay. Liable to calls in all weathers, in all seasons, over areas of 30 or 40 miles, sometimes unable to return home the same night, and with little chance of earning more than from £20 to £50 a year beyond their official parochial salary, their case is indeed entitled to consideration in many more respects than that which they specify. They ask only for the provision of a locum-tenent for a month, which would enable them to seek rest and refreshment in an annual holiday. We endorse every word of their memorial, only finding it too restricted in its points of complaint. The sick poor of these remote regions will not be properly treated until much more is done to improve the medical officer's position than is implied in supplying him with a locum-tenent. His whole status needs improvement, coupled with the security of tenure of office. Meantime he has made the most modest request possible for an advantage already conceded to dispensary medical officers of Ireland. We cannot doubt that it will be granted. The demand is the more reasonable as the value of locum-tenents has risen much of late, and, indeed, has reached a point beyond the means of the underpaid officers of the Scotch Poor-law. We have only to repeat that they owe it to themselves and to the poor of these districts to ask for many other improvements in their position beyond the solitary one included in their memorial.

EVER since the differentiation of the disease usually known as rötheln, or German measles, from scarlet fever and measles was first attempted in Germany towards the end of the eighteenth century various and conflicting views have been held by the medical profession as to its essential nature and clinical manifestations. It must appear obvious to any unprejudiced observer, as was suggestively pointed out by the late Dr. HILTON FAGGE, that the severe and frequently fatal affection described by PATTERSON of Leith in 1840, following the earlier German writers, and later by AITKEN and COPLAND, can have but little in common with the mild disorder described by THOMAS in ZIEMSSEN'S *Handbuch* some 30 years afterwards, which is more in accord with the observations of writers of the present day. So contradictory are the two accounts that it is impossible to regard them both as applicable to the same disease. Admitting, however, the general appropriateness of this modern conception of rötheln as we know it to-day we are confronted with the fact—and it is a most unfortunate one—that considerable discrepancies occur in the clinical descriptions of the disease emanating from different though equally competent observers. In other words, there exists even at the present day an undoubted want of agreement as to what constitute the distinctive symptoms of rötheln. In its clinical appearances the affection presents certain features which closely simulate both scarlet fever and measles. For this reason rötheln has been variously held to be a modified form both of measles and of scarlet fever, as well as a hybrid of the two infections. Each of these views is now regarded as untenable and the disease for some years past has been almost universally held to be a specific entity, having just as much claim to separate recognition as either measles or scarlet fever. We publish this week a communication from Dr. CLEMENT DUKES of Rugby in which he brings forward what are undoubtedly cogent reasons for revising our views as to the position of rötheln. The exceptional opportunities for observing the exanthemata which Dr. DUKES has enjoyed for many years as responsible medical officer to one of our largest public schools, and the special interest which he is known to have devoted to the clinical interpretation of this particular disease, entitle him to speak with more than ordinary authority.

Dr. DUKES'S main contention is that under the term "rubella," of which the other synonyms authorised by the Royal College of Physicians of London in the last edition of the "Nomenclature of Diseases" are "rötheln," "German measles," and "epidemic roseola," there are included two separate infections, each of which is etiologically and pathologically distinct; though hitherto, mainly in consequence of the close similarity of their clinical appearances, they have been almost universally confused. Their occasional concurrence in epidemic form would doubtless contribute in some degree to this confusion by tending to delay their separate identification, as has certainly been the case in respect to rubella when it has prevailed simultaneously with scarlet fever or measles. If Dr. DUKES is right in his contention that two perfectly distinct diseases have hitherto been classed under the term "rötheln," both of which are capable of propagation and invariably "breed true," we must recognise the presence amongst us of an additional specific fever which, like other members of the group, while affording protection against a second attack, confers no immunity whatever against the infection of any other disease. Dr. DUKES does not claim any novelty for the idea that two separate diseases are classified under the name "rötheln"; indeed, he himself, writing in 1894, distinctly refers to it. Moreover, the Council of the Medical Officers of Schools Association in a recent circular suggested that certain groups of cases to which they applied the name "infectious roseola," being of a particularly mild character

and unattended with obvious catarrh or definite faucial or glandular involvement, were really distinct from rubella though usually confused with it. Dr. DUKES states that though the question had frequently presented itself to his mind he had signally failed to establish a single fact to sustain the hypothesis, but that increased observation and extended experience have now convinced him to the contrary.

Although by those who enjoy exceptional facilities for observing the course and development of infective diseases amongst the young this pronouncement of Dr. DUKES may not be altogether unexpected, we imagine that to the profession at large the addition of one more exanthem to the recognised list will come with something of a shock. Dr. DUKES provisionally names it the "fourth disease" by reason of its admitted resemblance to scarlet fever, measles, and rötheln, which are already sufficiently confusing. The increased possibilities of mistake which the addition of a "fourth disease" implies are more than counterbalanced by the light which it undoubtedly sheds on what has hitherto proved the greatest stumbling-block to diagnosis in this particular field—viz., the confusing resemblance which rötheln bears alike to measles and to scarlet fever. The fact is so well recognised that it is customary to speak of the "measles type" and the "scarlet fever type" of the disease. Now, according to Dr. DUKES'S proposition the cases of the scarlatinal type are not rötheln at all, but instances of another affection—viz., the "fourth disease." Dr. DUKES is unfortunately obliged to admit that its resemblance to scarlet fever is so close as to make its recognition occasionally impossible and that a series of cases may be necessary conclusively to establish the diagnosis. For this reason he believes that innumerable cases of the "fourth disease" have been ascribed to scarlet fever, a suggestion which, if true, is of considerable importance. Its differentiation from rötheln, too, is frequently very difficult owing to the similarity of their symptoms, and the difficulty is increased not only in consequence of their period of incubation being almost identical, but also by reason of the fact that the two diseases are sometimes locally concurrent.

Let us now briefly review the evidence on which Dr. DUKES bases his belief that these cases are essentially distinct from rubella or German measles. The rash, though closely resembling that of rubella during its later stage by reason of its presenting a diffuse puncto-erythematous appearance, differs from it in that it does not pass through a stage of morbilliform maculation but assumes the scarlatinal characters from the outset. Distinct redness and swelling of the fauces sufficient to give them a velvety appearance are usually present, though attended with but little, if any, faucial discomfort. The cervical lymphatic glands are somewhat enlarged and tender, but though the enlargement is more pronounced than in scarlet fever it is usually less conspicuous than is the case in rubella, in which disease it is not very uncommon for the patient to complain of tenderness of the cervical chain for several days before the rash appears. In most cases the patient desquamates freely, the epidermis being shed in small scales, but in occasional instances the peeling appears to be as copious and complete as it ever is in scarlet fever. The disease occurs in patients who have previously, even recently, suffered from undoubted rötheln. This constitutes the strongest argument of all. Indeed, it was from personal observation of an epidemic at Rugby School last March that Dr. DUKES became convinced of the separate nature of the two disorders. Out of a consecutive series of 20 cases which displayed the symptoms characteristic of this "fourth disease" no fewer than nine of the boys—that is to say, 45 per cent.—had previously suffered from rötheln, some of them within the previous 12 months. An interesting point confirmatory of its being distinct from rötheln is that while rötheln, like measles, tends to affect large numbers in a school, the disease in question, like scarlet fever, always occurs to a much more limited extent—a fact which tends to show that it is less infectious at an early stage than rötheln.

In the differentiation of the "fourth disease" from scarlet fever the main difficulty lies in the extraordinarily close resemblance which exists between their respective eruptions. In each case the rash is followed by free desquamation and, according to Dr. DUKES, in exceptional instances of the "fourth disease" the peeling may be as profuse and protracted as it is in any case of scarlet fever. It is stated that the degree of peeling bears no relation to the intensity of the pre-existent eruption. In this respect, then, the "fourth disease" differs from scarlet fever. We gather that Dr. DUKES would place also some weight on the following points as serving to distinguish the "fourth disease" from scarlet fever. The incubation is considerably more prolonged—viz., from nine to 21 days; whereas in scarlet fever it is usually two days and rarely exceeds five days. It is suggested that the frequent confusion of the two diseases in practice may be accountable for the misleading statements in some of the text-books as to the occasional prolongation of the period of incubation in scarlet fever. There is usually no pre-eruptive illness, the invasion being unattended with either vomiting or faucial discomfort. The pulse-rate rarely reaches 100. This is in marked contrast to the relatively rapid pulse of early scarlet fever. The fauces are simply reddened. They are never really inflamed even should the rash be intense, which is by no means uncommon. The tongue shows no definite peeling but cleans in normal fashion; hence the "strawberry" tongue is wanting. The cervical lymphatic glands are always enlarged and tender, but not to the same extent as they usually are in rötheln. The kidneys are not affected; neither albuminuria nor nephritis are liable to arise. No immunity is conferred against a subsequent attack of scarlet fever and the period of infectivity is said to last but from 14 to 21 days, though desquamation may proceed for several weeks longer. Such are the points which are mainly concerned in the clinical differentiation of the "fourth disease" from rötheln and from scarlet fever.

Dr. DUKES recognised as far back, at any rate, as 1892 that there exists a disease so closely resembling scarlet fever as to be frequently mistaken for it even when prevailing as an epidemic. This affection he at that time regarded as the scarlatinal variety of rötheln. Subsequently, in 1896, in connexion with a most confusing outbreak in a school which he investigated with striking ability and marked success, Dr. DUKES elucidated the

important fact that this disease, which closely simulated scarlet fever, was prevailing concurrently with that affection. Since neither disease afforded protection against the other, as evidenced by the fact that 32 per cent. of the patients developed both of them in turn, the inference was certainly justified that the disease which formed the subject of investigation was specifically distinct from scarlet fever. Again, as recently as March, 1900, as a result of his inquiries into an outbreak at Rugby School of what was apparently the same disease, Dr. DUKES found that no less than 42 per cent. of the boys attacked had previously suffered from rötheln—a fact which made it more than probable that the disease in question was quite distinct from rötheln. Two points, then, may be regarded as proved. First, that the epidemic investigated in 1896 was not scarlet fever; and, secondly, that the outbreak at Rugby School inquired into last March was not rötheln; but whether, as is believed by Dr. DUKES, the disease was in each instance the same is not, we think, so conclusively proved, although its demonstration constitutes an important link in the argument by which he claims to have established the specific independence of the "fourth disease." The question as to whether the Rugby epidemic of last March may not have been after all a mild form of scarlet fever is one which appears to present some claim for consideration, since a remarkable constancy of type is occasionally observed in connexion with a localised prevalence of the disease. Dr. DUKES admits that the illness resembled scarlet fever more closely than any series of cases he had yet seen, that he had never observed such extensive desquamation except in scarlet fever, that none of the patients had previously suffered from that disease, and that the length of incubation in these attacks could not be ascertained. The force of these objections cannot be altogether ignored. Moreover, the negative aspect of some of the symptoms described—viz., the absence of definite faucial inflammation and, under these circumstances, of definite peeling of the tongue, the return of normal temperature by the third or fourth day, the freedom from kidney complication, and the apparent lack of infectivity after the third week—are all consistent with mild scarlet fever. This point is one of considerable interest, since the infectivity of the later peeling after scarlet fever has been much questioned during recent years. Any advance in our knowledge of what is and what is not scarlet fever is a valuable step in the right direction as tending without doubt to enhance professional credit and promote the welfare of schools; in addition to which, as Dr. DUKES very rightly and with much force points out, if a more accurate diagnosis is competent to effect a curtailment by two-thirds of the period of isolation hitherto deemed necessary for many of the cases which we have been accustomed to regard as scarlet fever, the proportionate saving of inconvenience and expense to the community must of necessity be considerable.

Dr. DUKES offers the suggestion that the wide extension of scarlet fever which was observed throughout the country during the winter of 1892 and the spring of 1893 may have been really dependent on the epidemic prevalence of the "fourth disease," and in confirmation of this view he instances the low mortality which characterised the outbreak. So far as London is concerned this view is not supported, for though the numbers admitted into the metropolitan fever hospitals during 1892 and 1893 considerably exceeded those of any former years the death-rate showed no corresponding reduction. But having regard to the relatively large proportion of cases certified as scarlet fever which are now received into the public hospitals the question as to whether the period of detention might not in many cases be reduced by some two-thirds is one of municipal importance as directly affecting the pockets of the ratepayers, both in respect to maintenance charges and the necessity for providing further isolation accommodation.

Dr. DUKES has done good service to the profession, and indirectly to the public, by showing most conclusively that there exists a disease which so nearly resembles scarlet fever as to have been frequently mistaken for it even when the opportunity has occurred of observing a multiplicity of cases; but whether this affection is specifically distinct, and not a form of German measles as is currently believed, is a point on which we think it right to suspend judgment for the present. Further critical observation, however, of the points so clearly indicated by Dr. DUKES may ultimately succeed in establishing this proposition.

Annotations.

"Ne quid nimis."

THE NEW UNIVERSITY OF LONDON.

THE history of the various stages in the movement for the formation of a Teaching University in London in the place of an Imperial degree-giving establishment has been fully placed before our readers. A complete sketch of its various details from 1864 to the appointment of Lord Davey's Statutory Commission in August, 1898, will be found in our Students' Number of Sept. 3rd, 1898. The new statutes were sealed by the order of the Commissioners on Feb. 13th, 1900, and the regulations were ordered by the House of Commons to be printed on March 1st, 1900. The statutes and regulations have now passed through Parliament, and we congratulate the Commissioners on the thorough and rapid manner in which they have carried out their part of the work. We trust that the machinery recommended by the Commissioners will as rapidly come into being and so speedily complete its various duties. The Senators (16) elected by Convocation will probably be chosen in October.

PLAGUE IN TURKEY.

THE first case of illness which gave rise to an alarm of plague in Smyrna has already been described in THE LANCET of May 19th (p. 1456) and June 9th (p. 1672). It was on May 5th that Dr. Amado of Smyrna first saw the patient and he immediately notified the case to the local *médecin sanitaire*. On May 27th Dr. Corris, also of Smyrna, met with a second instance of suspected plague. The patient was a man, aged 23 years, who had a temperature of 40·5° C. (105° F.) and a pulse of 120 per minute; he suffered from intense headache, vomiting, mental apathy with inability to answer questions, flushed face, and an inguinal bubo on the right side of the size of a small egg and painful when touched. There was no apparent lesion which might have caused the bubo. On the following day (May 28th) the patient was

somewhat better, but on a more careful examination it was found that instead of one bubo there were four enlarged glands—one in Scarpa's triangle, two above Poupart's ligament, and one above the pubes. The two patients lived about 400 yards apart. On June 7th a third case of suspected plague was discovered, the patient being a lad, 14 years of age, a Mohammedan servant in a Mohammedan house in the Turkish quarter far from the neighbourhood of the previous cases. His symptoms were a temperature of 38° C., a pulse of 90 per minute, an enlarged gland in Scarpa's triangle of the size of a pigeon's egg and painful when touched, and three enlarged glands above Poupart's ligament. Although the symptoms were not pathognomonic of plague the patients were isolated outside the city on a hill at Kiatipoglu. On the first case being reported to the authorities at Constantinople the Inspector-General of the sanitary service and Dr. Nicol, the director of the Pasteur Institute at Constantinople, were ordered to proceed to Smyrna to make investigations. Dr. Nicol and Dr. Nouri Bey were unable to find plague bacilli in the enlarged glands of the patients, but cultures showed the bacilli after three days' growth, and the same cultures produced characteristic lesions in rabbits. On June 6th and June 11th the *médecin sanitaire* at Trebizond reported two suspected cases of plague, one a man, aged 70 years, a pilgrim just returned from Mecca, and the other, a girl, aged five years, the daughter of a boatman. There was no bacteriologist at Trebizond, but one has been sent there from Constantinople. The precautions taken by the authorities are limited to quarantine and nothing is being done to improve the sanitary condition of the towns.

PYORRHŒA ALVEOLARIS.

AT a recent meeting of the Royal Medical and Chirurgical Society Mr. Rickman Godlee drew attention to that condition of the gums which is termed "pyorrhœa alveolaris." The medical profession has so far given but scant attention to this distressing condition, and the gums as a possible focus of infection have been almost, if not entirely, overlooked. Conditions which lead to the loss of teeth at an early age owing to a gradual but progressive destruction of the periodontal membrane have greatly increased in recent years. This destruction of the periodontal membrane is, as far as present knowledge shows, due to an inflammation commencing around the necks of the teeth and spreading towards the apices. All the teeth may be affected by the disease or the condition may be limited to a few teeth or even to one. In some patients the disease progresses slowly, and although pus may be present in small quantities it is not easily recognised. In other cases the destruction of the periodontal membrane is rapid and accompanied by much congestion of the gums and a copious discharge of pus from the tooth-sockets. The constant swallowing of so much pus may give rise to infective gastritis and other conditions traceable to the presence of pyogenic organisms. The importance of this to medical men is obvious. In the four cases recorded by Mr. Rickman Godlee the absorption of the pus from the mouth seems to have played an important part in the causation of the conditions recorded, since on the flow of pus from the gums being checked the general condition of the patient considerably improved. Dr. William Hunter, too, has recently shown that there are strong reasons for believing that some cases of pernicious anæmia are traceable to absorption of septic and infective material from the oral cavity. Within the last few years an abundance of literature has appeared dealing with the etiology of this disease. In reading this through it is evident that the term "pyorrhœa alveolaris" is differently used by different writers. Some include under this term only that condition where suppuration is present (true pyorrhœa alveolaris), while others include all conditions where the gums are receding. Among the latter many cases are due not so much to a suppurative inflammation as to degeneration and atrophy of the tooth attachments. There is also a divergence of opinion as to whether the disease is local or general in its origin. If the majority of patients suffering from pyorrhœa be examined it will be found that they are the subjects of some diathesis, such as gout or rheumatism, or are suffering from conditions which tend to lower the general vitality of the tissues, more especially fibrous tissues. These conditions may be regarded as predisposing causes, the actual disease being started by some local irritant, such as the deposit of tartar, or an anhygienic condition of the mouth, or a badly fitting denture. When once the inflammatory process is started it is not difficult to understand that suppuration may take place when it is remembered that pyogenic organisms, more especially the streptococcus brevis, are present in nearly all mouths in which there is caries. Dr. Miller of Berlin has made a careful bacteriological examination of the discharges from cases of pyorrhœa alveolaris with the object of determining the presence of a specific micro-organism. He has been unable to find such an organism but has found that the organisms present possessed well-marked pyogenic properties. In the light of our present knowledge pyorrhœa alveolaris should perhaps be regarded as suppurative periodontitis. Pyorrhœa is an insidious and in many ways an intractable disease. If, however, it is recognised at the onset and properly treated it may be held in check and the teeth may be saved for many years. The signs of the disease are a soft, flabby condition of the gums which are also deeply congested and tender. The teeth are unduly moveable in their sockets, and on gently pressing the gums pus will be noticed to flow freely from around their necks. On closer examination it will be found that a fine probe can be passed some distance up the sockets of the teeth showing that the periodontal membrane has been stripped off. A deposit of tartar is nearly always present around the necks of the teeth. The treatment should consist in the removal of all hard deposits from the roots of the teeth. This should be followed by thorough irrigation of each tooth socket with some antiseptic and for this purpose peroxide of hydrogen (20 volumes) is excellent. The inflammatory condition of the gums must be treated with astringents. Local treatment carried out regularly on the lines indicated, with attention to the general condition of the patient, will produce a considerable improvement in most cases.

COAL SMOKE ABATEMENT: THE CLAIMS OF AN INVENTION.

THE smoke question has assumed such proportions that any mechanical arrangement for the suppression or abatement of the nuisance naturally commands attention. We are informed that Sir William Richmond, the President of the Smoke Abatement Society, accompanied by Mr. Arthur Ventriss, surveyor and engineer to the Strand District Board of Works, Mr. Edward Turner Atkinson, mechanical engineer to the London County Council, Mr. Samuel Goodall, of the Acton District Council, and other gentlemen, including several medical officers of health and a number of officers of the different sanitary authorities, met recently to inspect some machines supplied by Messrs. Ransomes and Rapier which were on view at the premises of Messrs. Taylor Bros., cocoa manufacturers, Brick-lane, E. The inspectors are said to have been satisfied that there was absolutely no visible smoke where the machine was employed, which sounds too good to be true. Mr. Churchill, one of the directors of Messrs. Taylor Bros., claimed that by the use of the machine increased economy and

efficiency to the extent of 25 per cent. resulted and that there was almost a complete immunity from wear and tear, the machines in two and a half years not having cost a penny in repairs, every part, bars included, being in as good condition as when first put in. The coal used was small Derbyshire, that previously used being best Welsh coal. Mr. Atkinson, who is admittedly an expert on this subject, having put a number of searching questions to the engineer in charge and made an exhaustive examination of the machine, expressed himself as perfectly satisfied, and was of opinion that an apparatus was now before the public which would not only enable steam-users to comply with the provisions of the Act for the prevention of smoke, but which it would actually be to their interest, both as regards saving in coal and extra boiler duty, to adopt at their works. We understand that these mechanical stokers are being extensively used both in London and the large manufacturing towns.

MEDICAL MEN AS CORONERS.

MR. F. W. LOWNDES, chief surgeon to the Liverpool police, has re-issued his pamphlet entitled, "Reasons why the Office of Coroner should be held by a Member of the Medical Profession." He gives his reasons clearly and we find ourselves in accord with his arguments, while we are naturally interested in his illustrations of the advantage of medical training to a coroner, seeing that he cites two inquests held before the late Thomas Wakley—the well-known Hounslow flogging case and the Hillingdon case of 1850—in the course of the latter of which investigations a further examination made at the coroner's suggestion of the throat of a man supposed to have died as the result of a fight disclosed a piece of meat which had lodged so as to choke him. Unless this further examination had been brought about before the body was buried an innocent man might have been committed to take his trial for manslaughter. It is contended by some that the coroner should be a trained lawyer, but it was the opinion of the late Mr. Wakley that enough law for the necessary purposes of the office could be acquired in a day, and we see no reason materially to modify this opinion; although, no doubt, a barrister of some standing, who has enjoyed a practice, may have had useful experience in dealing with witnesses and juries and in the understanding of statutes and decisions—so that the ideal coroner would no doubt be one trained both as a lawyer and a medical man. In support of the medical coroner Mr. Lowndes calls attention to the fact that the coroner's first duty—and a very important one—is to decide when a death is reported to him whether the cause of it is unknown or whether it has otherwise taken place in such circumstances that an inquest need be held. For arriving at a correct decision upon this point the best equipment must of necessity be a medical training; while, again, when the inquiry is being held the medical training of the coroner is essential if the viewing of the body by coroner and jury, obligatory by law, is not to be, as it often is, a meaningless formality. We are aware that the holding of an inquest may involve the committal for trial of a person supposed to be criminally responsible for the death inquired into. Persons are, however, very often committed for murder and manslaughter by magistrates of no legal education and less experience than a coroner should gain after a few months' work, while the cases in which such committals take place at the hands of the coroner form a smaller proportion of the number of inquests held than many suppose. According to the latest blue-book on the subject in 1898 inquests were held in England and Wales on 34,541 persons and only in 3210 cases was death found to be due to wilful or criminal acts, while of these 3210 cases 2881 were suicides. The remainder included 169 cases of murder, 145 cases of manslaughter, five cases of justifiable homicide, and 10 executions. Again, if any still think that the committal of a prisoner to take his trial for murder or manslaughter by a person not a lawyer may involve a danger to the public, we must point out that although a prisoner may in law be put upon his trial upon the coroner's inquisition only without further preliminary, he is always also examined before a magistrate or magistrates. Before the magistrate only such evidence may be given as is legally evidence against the accused, excluding much that may quite properly be relevant at the coroner's inquiry into the cause of death, and the magistrate may not think the evidence sufficient to justify a committal. Should the magistrate commit the prisoner for trial a bill of indictment is then sent before the grand jury at the next assize. Should the magistrate decline to commit, or should the grand jury throw out the bill, the prisoner is never, as far as we know, tried upon the coroner's inquisition alone, but by the judge's permission the Crown tenders no evidence and he is set at liberty. Those who consider the expense and trouble that may be caused and the amount of pain that may be given to bereaved relatives by the holding of an unnecessary inquest will be in accord with us in our view that a medical man is the right person to decide whether an inquest should be held or not. Those who calculate the amount of medical evidence which it must have been necessary to explain to juries in the course of inquests held in a single year on nearly 35,000 dead bodies will agree with us that, again, for the actual holding of the inquiry the medical training is more likely to be of use to the coroner than the legal training. His duties had once a wide range; they still are of great importance but are practically limited to inquiries into the cause of death, the few additional functions that might be mentioned not demanding any considerable legal knowledge.

THE DISSEMINATION OF PLAGUE BY RATS AND FLEAS.

PLAGUE has now been established in Sydney for several months, and in an address delivered before the New South Wales Branch of the British Medical Association on April 7th Dr. Frank Tidswell of Sydney discussed a variety of interesting questions relating to the disease. In reference to rats, he said that there were many instances which showed that the presence of a plague rat was responsible for the illness in man. For example, a number of dead rats found one morning in a cotton factory at Bombay were removed by 20 coolies. Within the three following days about half of them fell sick with plague, whilst those in the store who had not touched the rats were not affected. Again, the coachman of an English family in Bombay found a dead rat in the stable and removed it. Three days later he fell sick with plague and died in a few hours, no other person in the same house being affected. Many persons, however, have caught plague without handling plague rats and many persons have handled plague rats without catching plague. To explain this difficulty Simond[1] has suggested that the infection is carried by the fleas natural to the rats. Perfectly healthy rats harbour very few fleas and are very expert in removing them, but fleas are abundant on sick rats. After death, as the body becomes cold, the fleas leave it. In this way Simond accounted for the fact that a plague rat may be handled with impunity some hours after death. If the fleas from the dead rat reach another rat or a human being, they may inoculate the bacilli they acquired by ingesting the blood of their former host. In some of Simond's experi-

[1] Propagation de la Peste, Annales de l'Institut Pasteur, 1898.

ments sick and healthy rats in separate cages were enclosed in a glass jar and it was found that when no fleas were present the healthy animals did not become infected.

"CHRISTIAN SCIENCE" AT HOME AND ABROAD.

WE mentioned recently that a powerful body of Oddfellows in America has decided to decline as members all persons associated with the semi-religious body known as "Christian Scientists" on account of the high rate of mortality shown to prevail in a fraternity which declines to avail itself of the services of medical men in cases of illness. This seems to show that provident associations of the nature of Oddfellows have some appreciation of the practical value of their medical attendants, however little respect or generosity they may exhibit towards them. It also suggests that in the United States, where "Christian Science" has more followers than with us, life insurance companies will do well to take it into account in their policies, while even in London this society eccentricity may some day have to be reckoned with by such associations. In England considerable attention was not long ago attracted to "Christian Science" by the inquiries resulting from two deaths among its members, particularly from that which followed the death of Mr. Harold Frederic, the novelist, but the deliberate neglect of medical aid is usually associated in our minds with the prosecution of parents belonging to the sect known as the "Peculiar People." A husband and wife, for example, belonging to this last-named body were brought before Mr. Justice Bigham at Chelmsford in June owing to the death of a child who had died in spite of their obedience to the mandate of the 14th verse of the 5th chapter of the Epistle of St. James, and they were each fined £5. But the "Christian Scientists," appreciating the fact that the indulgence extended to fanatics of the uneducated class would hardly be extended to them, are, we believe, careful not to interfere with the treatment of children, at all events in cases which they believe to be dangerous. The perusal of an article by Mr. H. T. Marshall in the June number of the *Johns Hopkins Hospital Bulletin* (Baltimore, U.S.A.) shows the wide spread of "Christian Science" in the country of its origin, and so explains the necessity of the attitude adopted towards it by the Oddfellows referred to above. The writer, without suggesting what discount he would allow for the inflation natural to such figures, informs us that it is claimed that in the United States a million people have received "Christian Science" treatment, while its enrolled members are put at about half a million, which shows that the danger has there reached a point at which it must be taken seriously. Mr. Marshall proceeds to give an interesting criticism of the "religious" and philosophical dogmas propounded by Mrs. Mary Baker G. Eddy, the aged founder of "Christian Science," from the point of view of its bearing on "Christian Science" treatment, or rather neglect, of the sick, while he ends by pointing out the dangers to human life which may result and to suggest precautions by the community. Foremost among these he naturally places insistance upon the proper notification of births, deaths, and contagious diseases, for which of course there exists ample machinery with us—machinery which is put in motion without difficulty when occasion occurs. With us, however, the danger is not a serious one as in the States owing to the craze not having "caught on" to the same extent, while, as we have seen, the fear of prosecution has a restraining effect in the case of children. Besides which a little reliance on the good sense of the average Englishman and Englishwoman and a glance at the congregation as it files into the "Christian Science" services in London alike tend to reassure us. Among the phrases quoted by Mr. Marshall from the writings of Mrs. Eddy occur the following: "The daily ablutions of an infant are no more natural or necessary than would be the process of taking a fish out of water every day and covering it with dirt in order to make it thrive more vigorously thereafter in its native element." "When there are fewer doctors and less thought is given to sanitary subjects there will be better constitutions and less disease." The bearings of these observations, as Mr. Bunsby would have said, lie in the application of them, and applying them to the smartly dressed ladies who sing hymns to the accompaniment of a grand piano and are soothed by solemn rigmarole in the comfortably furnished room in Bryanston-street, which is the London centre of their body, we should say without hesitation that they have their babies "tubbed" and send for the plumber or mason when the soil-pipe gets blocked as if no such nonsense as "Christian Science" had ever been concocted to confuse their "mortal minds." To them such precautions are as "natural and necessary" as the toilette with which they adorn bodies that, according to their teacher, only exist in their diseased imaginations. Beyond this they are precisely the followers best suited for enrolment in a congregation which should consist of those blest with the variety of "matter" known to the uninitiated as money, and they are precisely the order of human being most likely to suffer from ailments that may be dealt with by mental suggestion, while they are the least likely to suffer from those more serious troubles for which mental suggestion hardly affords a palliative. "Christian Scientists," as Mr. Marshall tells us, undertake to cure every form of disease by inducing the patient to disbelieve in its existence and acquire faith in their God. When they venture to deal with a child too young to understand their jargon they proceed to "heal" him or her by convincing the parents that there is nothing the matter. Methods such as these are to some extent harmless where, in fact, nothing is the matter, and "cures" of apparently serious disease wrought in cases where mental suggestion might naturally be expected to be effective probably account for much of the faith undoubtedly established in many minds by "Christian Science" preachers and "healers." At the same time, danger may at any time arise in individual cases; for instance, it is obvious that a woman might well have it suggested to her a few days after childbirth that she was perfectly able to arise from her bed and go about her ordinary duties and pleasures, and might obey the suggestion with results beyond the power of "Christian Science" to persuade into non-existence. Still, considerable protection is afforded to children in this country, however silly their mothers may be, by the fear of criminal proceedings, while children and women alike find some protection in the authority of the male members of the family. Men are scarce in the "Christian Science" congregation, and fathers and husbands are apt to impose limits beyond which nonsense may not be carried in their households, although a humorous story was recently circulated of a gentleman who consulted a "Christian Scientist" healer owing to an accident having left one of his legs shorter than the other. The healer was charming and highly successful, but she unfortunately went abroad during the progress of the cure, being able to conduct it equally well at a distance, and when last seen her patient was despairingly hunting for her lost address, unable to warn her without it that the injured limb was not only restored to its proper length, but was already longer than the other and still growing.

HORSE AMBULANCE IN LONDON.

AFTER the appearance of the article in the *Nineteenth Century* by the Hon. Dudley Leigh on Horse Ambulance for London, Mr. S. Osborn, F.R.C.S., chief surgeon of the Metropolitan Corps of the St. John Ambulance Brigade, wrote an article, a copy of which is now before us, in which is embodied a scheme for a complete ambulance

system for London, a scheme which in no way entrenches upon the very excellent work which is so ably undertaken by the above-mentioned Corps. It is a subject upon which he is well able to advise and not long ago he advocated its claim for urgent consideration before a specially convened meeting at the House of Commons. Whether an ambulance system for London should be under the control of the St. John Ambulance Association, the Metropolitan Asylums Board, or the London County Council was fully gone into by him, and he was able to show that it was only through the London County Council that the scheme could be efficiently carried out. He has been in communication for some time with this body with this object in view—viz., of grafting an ambulance system for London on to the Metropolitan Fire Brigade, by whom it could be easily horsed, housed, and supplied by alarm calls. The scheme has received the support of several members of the Council and one influential member has lately promised to take the matter in hand.

MEDICAL INSPECTION v. QUARANTINE IN THE UNITED STATES.

OLD customs die hard, even in a country deeply imbued with the spirit of originality and progress, but nevertheless the principle involved in the English method of medical inspection of vessels is making a substantial advance in the United States of America. The State of New Jersey has recently passed a Bill framed to prevent the introduction into that State of communicable diseases by maritime vessels or maritime traffic; and although the local boards of health are by it invested with full powers of detention it is not difficult to detect between the lines that medical inspection, isolation, and disinfection are the principles which will govern the action of the State and local authorities. It is by a system of "permits" that infected vessels will be allowed to approach the ports of New Jersey. All infected vessels are to be "examined, cleansed, ventilated, and purified," and even vessels which have passed any quarantine station on Long Island or in New York Bay and obtained a written permit to proceed to New Jersey ports are not allowed to land their passengers or merchandise until such permit has been deposited with the local authority and another permit obtained. With regard to the prevention of yellow fever it is laid down by the regulations based upon the Acts referred to that from May 1st to Nov. 1st no person shall leave or go on board any vessel arriving from any port south of Cape Henlopen until a proper permit has been issued; and in respect of infectious diseases generally permits shall only be granted if the vessel be found free from the "infection of yellow fever, cholera, typhus fever, bubonic plague, small-pox, diphtheria, scarlet fever, measles, or other diseases of a contagious, infectious, or pestilential nature." Furthermore, it is not permissible to land straw or bedding from any vessel from any foreign port or place until it has been disinfected by exposure in a closed chamber to steam at not less than 240° F. for 30 minutes. It will be seen that in certain aspects these regulations go considerably beyond those in force in this country, and this is more particularly the case with respect to diseases other than cholera, yellow fever, and plague. As to small-pox, for instance, it is laid down that when any person arriving at any of the New Jersey ports has been exposed to the infection of this disease that person shall either be vaccinated or subjected to detention and isolation for a period not exceeding the incubation of the disease in question. This is a fair alternative, but it seems to us that some provision is necessary to meet the case of those who have been recently vaccinated. The prevention of small-pox infection by maritime channels is a most useful precaution, but in order that consistency may be maintained it is necessary that all trains and travellers passing into this State from outside should be similarly dealt with.

THE CARE OF THE FEEBLE-MINDED.

FEEBLE-MINDED persons are to be found at all ages in every social class; their numbers are considerable, as shown by the reports of the Departmental Committee of the Education Board concerning children and a committee of the Charity Organisation Society. Many of these persons die young, but they survive in sufficient proportion to form an appreciable element among the adult population. The condition of these persons is in many ways a matter of importance to the public as well as to their friends. The work of caring for the feeble-minded and trying to benefit their condition is difficult and expensive, but it is an imperative duty and may yield unexpected benefits in valuable knowledge gained as to grades of brain power and scientific methods of increasing its growth while aiding mental development and removing causes of brain disorder by adapted training. Experience has shown the need of more accurate means of diagnosis and description of this class of case, and the many and varied conditions found among such cases, as also of studying the best methods of training, stimulating, and controlling deficient brains. Feeble-minded persons not certifiable as imbeciles should not be classed as or associated with idiots and lunatics; in fact, their intercourse with those of sound mental powers is desirable when practicable. The Commissioners in Lunacy are not responsible for those cases under public control as not being certifiable under the Lunacy Acts. The recent Education Act, 1899 (Defective and Epileptic Children), constitutes the Education Board the authority responsible for the inspection of the schools and special classes for defective children and for the distribution of the Parliamentary grant. We have received a copy of a memorial of the National Association for Promoting the Welfare of the Feeble-minded addressed to the President of the Local Government Board, asking that steps may be taken to institute an inquiry into the number and constitution of feeble-minded persons in receipt of Poor-law relief. Such an inquiry, conducted by competent medical men on lines settled beforehand, is very desirable. An example will be found in the report on 100,000 children examined by Dr. Francis Warner for a committee of the Charity Organisation Society and the British Medical Association. A recent conference of Poor-law guardians resolved that it is expedient that homes for the permanent protection of the feeble-minded should be multiplied throughout the country. We heartily recommend the proposal and would add that in every such home means should be taken also to promote the mental development of the inmates as well as to supply industrial occupations. The Local Government Board have in contemplation, it is stated, the preparation of a Bill providing for the better classification of inmates of workhouses and for the removal of imbeciles and epileptics; it is very desirable that in any such re-arrangements provision should be made for persons who are "feeble-minded" but not certifiable as imbeciles or lunatics.

STREET NUISANCES.

IN our issue of July 7th, p. 39, we remarked that the police in the neighbourhood of the Strand, at any rate, did not seem to be taking advantage of the powers conferred by the new by-laws of the London County Council. We are glad to see, however, that on July 6th two newsvendors were summoned before Mr. Plowden at Marylebone Police-court for shouting. Their names were Foster and Blackman, but Foster did not appear. Blackman, in defence, said that

he knew of the by-law, but thought that it only applied when a private person made a complaint. Mr. Plowden is reported as saying that he hoped the by-law would receive the fullest attention from the police and that they would not hesitate to use their powers whenever the opportunity offered. It was a most salutary by-law and the offence was complete if a person shouted to the annoyance of anybody. Blackman would be fined 10*s*. We hope that Mr. Plowden's remarks will be laid to heart by the police, and especially by those of the C and E Divisions. Mr. Plowden is to be congratulated upon his change of opinions as to noises. His sympathy with the "natural noises of animal life"[1] evidently does not include the noise made by the "runner." We are glad to see, too, that on the same day a window cleaner was charged at the Guildhall with standing on a sill "more than six feet from the ground." This was the first case under the new by-law of the London County Council. The defendant pleaded ignorance of the law and was mercifully let off.

THE ATHLETIC MASTER IN SCHOOLS.

A SHORT article in the *Contemporary Review* for July by Mr. H. J. Spenser, LL.D., is somewhat severe on the athletic master in schools and equally so on the headmasters who rush to engage the man who has achieved a reputation for mere physical prowess. Dr. Spencer bases his remarks very much on the legend of a noted "Blue," who on completing his century in a recent 'varsity match received five telegrams from as many headmasters offering him posts. He admits that in the majority of cases the headmaster tries to secure first the intellectual and teaching qualities which are the chief requisites in all schoolmasters, but is evidently of opinion that the temptation is strong and often yielded to to appoint a man for his popularity among boys, which is always best secured by the performance of physical feats. Dr. Spenser thinks not only that the athletic master is not necessarily a good teacher—rather the reverse; but he charges him generally with slackness in intellectual work or in promoting such work in others, with being untidy and unsystematic, with never condescending to small details in life, with no sense of obligation, and with being a tax on the forbearance and forethought of others. As he advances in life "his nights are usually devoted to cards, his clothes reek of tobacco, and the necessity for physical fitness is no longer cogent." He does not command the respect of his pupils, though on the field he may excite their admiration. He conveys to boys an utterly false view of the respective importance of work and play. There is much truth in this view of a certain type of athletic master. But we do not think the type is very common and we are not disposed to allow that even any serious minority of headmasters would be so unfaithful to their highest duty—that of selecting their subordinate—as to prefer men of mere physical fitness to those of intellectual and teaching aptitude. Undoubtedly the wise headmaster will have an eye to recreation and play, and of two men seeking work in his school, other things being equal, he will prefer the man who has some sense of the pleasure of physical life and activity—and rightly so. What boys in school need is an object lesson of the *mens sana in corpore sano*.

RUSSIA AND THE PROBLEM OF INTEMPERANCE.

RUSSIA, like all other progressive countries, is feeling the necessity of facing the question of intemperance arising from the existence among its simple-minded and good-natured peasantry of innumerable dram-shops where alcohol of the lowest quality and coarsest description is served out to the poor. The diseases due to alcohol, including the loss of moral self-control, abound, and the people were bartering themselves as slaves to the dram-seller. We commend to the notice of our readers and to that of all who are contemplating temperance legislation in our own country the letter on this subject of our Special Correspondent at the Paris Exhibition which appeared in our issue of July 7th, p. 53. The Russian Government in 1894 commenced to take the sale of alcohol into its own hands. Mere dram-shops in many provinces have been abolished and no indemnity whatsoever has been paid to the dram-shop keepers. Profits made by the State from the sale of alcohol have been given to temperance committees to establish taverns or places of social intercourse, restaurants, reading-rooms, libraries, concert halls, lecture halls, and the like. It will be curious to watch the effects of this measure on the future of Russia. One great good will be the better nourishment of the peasantry, who will spend their money on sound food. A great decrease in drunkenness and crime is already reported.

[1] THE LANCET, Jan. 28th, 1899, p. 276.

THE NEW ISLINGTON INFIRMARY, HIGHGATE HILL.

AN event of some significance and interest is to be honoured with the presence of Royalty on the 16th inst. at 4.30 P.M. Their Royal Highnesses the Duke and Duchess of York have kindly agreed to attend the ceremony of the opening of the Highgate Hill Infirmary connected with the parish of St. Mary, Islington. The ground is somewhat classic. The infirmary is built on the site of the old Small-pox Hospital where Marson did his immortal work in the observation of small-pox and of the effect on it of vaccination. But the new institution has an importance of its own. It is meant for the sick of this large parish—the most populous in the kingdom. Unfortunately pauper sickness seems to grow even faster than the population and to require for its treatment something very different from the old workhouse accommodation for paupers. We shall probably give our readers some details of the new institution next week. Meantime it is noteworthy that the Duke and Duchess of York should graciously show their concern for the welfare of the sick poor by their presence at the opening ceremony.

THE HOUSING PROBLEM IN RURAL DISTRICTS.

PART III. of the Housing of the Working Classes Act, 1890, has not up to the present been made much use of in rural districts, and an inquiry which has recently been held by the Essex County Council into an application on the part of the Malden Rural District Council to adopt this part of the Act has brought out some interesting points. The proposal is to erect a dozen cottages at Bradwell-on-Sea, at which place there are 121 occupied cottages. Of these cottages 22 have one bedroom, 77 two bedrooms, and 22 three bedrooms; but of the total 121 only 18 are regarded by the local surveyors as being in good condition. The district council are proposing to erect 12 cottages at a cost of £2500, including the land, and the surveyor estimates that at a rental of 3*s*. a week an annual loss of £50 would fall upon the rates. The county council commissioners think, however, that this figure is below the mark and that £60 more correctly represents the truth. There seemed, indeed, to be a feeling at the inquiry that under no circumstances could a higher rent than 3*s*. a week be paid for the cottages, while others thought a rental of 1*s*. 6*d*. should suffice. The commissioners point out that this question of rental is obviously the crux of the position and that under the present system the cottages attached to farms are frequently let considerably below their proper rental. In this

connexion they relate the evidence of one of their witnesses to the effect that a certain land-owner built for the use of a farmer two cottages at a cost of some £400; the farmer pays rent at 4 per cent. on the outlay in addition to doing repairs and paying rates and taxes. The annual expenditure of the farmer on these cottages is about £22—i.e., about 4*s*. 6*d*. per week for each cottage—but the rent which he charges his labourers is but 1*s*. per week—i.e., the men's wages are 3*s*. 6*d*. in excess of the nominal figures. The commissioners condemn this indirect method of payment and urge that if the farmers would increase the men's wages and charge the full rent some inducement might be offered to private building enterprise. The application of the district council is, it appears, likely to be granted and the experiment will be watched with interest by all those anxious to bring about a better state of affairs in some of our rural districts.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ANNUAL MEETING OF FELLOWS.

THE annual meeting of Fellows was summoned for Thursday, July 5th, at 5 P.M., but the election of members of Council delayed the entrance of the President, Sir William Mac Cormac, Bart., K.C.V.O., for about ten minutes. As, however, the number of Fellows required to form a quorum, 30, were not present, the President waited a quarter of an hour, and at the end of that time rose and declared that no meeting could take place as only 18 Fellows were present. He further pointed out that at the three previous meetings summoned no quorum had been obtained, so that the minutes of July, 1897, had not been yet confirmed. Until this year two meetings had been summoned yearly, but in 1899, in consequence of the repeated failures in getting a quorum, the Council had decided to call only one meeting each year. As it appeared that the Fellows were not sufficiently interested in these meetings to care to attend it might be possible that the Council would decide to do away with fixed meetings of Fellows and would themselves call a meeting when it appeared advisable, or on the requisition of a certain number of Fellows. We fear that the privilege of meetings of the Fellows, obtained after so much exertion, will shortly be withdrawn by the Council. The only agenda were three motions by Mr. R. B. Anderson.

Mr. H. Lockwood and Dr. A. H. Downes, Local Government Board inspectors, on July 10th opened an inquiry at St. Pancras Vestry Hall into the alleged irregularities which have recently taken place with regard to the certification and removal of lunatics.

SIR H. BLAKE, the Governor of Hong-Kong, in a telegram to Mr. Chamberlain received at the Colonial Office on July 9th, 1900, reports that 65 fresh cases of plague and 68 deaths occurred last week.

A CIVIL list pension of £50 has been granted to Mrs. Eliza Arlidge in consideration of the labours of her late husband, Dr. John Thomas Arlidge, in the cause of industrial hygiene, and of her straitened circumstances.

PRESENTATIONS TO MEDICAL MEN.—Mr. James C. M. Kinnear, M.B., C.M. Aberd., of Laurencekirk, Kincardineshire, on the occasion of his leaving the district, has been the recipient from his friends of a gold Albert chain and pendant.—Mr. T. Macdonald, M.B., C.M. Edin., has been presented with a centre-piece by the Highland Railway Ambulance Class, Inverness, in appreciation of his ambulance instructions.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

New Nationalities.—Scientific, Medical, and Surgical Exhibits of Hungary, Italy, and Switzerland.

ONE of the practical services rendered by Universal Exhibitions is that of revealing to civilisation the advent of new nations in its midst. Take, for instance, the Universal Exhibitions from the one held in Hyde Park in 1851 down to that apotheosis of the Second Empire, the first Universal Exhibition held in the Champs de Mars in 1867—up to that date there was no Hungary. Now, on the contrary, excepting the Trocadéro which is devoted exclusively to colonial exhibits, the horizontal tricolour of Hungary may be seen proudly displayed in all directions. Though now a thousand years have elapsed since Arpád and his mystic seven chiefs led the Magyars to the borders of the Tisza and the Danube, Hungary as a modern and independent nationality does not date back further than to the Austro-Hungarian compromise of 1867. But what giant strides have been made since that date, the nation accomplishing in each succeeding decade the work of a century. For instance, and as indicating the spread of intellectuality, there were but nine printing firms at Budapest in 1848, and 10 years after the re-establishment of the Constitution of 1867 there were 51 printing establishments in the capital and 198 in the provinces. To-day there are 660 printing firms in Hungary, of which 147 are at Budapest. Whereas in 1868 only 50 per cent. of the children went to school, now the school attendance is equal to 80 per cent. of the juvenile population. These primary schools to-day cost 38,182,306 crowns per annum, instead of 7,520,246 crowns, as in 1868. In the same interval the State subventions to schools have increased from 1,500,000 crowns to 10,000,000 crowns. For secondary education the cost has increased from 6,741,000 to 20,000,000 crowns and the number of pupils from 36,569 to 56,441. The University at Budapest had 96 professors in 1867 and 295 professors in 1899. In many other directions similar progress is to be noted and the result is manifest by the large share that Hungary has taken in the present Universal Exhibition. Naturally medical education has had its place in this general progress and development, and of the many public works undertaken some relate to water-supply, drainage, hospitals, clinics, university buildings, and other services bearing on the preservation of the health of the nation. Not least among these are the improvements in agriculture, as they tend to increase the food-supply and the cost of the necessities of life. All this is made manifest at the exhibition not only by the exhibits themselves but by numerous explanatory pamphlets and a special and semi-historical catalogue of the Hungarian exhibits published by the Royal Hungarian Commissariat.

The Hungarian section in the department of the Exhibition devoted to letters, arts, and sciences is compact and well organised; it is easily accessible, its situation being in the western wing of the main building on the Champ de Mars. Care has been taken to show that every encouragement is given to the study of the sciences, and the various Hungarian institutes created for this purpose have their exhibits. Thus the Hungarian Institute for the Study of Forensic Medicine, which is under the direction of Dr. B. Kenyeres, exhibits stereoscopic photographs of wounds and other injuries that were the subject of legal investigations. The Anatomical Institute of Topogr has a very fine display of bones, while the Botanic Institute, managed by Professor Istvanffy, has models of plants artistically prepared and some plants preserved in alcohol. Professor Leschner's clinique for mental diseases sends a cephalograph for mapping the convolutions of the brain in relation to the walls of the skull. Then there are the exhibits of the schools of anatomy and notably that of the Budapest Faculty of Medicine—sections of the pelvic region, the circulatory system, &c. But what strikes the eye first is a large collection of models of human teeth. These are from four to five inches in length and are most carefully painted, so that the appearances in caries and various other diseases are readily perceived by reason of the exaggerated size of the models. The teeth are held up by a brass frame and in the lower part, the leg or stem of the frame, there is space for the

introduction of a circular piece of paper about an inch and a half in diameter. In this medallion are drawings or enlarged photographs of the specific microbe associated with the disease which the model tooth above illustrates. There is likewise a large assortment of apparatus used in the schools of chemistry. The first group of apparatus deals with the classic demonstrations, the second with the analysis of gases, and the third with scientific researches, the last-named including spectroscopic analyses. A neat little pamphlet with good illustrations is given by the attendants to those visitors who seem to take a serious interest in the subject, and it contains full explanations.

Another pamphlet gives many details concerning the ophthalmological clinic of the Hungarian Royal University at Budapest. This clinic was founded in 1801, but it was then part of the surgical teaching and it was only in 1867 that its present active and separate existence began and that a chair of ophthalmology was created. Yet as far back as 1770 Professor Joseph Plenk delivered a separate course of lectures on ophthalmology at the University of Nagyszombat and in 1780 an annual grant of 200 florins was given so that such lectures might be continued. In 1801 the first ophthalmological clinic was created. It consisted of two rooms and six beds. One of the earliest teachers of ophthalmology at Budapest, Le Febure, Baron of Saint-Ildefont, won so great a reputation that he was appointed in 1790 by Louis XVI. as surgeon to the Court of France. He was the author also of some well-known works on the subject. In 1813 a law was enacted by which no one was allowed to call himself an oculist unless he possessed the diploma of doctor and surgeon and had obtained from the professor of ophthalmology a first-class certificate which was only given after two examinations, the first on theory and practice and the second on operations. The growth of this branch of surgery may best be realised by the following comparative figures. There were at the ophthalmic clinic of Budapest 507 out-patients and 87 in-patients during the year 1850. In 1898 there were 8983 out-patients and 983 in-patients. The record of operations does not seem to go further back than the year 1875, when 291 ophthalmic operations were performed; these increased to 1171 in 1898. Professor William Schulek, assisted by a numerous staff, is now the director of this clinic, which is located in the central block of the Faculty of Medicine. A plan is given of these extensive premises. The ground floor is devoted to the out-patients, the consulting and operating rooms, &c., and on the upper floor there are beds for 60 patients, isolation rooms for contagious cases, baths, &c. Thus a detailed idea of the hospital arrangements and the facilities for medical and surgical education which exist in Hungary can be obtained without going any further than the Paris Exhibition. Then there are also large diagrams prepared by Professor A. Hogyes setting forth what has been accomplished by the Pasteur Institute of Budapest. These include coloured maps of Hungary which indicate the prevalence of rabies in the different counties for many years. From this it appears that 9023 persons were bitten and suspected of rabic infection during the period 1890 to 1897. The cases of rabies that ensued numbered 283, or 3·13 per cent. of the persons who had been bitten. Of these persons 7528 were inoculated, of whom 117, or 1·55 per cent., had rabies. Of the 1495 persons who were not inoculated 166, or 11·10 per cent., had rabies. Of the 7528 persons who were inoculated 53 could not receive the proper or complete treatment: 22 fell ill while undergoing the course of inoculations, and 31 within 15 days of the last inoculation. Consequently it is claimed that though 7528 persons were treated, those who were treated in time numbered 7475. Of this latter number only 64 suffered from rabies and therefore the proportion of those who were fully and properly treated and who nevertheless were victims of the rabic poison amounted to only 0·85 per cent., instead of 1·55 per cent. Behind these statistics of the Hungarian Pasteur Institute are a number of oil-paintings representing the coats of the stomach during and after injections of cold water, of warm water, of mineral waters, and of water containing solutions of different acids or Karlsbad and other salts. These were taken with the Leiter-Mikulicz apparatus by Dr. Charles Morelli. There are also a few surgical instruments and orthopædic apparatus, &c., and then we come to the exhibits of the Hungarian crafts as taught in the technical schools.

Facing the Hungarian section in this department is that of Italy, a nation which is at once so old in history and yet so young as a modern and united kingdom. Here the visitor is constantly greeted by the characteristic sounds of music from guitar and mandolin, while a large photograph of the ruins of the Roman Forum and reproductions of the best Italian Old Masters give local colour to the section. On a broad table are piles of very artistic and cheap photographs of Italy, its ruins and its best paintings, so that the visitor may take away with him a suitable souvenir. But there is very little in this section of special technical interest. There are a few artificial teeth, a gymnasium, and some rough, cheap school furniture. Among the latter there are a desk and seat, which can not only be raised or lowered according to the size of the pupil, but the board on which the feet are placed can also be raised several inches. Thus the children may be lifted up all to the same height and a small boy would be able to see even though a big boy might be in front of him. Also the raising of the feet from the floor may be of use in case of dampness or draughts and thus the feet can be kept dry and warm. Close by Dr. C. Ghillini has an orthopædic measuring apparatus. In front there is a large pane of glass which is ruled in squares of a centimetre each. Behind the glass there is an upright nickel staff with moveable arms attached. One arm is placed above the head of the patient and measures his height; two arms hold each side of the head, whilst other arms press against the side of the body and their points reach the ruled glass in front. With their aid a life-size drawing or tracing can be made on the glass indicating the deviations rapidly and accurately. That was about all of a technical description which I noticed in this section. The exhibits of the Italian universities and the reports, drawings, &c., of public works bearing on public health are to be found in the gallery inside the Italian Palace in the Avenue of Nations.

Crossing the main passage again the exhibits of Switzerland are next to those of Hungary. Here also we find appropriate music, for there is a room surrounded with musical boxes which in turn play well-known and popular melodies, and it is not necessary to remark that the musical box is essentially a Swiss speciality. In the next compartment is another but a much better and more elaborate collection of school furniture. The desks, being larger, suggest plenty of elbow-room, and they enable the visitor to realise that the Swiss in respect to primary education have set an example to all Europe. Then there is a delightful room, with a comfortable velvet settee in the centre, where the weary investigator finds a welcome resting-place while he contemplates the surrounding gorgeous array of coloured photographs of Swiss alpine scenery. Here, too, there is a big table where all that Switzerland gives us in the form of photographic souvenirs can be cheaply purchased. Having rested in this cool, shaded compartment, which to the exhausted visitor will appear as a real oasis, he will find outside enlarged photographs of the human fœtus compared with that of a chicken. They are hung on a partition that is in a somewhat obscure corner and away from the general traffic. There is also the fœtus of a snake as compared with that of a chicken and some very remarkable and minute skeletons of the human fœtus which have been preserved by Dr. Eternod of the Geneva University. Close at hand Professor Emile Young exhibits beautiful specimens to demonstrate the morphology of anthropodes and the visceral anatomy of vertebrates. Then Messrs. Reymond Frères of Geneva have a large assortment of dental chairs, furniture, &c., and apparatus for making plates, casts, and other things connected with artificial teeth. M. J. Heinz of Bâle has an extensive exhibit. The first compartment represents an operating room. The operating table is of nickel, in three moveable parts, and is drained by a central groove. The instrument case or cupboard is of glass and metal; one side of the door fits into a groove on the other side and at the bottom of the groove there is a soft material which on being pressed tightly prevents any ingress of dust. Some of the tables are of porcelain on metal legs, but the porcelain, though beautifully smooth and bright on the upper surface, is rough and unpolished underneath, so that dust can adhere just where it is least likely to be seen. There is an apparatus that looks like the back or head of an iron bedstead; its two legs are on wheels. This can be affixed to the ends of a bed that is not on castors. By a lever arrangement the bed can be raised an inch or two from the floor, and then it rests on the wheels of the apparatus and

can be rolled along without disturbing the patients. Thus if there is a hospital where none of the beds have castors or wheels a couple of these contrivances will in a moment supply temporary wheels to any bed which it is necessary to move. But perhaps the most interesting exhibit is a sectional drawing illustrating the ventilation of an operating-room. Here a large space under the floor is devoted to this purpose. First, there is an air filter, then a fan propellor. After these there are a compartment for heating the air, a pulverised spray for moistening, and, finally, the shaft for delivery into the operating-room. Thus the amount and the quality of the air supplied can be regulated and does not depend upon the accident of outside meteorological conditions. Facing these objects Messrs. Fr. Klingelfuss and Co. of Bâle show electric apparatus used in dental surgery and for the examination of the throat, the nose, and the ears, as well as for cauterising, &c.

Messrs. Knœbel and Laubscher, also of Bâle, exhibit a large assortment of surgical instruments manufactured in Switzerland and some bronze aluminium thread for sutures which has attracted some attention. Next to these are the very interesting exhibits of bandages, &c., manufactured by M. H. Russenberger, of Geneva. The absorbent or hydrophile cotton-wool shown here raises important technical questions that merit careful attention on the part of operating surgeons. As a rule, this cotton-wool is made with the cotton-waste purchased from the mills. If such cotton were properly purified there would be no harm in its employment, but it not unfrequently contains as much as 5 per cent. of chemical waste products from the mills. For surgical purposes the safest plan is to employ, as in this case, virgin cotton imported direct from America. Apart from its greater purity it is not injured by manipulation, therefore the fibres are stronger and of greater length. Also there is a larger volume for equal weight and it is more elastic. A band made of virgin cotton-wool does not break so readily and therefore it is easier to dress a wound. A band of cotton-wool of this description is shown. It is some four feet in length and one and a half inches wide. Suspended by one end from the top of the case or stall it has, at the other end, a weight of one kilogramme; yet unless violently shaken it will not break. But the chief object is a rapid and large absorption. Formerly this property was tested by placing a little of the wool on the surface of a basin of water and watching how long it would take before it became immersed. M. Russenberger proceeds in a more conclusive manner. He takes a test-tube and places some coloured liquid at the bottom and then fills up the tube with the cotton. The height to which the coloured liquid travels and its penetration into the centre of the cotton show in a more certain manner the absorbent qualities of the latter. By these means is effectively demonstrated the superiority of virgin cotton to that of the waste cotton from the mills. Another point is the use of boric acid in cotton-wool dressings. Lord Lister has said that there should be from 50 to 60 per cent. of acid, but cotton-wool thus impregnated cakes and is difficult to use. This is due to the fact that the wool is soaked in a hot solution of the acid. Consequently a great deal of wool sold only contains 10 per cent. of boric acid. In the present instance the wool is impregnated by sprinkling the acid in a powdered condition and then passing steam through. But even by these means a sufficient quantity cannot be mixed with the wool unless it be by a cumulative process. Therefore the operation is repeated several times, and thus at last a cotton-wool bandage is obtained that contains 50 per cent. of its own weight of boric acid. So, also, instead of using glycerine to fix antiseptic powders on bandages, this is likewise done by a process of pulverisation. Glycerine is not always a suitable substance and, for instance, it will turn airol red when exposed to light. Then there is the question of sterilising wool, bandages, &c. What is the good of this precaution if after sterilisation the substance treated is to be brought into contact with the atmosphere, touched by the hand, and packed up in parcels? The bandages, &c., here exhibited are not thus exposed, but are first packed in parchment and then sterilised by steam under pressure. After a time the steam is turned off and nothing is touched till all is quite dry. The articles are then put into a second envelope and must not be opened till they are required for use. So that the operator may be satisfied that the sterilisation has been complete a small tube containing the loose powder of phthallic acid is placed in the centre of the packet. If this powder, instead of being loose, is found adhering to the side of the tube this proves that it has been exposed to a heat of 129° centigrade. Such are some of the technicalities of the scientific preparation of bandages, &c., as exhibited in the Swiss section. Before leaving this section I should not omit to mention a portable operating table devised by Professor Auguste Reverdin of Geneva especially for the use of rural practitioners. It weighs in all 15 kilogrammes. The legs are of hollow cycle tubing and fit into each other in a telescopic manner. The whole can be neatly packed and carried like a portmanteau. There is also another non-portable table consisting of three hollow parts that can be filled with warm water to prevent the patient suffering from cold. After examining these technicalities the visitor will perhaps be pleased to terminate his inspection and to rest himself by contemplating large plaster-cast models of the Swiss Alps.

Paris, July 9th.

THE WAR IN SOUTH AFRICA.

FROM a military point of view there has not lately been much to record. The enemy's troops can scarcely be regarded now as really organised forces and the fighting has assumed the type of guerilla warfare. The telegrams from South Africa show that the campaign is slowly but surely drawing to a close. The Boers are evacuating strong positions to take up others, and that alert and clever tactician, De Wet, still manages to slip out of our grasp with his troops. It is singular how seldom we seem to take any large number of Boers as prisoners or capture their guns. What has become of their artillery?

There is a widespread prevalence of enteric fever among our troops in South Africa. This fever is the scourge of all modern warfare and we are afraid it will continue to be so. Although typhoid fever is classified as a preventable disease it is uncommonly hard to prevent it under all the conditions of war. The more rapidly a campaign can be conducted the better for everyone, but the harder it is on all sanitary, transport, and supply departments. The mortality statistics of enteric fever in South Africa compare favourably on the whole with those of other wars or of India. A reference, too, to the statistics of the London Fever Hospital and to those of the Metropolitan Asylums Board will show that the percentage mortality at the army ages of soldiers is in excess of the average for all ages and this has, of course, to be borne in mind.

If the campaign in South Africa has from a purely military standpoint reached a dull stage of late as compared with the earlier and more exciting periods of its history this cannot be said of its medical aspects, for we are living in the clash of contentions and contradictory statements. About one thing, however, there can be no doubt, and that is that while there is an overwhelming amount of enteric fever at certain places the disease seems to be more or less prevalent everywhere in South Africa at the present time. It would be comparatively easy to deal with it if it were only known beforehand where the incidence of sudden and severe outbreaks was likely to occur, which is just what cannot be done. South Africa as a whole is of some 442,000 square miles in extent, and although the theatre of war has not this area it nevertheless occupies a very large one and the available means of communication are very limited for the great number of troops in the field. There was not long ago an epidemic of typhoid fever at Maidstone and to provide the requisite number of suitable hospitals and trained nurses for it was by no means an easy task, notwithstanding that Maidstone is not far from London by rail. How much more difficult must it be to do so in the case of epidemic outbreaks on a large scale in Africa, for they must be trained nurses to be of any good in the case of typhoid fever patients; untrained attendants, however well disposed, would be more likely to prove an encumbrance than otherwise. Where are all these trained nurses to be had? However, a commission will soon be constituted and sent out to South Africa to inquire into the sickness and medical arrangements there. We can quite appreciate the force of Lord Roberts's request that some of its members should be persons of strong common sense.

The last issued official return of the War Office shows the total casualties since the beginning of the war up to the end of last week, but exclusive of sick and wounded men in

British hospitals in South Africa, to be 30,693. The list is made up as follows:—

—	Officers.	Non-commissioned officers and men.
Killed in action	255	2,411
Died from wounds	70	625
Missing and prisoners (excluding those who have been recovered)	59	1,927
Prisoners died in captivity	1	84
Died from disease	137	4,398
Accidental deaths	—	68
Sent home as invalids	916	19,742
Total	1438	29,255

(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

Bloemfontein and enteric fever are synonymous at present, though I am glad to say we are gradually getting the best of it; it has, however, been a hard fight and many have gone down in the contest. When I tell you that besides the three big general hospitals, Nos. 8, 9, and 10, which have been accommodating any number between 1000 and 1500, there are the Langman, the Irish, the Portman, the Radzali, and the Volkes Hospitals, all more or less full up, it will give your readers some slight idea of the work of the medical staff during this campaign. Few people will realise unless it is explained to them, that each of our big general hospitals is treating at present nearly double the number of patients that can be accommodated at University Hospital or St. Mary's Hospital, and when the thousand and one other duties that are absolutely necessary are taken into account, such as rations, supplies, conservancy, and the internal economy of the various units of the Royal Army Medical Corps, St. John Ambulance, and the Cape Medical Staff Corps, to say nothing of the vast army of regimental orderlies who are doing duty in place of our own men who are ill or invalided, I think it will be acknowledged that life out here at present is not all rose coloured. The climate is excellent—cold and frosty in the mornings and evenings and comfortably warm during the day; and were everything else equal it ought to be an ideal spot for invalids and convalescents.

When I left Cape Town the only general hospitals left were Nos. 1 and 5, all the others having gone up country, and by the time you get this I hope our own may be also at Pretoria or Johannesburg. Of course, the number of surgical cases are now few and far between, but I expect the engagements that have beeen taking place round Pretoria will mean that we shall soon be having some more sent down. The great convalescent camps that exist here, at Norvals Pont, and at Springfontein are a great boon and enable men who, though seedy, are by no means so ill as to require to be sent to England, to pick up and rejoin after a brief stay. Two more new hospital trains, admirably fitted and equipped, have been added to the existing number and are performing excellent work, and besides these we have most comfortable saloon trains running at brief intervals for convalescent patients who do not require lying-down accommodation or special diet and nursing. Our number of nursing sisters is being augmented daily, and I cannot say too much for the way these ladies have been working under circumstances which, owing to the exigencies of warfare, must have been often disheartening in the extreme. Everyone speaks well of their devoted work, and no praise is too much from us who see them day after day and night after night going on steadily and earnestly in their labour of unselfish devotion to their duties.

As I predicted in my earlier letters disease has claimed far more victims than the Mauser bullets, and anyone who at the commencement of the war would have predicted that our sick would reach a total of over 10,000 would have been a true prophet, though he might at that stage of the proceedings have been discredited. As regards the enteric fever it is very difficult to say at present to what source it can be traced. It is undoubtedly endemic in Bloemfontein, which is not to be wondered at when one comes to look a little into the sanitary arrangements of the town, which are practically *nil*. The majority of our cases were transferred from the various field and stationary hospitals which seem to have brought them from the Modder and Paardeberg, where the disease was contracted during the stay of the troops in these localities. One of the worst features about this disease is that it absolutely unfits men for further duty for at least three months—which, of course, means that they must be sent home, the voyage being one of the main factors in the convalescent treatment which all these cases require. At present the line is blocked between this place and Kroonstad owing to the Boers having cut the communication, and several of the hospital trains and members of the staffs of the hospitals which are up at the front are temporarily detained here. Luckily there is plenty of excellent accommodation in the way of hospitals at both Pretoria and Johannesburg so that no inconvenience will be felt, and long ere you receive this the line will have been cleared. I shall not enter into any statistics regarding the enteric fever as you will doubtless have more extended reports than I have time to give you, but I can confidently state that the mortality does not exceed the average—in fact, when one comes to analyse the returns they certainly furnish a subject for congratulation as far as the mortality is concerned.

Bloemfontein, June 16th.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

We have had a terribly sad week since last I wrote to you owing to the death of two young officers, each of whom, though their ways lay far apart, had endeared themselves to many members of our camp. Early in the week came the bare statement, and even yet we have heard no details at all, of the death in action of Lady Chesham's son. Only a few weeks ago he passed through here on his way to the front for the first and last time and everybody who met him was won by his cheery good spirits and good heart. On the day we heard the sad news our chaplain held a memorial service, for a gloom was cast over the whole of our camp. But it was only the forerunner of another event the sadness of which came even more home to the staff and patients of this hospital, for in the death last Friday, June 15th, of Dr. R. T. Fitz-Hugh everybody here felt that they had lost a friend whose value they had had the opportunity of realising. He was one of the juniors among our medical officers, but his practice here among the patients had cemented the high opinions which had been formed at Guy's Hospital by his teachers no less than by his contemporaries from his earliest student days and which had been fortified by the high degrees he had taken at the London University. He was popular alike with his colleagues, with the nursing sisters, with the non-commissioned officers and orderlies, and with the patients. His career gave every promise of his attaining a very high place in his profession; but apart from his value to this hospital in his professional capacity he had many characteristics which had endeared him to those who knew him. He was a thorough sportsman, a prominent member of our cricket eleven, though perhaps best of all at Association football, in both of which sports he used to play for Guy's Hospital when he was a student. He was a man with a keen sense of humour and quite the most popular performer at the smoking concerts which do so much to keep up the spirits of our camp. One song of his in particular was so popular that however much he tried to satisfy the audience with others they never would let him leave the piano until he had given them their favourite Poor old "Fitz," as we always called him, will not quickly be forgotten by his friends. There was an enormous congregation at his funeral service, the first part of which was held in the church. All ranks of the hospital were largely represented and formed into a long procession to follow him to the cemetery about a quarter of a mile away. The coffin was carried by orderlies, and four of his fellow Guy's men acted as pall-bearers.

On the day that he died the entire staff was kept busy by the arrival of two trains full of sick and wounded, the first day on which we have ever experienced such a heavy "take in." The first train load was the earliest out of Mafeking. Poor fellows, they are thin! But you will hardly need me to tell you this, nor that they are plucky. I was much struck by the coolness displayed by one of the officers. He was shot

through the leg, and a few yards further on through the chest. That brought him down, but the Boers put two more bullets into him at forty yards' range while he was on the ground. He thought the best thing to do to save further damage was to sham dead. They came and looted his pockets and he found it very difficult to maintain the sham. Later he was taken into the Boer laager as one of the wounded, and the first thing he did was to protest against having been looted before he was dead! But this he did so eloquently that the Boer in command had his watch searched for and returned to him. Professor J. Chiene of Edinburgh came down with this train. The second train arrived from Wynberg and Senekal, and out of 96 occupants there were no fewer than 50 "stretcher" cases—i.e., patients so gravely ill that they had to be carried from the train to their beds. Many of the wounded from the latter neighbourhood presented a feature which was entirely novel to our experience in that they were burned more or less severely. It seems that our troops had had to advance through veldt fires. A few of them were burned in running through; others only got their burns when they fell to the ground wounded, but from the accounts of the survivors I fear that there must have been others again still less fortunate who, when they fell to the ground, were unable to move and were burnt to death. No. 3 hospital train, which brought the latter load, left again immediately for Mafeking, and Colonel Sloggett went up in it with the intention of bringing down all the rest of the sick and wounded from that place. Still lying there is a cousin of mine, Major Mullins, of the Imperial Light Horse, who, after being wounded through the shoulder at Elandslaagte early in the war and then being locked up in Ladysmith throughout the siege and having enteric fever in Intombi camp, formed one of the relief force and had the bad luck to get wounded in the back just before they got into Mafeking. Professor Chiene, who saw him in Mafeking, tells me that both legs were completely paralysed at first, but that now there is so much improvement as to warrant the hope that he may regain the use of both. I sincerely hope that Colonel Sloggett will find him and all the others still left in Mafeking—some 50 we were told—well enough to travel, in which case we shall have the pleasure of putting the splendid resources of this hospital at the service of all those who were laid up in Mafeking or wounded in its relief.

The blowing up of the railway north of Kroonstad has not really affected our material interests here at all, for most fortunately all three hospital trains (for a third one has just been improvised out of the ordinary saloon carriages with a kitchen truck in the middle) were south of that part at the time, and therefore their regular running has not been interfered with.

Professor Chiene was originally coming out as senior surgeon to the 100-bed Scottish Hospital recently established at Norval's Pont, but the day before he left home he was appointed a consulting surgeon to the Forces by the War Office in one of the vacancies created by the home-going of Sir William Mac Cormac and Mr. Treves. He stopped the whole day with us and I took him all round the hospital. He made a most minute inspection of everything and carried away, for the benefit of the Scottish Hospital to which he was going, a sample of any little device that struck him as novel. He was much fascinated, for instance, by the way buckets are improvised here out of empty oil cans. He and the two other medical men and the two sisters on the Mafeking train lunched and dined with us and he left again late at night, having expressed himself extremely pleased with everything he saw. The operating theatre, the laundry, the disinfectant house, and the latrines were the parts he admired most of all.

We have had to turn one of the smallest huts into a sick room for the sisters. They are so closely packed in the ordinary sisters' sleeping huts that it is extremely inconvenient there when one of them is ill. I am glad to say that there are no serious cases amongst them, but their work is very heavy now, and their sick room is in perpetual request for slight cases. Greenfield and Parker, the other two medical men who I told you had enteric fever, are both doing well. Three others of our medical staff have had to be admitted to the officers' ward during the past week, but we do not think that any of them have enteric fever. Exactly a quarter of the orderlies we brought with us are now sick in hospital. In spite of this attenuation of our staff we are still expanding our accommodation and have now 800 beds, although nearly a hundred of them are not occupied, 50 being reserved for our expected load from Mafeking, and from 30 to 40 we always keep vacant, as I have told you before, for chance arrivals.

Deelfontein, June 18th.

IMPERIAL YEOMANRY BRANCH HOSPITAL.

(FROM A CORRESPONDENT.)

Before Mr. Burdett-Coutts's letter had appeared in the *Times* Lord Roberts telegraphed to London from Pretoria that he would like another Yeomanry hospital sent out if possible.

The committee, with their usual promptness, despatched four days after the receipt of the telegram the nucleus of the medical and nursing staff of a new hospital destined for Pretoria or Johannesburg or any other spot decided on by Lord Roberts. The remainder of the staff were under orders to leave Southampton a week later. The first departures consisted of F. M. Sandwith, M.D., F.R.C.P., who is taking a summer holiday from Cairo; W. Langdon Brown, M.B., assistant physician to the Metropolitan Hospital and casualty physician to St. Bartholomew's Hospital; H. Williamson, M.B., B.C., late house surgeon at St. Bartholomew's Hospital; and S. F. Crowther Smith, M.B., late house physician at St. Bartholomew's Hospital. The matron is Miss Nisbet of the East Dulwich Infirmary, who earned her first laurels at the Chalcis Hospital during the late Greek war. She left in charge of 11 nurses of the Royal Army Nursing Reserve, and the staff were accompanied by 81 orderlies, many of whom have had previous nursing experience. Most of the equipment will be provided on arrival at the Cape. The party is also accompanied by Colonel Lucas and Colonel Deane who are proceeding to South Africa to report upon the various Yeomanry units now serving at the war. The Yeomen already number over 11,000.

JENNER INSTITUTE OF PREVENTIVE MEDICINE.

THE annual general meeting of the Jenner Institute of Preventive Medicine was held at Chelsea on June 29th, Lord LISTER, the President, being in the chair. Amongst those present were Sir Joseph Fayrer, Surgeon-General Hooper, Professor Greenfield, Professor W. G. R. Simpson, Dr. McCrury, Dr. Bridgwater, Colonel Addison, and Mr. S. G. Shattock.

The governing body reported that during the year the work of the Institute had continued to afford valuable results. The transference of Lord Iveagh's gift for the promotion of the objects for which the Institute was founded had been effected and the governing body which would in future control the affairs of the Institute had been constituted. Reference was made to the loss the Institute had sustained through the death of His Grace the Duke of Westminster.—The report of the TREASURER (Sir Henry Roscoe) was read and adopted.

The report of the DIRECTOR (Dr. Allan Macfadyen) stated that during the year the Institute's work had continued to progress. The following paragraphs are taken from the report: "The fitting up of the Chelsea building, which has occupied a good deal of my time during the past three years, is now completed with the exception of the museum. The foundations and footings on the vacant portion of the building site have been laid down, and this will facilitate building operations in the event of its being decided to proceed with the erection of the new wing. Amongst new features added during the year may be mentioned (1) a physiological room, (2) a room for incubating purposes, (3) a laundry, (4) a workshop, and (5) a cold-storage-room.

"Mr. Briggs has presented to the Institute a Hansen apparatus for yeast-culture and considerable additions have been made to the library. The first laboratory meeting of the Pathological Society of London was held at the Institute. During the year I visited the laboratories of Professors Behring and Ehrlich and those of Meister, Lucius and Brüning at Höchst. A second volume of the Institute's Transactions has been published. The volume contains 19 contributions and includes a paper

by Professor Ehrlich. Professor Welch of the Johns Hopkins University writes: 'I congratulate you upon the excellence of the scientific work recorded. Every paper is a genuine contribution of real value. The Institute is a splendid success and all English-speaking physicians have reason to be proud of it.'

"Three papers have been communicated to the Royal Society upon the influence of the temperature of liquid air and hydrogen upon bacterial life. The experiments were conducted with the kind coöperation of Professor Dewar and a further series is contemplated upon life at low temperatures. In conjunction with Dr. Morris and Dr. Rowland a paper has been submitted to the Royal Society on Expressed Yeast-cell Plasma (Buchner's 'Zymase'), a subject of considerable biological interest. The research has been the means of giving us a new method for triturating organisms. Systematic investigations are being carried out in the bacteriological department upon enteric fever, tuberculosis, and the etiology of cancer, with the coöperation of Dr. R. T. Hewlett and Dr. Rowland. Various investigations have been published during the year by Dr. Hewlett and other members of the staff. It is proposed to set on foot a systematic inquiry into the nature and origin of food poisons.

"A number of workers have utilised the laboratories for purposes of research during the year. Special investigations were carried out for public authorities during the year—e.g., upon tubercle in milk, glanders, anthrax, &c. The illustrations for the Transactions were prepared by Mr. J. E. Barnard in the photographic department of the Institute. Mr. A. Harden, chemist to the Institute, reports that he is continuing his investigations upon the chemical products of pathogenic and other micro-organisms. Dr. G. Harris Morris, lecturer on technical mycology, states that a number of students have utilised the facilities of the Hansen Laboratory, whilst researches upon yeasts, diastases, zymase, and other subjects of technical interest have been prosecuted. Dr. George Dean, in his report of the work of the antitoxin department, states: 'In connexion with diphtheria antitoxin many experiments have been made with the view of ascertaining the best conditions for obtaining powerful toxins and antitoxins and in testing the results claimed for the methods of other workers. The improvement in the strength of the toxins and in the method of immunising the animals has resulted in a higher average of antitoxic value being reached, so that the increased demand for this antitoxin has been successfully met. Several races of streptococcus pyogenes have been used in immunising horses with the view of obtaining a polyvalent serum. The War Office and several of the consulting surgeons who have gone to South Africa have been supplied with the tetanus and other antitoxins. Researches dealing with problems of immunity are in progress and papers have been published from the department upon the diphtheria bacillus and a new pathogenic streptothrix.'"

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, PARIS, AUGUST, 1900.

THE following arrangements have been made for British members who wish to attend the Congress to be held at Paris from August 2nd to August 9th. The South-Eastern and the Chatham and Dover Railway Company will issue tickets to members and their wives, but not to their families, on presentation of their cards of membership at the reduced rate for return tickets of 58*s*. 4*d*. first-class and 37*s*. 6*d*. second-class *viâ* Dover and Calais or Folkestone and Boulogne, available for 14 days; by the 2.45 P.M. service from Charing-cross or Cannon-street *viâ* Folkestone and Boulogne, and by the 9 P.M. service from Charing-cross, Victoria, Cannon-street, and Holborn *viâ* Dover and Calais. Each ticket will entitle the holder to a free allowance of 56 lb. of luggage and will be available to return from the Gare du Nord at Paris by the 3.30 P.M. or the 9 P.M. services. Those who wish to return by the 9 A.M. service *viâ* Calais and Dover, or the 10.30 A.M. service *viâ* Boulogne, may do so on payment of 7*s*. 1*d*. first-class and 3*s*. 9*d*. second-class on board the steamers. The special tickets will be issued every day from July 21st to August 10th and will thus be available for those who wish to attend the Congress of Medical Ethics, the Congress of the Medical Press, the General Medical Congress, and the Congress of Hygiene.

The London, Brighton, and South Coast Railway Company will issue on application to the Continental Traffic Manager, London Bridge Terminus, a day or two in advance of departure, 14-day excursion tickets available from London or any station on the Brighton Railway to Paris at 39*s*. 3*d*. first-class or 30*s*. 3*d*. second-class to members of the Congress. The tickets can be made available for the day service and the availability can be extended to, say, 25 days if desired. These tickets allow a break of journey at Brighton or Lewes, Newhaven, Dieppe, and Rouen, both in going and in returning. Members who apply for these tickets are required to give proof of their membership and should make their cheques payable to the London, Brighton, and South Coast Railway Company, addressed to Mr. T. N. Wylie, the Continental Traffic Manager at the London Bridge Terminus.

The London and North-Western Railway Company state that parties of 30 or more passengers travelling to Paris this season from a station outside the radius of 20 miles from London (the party travelling together on the outward journey, but individually if desired on the homeward journey) will be charged the single fare and a quarter for the double journey from the North of England to London and back, *plus* the 14 days' excursion fares from London to Paris in force by the different routes beyond London. The tickets will be available for 16 days—i.e., 14 days between London and Paris and two days extra between London and the provincial station.

The Midland Railway Company are prepared to make a similar concession for parties of 30 and upwards travelling together from stations over 20 miles from London.

The International Sleeping Car Company, 14, Cockspur-street, Charing-cross, London, S.W., are the agents for the Trocadéro Hotels in Paris. These hotels are situated on the Quai de Passy and the Boulevard Delessert, immediately adjoining the Trocadéro section of the Exhibition. They consist of four separate blocks, and being constructed solely of stone are so designed that when the Exhibition is over they may be used as flats. The position they occupy is in many ways unique, and their immediate proximity to the Exhibition grounds renders them most convenient for visitors to the Exhibition, and this, on account of the excessive charges made by the Parisian "cochers" for cabs, is a consideration. The hotels are pleasantly situated, two of the four blocks being on a level with the Quai de Passy, whilst the other two are on a level with the Boulevard Delessert, separated from the lower ones by a large garden and a series of terraces with fountains. The second floor of the two upper buildings is about on a level with the fourth floor of the two lower ones, so that the view over the Seine and over the whole of the Exhibition is the same from every part of the hotels. At present visitors are able to obtain bedrooms with one bed at from nine to 16 francs and double bedrooms at from 15 to 28 francs per day, including lights and attendance. The tariff for visitors *en pension* varies between 16 and 23 francs per head a day according to the floor and the aspect of the room occupied. These prices include bedroom, electric light, attendance, breakfast, luncheon, and dinner with wine, or beer, or mineral water, or milk. Early application, however, is now necessary and should be made direct to the Manager of the Sleeping Car Company, 14, Cockspur-street, S.W.

At Paris special rooms will be set apart on and after Monday, July 30th, for the use of the national committees of each country which may be used as a rendezvous for each nationality. These rooms will be in the buildings of the Faculté de Médecine. A postal telegraph office will also be opened at the Faculté de Médecine where members will find their letters and telegrams if they are addressed as under:—"Dr. ————, Member of the Thirteenth International Congress of Medicine, Paris."

STATE OF THE MORTUARIES AT DEVONPORT.—At an inquest held at Devonport on July 2nd the coroner described the Pottery Quay mortuary as a scandal and considered it his duty as coroner of Devonport to point out the disgraceful condition of things with regard to the mortuaries of the town. He added that the feelings of those who had had relatives placed there must have been very harrowing.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to noon on Wednesday last, when the total was over £40,000 :—

	£	s.	d.
Temple Church	115	0	0
St. Mary's, Bryanstone-square	269	0	0
St. Paul's, Avenue-road	121	0	0
St. Luke's, Rutford-place	115	0	0
Holy Trinity, Knightsbridge	126	0	0
St. James's, Clapham-park	100	0	0
Christ Church, Gipsy-hill (morning collection)	105	0	0
St. Peter's, Brockley	116	0	0
St. Marylebone Parish Church and Chapel	203	0	0
St. George's, Hanover-square, and St. Mary's, Bourdon-street	156	0	0
St. John's Presbyterian Church, Forest Hill	107	0	0
St. James's, Paddington, Parish Church	130	0	0
St. Martin-in-the Fields	212	0	0
St. Peter's, Vere-street	422	0	0
Christ Church, Wimbledon	100	0	0
Per Canon Haygarth, total	206	0	0
Trustees of the late Wm. Rankine	100	0	0
Miss Emily Old	25	0	0
Mr. Charles Edwin Layton	21	0	0
Mrs. Charles Edwin Layton	21	0	0
St. Mary's Old Church, Stoke Newington	30	0	0
"In Memoriam," Crosby Lockwood	20	0	0
Bromley (Kent) Presbyterian Church	20	0	0
Brixton Congregational Church	59	0	0
St. James's, Camberwell	30	0	0
St. James's, Garlickhithe	28	0	0
St. Matthew's, Brixton	51	0	0
Vintners' Company	21	0	0
St. Ann's, Wandsworth	46	0	0
Belgrave Church, Halkin-street	22	0	0
Finchley Parish Church	27	0	0
St. Paul's, Upper Holloway	26	0	0
Harrow Weald Parish Church	26	0	0
Orange-street Congregational Church	22	0	0
Gower-street Baptist Church	20	0	0
Putney Parish Church	40	0	0
St. Mary's, Cuddington, Parish Church	35	0	0
St. Mary's, Shortlands, Kent	51	0	0
St. Paul's, Great Portland-street	66	0	0
St. Philip's, Regent-street	27	0	0
St. Anne's, Highgate-rise	22	0	0
St. Jude's, Upper Chelsea	27	0	0
Brondesbury Baptist Chapel	21	0	0
High Beech Church	26	0	0
St. Peter's, Clapham	26	0	0
St. John the Evangelist, Westminster	80	0	0
St. Peter's, Ealing	27	0	0
St. Mary's, Monken Hadley	34	0	0
Christ Church, Chislehurst	43	0	0
Christ Church, Newgate-street	47	9	0
The Collegiate Church of St. Saviour, Southwark	29	0	0
St. Luke's, Hornsey	24	0	0
Northwood (Middlesex) Parish Church	25	0	0
Christ Church, Southwark	46	0	0
Metropolitan Tabernacle	43	0	0
West Wickham Church and Mission	43	0	0
St. Mary Boltons	65	0	0
St. Augustine's, Queen's-gate	72	0	0
West Wickham Churches	43	0	0
Great Stanmore Parish Church	33	0	0
Merton Parish Church	26	0	0
Church of the Annunciation, Chislehurst	77	0	0
St. Stephen's, Hampstead	22	0	0
St. James's, Clapton	26	0	0
Keston, Kent, Parish Church	27	0	0
Leytonstone Congregational Church	25	0	0
St. Paul's, Wimbledon-park	43	0	0
Nutley-lane Church, Reigate	22	0	0
St. John's, Redhill	42	0	0
Beckenham Parish Church	65	0	0
Bromley Parish Church, Kent	66	0	0
Crouch-hill Presbyterian Church	41	0	0
Roupell Park Wesleyan Church	22	0	0
Central Hill Baptist Church, Upper Norwood	87	0	0
Chapel Royal, St. James's Palace	70	0	0
St. Andrew's, Leytonstone	61	0	0
St. Mary's, Hornsey Rise	27	0	0
Christ Church, Brondesbury	38	0	0
Clapton Park Congregational Church	25	0	0
St. Gabriel's, Warwick-square	54	0	0
Christ Church, Hampstead	74	0	0
Guards' Chapel, Wellington Barracks	48	0	0
St. Barnabas, Dulwich	20	0	0
St. Saviour's, Denmark-park	26	0	0
Hampstead Parish Church	39	0	0
St. John the Baptist, Pinner	24	0	0
St. Mary's, Aldermanbury	22	0	0
St. Luke's, West Norwood	49	0	0
Munster-park Wesleyan Church, Fulham	20	0	0
Emmanuel Church, Wimbledon	65	0	0
Chiswick Parish Church	30	0	0
Ferme Park Baptist Church	28	0	0
St. Anselm's, Davies-street, W.	20	0	0
All Saints', Norfolk-square	36	0	0
St. Luke's (Parish Church), Chelsea	43	0	0
St. Marylebone Presbyterian Church	71	0	0
Upper Clapton Congregational Church	20	0	0
St. John's, Upper Norwood	34	0	0
Brixton-hill Wesleyan Church	24	0	0
Streatham Wesleyan Church	34	0	0
Dartford Churches	27	0	0
Christ Church, Woburn-square	25	0	0
St. James-the-Less, Westminster	36	0	0
Dulwich College Chapel	50	0	0
St. Mary the Virgin (Parish Church), Hayes, Kent	24	0	0
Hammersmith (St. Paul's) Parish Church	26	0	0
Trinity Presbyterian Church, Wimbledon	21	0	0
St. John the Evangelist, Putney	59	0	0
Bromley (Middlesex) Parish Church	23	0	0
Trent Church, Enfield	21	0	0
Upper Holloway Baptist Chapel	21	0	0
St. Mary Magdalene, Peckham	35	0	0
St. Mary's (New) Parish Church, Stoke Newington	63	0	0
St. John's, Deptford	65	0	0
Barry-road Wesleyan Church	20	0	0
Victoria Park Christian Evidence Association	62	0	0
Lewisham High-road Congregational Church	45	0	0
St. Katharine Royal Collegiate Chapel	23	0	0
Dutch Church, Austin Friars	66	0	0
St. George's Chapel, Albemarle-street	57	0	0
St. George's Garrison Church, Woolwich	20	0	0
St. Laurance's, Catford	28	0	0
St. Stephen's, Avenue-road	27	0	0
St. Mary's, Balham	41	0	0
Mission of the Holy Redeemer, Stoke Newington	23	0	0
St. Mary's Hospital Chapel, Ilford	30	0	0
St. James's, Holloway	60	0	0
Brixton Unitarian Church	29	0	0
Mitcham Parish Church	25	0	0
St. Peter's, Highgate-hill	25	0	0
Rectory-place Congregational Church, Woolwich	29	0	0
Kingswood, Surrey, Parish Church	28	0	0
Wanstead Parish Church and Christ Church	50	0	0
St. John's Mission Church, Chislehurst	30	0	0
St. Peter's, Dulwich-common	44	0	0
All Saints, Margaret-street	48	0	0
Camberwell Parish Church	25	0	0
West Hackney Parish Church	25	0	0
Holy Trinity with All Saints, Eltham	40	0	0
Hornsey Parish Church	25	0	0
Gordon-square Catholic Apostolic Church	27	0	0
St. Andrew's, Whitehall-park	25	0	0
St. Paul's, Upper Norwood	66	0	0
Hampstead Parish Church	49	0	0
Highgate Presbyterian Church	38	0	0
St. Paul's, Forest-hill	40	0	0
Duke of York's Royal Military School Chapel, Chelsea	32	0	0
St. German's, Blackheath	37	0	0
St. James's, Muswell-hill	45	0	0
St. John's, Notting-hill	48	0	0
St. Mark's, Bromley, Kent	34	0	0
Christ Church, Hornsey	54	0	0
St. Saviour's, Paddington	41	0	0
Emmanuel, West Dulwich	27	0	0
Miss Morice	25	0	0
Brompton Oratory	39	0	0
St. Thomas's, Regent-street (part collection)	20	0	0
Kensington Congregational Church	71	0	0
Farm-street Roman Catholic Church	24	0	0
Carmelite Church, Kensington	22	0	0
St. John's, Downshire Hill	48	0	0
St. Mark's, Kennington	29	0	0
Chigwell Parish Church	40	0	0
St. Philip's, Kensington	73	0	0
All Souls', Langham-place	66	0	0
St. John's, Notting-hill	48	0	0
St. Paul's, Forest-hill	40	0	0
Highgate Presbyterian	38	0	0
Grafton-square Congregational Church, Clapham	31	0	0
Regent's-park Baptist Church	32	0	0
Christ Church, Beckenham	31	0	0
Christ Church, Albany-street	22	0	0
Chapel Royal, Hampton Court Palace	40	0	0
Grosvenor Chapel, South Audley-street, W.	81	0	0
St. John's, Blackheath	53	0	0
St. Paul's, Camden-square	47	0	0
St. Luke's, Hackney	22	0	0
Archway-road Baptist Church	22	0	0
Stamford-hill Congregational Church	79	0	0
St. Mary's, Lewisham	47	0	0
St. Mary's, West Kensington	24	0	0
St. George's, Tufnell-park	37	0	0
Christ Church, Highbury	49	0	0
South Kensington Presbyterian Church	28	0	0
St. Andrew's Presbyterian Church, Upper Norwood	55	0	0
West London Wesleyan Mission	43	0	0
All Saints', Notting-hill	44	0	0
St. Leonard's and All Saints', Streatham	72	0	0
St. Paul's, Canonbury	27	0	0
Park Chapel, Chelsea	22	0	0
Westbourne-park Baptist Chapel	22	0	0
Regent-square Presbyterian Church	96	0	0
All Saints', Friern Barnet	35	0	0
Trinity Church, Hampstead	62	0	0
Aldenham Parish Church	86	0	0
Gray's Inn Chapel	50	0	0
St. Saviour's, Upper Chelsea	36	0	0
St. Luke's, West Holloway	33	0	0
Brompton Parish Church	81	0	0
St. Agnes's, Kennington	43	0	0
St. Luke's, West Hampstead	20	0	0
St. Mary Magdalene, Holloway	26	0	0
St. Mary the Virgin, Primrose Hill	52	0	0
Christ Church, Lee	43	0	0

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS OF SCOTLAND.

THE following memorial has been signed by 40 medical officers:—

Unto the Honourable the Local Government Board of Scotland, the Memorial of Medical Officers of the more remote Parishes of the Highlands and Islands of Scotland humbly sheweth—

I.—That the Medical Officers of the more remote parishes of the Highlands and Islands of Scotland are required to perform their duties by night as well as by day, and on Sundays as well as week days, and in all states of weather.

II.—That the areas of practice of many of these Medical Officers are of great extent, so that it is no uncommon occurrence for the Medical Officer to have to travel from 10 to 30 miles to see a pauper patient; that consequently his travelling expenses are heavy, and that, moreover, he is sometimes unable to return home the same night.

III.—That the work is very trying to the health of the Medical Officer, especially in winter time; yet, as matters stand, he may not leave his parish for a holiday rest unless he provides at his own expense a duly qualified and registered Medical Practitioner as his substitute.

IV.—That the salaries of the Medical Officers are small, and that the population of the districts is scattered and very poor, so that few Medical Officers can earn more than from £20 to £50 a year beyond their official parochial salary; and that consequently the expense of providing a qualified medical substitute during a reasonable holiday is out of all proportion to the emoluments attached to the office.

V.—That all other Parish Officers may have the privilege of an annual holiday without having to place a substitute in their place at their own expense; the Parish Medical Officer alone being compelled to provide such a substitute at his own expense.

VI.—That many of these Medical Officers are compelled to reside far from railway or other convenient communication with the South, so that in most cases two or three days are necessary to travel to Edinburgh or other centres of population, and that the expenses of living in such isolated districts are great and the social amenities few.

VII.—That the Local Government Board of Ireland requires that a Board of Guardians shall give its Medical Officer an annual holiday and pay a reasonable fee to a qualified substitute, and that most of these Boards have cheerfully acquiesced in this requirement.

VIII.—We, the undersigned Medical Officers, submit that, as is the rule in similar districts and under similar circumstances in Ireland, we also should be granted the privilege of an annual holiday, and that the Parish Council should pay a reasonable fee to a substitute; that if one month were allowed—deducting a week for going and returning—the Medical Officer would have a clear three weeks' holiday, and that the expense to the ratepayers would be trifling.

IX.—And the undersigned Parish Medical Officers earnestly pray that the Local Government Board of Scotland will be pleased to look into the difficulties and disadvantages, in the respects herein set out, under which their Medical Officers in the outlying districts at present labour, and will take the whole position of facts mentioned in this Memorial into consideration and grant the prayer thereof.

And your Memorialists will ever pray.

In connexion with the above the following has been presented "Unto the Honourable the Local Government Board of Scotland."

We, the undersigned Members of Imperial Parliament, and others, desire to express our sympathy with the Memorial presented by the "Medical Officers of the more remote Parishes of the Highlands and Islands of Scotland," and our hope that your Honourable Board may see its way to accede to the prayer of their Memorial:—

This memorial has been signed by the following gentlemen, viz.:—Lord Lister, Sir William Arrol, M.P., Mr. J. E. B. Baillie, M.P., Mr. Augustine Birrell, Q.C., M.P., Sir Charles Cameron, Bart., M.D., M.P., the Right Hon. J. A. Campbell, M.P., Dr. G. B. Clark, M.P., Mr. J. Colville, M.P., Mr. J. W. Crombie, M.P., Mr. Alexander Cross, M.P., Mr. J. H. Dalziel, M.P., Dr. Charles Douglas, M.P., Sir William Dunn, Bart., M.P., Dr. R. Farquharson, M.P., Sir Walter Foster, M.D., M.P., Mr. T. C. H. Hedderwick, M.P., Sir J. G. S. Kinloch, Bart., M.P., Sir John Leng, M.P., Mr. James McKillop, M.P., Mr. Donald N. Nicol, M.P., Sir George A. Pilkington, M.P., Mr. A. Robinson Souttar, M.P., Mr. H. J. Tennant, M.P., Sir W. Thorburn, M.P., Sir John Batty Tuke, M.D., M.P., Mr. Alex. Ure, Q.C., M.P., Mr. Eugene Wason, M.P., Sir W. Wedderburn, Bart., M.P., Dr. William Bruce, LL.D. (Direct Representative for Scotland on the General Medical Council), Dr. James Dunsmure (President of the Royal College of Surgeons of Edinburgh), Dr. James Andrew (President of the Royal College of Physicians of Edinburgh), Sir Hector Clare Cameron, M.D. (President of the Faculty of Physicians and Surgeons of Glasgow), Dr. T. McCall Anderson (Professor of Clinical Medicine and Dean of the Medical Faculty, University of Glasgow), Professor R. W. Reid, M.D., F.R.C.S. (Dean of the Medical Faculty of the University of Aberdeen), and Professor E. Waymouth Reid, F.R.S. (Dean of the Medical Faculty of the University of St. Andrews). Of the Faculty of Medicine of the University of Edinburgh: Professor Thomas Annandale, F.R.C.S.; Professor William S. Greenfield, M.D.; Professor Henry D. Littlejohn, M.D., LL.D.; Professor C. Hunter Stewart, M.B., D.Sc.; Professor Alex. Russell Simpson, M.D.; Sir William Turner, M.B., D.C.L., LL.D.; and Professor John Wyllie, M.D., F.R.C.P., LL.D.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6553 births and 3220 deaths were registered during the week ending July 7th. The annual rate of mortality in these towns, which had been 14·9 and 15·1 per 1000 in the two preceding weeks, fell last week to 14·5. In London the rate was 13·5 per 1000, while it averaged 15·1 in the 32 provincial towns. The lowest death-rates in these towns were 9·1 in West Ham, 9·9 in Croydon, 10·1 in Bristol, and 10·2 in Birkenhead; the highest rates were 18·9 in Salford, 19·3 in Manchester, 19·9 in Liverpool, and 24·1 in Sunderland. The 3220 deaths in these towns included 344 which were referred to the principal zymotic diseases, against 366 and 419 in the two preceding weeks; of these 89 resulted from whooping-cough, 84 from measles, 63 from diarrhœa, 53 from diphtheria, 27 from scarlet fever, 26 from "fever" and two from small-pox. The lowest death-rates from these diseases were recorded in Croydon, in Birkenhead, and in Bolton; and the highest in Derby, in Sunderland, and in Swansea. The greatest mortality from measles occurred in Oldham and in Derby; from whooping-cough in Sunderland and Wolverhampton; and from diarrhœa in Gateshead. The 53 deaths from diphtheria included 20 in London, four in Swansea, four in Liverpool, and four in Leeds. Two fatal cases of small-pox were registered in Liverpool, but not one in any other of the 33 towns. There were 17 cases of small-pox under treatment in the Metropolitan Asylums Hospitals, on Saturday last, July 7th, against 15, 13, and 16 at the end of the three preceding weeks; four new cases were admitted during the week, against eight, none, and eight in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and in the London Fever Hospital at the end of the week was 1843, against numbers increasing from 1754 to 1810 on the four preceding Saturdays; 229 new cases were admitted during the week, against 210, 219, and 210 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 181 and 180 in the two preceding weeks, further fell last week to 140, and were 48 below the corrected average. The causes of 46, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, in Nottingham, in Cardiff and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool and in Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·5 and 17·9 in the two preceding weeks, fell again to 17·7 during the week ending July 7th, but was 3·2 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 8·4 in Perth and 9·3 in Paisley to 20·2 in Dundee and 20·3 in Glasgow. The 546 deaths in these towns included 32 which were referred to diarrhœa, 22 to whooping-cough, 20 to measles, four to scarlet fever, three to "fever," two to diphtheria, and two to small-pox. In all 85 deaths resulted from these principal zymotic diseases, against 60 and 83 in the two preceding weeks. These 85 deaths were equal to an annual rate of 2·8 per 1000, which was 1·3 above the mean rate last week from the same diseases in the 33 large English towns. The 22 fatal cases of whooping-cough showed a decrease of four from the number in the preceding week and included 17 in Glasgow. The deaths referred to measles, which had been 14 and 18 in the two preceding weeks, further rose last week to 20 and included 13 in Glasgow and three in Edinburgh. The fatal cases of diarrhœa, which had increased from 19 to 24 in the two preceding weeks, further rose last week to 32 and included 16 in Glasgow, five in Edinburgh, four in Dundee, four in Aberdeen, and three in Leith. The deaths referred to scarlet

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1900.

(*Specially compiled for* THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	**4,589,129**	**23**	**1105**	**769**	**1**	**203**	**3**	**12**	**328**	**—**	**2444**	**6·9**	**—**	**217**	**7**	**101**	**174**	**—**	**30**	**2**	**55**	**616**	**1·7**	**5201**	**14·8**	**117**
West Districts.																										
Paddington	130,104	5	24	3	—	3	—	—	12	—	47	4·7	—	19	—	1	5	—	—	—	3	28	2·8	134	13·4	148
Kensington	173,603	6	29	13	—	7	—	1	8	—	63	4·7	—	12	—	4	1	—	—	—	1	18	1·4	162	12·2	116
Hammersmith	110,203	—	26	13	—	6	—	—	10	—	55	6·5	—	7	2	1	3	—	1	—	1	15	1·8	125	14·8	162
Fulham	136,383	3	33	30	—	4	—	—	9	—	79	7·6	—	2	3	2	6	—	1	—	3	17	1·6	134	12·8	116
Chelsea	96,715	—	25	9	—	1	—	1	6	—	42	5·7	—	1	—	—	3	—	1	—	3	8	1·1	110	14·9	107
St. George Hanover-square	81,133	—	17	4	—	4	—	—	4	—	29	4·7	—	—	1	—	—	—	—	—	—	1	0·2	73	11·7	71
Westminster	51,657	—	14	8	—	1	—	—	2	—	25	6·3	—	3	—	1	—	—	2	—	—	6	1·5	65	16·4	103
St. James Westminster	21,457	—	5	6	—	—	—	—	—	—	11	6·7	—	—	—	1	—	—	—	—	—	1	0·6	19	11·5	73
North Districts.																										
Marylebone	139,777	—	39	15	—	3	—	1	20	—	78	7·3	—	13	1	1	9	—	—	1	2	27	2·5	175	16·3	98
Hampstead	81,766	—	12	12	—	3	—	—	4	—	31	4·9	—	3	—	1	—	—	—	—	—	4	0·6	47	7·5	28
St. Pancras	245,651	—	56	49	—	24	1	2	9	—	141	7·5	—	17	2	4	5	—	4	—	1	33	1·8	276	14·6	94
Islington	351,541	—	62	43	1	16	1	—	23	—	146	5·4	—	28	4	11	20	—	2	—	5	70	2·6	393	14·6	144
Stoke Newington	35,718	—	5	5	—	4	—	—	2	—	16	5·8	—	—	—	1	3	—	1	—	1	6	2·2	37	13·5	108
Hackney	225,519	1	78	30	—	13	—	—	13	—	135	7·8	—	2	1	5	14	—	—	—	1	23	1·3	202	11·7	89
Central Districts.																										
St. Giles	36,870	—	3	3	—	4	—	—	2	—	12	4·2	—	2	—	1	2	—	1	—	—	6	2·1	45	15·9	123
St. Martin-in-the-Fields	11,865	—	1	—	—	1	—	—	1	—	3	3·3	—	—	—	—	—	—	—	—	—	—	—	20	22·0	77
Strand	22,748	—	4	4	—	1	—	—	2	—	11	6·3	—	—	—	—	1	—	1	—	—	2	1·1	39	22·4	200
Holborn	29,188	—	9	4	—	2	—	—	2	—	17	7·6	—	3	—	—	2	—	1	—	1	7	3·1	62	27·7	245
Clerkenwell	66,007	—	18	8	—	5	—	—	6	—	37	7·3	—	7	2	2	5	—	—	—	—	16	3·2	93	18·4	121
St. Luke	40,655	—	14	7	—	2	—	—	3	—	26	8·3	—	2	1	1	—	—	—	—	1	5	1·6	80	25·6	121
City of London	26,922	—	7	4	—	—	—	—	—	—	11	5·3	—	—	2	—	—	—	—	—	—	2	1·0	37	17·9	120
East Districts.																										
Shoreditch	120,641	—	25	39	—	9	—	—	6	—	79	8·5	—	8	3	7	8	—	1	1	3	31	3·3	172	18·5	139
Bethnal Green	128,831	1	41	40	—	8	—	—	22	—	112	11·3	—	2	1	14	6	—	1	—	1	25	2·5	156	15·8	108
Whitechapel	82,220	—	50	22	—	3	—	—	12	—	87	13·8	—	2	1	—	3	—	1	—	2	9	1·4	109	17·3	80
St. George-in-the-East	48,875	6	17	4	—	3	—	—	8	—	38	10·1	—	2	1	1	2	—	—	—	—	6	1·6	79	21·1	95
Limehouse	58,944	—	22	25	—	2	—	—	6	—	55	12·2	—	13	2	1	7	—	—	—	3	26	5·8	133	29·4	308
Mile End Old Town	113,781	—	32	14	—	3	—	—	17	—	66	7·6	—	13	2	1	7	—	—	—	—	23	2·6	137	15·7	124
Poplar	170,968	—	35	28	—	7	—	—	17	—	87	6·6	—	16	—	2	9	—	—	—	3	30	2·3	240	18·3	185
South Districts.																										
St. Saviour Southwark	23,854	—	5	5	—	1	—	—	1	—	12	6·6	—	1	—	—	—	—	—	—	—	1	0·5	45	24·6	108
St. George Southwark	60,597	—	23	13	—	—	—	—	6	—	42	9·0	—	1	2	—	5	—	—	—	1	9	1·9	98	21·1	164
Newington	125,178	—	24	37	—	5	—	—	7	—	73	7·6	—	6	—	5	2	—	1	—	3	17	1·8	157	16·4	133
St. Olave Southwark	10,909	—	9	3	—	—	—	—	—	—	12	14·3	—	1	—	—	—	—	—	—	—	1	1·2	16	19·1	129
Bermondsey	85,920	—	18	20	—	3	—	1	5	—	47	7·1	—	—	—	4	6	—	3	—	—	13	2·0	103	15·6	131
Rotherhithe	41,246	—	8	4	—	3	—	—	3	—	18	5·7	—	1	1	2	2	—	—	—	—	6	1·9	47	14·9	99
Lambeth	312,152	—	56	63	—	10	1	1	18	—	149	6·2	—	1	1	9	2	—	2	—	4	19	0·8	310	12·9	84
Battersea	178,100	—	45	12	—	6	—	1	14	—	78	5·7	—	2	1	1	7	—	1	—	4	16	1·2	178	13·0	119
Wandsworth	217,004	—	34	24	—	11	—	—	14	—	83	5·0	—	10	1	3	3	—	2	—	3	22	1·3	194	11·7	107
Camberwell	268,457	1	63	58	—	8	—	1	11	—	142	6·9	—	—	—	5	8	—	2	—	1	16	0·8	256	12·4	126
Greenwich	184,582	—	55	32	—	6	—	1	11	—	105	7·4	—	5	1	4	12	—	—	—	—	22	1·6	216	15·3	112
Lewisham (excluding Penge)	93,548	—	30	21	—	5	—	—	3	—	59	8·2	—	—	—	2	2	—	—	—	3	7	1·0	73	10·2	67
Woolwich...	41,600	—	7	2	—	1	—	2	1	—	13	4·1	—	4	—	1	1	—	—	—	—	6	1·9	58	18·2	107
Lee	40,722	—	6	14	—	3	—	—	4	—	27	13·1	—	1	—	1	—	—	1	—	1	4	1·3	30	9·6	77
Plumstead	65,558	—	19	19	—	—	—	—	3	—	41	5·4	—	7	1	1	3	—	—	—	—	12	2·4	66	13·1	87
Port of London	—	1	—	—	—	2	—	—	1	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 12 cases of membranous croup.

† Including deaths from membranous croup.

fever, which had been two and seven in the two preceding weeks, fell last week to four, and included three in Glasgow. The three deaths from fever and the two from small-pox occurred in Glasgow. The two deaths from diphtheria included one in Edinburgh and one in Greenock. The deaths from diseases of the respiratory organs in these towns, which had been 87 and 97 in the two preceding weeks, fell last week to 72, but were 15 above the number in the corresponding period of last year. The causes of 31, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9 and 20·0 per 1000 in the two preceding weeks, fell again to 17·8 during the week ending July 7th. During the four weeks ending on Saturday last the death-rate in the city averaged 19·9 the rate during the same period having been 14·7 in London and 17·3 in Edinburgh. The 119 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the preceding week, and included six which were referred to the principal zymotic diseases, against four and three in the two preceding weeks; of these, three resulted from whooping-cough, two from diarrhœa, one from fever, and not one from small-pox, measles, scarlet fever, or diphtheria. These six deaths were equal to an annual rate of 0·9 per 1000, the zymotic death-rate during the same period being 1·5 in London and 1·7 in Edinburgh. The fatal cases of whooping-cough, which had risen from one to two in the two preceding weeks, further rose to three last week, and the two deaths from diarrhœa showed an increase of one. The 119 deaths in Dublin last week included 22 of infants under one year of age and 26 of persons aged upwards of 60 years; the deaths of infants were about equal to the average, but those of elderly persons were below those recorded in recent weeks. Seven inquest cases and six deaths from violence were registered; and 45, or rather more than one-third of the deaths occurred in public institutions. The causes of six, or 5 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JUNE, 1900.

IN the accompanying table will be found complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·9 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 6·6, 6·2, and 7·2 per 1000 respectively. The rates were considerably below the average in Paddington, Kensington, St. George Hanover-square, St. Giles, St. Martin-in-the-Fields, and Woolwich; while they showed the largest excess in Bethnal Green, Whitechapel, St. George-in-the-East, Limehouse, St. Olave Southwark, and Lee sanitary areas. 23 small-pox cases were notified during June, of which six belonged to St. George-in-the-East, five to Paddington, five to Kensington, and three to Fulham sanitary areas; 20 small-pox patients were admitted into the Metropolitan Asylums Hospitals during June, and 16 remained under treatment at the end of the month. The prevalence of scarlet fever showed a further increase upon that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in Hackney, Whitechapel, St. George-in-the-East, Limehouse, St. George Southwark, and St. Olave Southwark. The Metropolitan Asylums Hospitals contained 1788 scarlet fever patients at the end of June, against 1654, 1619, and 1735, at the end of the three preceding months; the weekly admissions averaged 202, against 162, 174, and 198 in the three preceding months. The prevalence of diphtheria showed a slight decline from that in the preceding month; the proportional prevalence of this disease was greatest in Shoreditch, Bethnal Green, Limehouse, Newington, Lee, and Plumstead sanitary areas. There were 1212 diphtheria patients in the Metropolitan Asylums Hospitals at the end of June, against 1236, 1131, and 1402 at the end of the three preceding months; the weekly admissions averaged 151, against 148, 135, and 172 in the three preceding months. The prevalence of enteric fever showed a further decrease from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Pancras, Stoke Newington, St. Giles, St. Martin-in-the-Fields, Clerkenwell, and Lee. The Metropolitan Asylums Hospitals contained 148 enteric fever patients at the end of June, against 263, 208, and 176 at the end of the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Marylebone, Bethnal Green, Whitechapel, St. George-in-the-East, and Mile End Old Town sanitary areas. The 12 cases of puerperal fever included two in St. Pancras and two in Woolwich sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the four weeks ending June 30th the deaths of 5201 persons belonging to London were registered, equal to an annual rate of 14·8 per 1000, against 19·1, 20·2, and 16·6 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 7·5 in Hampstead, 9·6 in Lee, 10·2 in Lewisham, 11·5 in St. James Westminster, and 11·7 in St. George Hanover-square, in Hackney, and in Wandsworth; the highest rates were 22·0 in St. Martin-in-the-Fields, 22·4 in Strand, 24·6 in St. Saviour Southwark, 25·6 in St. Luke, 27·7 in Holborn, and 29·4 in Limehouse. During the four weeks of June 616 deaths were referred to the principal zymotic diseases in London; of these, 217 resulted from measles, 37 from scarlet fever, 101 from diphtheria, 174 from whooping-cough, 30 from enteric fever, two from simple continued fever, and 55 from diarrhœa. These 616 deaths were equal to an annual rate of 1·7 per 1000, against 1·8 in each of the two preceding months. No death from any of these diseases occurred last month in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, St. James Westminster, Hampstead, St. Saviour Southwark, Lambeth, and Camberwell; and the highest rates in Paddington, Holborn, Clerkenwell, Shoreditch, and Limehouse. The 217 deaths from measles were 81 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Paddington, Holborn, Clerkenwell, Limehouse, Mile End Old Town, and Plumstead sanitary areas. The 37 fatal cases of scarlet fever showed a decline of 29 from the corrected average number; the greatest proportional fatality from this disease occurred in Fulham, Clerkenwell, City of London, Shoreditch, Limehouse, and St. George Southwark sanitary areas. The 101 deaths from diphtheria were 47 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Shoreditch, Bethnal Green, Newington, Bermondsey, Rotherhithe, and Lambeth. The 174 fatal cases of whooping-cough were three in excess of the corrected average number; this disease showed the highest proportional fatality in Stoke Newington, Holborn, Clerkenwell, Limehouse, St. George Southwark, and Bermondsey sanitary areas. The 32 deaths referred to "fever" were slightly below the number in the corresponding periods of the ten preceding years; among the various sanitary areas the "fever" death-rate was highest in Westminster, St. Pancras, Stoke Newington, Strand, Holborn, and Bermondsey sanitary areas. The 55 fatal cases of diarrhœa were only one-third of the corrected average number; the greatest proportional fatality from this disease was recorded in Chelsea, Stoke Newington, Holborn, St. Luke, Limehouse, and Lewisham sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during June was 30 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 117 per 1000. The lowest rates of infant mortality were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Martin-in-the-Fields, Lewisham, and Lee; and the highest rates in Hammersmith, Strand, Holborn, Limehouse, Poplar, and St. George Southwark sanitary areas.

THE SERVICES.

MR. BURDETT-COUTTS'S CHARGES.

THE terms of reference of the proposed commission which is to proceed to South Africa are as follows:—"To report on the arrangements for the care and treatment of the sick and wounded during the South African Campaign."

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified: — Staff-Surgeons: J. H. Thomas to the *Camperdown*, lent, and A. M. Page to the *Australia*.

ROYAL ARMY MEDICAL CORPS.

The under-mentioned surgeons-on-probation to be lieutenants: Patrick Hagart Henderson, John Patrick Joseph Murphy, Arthur Rowland Greenwood, Frederick Hallam Hardy, William Moreland Haladay Spiller, Archibald Douglas Jameson, William Bennett, Bernard Bruce Burke, Walter Burgess Fry, Charles Richard Louis Ronayne, George Baillie, Llewellyn Lancelot Græme Thorpe, John Blake Hall, William Silvister Crosthwait, Percy Clarence Douglass, Richard Francis Ellery, Robert Lionel Popham, The following among them have arrived at Salisbury Plain and have been posted in the district as follows: Perham Down—B. B. Burke, to charge of stationary hospital; C. R. Ronayne, to charge of 3rd Brigade and duty in hospital; and W. B. Fry, stationary hospital and medical charge of details in Tidworth House. Bulford Camp—F. H. Hardy, to charge of stationary hospital; G. Baillie and G. Douglass, for duty in stationary hospital; and J. B. Hall, to charge of 2nd Brigade. West Down Camp—W. S. Crosthwait, to charge of details.

MILITIA MEDICAL STAFF.

Surgeon-Lieutenant-Colonel D. Jacob, 4th Battalion the Prince of Wales's Leinster Regiment (Royal Canadians), retires under paragraph 81 Militia Regulations, with permission to retain his rank and to wear the uniform of the battalion on retirement.

VOLUNTEER CORPS.

Artillery: 4th Durham (Western Division, Royal Garrison Artillery): William Gray to be Surgeon-Lieutenant. 1st Forfarshire: James Gray to be Surgeon-Lieutenant. 1st Glamorganshire: Surgeon-Lieutenant D. A. Davies to be Surgeon-Captain. 1st Shropshire and Staffordshire: Surgeon-Captain J. P. Massingham to be Surgeon-Major. The undermentioned gentlemen to be Surgeon-Lieutenants:—George Higginson and Wheelton Hind. 2nd Gloucestershire (the Bristol): Lieutenant T. H. Board to be Captain and Marcus John Eustace to be Surgeon-Lieutenant. *Rifle:* 3rd Volunteer Battalion the King's (Liverpool Regiment): Lieutenant Henry D'Arnim Blumberg resigns his commission and is appointed Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF.

The London Companies: Surgeon-Lieutenant W. S. Sharpe to be Surgeon-Captain. The Woolwich Companies: Alfred Hugh Minton to be Surgeon-Lieutenant.

TRANSVAAL WAR NOTES.

The following have left for service in South Africa:—Civil Surgeons Owen, Davies, Ffrench, and Hunter.

The following have arrived in England from South Africa:—Major Kelly, R.A.M.C., Lieutenant Nicholls, R.A.M.C., Lieutenant Irvine, R.A.M.C., Major Whaite, R.A.M.C., Captain Dalton, R.A.M.C., Lieutenant Cuddon-Fletcher, R.A.M.C., and Civil Surgeons Nicol, Goodman, Thomas, and Stamford.

Major Nichol, R.A.M.C., is reported from Cape Town discharged from hospital to duty.

The following steamers have arrived at Southampton, bringing the sick and wounded men as detailed from the seat of war in South Africa:—The *Maine*, on July 4th, with 16 very severe cases; the *Avoca*, on July 5th, with 50 cases; the *Assaye*, on July 7th, with 693 sick and wounded; and the *Princess of Wales*, on July 9th, with 170 patients. On Tuesday afternoon, July 10th, H.R.H. the Duchess of York visited the Royal Victoria Hospital and was conducted over the surgical and medical divisions by Colonel Charlton (principal medical officer) and his staff. In the medical division Lieutenant-Colonel W. E. Webb, and in the surgical division Major C. Birt, explained the nature of the cases.

Six medical men and a number of nurses and ward maids have left for South Africa in the *Dunvegan Castle*. They form part of the remainder of the staff of the Imperial Yeomanry Hospital now being formed at Pretoria. The complete medical staff will be as follows:—Dr. W. Langdon Brown and Dr. Herbert Williamson, St. Bartholomew's Hospital; Dr. F. M. Sandwith, Kasr el Aini Hospital, Cairo; Dr. Stanley F. Crowther Smith, Mr. A. R. J. Douglas, and Mr. Howell Davies, St. Bartholomew's Hospital; Dr. F. Brickwell and Mr. F. L. Provis, Tottenham Hospital; and Mr. A. H. Hayes and Mr. C. S. Frost. Major Reade, R.A.M.C., is the commandant.

Of the 1009 invalid soldiers who have arrived at Plymouth during the past two months from South Africa only 120 now remain at the Military Hospital, Devonport. The majority of these are convalescent and will be shortly sent on sick furlough.

TRANSVAAL WAR CASUALTIES.

Surgeon-Lieutenant-Colonel James Creagh, 9th Battalion King's Royal Rifle Corps (North Cork Militia), died from enteric fever on July 6th, between Viljoen's Drift and Kroonstad.

THE RISING IN ASHANTI.

A telegram received from Mr. Low (Gold Coast) by the Colonial Office, dated Akwabosu, July 1st, says: "Crossed Ofin river June 30th and July 1st. Following Europeans left Kumassi with force. ..... Medical Officers Garland, Chalmers, Tweedy, Graham, Gold Coast Colony, (and) Macfarlane of Lagos. ..... Passage across Ofin river very difficult owing to floods. Hardships of journey from Kumassi have been very severe. Most of the severely wounded Hausas have since died; others are missing. In addition to officers mentioned in previous telegram as left in charge of fort add name of Hay, medical officer.—HODGSON."

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on July 10th, Sir J. N. Dick, K.C.B., late Director-General, R.N., being in the chair, the sum of £55 was distributed among the several applicants.

VOLUNTEER MEDICAL ASSOCIATION.

The annual meeting of the Volunteer Medical Association will be held at 20, Hanover-square, on Tuesday, July 24th, at 4.30 P.M. The council will meet at 4 P.M. Surgeon-Major John J. de Zouche Marshall, 3rd Volunteer Battalion the East Surrey Regiment, has been elected to the post of honorary secretary, vice Surgeon-Captain F. J. Warwick, V.M.S.C.

Deputy Surgeon-General Henry Cayley (retired), Indian Medical Service, has been appointed Honorary Surgeon to the Queen, vice Surgeon-Major A. Grant (retired), Indian Medical Service, deceased.

At Windsor Castle on July 7th the following Companions of the Order of the Bath were introduced into the presence of the Sovereign, and Her Majesty the Queen was graciously pleased to affix to their respective left breasts the Decoration of the Military Division of the Third Class of the Order: Colonel William Egerton Saunders, Royal Army Medical Corps; Surgeon-General Henry Skey Muir, Deputy Director-General Army Medical Service; and Surgeon-Lieutenant-Colonel Benjamin Bloomfield Connolly, A.M.S.

Correspondence.

"Audi alteram partem."

"THE LECTURERS AND LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND FROM 1810 TO 1900."

To the Editors of THE LANCET.

SIRS,—Your kind and appreciative notice in an annotation in THE LANCET of June 30th (p. 1894) of my "List of Lecturers and Lectures at the Royal College of Surgeons of England, 1810–1900," encourages me to ask you to be so good

MUSEUM LECTURES.

COMPARATIVE ANATOMY.

Date of delivery.	Name of lecturer.	Number of lectures.	Title of lecture.
1814	Astley Paston Cooper.	15	Comparative Anatomy.
1815	Astley Paston Cooper.	15	Comparative Anatomy.
1816	William Lawrence.	15	An Introduction to Comparative Anatomy and Physiology.
1822	Everard Home.	15	Comparative Anatomy.
1829	Herbert Mayo.	15	Anatomy and Physiology of the Nervous System in the Different Classes of Animals. Development of the Brain in Man and Functions of the Cerebral Nerves.
1830	Herbert Mayo.	15	Anatomy and Physiology of the Organs of Sense in the Different Classes of Animals. Physiology of Sleep, Volition, Muscular Action, Respiration, and Vocal Organs.
1832	Charles Bell.	15	On Life and Organisation; on the Skeleton; and on the Physiology of the Nervous System.
1833	Charles Bell.	15	On the Prospective Design indicated by the Adaptation of the Organs of Support, or the Hard Parts, of the Different Classes of Animals to their Habits, and to the Circumstances in which they are Placed. The Teeth in the Different Classes of Animals, and the Different Kinds of Articulation of the Bones, and the Arrangement of the Muscles similarly considered. Physiology of the Nervous System as connected with the Anatomy of Expression.

SURGERY.

1819	James Wilson.	9	Lectures on the Blood and on the Anatomy, Physiology, and Surgical Pathology of the Vascular System of the Human Body.*
1820	James Wilson.	9	Lectures on the Structure and Physiology of the Parts composing the Skeleton and on the Diseases of the Bones and Joints of the Human Body, preceded by some Observations on the Influence of the Brain and Nerves.
1821	James Wilson.	9	Lectures on the Structure and Physiology of the Male Urinary and Genital Organs of the Human Body and on the Nature and Treatment of their Diseases.†
1829	George James Guthrie.	9	Anatomy of the Circulating System in Man: History of its Development and Comparison of the Different Stages with the Permanent Structures in Inferior Animals. Functions of the Heart and Arteries and Veins. Injuries and Diseases of the Vascular System in Man and the Treatment of the Same.
1830	George James Guthrie.	9	On the Anatomy of the Human Pelvis: its Sexual and National Varieties; Comparison of it with the Pelvis in other Animals. On the Anatomy of the Human Urinary and Sexual Organs, illustrated by Observations of the Same Parts in the Inferior Classes of Animals. On Wounds and Injuries of the Head and Chest. On the Diseases of the Urinary and Sexual Organs, and more especially of Diseases of the Urethra.
1831	George James Guthrie.	3	On the Anatomy of the Parts concerned in Hernia.‡
1832	George James Guthrie.	9	Anatomy of the Organ of Vision in Man, illustrated by Observations on its Structure in the Lower Animals. On the Diseases of the Eye and its Appendages and the Treatment of the Same.
1833	Henry Earle.	9	On the Minute Anatomy and Physiology of the Urinary Organs. On the Diseases of the Same and their Treatment. On the Anatomy of the Colon, and the Nature and Treatment of Some of the Diseases of that Intestine.§

* Wilson completed this course in his Arris and Gale Lectures of this year.

† Wilson, who died in this year, had arranged for a further course on "The Brain and Nervous System."

‡ This course of lectures proceeded amidst much disturbance until the fourth lecture, when they were wholly interrupted by a systematic and continued riot. The lectures were consequently suspended and the theatre closed by the advice of the law officers of the College and by the concurrence of the trustees of the Museum until the sanction of the Chancellor and judges had been obtained to a by law enabling the President and Council to repress any similar disturbances in future.

§ Earle continued this course in the Arris and Gale Lectures of the same year.

is to give publicity to the accompanying amplifications and corrections of my pamphlet. Many of them I owe to Mr. D'Arcy Power; upon others I have chanced in a research into the history of the College. As the "list" is given away, not sold, to anyone interested in medical history it is not likely that it will see a second edition.

I am, Sirs, yours faithfully,

VICTOR G. PLARR,
Librarian of the College.

The Library, Royal College of Surgeons of England, July 2nd, 1900.

THE SOUTH AFRICAN COMMISSION.

To the Editors of THE LANCET.

SIRS,—As in the Crimea and in Egypt, so now in South Africa, war on a large scale seems to have as its invariable sequel accusations of neglect of sick and wounded involving mainly the Army Medical Department as responsible for the results, the conclusions of committees being hitherto impotent in the prevention of repetition of charges or of the conditions complained of. Another inquiry is in progress and it is a matter of profound importance to the accused department (for this is clearly the position of the Royal Army Medical Corps) that the proposed Commission should be so constituted as to contain within itself the means of eliciting the truth and the whole truth, and the requisite capacity to recognise and gauge the real import of the evidence; and from the facts adduced to fix the responsibility for shortcomings on the right shoulders and make proposals likely to prevent a recurrence in the future. Now, Sirs, when we note the tone of some of the debates in the House of Commons, the vacillation of the Government and the views expressed in the lay journals, I venture to think that to anyone bearing in mind the experience of the past and cognisant of army life, the duties of the Royal Army Medical Corps and the conditions under which its work has to be done in peace and in war, a feeling of grave scepticism will arise as to whether this Commission as proposed will be any more fruitful in results than its predecessors.

The original scope of the Commission as formulated by the Government was "to report as to the arrangements for the care and treatment of the sick and wounded during the campaign in South Africa" and to inquire especially into the complaints of negligence in regard to enteric fever; and to this end the Commission was constituted of three members—one judge and two medical men. And in view of the fact that the subjects embraced by it are mainly professional, requiring not merely "common sense," but a specially trained technical sense for their solution, the commission was one fairly capable of doing the duty entrusted to it. Mr. Balfour spoke of it as having "great qualities of knowledge and impartiality stamped upon it," and the Leader of the Opposition considered the medical members are "high-minded, straightforward men who will do their work well." Yet what do we find but the Government departing from their scheme, to which we must assume they had given reasonable thought, and agreeing to add two more members, neither of whom can have the necessary knowledge to guide them in such a professional inquiry, the numerical deciding power being now in the hands of those untrained to gauge the true import of the evidence and facts adduced! Moreover, the main objection to the original commission apparently was "that the inquiry would practically be in the hands of medical men," the view being held by some that medical men could not be relied on to act fairly in matters in which their fellow professionals were concerned, they presumably being deficient in that sense of justice and rectitude of purpose allowed to most men; and these are points which the profession would do well to lay to heart.

Further it would appear that the inquiry is to be extended to transport, &c. In the words of the leading Conservative journal, "the whole question of hospital administration at the seat of war and the general organisation and methods of the Royal Army Medical Corps will be thoroughly examined." And when cognisance is taken of this expansion the doubt still more is increased as to whether the Commission as proposed has the necessary capacity for the duties with which it is charged. In addition to what has been aforesaid, who among its members have that experience of war and that practical knowledge of the rules and regulations of the Service and the nature and work of the Royal Army Medical Corps and the conditions under which it is done as will entitle them to speak with authority on the matters to be inquired into?

Mr. Balfour himself expressed the possibility of the danger of unfairness to the army medical officers from the medical members owing to the former "carrying out their duties under conditions not very familiar to doctors and surgeons at home"—a danger augmented with a majority with everything to learn. And when we note the remarks of Mr. Burdett-Coutts *apropos* of himself we further recognise the possibility of injustice accruing either to the Department or to individual members. He is recorded to have said that in his grave indictment of the medical arrangements in South Africa he was originally in a position of a plaintiff, but now in that of a defendant of the great interest involved in the truth or untruth of his statement; and, going on to say that now the Government would call him as a witness to enable him to state his case with possibly the opportunity of producing other witnesses, he asks: "Was that enough in this case? What was the usual practice when a man was placed in his position? Had he not a right to put what questions he liked, to cross-examine the witnesses?"—questions which elicited cheers. Now it is apparent that the Department is the true defendant in this inquiry, and its position is exactly that which Mr. Burdett-Coutts details as characterising himself; and if these essentials to justice are requisite in the one instance why not in the other? Can it for a moment be said that the proposed Commission will contain within itself these essentials? What might go far towards placing it in a position to do for the Department what it cannot do for itself would be to add to it one or two independent army medical officers whose knowledge and experience would tend towards eliciting the whole truth and giving proper weight and importance to the facts adduced.

Well, Sirs, I take it for granted that the view of the Department is that neither in the Crimean nor in the Egyptian inquiry was justice meted out to it, and the possibility of a like fate befalling it in this instance has to be faced; not, of course, from set purpose, but from inability on the part of a Commission as proposed to decide on technical points and disentangle and rightly apportion its true responsibility among the more powerful army sections (including, of course, the War Office) which are also involved in this important and difficult inquiry. What does the country really want—a "scapegoat" for the relief of its feelings with a lapse into the old ways, as formerly, as soon as the excitement of war has passed away? Or is it for once thoroughly determined that the experience and teaching of the past shall not be lost, but shall bear such fruit as to make a recurrence of such departmental complaints an impossibility in the future? Have we solid grounds for such a hope?

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), A.M.S.

Brandram-road, Lee, S.E., July 9th, 1900.

"THE CAUSE OF CARIES OF THE TEETH."

To the Editors of THE LANCET.

SIRS,—Dr. J. Sim Wallace holds that the great prevalence of dental caries among civilised peoples is due to their eating soft and pappy foods requiring little mastication. Some years ago you were good enough to publish in THE LANCET a letter from me in which I urged the same view. My interest in the subject led me to read Dr. Wallace's work carefully directly it appeared, and I hope I may be permitted to say that I was greatly impressed by the closeness of his arguments and the scientific spirit pervading his book.

My original contention was that soft foods predispose to caries by leading to imperfect mastication and thus to defective nutrition and development of the teeth; and although I still venture to think that this may be a factor Dr. Wallace has converted me to his view that soft foods lead to caries essentially by modifying the buccal environment of the teeth—the teeth being no longer properly cleansed by coarse fibrous foods, the buccal secretions being no longer adequately excited, and so forth.

Regarding Dr. Wallace's remarks as to the tooth-brush not being altogether an unmixed blessing, it is significant that the very next day after reading them there consulted me a man, aged 22 years, who had never in his life used a tooth-brush, and he had 32 sound teeth in his head.

I feel convinced that if Dr. Wallace's views are taken to heart by the medical profession we shall do much to diminish caries and other defects of the teeth. I, indeed, believe with him that we have it in our power to rear a race having teeth every bit as good as those of our primitive ancestors.

May I take this opportunity of saying that there is, in my opinion, a further indictment to be made against the use of soft food. I believe we have in the imperfect mastication which foods of this kind lead to a clue to the long sought-for pathology of adenoids—a subject with which I am dealing fully elsewhere.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 9th, 1900. HARRY CAMPBELL.

To the Editors of THE LANCET.

SIRS,—The cause of caries of the teeth must be one of universal distribution and I have for years expressed my opinion that it is the universal consumption of bread made from flour deprived almost entirely of "earthy matter"; every particle of bran, which contains nearly all the above, being removed therefrom, the mother's blood therefore is deficient in the constituents necessary to properly build up and consolidate the bones and teeth of the fœtus. Every generation will, I fear, get worse and worse unless something can be done to improve the character of the bread consumed. Now I am writing may I be allowed to say that I have met with two cases in which mothers have vaccinated themselves accidentally from their babes; it is, therefore, I should think, not so very uncommon. I am, Sirs, yours faithfully,

Donington, Spalding, July 10th, 1900. E. W. JOLLYE.

"A PLEA FOR EARLY OPERATION IN CASES OF UNDOUBTED TUBERCLE OF THE LUNG."

To the Editors of THE LANCET.

SIRS,—The recent article in THE LANCET written by Mr. Foster Palmer on "A Plea for Early Operation in Cases of Undoubted Tubercle of the Lung" reminds me of a paper that I wrote some years ago but did not publish. By early operation I suppose the writer means such to attempt a radical cure, and not a palliative measure such as incision and drainage of advanced phthisis with pleural adhesions. None of the present procedures are well adapted for a radical excision, and such is rarely attempted, the fears of pneumothorax and hæmothorax deterring the surgeon from operating. But in the course of every lung case there must happen a time when, though the chance of medical cure is past, there still exists a time for radical excision before it advances too far. Let us take a case of a young person with phthisis in the apex of one lung which has gone on to cavity formation and in which there are as yet no pleural adhesions. If excision be desired how shall we proceed? In the article referred to the procedures are as follows. 1. To sew the pulmonary pleura to the costal pleura beyond the seat of the disease before operating. In such a case as the above this would be impossible. It would do in a case of large cavities with no pleural adhesions and some reasons against excision, such as the other lung affected, and then would only be as a preliminary to incising and draining. 2. To trust to previous existence of adhesions. This is not the case as above and if present would prevent a radical excision. 3. To excite artificial adhesions. This is dangerous, uncertain, and leaves a pathological lesion and a breeding-place for tubercle behind in a tuberculous subject. 4. Artificial inflation. This is unsatisfactory and the moving lung would hinder the operation. The method which I proposed was to collapse the lung artificially on the affected side by passing into the pleural cavity a suitable medium such as sterilised air, or preferably sterilised water or a weak antiseptic solution. This treatment is commenced some days before opening the chest and may be done by placing a small tube in one of the lower intercostal spaces and opening into the pleural cavity and fitted with tubing and stopcocks. The medium is passed in certain quantities daily and gradually, till the lung is sufficiently collapsed, and completed on the day of operation, the patient being thus slowly accustomed to using only one lung and being spared any sudden collapse. Now the pleural cavity can be opened as safely as a peritoneal cavity, due care being taken in the technique of the operation.

As regards the operation itself I suggest, first, a flap comprising all the tissues down to the costal surface of the costal pleura, and this being well demonstrated and all hæmorrhage

checked can be opened either by a small flap or by incision, semilunar or straight. The affected lung is now seized with forceps and drawn out and excised. The stitches necessary for this may be done as cobblers' double stitch. The pleura is now sewn up after the lung is replaced, the flap adjusted, and the operation completed; but before the costal pleura is sewn up the chest should be again filled with the medium.

If this medium is not absorbed and the lung repaired in due time aspiration might be performed. By this method even one whole lobe might be bodily removed after ligaturing its base and if the side was not subsequently filled with lung (other lobe or lobes and also by expansion of the lung of the other side), even after aspiration, thoracoplasty might be performed and the side of the chest adjusted to the size of the lung left.

By this method, not only the lungs, but also other thoracic viscera might be dealt with.

I am, Sirs, yours faithfully,

Newcastle-on-Tyne, July 6th. GEORGE LANE.

"LOSS OF MEMORY AND OF SENSE OF PERSONAL IDENTITY."

To the Editors of THE LANCET.

SIRS,—Your annotation on "Loss of Memory and of Sense of Personal Identity" in THE LANCET of June 9th, p. 1670, reminds me of a case which may be of interest in connexion with this subject.

Two or three seasons back, towards the end of cub-hunting and just before regular hunting commenced, a gentleman, a tall, strongly-built young fellow about 25 years of age, "trained on" with his horse from a station in the Midlands to another some 30 miles distant to meet the hounds. He made an early start—at that time of year hounds meet early—and possibly did not get much of a breakfast before starting. He rode through one run, not a particularly severe one. Then, as hounds were moving off to draw for another fox he found that he was lost. He had no recollection as to who he was, or where he had started from in the morning, of where he was, or of what hounds he was out with.

At a loss to know what to do, he rode up to another man out and asked him if he would tell him what pack they were out with. By one of those extraordinary coincidences which in a novel would be voted very far-fetched, the man he rode up to to inquire of was his own cousin. More remarkable was the fact that neither knew that the other was out; that they resided more than a hundred miles apart, and that while the patient had come by a train to the meet from some 30 miles west, his cousin had come the day before from a hundred miles east, and was out from the house of his host. The cousin, also, though recognising the patient at a glance, did not know where he was at the time staying. He, the cousin, in his turn, called to his aid his host and they put the patient in charge of a second horseman, directing him to ride close to the patient and not to leave him till he had deposited him at my house.

On my return from a journey I found the patient on a sofa in my consulting-room covered with blankets and my wife administering hot tea. He was very cold, his most prominent symptom being weak heart action—in fact, the usual symptoms of concussion and shock after a heavy fall. I had him put to bed and treated on general principles; and in the course of 24 hours his memory returned. Then I found that he had not long returned from Buluwayo and the Matabele rebellion, where he had been "just to see what was going on." He had suffered severely from malaria and it was pretty plain that the malaria was then by no means all out of his system. A couple of days before, riding a young horse, hunting, he had had one or two falls, but nothing to stop him. His heart action for the next 48 hours remained weak and unsatisfactory. I advised him that hunting was, for the present, absolutely out of the question for him. The chances of a recurrence of the symptoms, or of exhaustion from heart fatigue in a lonely place—where he might possibly lie in a state of exhaustion for hours before he was discovered—appeared to me to be altogether too great a risk to run. It was not a very pleasing opinion to him as he had just got a stud of horses together to begin the season with. However, he acted upon it and sent his horses up for sale. He made a complete recovery and has hunted regularly for the last two seasons and, so far as I know, has never had any return of the symptoms.

I am, Sirs, yours faithfully,

Stratford-on-Avon, June 14th, 1900. HARRY LUPTON.

"SIR W. FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR."

To the Editors of THE LANCET.

SIRS,—In an annotation in your issue of July 7th you asked that I should furnish a reference to a statement by the late Professor De Chaumont which you have been unable to verify. If you will refer to the seventh edition of Parkes's Hygiene, edited by Professor De Chaumont, you will find on page 664 the following:—

"*Amount of hospital accommodation.*—This must not be less than 25 per cent. of the force with reserve tents in rear in case of need."

With reference to the mortality of 21 per cent. in the cases of typhoid fever in South Africa I said in the debate that if that represented the death-rate under the horrible conditions described by Mr. Burdett-Coutts, I believed that with proper care and nursing it might have been reduced to 12 per cent. I see no reason to alter that opinion. On the contrary, I am confirmed in it by the mortality of 7·38 per cent. recorded by Professor Victor C. Vaughan of the University of Michigan for the typhoid fever in camp in the United States army during the recent war and Brandt's mortality of 7·8 per cent. calculated on 19,017 cases.

I am, Sirs, yours faithfully,

House of Commons, July 11th, 1900. WALTER FOSTER.

*** We are obliged to Sir Walter Foster for so courteously giving the reference to Parke's Hygiene, 7th edition. To provide hospital accommodation in the proportion of 25 per cent. for an army such as ours in South Africa would mean at least 50,000 beds, a provision which it seems to us would seriously interfere with the mobility of the troops as a fighting force. Professor Victor C. Vaughan's figures are, we understand, those of cases treated in a stationary camp in their own country and not at the seat of war; while Brandt's figures refer, we believe, to cases which had not been exposed at all to the conditions of war. Will Sir W. Foster be good enough to compare the enteric fever statistics of the army in South Africa with those of the London Fever Hospital as given by Murchison, or with those of the Metropolitan Asylums Board for ages corresponding to those of soldiers, say from 20 to 30 years?—ED. L.

SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID COMMITTEE.

To the Editors of THE LANCET.

SIRS,—The outbreak of hostilities in China and on the West Coast of Africa must, it is feared, result in the early arrival of many naval, military, and other officers invalided home from the operations now being carried on in those quarters. Would you kindly allow me to make known through your columns that this Committee, originally formed to provide medical and surgical aid for those who have suffered in South Africa, will be equally prepared to render assistance to officers returning home from these other theatres of war. Applications should be addressed to the Hon. Arthur Brodrick, at Hampden House.

I am, Sirs, yours faithfully,

ABERCORN, President.

Hampden House, Green-street, W., July 11th, 1900.

CIVIL SURGEONS ON THE WEST COAST OF AFRICA.

To the Editors of THE LANCET.

SIRS,—In both THE LANCET and the *British Medical Journal* the Colonial Office is advertising for temporary civilian medical officers for an expedition—presumably military—to Coomassie. The emoluments offered for this service are £30 a month for a six months' engagement, free rations, a gratuity of ten days' pay for *every complete month served on the coast*—time occupied on the passage out and

home apparently not counting towards the gratuity—and a free passage out and home. When these terms are compared with the War Office remuneration to civilian surgeons in South Africa—viz., £1 a day, 3*s.* a day allowance, free rations, a horse and servant, two months' pay as a gratuity and a free passage out and home—and when one considers that the climate of this part of the West Coast is the most deadly along that most deadly littoral, while that of South Africa is, under ordinary conditions, perhaps the best in the world, the total inadequacy of the pay offered for the temporary but arduous and deadly work demanded is at once apparent. If there is any sliding scale of remuneration based on the risks involved and the nature of the work entailed, then the pay and allowances of these West Coast officers should be at least double those of their South African *confrères*. Men must be down on their luck indeed—professionally, socially, and financially—to accept this work at the rate offered, and I can hardly congratulate the Colonial Office on the type of medical man they are likely to obtain by their munificent offer.

I am, Sirs, yours faithfully,

July 10th, 1900. CANTAB.

"THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

To the Editors of THE LANCET.

SIRS,—I do not think that a controversy can be profitably pursued on the lines of the letter of your correspondent "Irish Graduate." He asks me to say, "Is Trinity College to be the only place of collegiate education for young Irishmen?" To which I reply that I have not heard that anyone outside the walls of a lunatic asylum has suggested anything of the sort. My proposition is that the University of Dublin and its College should be absolutely free from even the suspicion of sectarian bias and should open their arms to alumni and intending graduates in arts coming from educational institutions of any religious type and that the education of those intending graduates should be left unrestrained to the respective institutions. Provision already exists, I believe, for the divinity education of these graduates in every religious community outside Trinity College, and I propose, simply, that that faculty shall share with others the position apart from Trinity which they occupy.

Your correspondent takes his stand upon the numerical predominance of Roman Catholics in Ireland, but I differ from him in the creed that university graduation or collegiate education should depend altogether on numerical preponderance. People who argue in this way must, to be consistent, object *in toto* to the education, on the lines of European civilisation, of any individual resident in an Eastern country like India, where the non-European community is enormously preponderant. Education ought to be cosmopolitan. I have already said that everyone knows that neither the Roman Catholic priesthood nor the authorities of Dublin University will permit desectarian education if they can help it. The whole question can, however, be settled by turning a deaf ear to the selfishly unreasonable demands of the priesthood and by peremptory desectarianism of Trinity College, and a Government endowed with a backbone could do it without trouble, but our present rulers are too busily employed in trying to catch the votes of the Nationalist party in anticipation of the general election to think much about Irish middle-class education.

I am, Sirs, yours faithfully,

A.M., M.D. DUB. UNIVERSITY.

ERRATUM.—In a letter headed "The Nationalisation of Trinity College, Dublin," which appeared in THE LANCET of July 7th, p. 50, the following correction should be made. Col. 2, par. 4, line 3: "A truly national university must be ....." should read, "A truly national university must *not* be ....."

LUNACY IN SOMERSET.—At a meeting of the Somerset County Council held on July 2nd it was reported that there were at Wells Asylum 339 male and 502 female inmates and at Cotford Asylum 195 male and 270 female inmates, making an aggregate total of 1306. For the corresponding quarter of 1899 there were 1284 patients, 532 males and 752 females.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending May 26th are as follows: remaining at the beginning of the week, 100; admitted, seven; discharged, 19; died, six; remaining at the end of the week, 82. The totals up to the end of the week are as follows: cases, 247; deaths, 89; discharged, 76; "contacts," 1407; "contacts" remaining, 115; cases among "contacts," seven.

The number of new cases during this week has been lower than in any week since that ending March 10th. The following table shows the weekly returns from the beginning:—

Week ending	Cases.	Week ending	Cases.
Jan. 27th	1	March 31st	23
Feb. 3rd	0	April 7th	29
,, 10th	0	,, 14th	29
,, 17th	0	,, 21st	16
,, 24th	2	,, 28th	27
March 3rd	2	May 5th	38
,, 10th	5	,, 12th	23
,, 17th	12	,, 19th	23
,, 24th	10	,, 26th	

This sudden and great reduction is not as easily accounted for as an equivalent rise would have been.

On May 1st, 2nd, 11th, 13th, and 21st cases of plague occurred at Manly. This town, which had remained uninfected, is situated at the northerly end of the fiord which forms the outer harbour and is about seven miles from Sydney. It can be reached by a journey of 13 miles by road which involves crossing water by two horse ferries; but communication is usually made by steamer. It is a favourite place of residence for people engaged during the day in Sydney and considerable numbers pass to and fro regularly; on Saturdays, Sundays, and other holidays many thousands of people resort there. The only feature which the four later cases had in common was their occupation at one of the wharves. The first patient was a shopkeeper in the town who had visited two warehouses in the neighbourhood of the infected wharves at Sydney three days before he fell ill; it was supposed at first, therefore, that he had been infected there, and it seems certain that his sole connexion with the Manly wharf consisted in his traversing it as a passenger. The ferry-boats carried rats and it was thought that some must have got ashore notwithstanding the precautions taken. Accordingly, as soon as the first case occurred steps were taken to trap and examine the rats on shore, and especially those about the wharf and the street nearest to it. Poison had long been laid for them. Many specimens, both alive and dead, were submitted and examined; nearly all had enlarged livers and spleens, but these signs could not be connected with plague after very careful examination, and were provisionally ascribed to phosphorous poisoning. The search was continued, it being assumed that where several cases of plague arise plague-rats must exist; and long after it began to seem likely it would prove interminable one putrid carcass was met with which afforded probable but inconclusive evidence of plague. Shortly afterwards a rat was sent in which furnished unmistakeable evidence of plague. Probably the trappers had worked too close to the wharf from which most of the rats had disappeared before they began their work.

May 28th.

The returns of plague in Sydney for the week ending June 2nd are as follows: remaining at the beginning of the week, 82; admitted, 17; discharged, eight; died, three; remaining at the end of the week, 88. The totals up to the end of the week are as follows: cases, 264; deaths, 92; discharges, 84; "contacts," 1502; "contacts" remaining, 122; cases among "contacts," seven. Since the Government offered a capitation fee for rats taken to appointed receivers nearly 25,000 have been paid for; the number for May was above 19,000. Most of them were taken in parts of the city and its neighbourhood which are known to carry infected rats, but a small proportion from more distant areas. To those who are aware of the multitudes in which rats swarm in and around Sydney these totals appear insignificant. However, it must not be forgotten that there was a time when the public had not been aroused to the necessity for killing rats

and that it continued long after the epidemic in man had become alarming.

A further supply of four litres of Yersin-Roux serum has arrived from Paris. At the hospital the opinion so far formed seems to be that very large quantities are necessary to produce decisive results; or, rather, that much larger quantities than have hitherto been used there are required. Still, the experience has been short, yet it is thought that intravenous injections do not produce a more striking effect than subcutaneous injections of twice the quantity—that is, of 40 c.c., reference being had merely to the immediate and not to the ultimate effect. Injection into the veins is made with a short needle; with a little practice this appears to be easy and the risk of penetrating both walls of the vein to be slight. At first the vein was dissected out; it is well that this tedious and rather delicate operation should be unnecessary.

June 5th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Decline of the Plague.—More Patients for Paris.—The Water-supply of Bombay.

NOT since the epidemic broke out in 1896 has such a low death-rate from plague been recorded as for the past week. The mortality throughout India has declined to 319, as compared with 417 deaths for the week previous. Bombay city returns 97 deaths notwithstanding its rate of mortality is 67 per 1000 per annum—a total mortality of 1183 when it ought to be under 600. Calcutta returns 125 and these are almost entirely accounted for by the excess mortality. The figures for Calcutta prove for themselves that very few cases of plague occur in the city which do not get known to the authorities either before or after death. This accuracy in the returns is due to the system of inquiry and registration adopted. The deaths are carefully recorded every day at the burning ghats and burial-grounds. A list of deaths is made out and inquiry is made by medical officers into the circumstances of each death. If the clinical history obtained points to plague the death is returned accordingly. Constant inquiry and investigation in every part of the city bring to light a certain proportion—roughly, say, one-third—of living cases. Disinfection follows every doubtful death. This method has proved itself so accurate that taken over a long period the amount of plague recorded and the excess mortality balance each other. There has been no other epidemic disease to complicate the system and in view of the secrecy adopted by the natives it seems the only practicable method of procedure. Notwithstanding the satisfactory decline cases still continue to be returned from widely scattered districts. Bengal gives 37, the Bombay Presidency 32, Karachi 12, and Aden five.

I regret to hear that no less than ten privates of the 1st Royal Scots Fusiliers and three drivers and gunners of the 24th and 52nd Field Batteries have sailed for treatment at the Pasteur Institute at Paris on account of bites from animals suspected to be suffering from rabies.

After a heavy fall of rain with storms in various places the weather throughout India has again been unpropitious and the real monsoon can hardly be said to have arrived. The south-west current is reported to be weak and unsteady and the welcome rainfall on the west coast of the peninsula is declining.

I have from time to time had occasion to report upon the water-supply of Bombay. Generally of abundance, the quantity has been seriously affected by last year's drought, and while hitherto considered unquestionable in quality it is now found to require filtration. The plan recommended is to construct covered filters outside the reservoirs. Though this will prove more costly than placing them inside the distributing basins there would be greater facility in looking after and maintaining the filters as the catchment basins are some distance from the city. The municipal authorities are justly proud of the water-supply and there is little doubt that with the precaution of properly constructed and well-maintained filters Bombay will be supplied with water second to none in the dependency. As I pointed out in a previous letter, there is some evidence that the amount of enlarged spleens (as representing the malarial condition of a place) is influenced considerably for the better by filtration of the water-supply. An explanation of this is still wanting.

June 24th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Housing Problem.

MANCHESTER and Salford are each confronted with the perplexing and, so far as can be seen at present, almost insoluble problem of how to provide decent and healthy house accommodation for those who can only afford to pay 4*s.* or perhaps 5*s.* a week rental. It is forced on them by the necessity there is for clearing away insanitary dwellings—which unhappily are just those most apt to be overcrowded—if the public health is to be maintained or improved. For the last 15 years the corporation of Manchester have been gradually doing away with back-to-back houses. They are ill-ventilated, and the closets are oftener bad than not, sometimes opening on to the street, sometimes being built into the side of the house, with perhaps walls soaked and leaking into a living room and with a bedroom over. To live healthily under conditions even somewhat better than these would be difficult for the most cleanly, but, as a rule, such dwellings are occupied by the lowest of the people who by their own careless and filthy habits go far towards securing a heavy death-rate. The Sanitary Committee have during the last 15 years closed 3522 insanitary houses, but the occupants have been re-housed by the corporation, generally, however, having had to pay a higher rent. In many cases, no doubt, the original tenants have gone elsewhere or crowded into houses already tenanted, and their places have been filled by a somewhat higher class of working people. This question was discussed at the last meeting of the City Council, and the proposed closing of certain houses in Hulme by the Sanitary Committee was referred back. The mover of the amendment said that the work of demolition proceeded more rapidly than the provision of new dwellings and hence overcrowding prevailed. Within a recent period he stated that out of 583 houses closed in Hulme 389 had been demolished and over 1500 people had had to go into houses where families were already in occupation, and that of the 13,000 houses built in Manchester during the past 10 years none were to be let at 4*s.* a week, which was the highest rent the people he referred to could pay, though they were for the most part honest members of the labouring classes. With the increasing value of town sites it seems that four-roomed cottages cannot be built to let at 4*s.* a week without loss. The speaker advocated the provision of what are called "barrack dwellings." Those that have been built in Manchester are tenanted, but it is a complaint that the rooms are too small, which might be avoided in the future. One of the objections to these buildings of many storeys is, not that the parents have to go up and down so many steps, but that it increases the difficulty of the children getting proper air and exercise. The same problem troubles our neighbours of Salford. In course of time some hundreds of dwellings have been demolished, and builders are now beginning to use up the old bricks to provide those displaced with new houses. But the old rent for the four-roomed houses was 3*s.* 6*d.*, while that for their less roomy and less commodious successors will be 6*s.* 6*d.* The addition of 2*s.* or 3*s.* a week to the rent is a serious matter to a woman, say, who only has 12*s.* or 14*s.* a week for household expenses. There is no great wonder that our town-bred population grows up weakly and stunted and that the "corner boys" and "hooligans" of our streets excite pity as specimens of a decaying race and disgust as an illustration of the results of our methods of bringing up our boys. It is not surprising that scarcely one-half of our town-bred young men come up to the low standard of physique required in our recruits. Nor is it likely to alter for the better while life in the slums is what it is and while life in the barrack flats must be too confined for the healthy growth and development of the coming race. Easy and cheap transport to the outskirts of our towns would do away to a great extent with the need for the working classes to live close to their work. Houses would be cheaper than in town and the children would grow up under more natural and healthy conditions than at present, much to their advantage in mind and body. In these days, when peace and goodwill among the nations seem farther away than ever, one cannot but view with concern the rapid physical, and, one fears, moral degeneracy of our town population.

The late Dr. D. J. Leech.

Manchester has suffered stroke upon stroke of late from the hand of death, and the medical profession is left much the poorer by the loss of a physician so able, so conscientious, and so universally respected as Dr. Leech. His painful illness was borne with fortitude and resignation touching to witness in one whom we had known for years as an almost perfect illustration of strength and energy, of the sound mind in a sound body. It is remarkable that three, if not four, members of the infirmary staff should have fallen victims one after the other to some form of the same disease.

July 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health Congress, Aberdeen.

THE official programme now issued shows that the proceedings of the Congress of Public Health to be held at Aberdeen will last from August 2nd to 7th inclusive. The patron of the Institute (the Royal Institute of Public Health) is Her Majesty the Queen. Lord Balfour of Burleigh, Secretary for Scotland, is patron of the Congress and Lord Aberdeen is the president, while Lord Provost Fleming (Aberdeen) is the honorary president. Professor W. R. Smith, M.D. Aberd., D.Sc., F.R.S. Edin. (London), is the president of the Institute and Mr. Henry C. Jones (197, High Holborn, London, W.C.), is the honorary secretary; Professor Matthew Hay, M.D. (Aberdeen), and Mr. Kenneth Cameron (chief sanitary inspector, Aberdeen), are the honorary secretaries of the Congress. The various sectional presidents are as follows:—Preventive Medicine and Vital Statistics section: Dr. W. J. Simpson, Professor of Hygiene, King's College, London. Bacteriology and Comparative Pathology section: Dr. D. J. Hamilton, Professor of Pathology, University of Aberdeen. Chemistry and Meteorology section: Dr. C. Hunter Stewart, Professor of Public Health, University of Edinburgh. Architecture and Engineering section: Mr. John Honeyman, R.S.A., F.R.I.B.A., architect, Glasgow. Municipal and Parliamentary Hygiene section: Dr. Robert Farquharson, M.P. The various conferences will meet in Marischal College, commencing on Monday, August 6th, at 11 A.M. The president of the Medical Officers of Health Conference will be Dr. John C. McVail, medical officer of the counties of Stirling and Dumbarton; of the Sanitary Inspectors' Conference, Mr. Peter Fyfe, F.R.S. Edin., chief sanitary inspector of Glasgow; of the Veterinary Surgeons' Conference, Mr. W. Williams, F.R.C.V.S., principal of the New Veterinary College, Edinburgh.

The Illness of Professor Ogston of Aberdeen University.

A telegram from South Africa recently received in Aberdeen stated that Professor Ogston's illness was enteric fever, that he was still a patient in hospital at Bloemfontein, but was progressing favourably.

July 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Principal Medical Officer in Ireland.

DURING the absence on leave extending to August 4th of the Principal Medical Officer in Ireland his duties will be performed by Lieutenant-Colonel F. G. Adye-Curran, Royal Army Medical Corps.

The Hospital at Bloemfontein.

In connexion with the treatment of the sick and wounded at Bloemfontein it is interesting to note that the Raadzaal (Parliament House) there has been converted into a hospital and is under the charge of Colonel W. W. Kenny, R.A.M.C., well known in Dublin. Under him are Surgeon Henry Moore of the City of Dublin Hospital (a volunteer), Lieutenant Archer, R.A.M.C. (also from Ireland), with Surgeon Williams of London. Eight nursing sisters are attached to the hospital in addition to the usual staff of orderlies.

Military Manœuvres and the Belfast Water-supply.

At a meeting of the Belfast Water Commissioners on July 5th attention was publicly called by one of the members to the statement that part of the Mourne range of mountains had been scheduled as a portion of the area over which the summer military manœuvres are to be conducted, and that this part so specified actually included the catchment area purchased by the Belfast Water Commissioners. The Water Commissioners have (or will shortly have) paid a million of money in connexion with this scheme, and in order to ensure the purity of their catchment area they had bought it up, minerals and all. Very naturally the Water Commissioners, seeing what has taken place recently in Africa, protest very strongly against any risk of their catchment area being in any way interfered with owing to the great risk of the sanitary conditions accompanying an army in the field, and they call upon the Belfast Members of Parliament and the city corporation to use their influence to prevent such an occurrence taking place as their catchment area being made a camping ground for military manœuvres. Some years ago, the Commissioners having restrained the colonel of a regiment stationed in Belfast from washing his dogs in one of their reservoirs, that military authority in martial dudgeon refused to allow the regimental band to play any more in the pleasure grounds of the waterworks, whereupon the Commissioners were much blamed by the Press for needlessly interfering with the recreations of the people. The Press, however, it is hoped now will uphold the Commissioners in their rightful efforts to prevent defilement of their catchment area at the Mourne Mountains.

North of Ireland Branch of the British Medical Association.

The twenty-second annual meeting of the North of Ireland Branch of the British Medical Association was held in the town-hall, Portrush, on July 5th. From the annual reports it appears that the society is in a most flourishing condition, there being 271 members, of whom 153 are country and 118 from Belfast. Financially there is a balance in the treasurer's hands of £13 18*s.* 9½*d.* The following office-bearers for 1900–1901 were then elected:—President: Professor Byers. Vice-Presidents: Dr. J. S. Darling (Lurgan) and Professor Lindsay. Secretary: Dr. W. Calwell. Treasurer: Dr. George Gray (Newcastle). Members of Council—Country: Dr. E. C. Thompson (Omagh), Dr. J. Stuart (Ballymena), Dr. J. C. Martin (Portrush), Dr. J. C. Hall (Monaghan), Mr. St. George (Fishburn), Dr. Agnew (Lurgan), Mr. R. Gray (Armagh), and Dr. D. Gaussen (Dunmurry). Belfast members: Dr. John Campbell, Dr. A. Dempsey, Professor Sinclair, Dr. M'Kisack, Professor Whitla, Dr. McCaw, Dr. E. C. Bigger, and Dr. A. B. Mitchell. The President (Dr. J. C. Martin) read an interesting paper on Portrush from a Medical Point of View.

The Samaritan Hospital, Belfast.

A summer fête and fancy fair was held at Norwood Tower, Belfast (kindly lent by the ladies and gentlemen of the Henderson family who placed their beautiful grounds at the disposal of the promoters of the undertaking), on July 6th and 7th. The object was to clear off a debt from the Samaritan Hospital. Dr. St. Clair Boyd, one of the surgeons to the hospital, has offered in the most generous manner to be responsible for any deficiency in case the debt is not cleared off. A sum of about £300 has been raised.

July 10th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Last Lecture of Professor Potain.

ON Tuesday, July 3rd, at 10 A.M., Professor Potain in the theatre of the Charity Hospital gave his last lecture upon Clinical Medicine. The rules as to age limit are inflexible. Hospital physicians must retire at the age of 65 years and hospital surgeons at 62. If, however, the physician is also professor in a clinic he may hold his appointment up to the age of 70 years, and if he is a member of the institute he may continue until he reaches the age of 75 years. Professor Potain, who is 75 years of age, has thus gone to the extreme limit which his accumulated offices allow, and he resigns his chair while still in full possession of his faculties and enriched by his long experience. Few medical careers have been so worthy as that of the venerable professor. A consummate clinician whose labours on diseases of the heart and lungs have gained him a world-wide reputation; an exemplary professor who for 30 years without a break took up his parable before an audience composed of listeners of every

nationality very many of whom were past masters in their art; a physician who for 40 years arrived at 8 A.M. to the minute in his wards when he saw all his poor patients whose claims were never neglected for those of the rich and mighty; a public man whose retirement meets with universal regret and who is everywhere respected; in addition to all this he is absolutely upright and kind-hearted to a degree which no one who knows him can forget. Overwhelmed as he was by requests for a consultation he never would raise his fees—a fact with which his younger colleagues would sometimes reproach him—but whoever asked for his opinion, even among the humblest, was sure of getting it, and that, too, very often without any fee. These, then, are the reasons why throughout France no physician is regarded with such practically filial respect as "Father Potain," to give him the name by which he is generally known. When, therefore, the day dawned upon which one so loved had to resign his chair and his hospital work it is easy to conceive the cruel wrench which the parting would give him. Such a feeling was widespread, and by no concerted action but on their own initiative all his pupils and many of his friends attended his last lecture. There in that throng, so evidently permeated by an emotion no less marked because restrained, were Professor Bouchard, Professor Dieulafoy, Professor Guyon, Professor Brissaud, Déjerine, Gaucher, Oulmont, Gourand, Moutard-Martin, Duflocq, Vaquez, Marey, Teissier, and many more old pupils who have now become teachers. Professor Potain began his lecture just in his usual calm way and pointed out the remarkable harmony which existed between the results of a radiographic examination of the heart and the results obtained by stethoscopy—it seemed as if he wished his last words as professor to be concerned with his favourite study of the heart, by doing homage to the modern discovery, owing to which that study had entered on a new road. Eleven o'clock struck, the master stopped, and in the midst of a dead silence announced that he had given his last lecture. "I wish," he continued, "to say a word or two in memory of Corvisart who, 100 years ago in this very theatre, created the first course of clinical medicine in France. I wish to thank my colleagues, my pupils, my friends, whom——" His voice failed and he stopped with his eyes full of tears. Thunders of applause burst through the theatre, during which his pupils rushed towards him and escorted him to the door. There the Professor fell into the arms of his old pupil Dieulafoy, who warmly embraced him. He then went up the staircase, which was lined with old pupils and friends, whom he saluted and all of whom were visibly moved. Then slowly and sadly crossing the quadrangle, he left the hospital for the last time.

Definite Lesions in Prehistoric Bones.

M. Zambaco of Constantinople recently showed before the Academy of Medicine a series of photographs of human bones collected in Upper Egypt and dating back some 8000 years. Alterations of a destructive or hypertrophic nature, such as suppurative osteitis, exostoses, eburnated surfaces, and the like were evident upon the bones of the skull, the limbs, and the vertebral column. Some of these M. Zambaco considered were due to syphilis and others to tuberculosis. M. Fournier said that he did not consider that the lesions of which M. Zambaco had shown photographs gave any definite evidence of having been caused by syphilis. It is next door to impossible to affirm the existence of syphilis simply from the alterations exhibited by the bones, for a variety of diseases give rise to alterations in the bones exactly similar to those produced by syphilis. Not only do ordinary injuries give rise to exostoses exactly comparable to those produced by syphilis, but varicose ulcers give rise to hyperostosis of the tibia at the border of the ulcer which differs in no way from syphilitic periostitis. M. Fournier, therefore, was of opinion that a simple inspection of a bony lesion was not enough to enable the observer to determine its origin.

July 10th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis in Rome.

AT a recent meeting of the Società Lancisiana di Roma Professor T. Gualdi, chief medical officer of the Bureau of Hygiene, gave some interesting particulars regarding tuberculosis in Rome. While, he said, the population of the city had increased from 350,000 in 1885 to over 508,000 in 1899 the number of cases of tuberculosis had remained about the same, and it might therefore be inferred that there had occurred a relative diminution in the prevalence of the disease. But even if the proportion had remained the same there would still have been cause for satisfaction, because as the population increased so did the sources of contagion. Pulmonary tuberculosis, which on account of the greater ease of diagnosis afforded a better guide than other forms, accounted for over 900 deaths out of a total for all forms of 1500. A diminution had taken place in the number of abdominal, meningeal, glandular, and miliary cases, which (except the last) were the usual index of infection by the digestive tract. In regard to the morbidity there was little to guide one since the hospitals reported only the gravest cases. The number of cases of pulmonary tuberculosis might, however, be put down as being at least three times as great as the number of deaths—in other words, it might be said that every year there were 3000 phthisical subjects in Rome. A good deal had been done in the direction of prophylaxis, but much remained to be done. Tuberculosis of animal origin had been reduced to a minimum. No tuberculous meat was eaten and milk no longer presented serious dangers. Santori had found bacilli constantly present in the sediment of the milk supplied in Rome which resisted acids after staining with Ziehl's solution and yet were not tubercle bacilli. These were constantly present in the normal fæces of the cows. But no bacilli capable of causing infection were found. The hygienic condition of the dairies had improved immensely. The use of tuberculin had become general and gave splendid results. On notice being given by the authorities of the slaughterhouse of any cow with tubercle the cows of the dairy from which the animal came were at once tuberculinised. All cows were now so examined once a year. At first there was a great difference between the number of cases in oxen and the number in cows, but now there was the same proportion in both—viz., 6 per cent.—of those slaughtered, and in the greater number the tuberculosis was circumscribed. Since cattle caught the infection from man it was well to keep them out of the city, although this rendered supervision more difficult. In regard to disinfection this had been carried out during the last five years in all houses where death from phthisis had occurred and in the houses of all phthisical patients sent to hospital. Excellent results had been obtained by washing the floors with boiling caustic soda and whitewashing the rooms with lime. All second-hand furniture and carpets sold ought to be disinfected and eventually this would be done. The isolation of patients, Professor Gualdi thought, would not be secured without a vigorous propagation of the doctrine of infection. In the hospitals it was already well carried out and even in tenement houses it began to be practised as its necessity became better understood. In this connexion he dwelt on the importance of early diagnosis. In all public places in Rome placards forbidding spitting on the floors had been put up and spittoons supplied, and the same had been done in the houses of the working-classes. Instructions in the various hygienic measures for preventing the spread of the disease had been issued to the public. Professor Gualdi added that he believed the low relative proportion of cases of tuberculosis in Rome to be due to the backward state of industries, with the developmeet of which an increase in the number of such cases might be expected. In the discussion which followed the reading of Professor Gualdi's paper several speakers, while praising the work already done by the Municipal Bureau of Hygiene, commented on the absence of precautions against infection in the schools, and some advocated a system of medical inspection of the school children for the purpose of eliminating all tuberculous subjects, for whom special permanent schools—sanatorium schools, as suggested by Baginsky at the Congress of Naples—should be established. It was even urged that the Bureau of Hygiene should take up the question of the gratuitous feeding of school children by the Government. One speaker deplored the insanitary condition of the public offices, courts of justice, post offices, &c., and was not surprised that until the authorities provided more efficaciously for the cleanliness of the places immediately under their care there should be a disposition on the part of the public to ridicule the prohibition against spitting. In the course of his reply to these criticisms Professor Gualdi remarked that a great practical difficulty in the way of securing obedience to the injunction against spitting was the

want of a good portable pocket spittoon. The responsibility for the hygiene of public offices lay, he said, not with the municipality, but with the Government. He entered heartily into the scheme of school canteens which had been established in Belgium at trifling cost. He admitted the deficiency of hygienic supervision of the schools, the need of special schools, of sanatorium schools, &c., but the resources of a Municipal Bureau of Hygiene were unequal to the task of carrying out such a vast programme.

The Anti-malarial Campaign.

The anti-malarial campaign in the Agro Romano has now fairly begun, the eight ambulances organised for it by the Red Cross Society having left Rome for their various stations at the end of June. A day or two previously they had been inspected by the President-General of the Society, Conte Taverna, who was accompanied by Conte Della Somaglia, President of the Roman Committee, and by the medical inspector, Professor Postempski. The wagons were constructed at the arsenal of Turin expressly for this service and are made in such a way as to be convertible in time of war into transports for the wounded. Every wagon, in addition to the ambulance stretchers, carries three cases containing surgical instruments, medical appliances, and medicines (compressed and liquid), and a fourth case with miscellaneous stores and a saddle for the use of the medical officer in the event of his services being required at places not accessible by carriage. The *personnel* wear the uniform adopted by the Red Cross Society for Africa—flannel tunic and trousers with helmet and alpine boots for the officers, and linen coat and trousers with helmet for the nursing attendants. The medical officers, of whom there are eight, are armed with revolvers. On July 1st, at daybreak, the ambulances started on their various rounds, and already the first reports of the work done begin to reach the Bureau of Hygiene. For the present, and until the malarial season commences in earnest, this work will be chiefly in the nature of practice, to familiarise the medical officers with each locality and the best way of dealing with its particular needs. Nevertheless, on this the first day of the campaign a large quantity of preventive remedies were distributed and a couple of bad cases of malaria were admitted into the Hospital of Santo Spirito. Even the small experience already gained shows that this crusade against the deadly foe which yearly exacts so heavy a tribute from the fever-stricken peasantry of the Roman Campagna will be the means of relieving much suffering and of saving many lives. To the same humane object the series of experiments which the Society for the Study of Malaria are again inaugurating in Latium for the malarial season now commencing will no doubt likewise contribute. These experiments will be of a similar kind to those carried out last summer along the Mediterranean and Adriatic railways with such encouraging results. Some 26 of the houses of the employés along the same lines of railway, all in localities known to be highly malarious, will be selected, and the doors and windows will be closed with wire gauze to prevent the entrance of anopheles. The men on night duty will wear special coverings for the head and hands to protect them from the bites of mosquitoes, and will have preventive medicines administered to them. Similar measures will be adopted by the Acqua Marcia and the Rome-Tivoli Electric Traction Companies for their stations and workpeople, and an attempt will be made to induce the peasantry in the most malarial zones, such as Cervelletta, Castella di Velletri, the Pontine Marshes, &c., to adopt like precautions, wire gauze for the windows of their houses and huts being supplied to them. The Caetani family have had a moveable shelter constructed furnished with mosquito nets and all the necessary protective paraphernalia, which will be sent with the workpeople to the various places where the mowing, ploughing, and reaping are successively carried on thus to afford them a safe sleeping-place during the night-time. While these experiments are going on in the Agro Romano other series of a similar nature will be prosecuted in the Tuscan Maremma and in the provinces of Salerno and Bari. All the results will be collected and compared in the hope of gaining information and devising practical measures which may prove helpful in protecting the labouring classes against the ravages of malaria.

Small-pox in Piedmont.

There appears to have been no recrudescence of the outbreak of small-pox with which Italy was threatened last April through the landing at Naples of a number of infected persons belonging to a large party of American tourists, but two cases of hæmorrhagic small-pox imported from Toulon and Marseilles are reported at Cuneo in Piedmont. One case has proved fatal and in the other the patient is not expected to recover. Prompt measures were taken to prevent any spread of the infection.

July 3rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Ice Trust in New York.

MUCH indignation has been aroused among the inhabitants of New York by the action of the trust which controls the sale of ice in the city in raising the price of that indispensable commodity during hot weather to a figure almost prohibitive to the poor. Owing, however, to the stand taken by some of the New York daily journals, notably by the *New York Journal* and by the *World*, the prosecution of this obnoxious scheme has been frustrated, and, furthermore, its promoters and the more influential of the shareholders in the company, among whom were the Mayor of New York and other city officials, have been publicly pilloried and sharply brought to book. If the project had been carried out much suffering would have been entailed on the residents of the poorer districts of New York, where in the summer the heat is often oppressive to a degree and where ice is a necessity for the preservation of food. Dr. Dwight Chapin, writing on the matter in the *New York Medical Record* of June 9th, says:—"It is estimated that there are 146,600 children under the age of three years in the boroughs of Manhattan and Broux, or 6·72 per cent. of the whole population. This immense number subsists principally upon milk. Recent studies show that if cow's milk can be properly cooled it will keep a considerable time and is much better than relying too largely upon superheating. Here is where the subject of ice comes properly under the physician's notice. Any difficulty in the free procuring of ice during the heated months, whether from a natural scarcity of this article or from a cornering of this staple by commercial greed, is a public calamity."

Plague in San Francisco.

The plague in San Francisco, owing doubtless to the vigorous measures taken for its suppression by the United States Marine Hospital Service and by the San Francisco Board of Health, has apparently been, if not completely eradicated, at least kept well under control. Dr. Kinyoun, of the Marine Hospital Service, San Francisco, states that from March 7th to June 2nd there have occurred 11 deaths from plague in San Francisco. In 10 of these the diagnosis has been confirmed by bacteriological examination. There were at the time of the despatch of the report three suspected cases under investigation. In order to prevent dissemination of the disease strict measures of inter-State inspection are in vogue. The Chinese and Japanese object very strongly to the cordon placed around their quarters as well as to the inoculation with Haffkine's serum, to which they are compelled to submit, arguing that they are being subjected to an unfair discrimination. So strong is this feeling among the members of the yellow race in San Francisco that a suit has been brought by them to test the validity of the existing law and to procure an injunction against the local authorities to cause the abandonment of the cordon around the Chinese quarter. Dr. Kinyoun, in his report to Surgeon-General Wyman, says that the local press is still attacking the Board of Health in every way it can, and is fully and cordially supported by one of the mercantile associations of the city. They have issued a circular which is now being scattered broadcast over the city and, I presume, over parts of the United States in which it is stated that the Federal authorities joined with the State and local authorities have stated that no plague exists in San Francisco. Dr. Kinyoun has contradicted this assertion and declared that plague infection does exist in the Chinese quarter and will exist until a strong, determined, and concerted effort is made to eradicate it.

Death of Dr. Paul Gibier.

Dr. Paul Gibier, the head of the Pasteur Institute in the United States, died from injuries received in a runaway accident at Suppern, New York, on June 9th. He was born in France in 1851 and after graduating at the medical side

of the University of Paris, became assistant professor of comparative medicine. In 1885 the French Government sent him to Spain to study the outbreak of cholera there, and in the following year he was sent to the South of France to study the same disease. In 1888 the same Government sent him to Havana to study yellow fever. On his way home he stopped in New York. He returned the next year, 1890, and started the Pasteur Institute in this country, a specialty of which was originally the preventive treatment of hydrophobia.

June 29th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

THE epidemic of bubonic plague would appear to be slowly subsiding in Australia. In New South Wales 248 cases have occurred to date of which 83 proved fatal. In Sydney the disease shows a tendency now to locate itself in the Chinese quarter, in which eight of the more recent cases occurred with seven deaths. Vigorous measures have been taken to improve the sanitary conditions. The Government has taken over the infected wharves and they are in course of demolition, the timber being burned and the accumulated filth under the wharves being removed in punts. Inspection and cleansing of the city and also destruction of rats are still going on. In Melbourne the municipal authorities are being galvanised into activity in the same way. Additional inspectors are being appointed and the scavenging operations are more efficiently conducted. No cases of plague have occurred in Victoria for a period of 11 days and of the nine cases that have occurred (four being in one family) only one (at Geelong) proved fatal and, indeed, was only diagnosed post mortem. As usual doubt has been cast on the diagnosis in all the cases, but its correctness seems to be unquestionable. Several cases have occurred in Brisbane and at Rockhampton in Queensland. Western Australia is declared to be free from cases. Two cases are reported from Adelaide. In many instances it has been impossible to trace the method of contagion, but the observations of the health authorities, so far as they go, support the views of Simond as to the part played by fleas.

Metropolitan Hospitals and their Needs, &c.

Recently a deputation waited on the Colonial Secretary of New South Wales with reference to extending the Prince Alfred Hospital, Sydney. It was stated that for several years the demands for accommodation had increased to such an extent that more beds were urgently required. The hospital had the ground and the plans ready for the erection of two new pavilions providing 120 beds. The administrative arrangements were such as to suffice for working the increased number of beds and the ratio of cost would thus be materially lessened. If the request were not granted patients must be turned away. The institution had been originally built with a view to its enlargement as the population of the city increased, and the time for its enlargement had now arrived. In reply the Minister said that he fully recognised the increasing need for more hospital accommodation. Not only had the population increased but the hospitals were more popular. He fully appreciated the good work which the hospital did and he would seriously consider the matter and bring it before the Cabinet, and probably they would place a sum on the estimates to enable the work to be carried out. The deputation also asked for a further sum of about £5000 to carry out improvements in the existing buildings and to clear off a deficit on the nurses' home. The Minister promised a favourable consideration of this request also. In Melbourne the finances of the leading hospital are in a bad way, chiefly owing to the action of the Government some years ago in reducing its annual grant to the hospital by £2000. The annual expenditure has exceeded the revenue by about that amount ever since, until now the debt of the Melbourne Hospital is £18,000, and the committee has decided that if the income is not increased some of the wards must be closed. An effort has been made to clear off the debt by public subscription, &c. A large bazaar was held which realised £8000, and Mr. G. Iliffe subscribed £1000 on condition that £20,000 were raised by subscriptions of £1000 and £500. Towards this amount £7700 have been given, and it is hoped that the balance will soon be raised. The question of admitting paying patients into public hospitals has also been much discussed of late, both in Sydney and Melbourne. Mr. E. T. Thring of Sydney in his address as retiring President of the New South Wales Branch of the British Medical Association, condemned the practice, asserting that such hospitals entered into unfair competition with strictly private hospitals, and further charged the members of the staff of such institutions with acting unfairly to the general body of practitioners. The *Australasian Medical Gazette* took up the matter and severely denounced the practice, and appealed to the members of the staffs of the hospitals in question to remedy the abuse. In Melbourne the *Argus* newspaper made much the same statement, giving a full account of the methods adopted at all the different hospitals. The authorities at St. Vincent's Hospital in Melbourne made a reply to the effect that as they receive no aid from the Government they are compelled to add to the income received from public subscriptions by taking a limited number of private patients into wards set apart for the purpose, and that the nursing and administrative work being all done gratuitously by the Sisters of Charity they make a considerable profit on the private patients and prevent imposition on both the charity and the profession in many cases.

The Lunatic Asylums in Victoria.

The Melbourne press have been attacking the administration of the Lunacy Department in Victoria, both the *Age* and the *Herald* having published articles on the subject. The main points brought out are—that in proportion to the population there are more lunatics in Victoria than in any other English-speaking country; that there has been a steady decline in the percentage of recoveries among the patients admitted to the asylums—in the early part of the last decade more than half were cured, now less than one-third recover; and that there is no receiving-house where doubtful cases can be kept under observation, and no proper provision for paying patients, private asylums having been abolished by Act of Parliament. The administration defects are all ascribed to the false economy practised by successive Governments. It is also alleged that the medical officers are for the most part incompetent, the inadequate pay and civil service conditions of promotion by seniority failing to attract good men. As usual in newspaper articles of the kind there is a good deal of truth mixed up with a good deal of exaggeration and misstatement in these charges. When the financial depression came on the colony the Lunacy Department, like every other State department, was retrenched and economy was carried to an extent that was unfair to the medical staff and to the patients; and the inadequate pay and difficulties of successful administration do unquestionably prevent the best men in the profession from entering the service. Still there are some very capable and skilled men on the staffs who take the keenest interest in their work and in teaching the students of the medical schools who attend at the metropolitan hospitals for the insane. The report of the Inspector-General for last year will also show a great increase in the proportion of recoveries.

The Victorian Branch of the British Medical Association.

At a meeting of the Goulburn Valley Sub-branch of the Victorian Branch of the British Medical Association, held on May 7th, the following resolution was carried unanimously:—

> Having heard read the evidence in the O'Hara case, we, the members of the Goulburn Valley Sub-branch in regularly notified meeting assembled, unanimously resign from the Victorian Branch (but not from the British Medical Association), as we entirely concur in the action of the late Council.

The Ballarat Sub-branch also passed a resolution approving of the action of the late Council. The South Australian Branch, at a well-attended meeting held on May 31st, unanimously passed the following resolution:—

> The South Australian Branch of the British Medical Associatio sympathise with the late Council of the Victorian Branch of the British Medical Association in their endeavour to uphold the dignity of the profession in the matter of the "Silenette" investigation; and are of the opinion that they could not have acted otherwise than they did in resigning their positions after the insufficient vote of the 21st March, 1900. That our Representative on the General Council, British Medical Association, be requested to bring the decision of this Branch before the said Council.

Carrasquilla's Serum Treatment of Leprosy.

In the *Intercolonial Medical Journal of Australasia* for May is an account of a very exhaustive investigation by

Dr. F. Tidswell of the value of the serum treatment of leprosy devised by Carrasquilla of South America. The mode of preparing the serum is described as are the results of the treatment, which did not accord with the results stated by Carrasquilla. During the treatment tubercles and maculæ remained and increased, anæsthesia and nerve thickening persisted, and alopecia and defects of sight, &c., were not improved. The disease, far from being cured, did not appear to be even ameliorated, and after nine months' persistent trial the patients declined further treatment.

June 1st.

Obituary.

DANIEL JOHN LEECH, M.D., F.R.C.P. LOND, D.SC. VICT.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE OWENS COLLEGE, MANCHESTER; CONSULTING PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY; AND REPRESENTATIVE OF VICTORIA UNIVERSITY UPON THE GENERAL MEDICAL COUNCIL.

THE death of Dr. Daniel John Leech, the well-known Professor of Materia Medica in Owens College, Manchester, following close upon the death of Professor Thomas Jones, inflicts a double shock upon medical circles in Manchester. Like that of his colleague Dr. Leech's death was premature, but his friends had known for three months that the end was only a matter of time, as he was suffering from malignant disease of the stomach.

Dr. Leech was born 60 years ago at Urmston, being the second son of the late Mr. Thomas Leech, a medical practitioner in that city, and the younger brother of Sir Bosdin Leech, the ex-Lord Mayor of Manchester. It is interesting to note that Dr. Leech's original family name was Bosdin, for he belonged to a branch of the old Cheshire family of that name which adopted the name of Leech—at least, so it is said—because of the persistence with which its members distinguished themselves in medicine. The late Dr. Leech has added lustre to his medical name. He entered the recently founded Owens College, Manchester, at the early age of 14 years, and six years later, in 1860, he matriculated in the first division at London University. He was already an advanced medical student, wanting only the final examination to qualify him, his medical studies having been pursued in the Manchester School of Medicine and also, as was the habit in those days, as the assistant of a general practitioner in the city. His career as a student was a successful one and was frequently rewarded with prizes. In 1861 he qualified as M.R.C.S.Eng. and L.S.A. In the following year, after a short sojourn in Paris, the anatomical schools of which city were famous in the "sixties" for the excellence of their teaching and the facilities afforded to the students for practical work, he became demonstrator of anatomy in the Manchester Medical School. This post he held for two years, and in 1864 came up to London where he entered his name for classes at St. Mary's Hospital, upon the honorary staff of which were to be found at that time the names of Dr. James Alderson, F.R.S., Dr. Tyler Smith, and Mr. J. Lane, all of whom had a wide reputation. Returning to Manchester he was taken into partnership by the medical practitioner whose assistant he had previously been, and in 1868 he graduated in London University as Bachelor of Medicine, obtaining first-class honours in gynæcology. In 1870 he was appointed physician to the Hulme Dispensary, and three years later he became assistant physician to the Manchester Royal Infirmary, with which institution his name from that day forward was honourably associated. His excellent work both as teacher and clinician met with ready recognition; his grasp of clinical medicine was firm and his power of imparting instruction great, and in particular he interested himself in the study of materia medica and therapeutics, a branch of medicine the growing neglect of which in this country is a matter of some reproach to the medical profession. In 1878 he was appointed co-lecturer, having as his colleague the late Mr. Somers, in materia medica and therapeutics at Owens College, and on the death of Mr. Somers five years later he became sole lecturer, being at the same time appointed professor of materia medica and therapeutics, which post he held till his death. Upon the appointment of Dr. Leech to the chair Owens College possessed no Materia Medica Museum and to supply this want, which he felt to be fatal to good and fruitful teaching, he set himself with zeal. He spared no trouble and no expense (for the calls upon his private purse in behalf of the Materia Medica Museum were not small), and he formed one of the finest museums in the country, attached to which is a department of experimental pharmacology where excellent work has been done under his supervision and where the spirit of his teaching still remains as a stimulus to further exertion in pharmacological research.

If Dr. Leech had contributed nothing to the progress of medicine but his work in organising a Materia Medica Museum for Owens College and in delivering there his admirable scientific discourses upon pharmacology he would have deserved to be ranked among the prominent medical men of our day; but though pharmacology was Dr. Leech's especial bent he did not allow its study to keep him from a wide interpretation of the duties and responsibilities of a physician. In 1875 he was admitted a member of the Royal College of Physicians of London, a year later he took the degree of Doctor of Medicine of London University, and was elected a Fellow of the Royal College of Physicians of London in 1882. Three or four years previously to this he was elected full physician to Manchester Infirmary, which appointment he held for 21 years, only resigning it about a year ago when he was appointed consulting physician. Dr. Leech's career is, however, but half described when we say that he was an excellent hospital physician with a large private practice and was an admirable professor in the University College of Manchester. He had many other interests, and many other duties were laid upon him, and the way in which he discharged them earned him the gratitude of his fellow-citizens. Thirty years ago he became the secretary of the Manchester and Salford Sanitary Association which through Dr. Leech's powerful instrumentality has rendered the city of Manchester incalculable benefits. To it the corporation owe the institution of many wholesome by-laws, while its teachings have assisted the authorities in the most practical manner to prevent the terrible dangers that follow upon the adulteration of food and upon a vitiated milk-supply, while in particular to this association belongs the honour of being the first body vigorously to combat the evils of black smoke. Several of Dr. Leech's reports upon this subject and upon the pollution of rivers were of the greatest value to the community.

Owens College, Manchester, is much beholden to its dead professor. He was a member of the Council and of the Court of Governors and played an important part in the organisation of the medical faculty of Victoria University. When the University was established Dr. Leech was appointed Chairman of Convocation and Representative of the University upon the General Medical Council, and his services in these two capacities the University acknowledged four years ago by granting him the degree of D.Sc.

Among the many complex problems of medicine few are more interesting than those connected with the accurate determination of the methods of action of particular groups of drugs which possess definite chemical affinities, and all pharmacologists owe the late professor of materia medica and therapeutics at Manchester a real debt of gratitude for his earnest endeavours to increase our knowledge in this direction. In 1893 Dr. Leech took as his subject for the Croonian Lectures before the Royal College of Physicians of London the Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds.[1] In tracing the physiological influence of groups of elements, more particularly of the groups formed by oxygen and nitrogen, he gave in the first two lectures a summary of his own work and proved it to be of considerable practical importance as well as most thoroughly and conscientiously executed. He desired his hearers to obtain a more intelligent appreciation of the conditions of efficiency of the nitrites as a group, and with this object he not only detailed his own experiments but reviewed those of Sir T. Lauder Brunton, Professor Cash, Dr. Filehne, Dr. Reichert, and the late Sir B. W. Richardson in a way that was remarkably intelligible considering the difficulty of the subject. In the last two lectures he dealt mainly with the therapeutic value of the remedies falling under these groups and his conclusions were valuable because of the scrupulous way in which they had been arrived at. Many busy practitioners who looked askance

[1] THE LANCET, June 24th (p. 1499) and July 1st (p. 3), 8th (p. 76), 15th (p. 123), and 22nd (p. 177), 1893.

when these lectures were published in our columns at the unfamiliar names of the drugs mentioned perceived the value of Dr. Leech's work when he proceeded to apply his theories to the estimation of the dosage of such therapeutic agents as nitrite of amyl and ethyl to many common conditions and to give his reason for his teachings.

Dr. Leech will nowhere be more missed and regretted than in the General Medical Council, where he represented the Victoria University. He was, in truth, one of the most useful members of the Council. He was elected to it in 1891 and took an active part in various committees. Of late he had been chiefly occupied in the work of the Pharmacopœia Committee, where the practical and scientific knowledge of drugs to which we have just alluded was of the greatest use to the counsels of the body that has charge of the issue of the British Pharmacopœia. On the death of Sir Richard Quain he was made chairman of the committee, and to him is due much of the credit which has been universally given to the work. He did not speak long or frequently in the Council, but whenever he did speak his views carried much weight. He was especially interested in all questions affecting the general practitioner, such as the various Midwives Bills, the abolition of the unqualified assistant, and the institution of a Conciliation Board to attempt to settle some of the points at issue between the medical profession and friendly societies and medical aid associations. He was a member of the first committee on medical aid associations in 1893 and gave the closest attention to the subject. Up to the last his interest in the work of the Council continued, especially in all questions relating to the Pharmacopeia, and he sent to the Council at the May meeting, through Dr. Donald MacAlister, touching expressions of this interest and left to it several valuable works on pharmacy and materia medica.

Dr. Leech took a prominent part in the affairs of the British Medical Association, being joint general secretary with Dr. C. J. Cullingworth and Mr. James Hardie when the Association met at Manchester, President in 1890 of the Lancashire and Cheshire Branch, and President of the Section of Pharmacology when the Association met at Montreal. He was also a ruling spirit and a late President of the Manchester Medical Society and founder of the Manchester Therapeutical Society, a young and earnest scientific body working on the lines of research where he had made himself a pioneer. He was for several years editor of the *Medical Chronicle*, and the pages of our Manchester contemporary contain many contributions from his pen. He was also a magistrate for the city.

We have said enough to show that in Dr. Leech Manchester has lost a citizen and medicine a representative which both must deeply regret. An excellent physician, a sound teacher, and an original worker Dr. Leech joined to his high intellectual qualities a particularly charming nature. He was kind, generous, and fair-minded, prudent in counsel, and while leaning to the weaker side was never afraid to speak his mind. All his work, whether public, medical, or strictly scientific, had one aim—the good of his generation. He bore his last illness with fortitude and leaves behind him many friends to recall his good qualities.

Dr. Leech married the daughter of Mr. Maclaren of Whalley Range, who survives him.

HENRY EWBANK, M.R.C.S. ENG., L.R.C.P. EDIN.

A WIDE circle of friends and acquaintances will hear with deep regret of the death after a long and painful illness of Mr. Henry Ewbank, at his residence, 5, Berkeley-place, Cheltenham. The deceased gentleman was a native of St. Germains, Cornwall, and was only 44 years of age. He received his medical training at University College Hospital, London and he went to Cheltenham some 20 years ago to begin his professional career as junior house surgeon of the General Hospital. His stay there was short but eminently successful. In 1881 he succeeded Dr. Cardew as senior surgeon; and on his resignation in May, 1883, he was presented with a case of instruments by the staff, by whom his departure was generally regretted. He left the hospital to enter into partnership with Dr. Gooding of Cheltenham, with whom he was long and honourably associated. The partnership was dissolved in 1895. For a short interval he practised on his own account; but about two years ago he was joined in partnership by his relative, Mr. C. Ewbank Lansdown. He was formerly honorary surgeon to the Home for Sick Children. Much of his popularity was due to the interest which he took in all forms of outdoor sport and to his genial good comradeship with sportsmen of all classes. In his young days he greatly excelled as a swimmer, and he was at one time looked upon as the leading amateur in the West of England. In fact, he enjoyed the unusual honour of having inflicted defeat on the great Captain Webb himself in a quarter-mile race at Westminster. Nor was that the only occasion on which he met the world-famed swimmer in friendly contest, as he was defeated by the champion in a half-mile race at the Cheltenham Montpelier Baths. For some time he was chairman of the Cheltenham Swimming Club and ably presided over the business meetings and social gatherings. He was a consistent supporter of cricket, football, and similar clubs, and he has done good work on the committee of the Cheltenham Cricket Club, having also from time to time undertaken the captaincy of the second eleven. In 1890 he married Mary Elizabeth, eldest daughter of the late Martin Inett Preston, solicitor, of Nottingham. He leaves a widow and two children.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Fritz Rubenstein of Berlin, who has made a reputation for himself in the domain of surgery and the use of the Roentgen rays as well as by his writings on philosophical and literary topics, has died from the effects of a poisoned wound, at the age of 37 years.—Dr. H. Benedikt, son of the Vienna professor, who has published various researches on radiography.—Dr. F. Nott Otis, formerly Professor of Genito-urinary Diseases in the College of Physicians and Surgeons, New York.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen have passed the Second Examination of the Board in the subjects indicated.

Wednesday, July 4th:

Anatomy and Physiology.—Robert Mackenzie im Thurn and Arthur Hallowes, St. Bartholomew's Hospital; John Speechly Le Fevre, Samuel Smulian, George Delaval Walsh, and George Meredith Sanderson, London Hospital; Reginald Henry Hardwick and Thomas Andrew Chater, St. Thomas's Hospital; James Matthew O'Brien, Geoffry Smyth Oades, and John Bourdas, Charing Cross Hospital; Ernest Harrison Griffin, Cambridge University and Guy's Hospital; Percy Claude Vincent Bent, Herbert Douglas Smart, and Edgar Norman Jupp, Guy's Hospital; George Christian Blake Miéville, University College, London; Bertram Maughan Footner and William Joseph Edward Stuttaford, King's College, London; Frederic Rosenberg Harris and George Rowland Henderson Crozier, St. Mary's Hospital; and Charles Aubrey Godson, Hugh Basil Drake, and Leonard Erasmus Ellis, St. George's Hospital.

13 gentlemen were referred to their professional studies for three months.

Thursday, July 5th:

Anatomy and Physiology.—Bernard Beryl Riviere, Lauriston Leonard Winterbotham, Alan Hargrave Pinder, and Kenelm Digby Bell, St. Bartholomew's Hospital; Harold Harris Elborough Scatliff and Lionel Danyers Bailey, St. George's Hospital; Charles Herbert Romer Coltart, Westminster Hospital; William Percival Hingston and Peter Gifford Foulkes, Middlesex Hospital; Charles Robert Shattock, Frank Percival Hughes, Charles Frederick Fraser, and Francis William Fawssett, Guy's Hospital; George Russell Rew, Cyril Thomas Cheatle, and John Henry Napper, King's College, London; William George Cheatle and Russell Edwards Palmer, St. Mary's Hospital; Austin Clarence Dixon, James Stewart, and Edward John Henry Rudge, London Hospital; Harry Morgan Gilmour and Augustine Henry Hudson, St. Thomas's Hospital; James Vere Arkle, University of New Zealand and St. Thomas's Hospital; and George Archibald Bosson, University College, London.

Anatomy only.—Samuel Goodman, St. Thomas's Hospital.

Physiology only.—Clifford Greville Simms, Middlesex Hospital; Joseph Wilding, St. Bartholomew's Hospital; and Ernest John Hamilton Bowen, University College, Cardiff, and King's College, London.

Eight gentlemen were referred in both subjects, two in Anatomy only and two in Physiology only.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination held in July the following candidates passed in the subjects indicated:—

PART I.

Biology.—C. H. Osmond, Glasgow.

Chemistry.—A. G. Gamble, Leeds; J. E. Jones, Bristol; and O. F. W. Steele, Birmingham.
Materia Medica and Pharmacy.—B. F. Board, M. Foley, E. M. Handley, C. Kellgren, and A. M. Marval, Royal Free Hospital; J. E. Mondon, Glasgow; O. P. N. Pearn, Westminster Hospital; and E. Renouf, Royal Free Hospital.

PART II.

Anatomy.—J. J. Anning, Leeds; W. H. Bush, Guy's Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; W. L. Crabtree, Leeds; J. Cretin, Bristol; I. Griffith, London Hospital; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. A. Parker, St. Thomas's Hospital; W. W. Read, Guy's Hospital; Z. Rowlands and E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; A. W. D. Thomson, St. George's Hospital; and E. N. L. Wilson, Royal Free Hospital.
Physiology.—J. J. Anning, Leeds; F. D. S. Barker, Royal Free Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; J. Cretin, Bristol; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. Johnson, Guy's Hospital; A. R. McEnnery, Bristol; W. W. Read, Guy's Hospital; Z. Rowlands and E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; W. P. Taylor, Sheffield and Bristol; A. W. D. Thomson, St. George's Hospital; and E. N. L. Wilson, Royal Free Hospital.

A DAY OF REST FOR THE METROPOLITAN NURSES.—On Wednesday, June 27th, the nurses of the London hospitals and metropolitan nursing institutions spent a day in the country at Hertingfordbury. Advantage was taken of the occasion to help those who were present to realise in devotional exercise the spiritual character and dignity of the nurse's vocation as an essential part of the Christian ministry. The "Day" commenced with a celebration of the Holy Communion in the parish church. The Very Rev. the Dean of Windsor gave the address, taking for his text, "Rest in the Lord." Evening prayer was said by the rector at 3.30, the dean again giving the address, based upon the Psalmist's words, "Delight thyself in the Lord." Dinner and tea were provided, and by the kindness of the Earl and Countess Cowper the visitors were invited to inspect the picture-gallery at Panshanger.

WEST-LONDON MEDICO-CHIRURGICAL SOCIETY.—The following gentlemen have been elected as officers and members of council for 1900-1901. President: Dr. F. F. Schacht. Vice-Presidents: Dr. Seymour Taylor, Mr. Neville T. Wood, Dr. F. J. McCann, Dr. F. H. Low, Mr. C. Andrews, Dr. J. A. Coutts, Dr. J. Crombie, and Dr. S. A. Bontor. Council: Mr. F. R. Mallard, Mr. F. Savery, Mr. E. Bartlett, Dr. D. R. Pearson, Mr. G. E. Twynam, Mr. H. W. Chambers, Dr. G. D. Robinson, Mr. H. Webb, Dr. T. R. Atkinson, Mr. W. S. Fincham, Dr. A. Baldock, and Mr. M. H. Taylor. Treasurer: Mr. T. Gunton Alderton. Secretaries: Dr. G. P. Shuter and Dr. Leonard Dobson. Librarian: Mr. C. B. Keetley. Editor of Journal: Mr. H. Percy Dunn. Editorial Secretary of Journal: Mr. McAdam Eccles.

EPSOM COLLEGE.—The following are the results of recent examinations for entrance scholarships and exhibitions:—Scholarships and Council Exhibitioners: Elected to Senior Scholarships: A. Master and A. C. C. Parkinson. Elected to Junior Scholarships: C. E. Milner and A. Ll. Jones. Elected to Entrance Scholarships: G. T. Vivian (Messrs. Clarke and Crouch, Seaford), D. Rahilly (Fairleigh School, Weston-super-Mare), E. A. C. Fazan (Rose Hill School, Tunbridge Wells), and E. L. M. Emtage (private tuition). Elected to Council Exhibitions: R. Nankivell and J. H. A. Hynes.

THE WATER-SUPPLY OF BARRY, SOUTH WALES.—Owing to the rapid increase of the population of Barry the local authority last year decided to increase the water-supply by sinking another well at Biglis. The works are nearly completed and will increase the pumping capacity at Biglis from 500,000 gallons of water per day to more than twice that quantity. The cost has been about £6000.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.—At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary, Mr. R. N. Ramsay, reported that the number of students attending the school during this session was 1109.

MEDICAL MAGISTRATES.—Mr. J. Whitehead Bentley, L.R.C.P.Edin., M.R.C.S.Eng., of Stockport, and Mr. James Bernard Wall, L.R.C.P., L.R.C.S. Edin., of Coleshill, Warwickshire, have been appointed magistrates for the boroughs of Stockport and Coleshill respectively.

ON July 4th the new wards at the Devonport Workhouse Infirmary, erected at an outlay of £4000, were formally opened.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—We are asked to state that Licentiates of the College who desire to claim the advantage of the concession for the Fellowship, in recognition of the Royal visit, should apply before July 31st, 1900.

MR. WILLIAM H. CORFIELD, M.D. Oxon., F.R.C.P. Lond., Professor of Hygiene and Public Health, University College, London, has been elected a Foreign Corresponding Member of the Royal Academy of Medicine of Belgium.

IN MEMORIAM.—The treasurer of Queen's Hospital, Birmingham, has received a cheque for £1250 from Mrs. Poncia, Gough-road, Edgbaston, for the endowment of a bed in memory of her husband, the late Mr. John Poncia.

MR. PRIESTLEY SMITH, M.R.C.S. Eng., of Birmingham, has been elected as representative of the Faculty of Medicine on the council of the Birmingham University.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Proposed Extension of the Medical Act of 1858.

ON Friday, July 20th, General LAURIE, Member for Pembroke and Haverfordwest, will introduce a Bill into the House of Commons to extend the provisions of the Medical Act of 1858. The Bill is the outcome of the refusal of the War Office to accept the services of Canadian militia medical officers in the field in South Africa. In the first case brought to the knowledge of General Laurie, the surgeon of Montreal General Hospital, who also holds a commission as surgeon in one of the local militia regiments, was refused on the ground that it would be contrary to law to employ in the military service a medical man who was not registered under the Medical Act of 1858. Subsequently the Canadian Government offered a complete field hospital and it was refused on the same ground. General Laurie considers that the remedy for this state of things lies in a recognition in the Medical Acts of schools of medicine throughout the Empire which are recognised by their respective Governments and whose requirements come up to the standard established and maintained by the General Medical Council. This is what he proposes to do in his Bill.

HOUSE OF COMMONS.

TUESDAY, JULY 3RD.

The Inspection of Irish Hospitals.

Mr. PATRICK O'BRIEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that union general hospitals and union fever hospitals in Ireland were inspected and reported upon by lay inspectors, and could he state what qualifications these gentlemen possessed for the discharge of this duty; was he aware that the Irish Workhouse Reform Association and the Irish Medical Association recommended that those hospitals should be inspected by professional men; and would he see that effect was given to those recommendations?—Mr. GERALD BALFOUR replied: The inspection of workhouses in Ireland, as in England, is under the general inspectors who report on the state of the buildings, the cleanliness, order, discipline, the keeping of the books, the finance, and the compliance with the general regulations by the several officers in every department, including the hospital wards. It would not be practicable to exclude these wards from the general inspectors' authority, but when any questions as to medical treatment arise, or where any inquiry has to be held wherein medical knowledge is required, a medical inspector makes a special inspection or holds any inquiry on oath that may be necessary. The question of assigning this work to a special medical inspector appointed for the purpose is under consideration.

Hospital Staff at Shorncliffe Camp.

Captain NORTON asked the Under Secretary of State for War if he was aware that at an inquest held on Saturday last at Shorncliffe Camp on Sergeant Wilmshurst, of the Sussex Regiment, it was shown in evidence that there was not a single orderly of the Army Medical Corps in the hospital, and that Wilmshurst, when taken to the hospital in a fit, died before a doctor could be found; and in view of the comments made by the jury at the inquest whether he could say what steps, if any, were now being taken to secure without delay an adequate staff for our military hospitals both at home and abroad.—Mr. WYNDHAM replied: No information has been received in the War Office of this incident, but inquiry will be made. The staff of the hospital consists of a sergeant-major, a sergeant, two corporals, and 14 orderlies of the Army Medical Corps, besides regimental soldiers.

Widal's Method of Diagnosis.

Dr. FARQUHARSON asked the Under Secretary of State for War whether he would state what steps were taken by the War Office to provide means for the application of the serum test (Widal's method) to the diagnosis of doubtful cases of enteric fever in general hospitals in South Africa, whether he was aware that this means of making an early diagnosis was largely used by hospitals and local sanitary authorities,

and whether he would take immediate steps to provide every general hospital in South Africa with the skilled assistance and simple appliances necessary in these cases in which such provision had not yet been made?—Mr. WYNDHAM replied: No special steps have been taken beyond the general training of medical officers in this method of diagnosis. The test is being applied in South Africa and army medical officers are quite capable of carrying it out.

THURSDAY, JULY 5TH.

Volunteer Surgeons in Camp.

Sir HOWARD VINCENT asked the Under Secretary of State for War if a decision had yet been taken to facilitate the attendance of volunteer surgeons in camp and to enable the pay and allowances of one surgeon to be divided according to the attendance their private practice enabled them to give.—Mr. WYNDHAM replied: Yes, sir; the Secretary of State has decided to make this concession to the medical officers of volunteer corps.

Death under Anæsthetics.

Mr. MACALEESE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could give any particulars to the House regarding the case of a man named George Dover who died at the Belfast Royal Hospital on June 7th under an anæsthetic, and would he explain why no inquest was held in this case to ascertain if the anæsthetic which proved fatal had been properly administered, while on the same day an inquest was held on another hospital case in which the jury returned a verdict of death from natural causes; was he aware that the town clerk of Belfast, at the instance of the Finance Committee of the City Council, asked for an explanation of this matter from the coroner who replied that the only person entitled to demand explanations from him was the Lord Chancellor; and would he take steps to draw the attention of the Lord Chancellor to this case?—Mr. GERALD BALFOUR replied: I understand that the coroner, in the exercise of the discretion vested in him, decided that it was unnecessary to hold an inquest in the case of George Dover, whilst in the second case referred to he found it imperatively necessary to hold an inquest. It is open to any of the parties interested to bring the action of the coroner under the notice of the Lord Chancellor. He is not an officer of the Executive, and the Government see no reason for intervening as suggested in the last paragraph of the question.

Hospital Orderlies in South Africa.

In reply to a question on this subject addressed to him by Sir WALTER FOSTER Mr. WYNDHAM said: The number of hospital orderlies employed in South Africa were as follows:—March 17th, 2936, including 560 St. John Ambulance Brigade; April 21st, 3739, including 766 St. John Ambulance Brigade, 84 Militia Medical Staff Corps, and 361 Volunteers; May 19th, 3943, including 986 St. John Ambulance Brigade, 91 Militia Medical Staff Corps, and 492 Volunteers. This does not include the staff of such hospitals as the Yeomanry Hospital, Portland Hospital, &c., the subordinate male staff of which numbers 519, but of which it is not known how many are employed as orderlies. The returns of medical staff raised locally in addition to the above are not furnished to the War Office, but 1200 stretcher bearers are known to have been raised in Natal, thereby releasing orderlies of the Royal Army Medical Corps for duty in the hospitals.

The Treatment of the Sick and Wounded in South Africa.

Mr. BALFOUR announced that it was proposed to appoint a commission consisting of Dr. Church, President of the Royal College of Physicians of London; Dr. Daniel John Cunningham, Professor of Anatomy and Surgery in Trinity College, Dublin; and Lord Justice Romer, to report on the arrangements for the care and treatment of the sick and wounded during the South African campaign.—Mr. DILLON asked whether the Government would appoint an independent commission to inquire as to the responsibility of the War Office in connexion with the treatment of the sick and wounded in South Africa and into the organisation and present condition of the Army Medical Department, such commission to sit immediately and conduct its inquiry independently of the commission which it is proposed to send to South Africa.—Mr. BALFOUR replied that two independent and simultaneous commissions whose duties would overlap seemed to him to be very objectionable.

Later in the day there was a long debate on the composition of, and the scope of the reference to, the proposed commission. Many members expressed a strong desire to have the terms of reference extended and the number of commissioners enlarged and some took exception to medical men having a preponderating voice in an inquiry where questions of transport and military organisation were so largely involved and in connexion with which there had been an attack upon the Army Medical Department. At the close of the debate Mr. BALFOUR, while insisting on the superiority of the Government proposal and saying that in his opinion the House was wrong, said he must yield to the opinions expressed and do his best to consult with his colleagues as to how they could increase the number of commissioners from three to five. He declined, however, to enlarge the scope of the reference.

FRIDAY, JULY 6TH.

Uncertified Deaths in Scotland.

In Committee of Supply on the Scottish Estimates Mr. WEIR and Sir CHARLES CAMERON called attention to the large number of uncertified deaths in the Highlands and others of the remoter parts of Scotland. The latter suggested that in his return the Registrar-General should record separately the certified and the uncertified deaths, so that it might be seen whether any progress was being made in the matter of certification. He reminded the House that the Select Committee of a few years ago found that in some of the western parts of Scotland 50 per cent. of the deaths were uncertified by a medical man and that in spite of this state of things the recommendations of the Committee had not been carried into effect.—The LORD ADVOCATE, by way of reply, said he would place Sir Charles Cameron's suggestion before the Registrar-General.—Mr. WEIR protested against this reply as altogether inadequate and unsatisfactory. In his own constituency of Ross and Cromarty there were hundreds of uncertified deaths every year—a state of things which he regarded as a public scandal. By way of emphasising his protest Mr. WEIR moved a reduction in the vote under the review.

The Use of Glycerinated Calf Lymph in Scotland.

On the vote for the Local Government Board for Scotland Sir CHARLES CAMERON drew attention to the small proportion of glycerinated calf lymph distributed in Scotland as compared with the proportion distributed in England.—The LORD ADVOCATE replied that up to the present the advantages of the lymph had not been brought home to the people so clearly in Scotland as in England. He was glad, however, to be able to assure the hon. member that the demand for it was steadily increasing, and he thought the hon. member and others interested might feel certain that this steady increase would be maintained.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ABERCROMBIE, PETER H., M.D., C.M., has been appointed Assistant Surgeon to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

ASTIN, WILSON, M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Loughton Urban District.

BARFORD, ARTHUR, M.D., has been appointed Assistant Anæsthetist to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

BEAUMONT, A. W., B.A. Camb., M.D. Dubl., has been re-appointed Medical Officer of Health by the East Ham Urban Council.

BELLAMY, J. H., junr., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Resident Medical Officer at the Workhouse by the Sheffield Board of Guardians.

BROWNE, G. H., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Blaina Sanitary District of the Tredegar Union.

BURGESS, G., M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Great Driffield Urban Sanitary District, vice R. Wood, resigned.

GOLDSMITH, G. H., M.B. Cantab., has been appointed Medical Officer to the Bedford Union Workhouse.

GRAY, W. G., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Holsworthy Urban Sanitary District.

HOWELLS, W., M.B., C.M. Glasg., has been appointed Medical Officer of the Workhouse, Brecknock Union, vice W. M. Parham, resigned.

HULBERT, E. B., M.D. Durh., M.R.C.S., L.R.C.P., has been appointed Second Assistant Medical Officer to the St. Marylebone Infirmary, North Kensington, W., vice E. Worley, resigned.

HUTCHENS, H. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent of the Plague Hospital, Brisbane, Queensland.

LEONARD, NORMAN, has been appointed Analyst for the Borough of Northampton, vice Messrs. Swete and Ross.

MCFARLAND, B., M.D., M.Ch. Irel., has been re-appointed Medical Officer for the Lincoln Workhouse.

MCWALTER, J. C., L.R.C.P., L.R.C.S. Irel., has been elected a Fellow of the Royal Institute of Public Health.

MORICE, C. G. F., M.D. Brux., F.R.C.S. Eng., has been appointed Sanitary Commissioner for Westland and Buller, New Zealand.

NOURSE, W. J. C., F.R.C.S. Edin., has been appointed Assistant Surgeon to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

PECK, H., M.D. Edin., D.P.H. Camb., has been re-appointed Medical Officer of Health by the Chesterfield Town Council.

PLATT, J. E., M.S. Lond., F.R.C.S. has been appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary.

WEAVER, J. J., M.R.C.S., has been appointed Medical Officer of Health for the Borough of Southport, vice H. H. Vernon, deceased.

WEBSTER, F. J., M.R.C.S., has been appointed Medical Officer of Health for the Vaynor and Penderyn Rural Sanitary District, vice T. J. Dyke, deceased.

WEIGHTMAN, E. J., M.B., C.M. Edin., has been appointed Medical Officer of the Workhouse and Children's Homes, Middlesbrough Union, vice L. G. Davies, resigned.

WILLIAMS, W. R. E., M.B., M.R.C.S., has been appointed Assistant Resident Medical Officer to the Mill-road Infirmary, Liverpool.

WHITAKER, E. T., M.B., C.M. Edin., B.Sc., D.P.H. Camb., has been appointed Medical Officer of Health for the Wem Urban Sanitary District.

WOODFORD, E. V. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 1 Sanitary District and the Workhouse of the Abingdon Union.

WYNNE, WALTER, M.B., C.M. Edin., has been appointed Medical Officer of Health by the Rye Rural District Council.

Vacancies.

For further information regarding each vacancy reference should made to the advertisement (see Index).

ALTON CAMP. — HOSPITAL AND CONVALESCENT CAMP FOR SICK, WOUNDED, AND CONVALESCENT SOLDIERS (now in course of erection). —Positions on the Medical and Surgical Staff. Applications in the first instance by post, addressed Manager, Absent-minded Beggar Relief Corps, Room 44, Harmsworth-buildings, Tallis-street, London, E.C.

BEDFORD COUNTY HOSPITAL.—Assistant House Physician. Salary £25 for six months, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOROUGH OF BOOTLE HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Superintendent, unmarried. Salary £120 per annum, with board, washing, and apartments at the hospital. Apply to the Chairman of the Health Committee, Town Hall, Bootle.

BRADFORD ROYAL INFIRMARY.—House Physician for 12 months, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY (not provident).—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c. Also Locum Tenens for one month or more. Terms £3 3s. and all found, with second-class return fare.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125 per annum, with furnished apartments, board, attendance, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30 for that period, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon. Salary of House Surgeon £100 per annum, and Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for 12 months, unmarried. Salary £60, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Physician for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the hospital.

GROVE HALL ASYLUM, Bow, London, E.—Assistant Medical Officers. Salary £175 per annum for Senior and £120 per annum for Junior, with board, furnished apartments, attendance, and washing in each case.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer at the Asylum, Willerby. Salary £120 per annum, rising £5 per annum to £150, with board, apartments, and washing. Applications to the Clerk to the Committee of Visitors, Town Hall, Hull.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also Resident Medical Officer for 12 months. Salary £120, with board, residence, and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent—House Surgeon. Salary £120 per annum, increasing conditionally, by £10 a year, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising by annual increments of £10 to £175, with furnished apartments in the Asylum, board, and washing. Applications to the Clerk to the Visiting Committee, Municipal Buildings, Plymouth.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL INFIRMARY FOR THE SICK AND LAME POOR OF THE COUNTIES OF NEWCASTLE-UPON-TYNE, NORTHUMBERLAND, AND DURHAM.—Honorary Assistant Surgeon. Applications to the Secretary, Royal Infirmary, Newcastle-upon-Tyne.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—House Surgeon for 12 months. Salary £90, with residence, board, and washing. Also Assistant House Surgeon for six months. Salary at the rate of £75, with residence, board, and washing.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

UNIVERSITY COLLEGE, Cardiff.—Demonstrator and Assistant Lecturer in Anatomy, and Demonstrator and Assistant Lecturer in Physiology. Salary in each case, £120.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £80, rising £10 annually to £100, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

AUDEN.—On July 5th, at Bootham, York, Constance, the wife of George A. Auden, M.A., M.D. Cantab., of a son.

DONALD.—On July 4th, at Platt Abbey, Rusholme, Manchester, the wife of Archibald Donald, M.D., of a daughter.

FACEY.—On July 7th, at The Lodge, Maldon, Essex, the wife of W. E. Facey, B.A., M.B. Cantab., of a son.

GUTHRIE.—On July 2nd, at Belmont, Tunbridge Wells, the wife of T. C. Guthrie, M.B., of a son.

MILLS.—On July 6th, at Hill-street, Haverfordwest, the wife of Yarnold Mills, M.B. Lond., F.R.C.S. Eng., of a daughter.

WARD.—On July 9th, at Museum-street, Ipswich, the wife of Francis Ward, M.D., of a son.

WHITFIELD.—On July 6th, at Upper Berkeley-street, W., the wife of Arthur Whitfield, M.D., M.R.C.P., of a daughter.

MARRIAGES.

ADDISON—MOTTRAM.—On July 6th, at St. Bartholomew's, Norwich, Eldred Arthur Addison, M.R.C.S., L.R.C.P., of Coddenham, Suffolk, to Marion Watson, younger daughter of Alfred Mottram, Heigham Hall, Norwich.

BIRLEY—STOWELL.—On July 5th, at the parish church, Chorley, Hugh Kennedy Birley, M.D., of Weaste, Manchester, to Ellin Cecilia Stowell.

DOWDEN—KERANS.—On July 9th, at St. John's, Paddington, Richard Dowden, M.D., to Jessie Allen Kerans, second daughter of T. G. Kerans, of Southwick-place, Hyde-park-square, London.

WHITE—FRASER.—On July 3rd, at St. Michael's Church, Blackheath-park, Finch White, M.R.C.S., L.R.C.P., son of Colonel Finch White, late 85th Light Infantry, to Annie Violet, second daughter of the late James Fraser, of Newfield, Blackheath-park, S.E.

DEATHS.

HOWARD.—On June 22nd, at Elberon, New Jersey, Benjamin D. Howard, M.A., M.D., M.R.C.S., F.R.C.S.E., of New York, aged 64 years.

JAMES.—On July 9th, at 62, Comeragh-road, West Kensington, Henry James, formerly of Weybridge, Surrey, F.R.C.S., aged 83 years. No flowers by desire.

SQUIRE.—On July 6th, at Maitland-park-villas, Haverstock-hill, N.W., Robert Hemington Squire, B.A., M.R.C.S., aged 57 years.

STEELE.—On the 10th inst., at 33, Via S. Gallo, Florence, after seven years' painful illness unmurmuringly borne, Sarah Louisa, wife of J. P. Steele, B.A., M.D. Edin., and younger daughter of the late Rev. William and Lady Louisa Augusta Anne le Poer Trench.

WATERHOUSE.—On July 10th, at his residence, Croxteth-grove, Sefton-park, Liverpool, Charles Henry Waterhouse, M.D.

N.B. A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"THE HONOUR AND DIGNITY OF THE MEDICAL PROFESSION."

OUR correspondent whose letter we printed last week thus continues his jeremiad:—

"Shall I turn to our great hospitals for relief from this intolerable monotony of unwholesome competition which is disastrous in the long run not only for our profession but also for the public? The other day I heard of a tradesman of undoubted veracity in the City of London who was advised to see a distinguished dentist at the West-end who holds the appointment of dental surgeon to one of our large medical schools in London. The fee which this dentist demanded was 30 guineas. When the patient said that this fee was rather more than he expected the dentist at once replied, 'Well, if you do not mind going to *my* hospital *my* assistant will extract five of your teeth, this will save five guineas and reduce my fee to 25 guineas only.' This incident, for which I can vouch, leads me to ask a few more questions. Why should the junior staff of our hospitals work for nothing and their seniors take the credit, and what is more the pay as well, if any? Why should the General Medical Council adjudicate that a medical man who covers an unqualified assistant at a midwifery case is guilty of infamous conduct in a professional respect, although he may be well aware of the abilities of his assistant, as well as being morally, legally, and pecuniarily responsible for the management and result of the case, and then immediately afterwards stultify themselves by bolstering up a Bill to make midwifery conducted by a nurse a legal act? Will a medical man be judged guilty of infamous conduct who covers one of these legal Gamps? Why should the Council of the Royal Colleges of Physicians and Surgeons support the Midwives Bill after selling their diplomas and licences to their members and licentiates and promising to protect them? Most of the censors of the Royal College of Physicians of London do not attend any midwifery and the members of the Council of the Royal College of Surgeons of England especially are debarred from attending any by the tenure of their office as surgeons to the large hospitals. Therefore what can these know of the requirements of the public or the profession so far as midwifery is concerned? Why should the just rights of the juniors in the profession be undermined and bartered away by their seniors? Why do not the heads of our profession constitute themselves as special examining bodies of chiropodists, manicurists, masseurs, and the like? Why do we find the names of medical men on the self-constituted boards of examiners of spectacle-makers, plumbers, &c.? We shall soon have them examiners of the colleges of boot and shoemakers, sanitary clothiers, and wooden leg makers, and this, too, with quite as much reason. Quite recently there has been an appointment of parish infirmary doctor offered for competition to women. There were some dozen candidates for the appointment at the munificent wages of less than £2 a week. Some of these women a few years ago pleaded that they wanted to enter the medical profession in order to attend their suffering sisters out in India. Does this wholesale competition amongst themselves for an appointment to attend paupers in London prove that the way to India is through the workhouse? Why should a medical man or woman accept less remuneration than a professional nurse, or the quill-driver who wrote out the advertisement, or the compositor who sets up the type, less almost than the very printer's devil, now almost extinct, who applies the necessary ink. I was dining out a short time ago when one of the guests said that he had to attend upon a jury, and this was exceedingly annoying and inconvenient, when another guest who did not know me intimately said: 'Why not get a medical certificate?' at the same time adding, '*Any* doctor will give you one for a shilling!' Shall we sigh and say, 'Alack and alas! is it not true?'"

AXIS TRACTION FORCEPS.

To the Editors of THE LANCET.

SIRS,—Would you, or some of your readers, oblige me by advising me as to the best form of axis traction forceps to purchase? Is there any real advantage in having Neville's arrangement attached to the ordinary Barnes-Simpson?

I am, Sirs, yours faithfully,

July 11th, 1900. A COUNTRY SURGEON.

RAILWAY SANITARY ARRANGEMENTS.

A CORRESPONDENT writes:—"Are the water-closet and lavatory arrangements of corridor trains in the interests of public health? It seems to me that they are not. I have to-day travelled 250 odd miles in one such train, not overcrowded, and I had opportunity of noting that from one carriage alone that the visits to the lavatory were numerous, and some were made while the train was at a standstill in important stations. At the end of the journey myself and fellow-passengers, as is generally the case in summer, were very dusty. This dust was from the permanent way and carriage-fittings, I assume, as in this case the water-closet is usually open to deliver direct on to the ground. Thus the permanent way has become a receptacle for years past of human excrement which goes straight on to the line except so much as is driven by the impetus of the wind from the speed of the train on to its under-floor fittings, &c. I strongly suspect, if my surmise is right as to the general absence of receptacles, that if the under-floors, bearers, and wheels of the carriage were submitted to a careful examination they would reveal revelling myriads of microbes ready for revenge. Just fancy the scores of corridor trains which fly over our main trunk lines every day and the hundreds of people in all conditions of health, or otherwise, who use this modern 'convenience.' Surely the permanent ways, even in the stations, and certainly along the whole course of the line must be seething bacterial beds. It occurs to me that some arrangement might be made which, while meeting the needs of long-journey passengers in fast trains, might prevent this broadcast sowing of filth and disease. It is not as though the permanent way were subject to the influence of the plough on a friable soil, but this bacterial distribution falls on to hard rubble to be nourished by the sun and distributed by the wind. It would be an interesting inquiry whether platelayers, &c., and those who dwell in the immediate proximity of railways have any special record in the matter of disease. I may be quite wrong in my assumption that the absence of receptacles is general, and that if so there is death in the carriages. I think, however, you would contribute to the solution of what seems to me a most important national sanitary question if you would open your columns to the discussion of it."

WHO IS MR. W. HARTLEY AUSTIN?

Two correspondents write asking who is Mr. W. Hartley Austin, from whom they have received the following circular:—

93, Queen Victoria-street, London, E.C., 27th June, 1900.

DEAR SIR,—A large number of prominent gentlemen in your profession have recently been good enough to grant me a brief interview in order that I might explain an entirely new and most interesting investment, specially suitable for a medical man and guaranteed by a wealthy, old-established company with funds exceeding £2,000,000 sterling.

This investment is practically the *only* one under which you can take advantage of the extraordinary rapidity with which money accumulates at *compound* interest. You are, of course, aware that even a small sum will (if set aside each year and allowed to accumulate at *compound* interest) mount with great rapidity to a large total, while the ordinary investment at simple interest does not increase at all.

The investment I refer to enables you to set aside a moderate amount each year (from a £5 note upwards), to accumulate same at *compound* interest for a number of years, drawing the result either in cash or as a yearly addition to your income. Should you unfortunately *die* while the money is accumulating at compound interest your family or other dependents are provided for by life insurance *without further charge*.

I venture to ask if you also would grant me the favour of a few moments' conversation to bring this matter under your notice. If so, I feel confident you would be much interested in what I have to say, and I should not encroach in any way upon your valuable time.

Thanking you in anticipation of your returning the enclosed stamped postcard,

I am, yours faithfully,

W. HARTLEY AUSTIN.

The circular encloses a stamped card to be signed by the recipient when making appointments with Mr. Austin, who clearly saves his correspondents as much trouble as possible. We have not the least idea who Mr. Austin is. We do not follow his arguments with regard to the difference between simple and compound interest. Presumably, "most prominent gentlemen" in the medical profession know that money accumulating at compound interest increases more rapidly than money accumulating at simple interest; but no accumulation will take place under either system if all the interest is annually spent, while an "ordinary investment at simple interest" increases by the amount of that simple interest if the simple interest is not spent.

We recommend any of our readers who have received this circular to ask Mr. Austin for the usual banker's reference before entrusting him with money, if not before seeing him. An investment that is "guaranteed by a wealthy, old-established company with funds exceeding £2,000,000 sterling" should have no difficulty in furnishing undeniable credentials.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—"If they hear not Moses and the Prophets," &c., and so I say, if after all that has been advanced against the rule-of-thumb method of administration—no matter by whom the chloroform vapour be administered—then to say more is useless. Nearly every argument has been examined and good and sufficient reasons given by Dr. Edmunds for urging the adoption of the Krohne inhaler, and to designate such an exact method of administering chloroform vapour "the latest fad" in the face of such unanswerable evidence is a curious perversion of

the intellect. I am the last to deny the wonderful safety with which chloroform is administered by very many able men like Dr. Marshall, but the worst of it is that all who administer choloroform can hardly be classed in that list, otherwise we certainly should not have recorded the number of deaths that now unhappily obtain. Dr. Marshall may also be equally competent to dispense strychnine without measuring, but would he be justified in so doing? If not, how about the less competent? All I therefore venture to urge in connexion with this important question is that the safest mode of administering chloroform vapour should be worked out and adopted; that, in the hands of any ordinary practitioner with common sense, could hardly ever result in death. This, Sirs, I venture to think, in the absence of positive proof to the contrary, may be claimed for the "Krohne Inhaler, 1900."

Thanking Dr. Marshall for his reply,

I am, Sirs, yours faithfully,

C. J. HARRIS, M.R.C.S. Eng., &c.

Kilburn Priory, N.W., July 2nd, 1900.

A PROLIFIC FAMILY.

A PARAGRAPH in the June number of the *Maryland Medical Journal* states that among recent returns of births for the State of Maryland was a birth certificate sent by Dr. J. V. Wallace of Chesapeake City, who reported the birth on Feb. 23rd, 1900, of Warren O——. The grandmother and great-grandmother were present at the birth, while the great-great-grandmother was in a house in the neighbourhood. From this last-named lady, now only 72 years of age, there have sprung 11 children, of whom eight are living, and 50 grandchildren, of whom 18 are living. There are 22 great-grandchildren living, and there have been two great-great-grandchildren, one being the child Warren O——. The record does not give the number of great-grandchildren dead, but the figures given show that there have descended from this very superior mother 85 children, of whom 63 are living. The number of plural births is not given, but the oldest daughter, now 52 years old, had twins four times. This is a very remarkable record.

THE DUTIES OF A PUBLIC VACCINATOR.

To the Editors of THE LANCET.

SIRS,—As a subscriber to THE LANCET I shall be very glad if you will kindly answer the following question. I am a public vaccinator. Several persons in my district are summoned to appear before the magistrate for refusing to have their children vaccinated. I have subpœnas to attend the court and give evidence as to vaccination notices, &c. I want to know whether under the present Vaccination Act it does not come under the vaccination officer's duty to give all the evidence necessary to convict without the public vaccinator appearing in court. Also whether, in case I am bound to appear, I am entitled to a fee (half a guinea) for each case.

I am, Sirs, yours faithfully,

July 5th, 1900. X.

*** The duty of taking proceedings for the enforcement of the law devolves upon the vaccination officer. (See Schedule 4 of the Vaccination Act of 1898.) If, however, our correspondent has been subpœnaed he must attend. We should say that he is entitled to a fee for each case, but perhaps it would be as well for him to consult his legal adviser upon that point.—ED. L.

LIVING LARVÆ IN THE EAR.

To the Editors of THE LANCET.

SIRS,—The following, to myself at least, is an unusual experience and as a case of myiosis may be of interest. To-day a man consulted me with the history that some 10 hours previously he had been awakened from sleep by an unusual sensation in his left ear. He described it "as if he had wheels in his ear" and soon began to suffer pain and discomfort that increased to such an extent that he could bear it no longer and came to seek advice. On examining with a speculum and on inquiry I found that he had suffered many years from middle-ear disease. There were great swelling and inflammation of the tympanum and surrounding parts. On syringing out the ear with water I was astonished to see an animal some one-eighth of an inch in length make its appearance, and on further douching others of a like kind were washed out. I continued syringing till no more appeared and counted 14 larvæ, all alive. I finished syringing the ear with sol. hyd. perchlor., and the patient went away feeling quite relieved and free from pain. I presume these were the larvæ of a species of creophila.—I am, Sirs, yours faithfully,

D. J. DRAKE, M.R.C.S. Eng., L.R.C.P. Lond.,

June 21st, 1900. Medical Officer to the Ray Copper Co., Arizona.

BOOKS ON PHYSIOLOGICAL CHEMISTRY.

To the Editors of THE LANCET.

SIRS,—Will you kindly recommend a reliable work solely upon physiological chemistry? "A Text-book of Physiological Chemistry," by Olof Hammarsten, published for Wiley and Sons by Chapman and Hall, has been recommended. I am, Sirs, yours faithfully,

July 9th, 1900. STUDENT.

*** The book mentioned is a good one. Another admirable work is Halliburton's "Text-book of Chemical Physiology and Pathology," Longmans, Green, and Co. The most complete treatise which, however, is only suitable for advanced students, is Gamgee's "Physiological Chemistry," published by Macmillan and Co.—ED. L.

"AN APPEAL TO BROTHER PRACTITIONERS."

To the Editors of THE LANCET.

SIRS,—Did it ever strike your correspondent, "M.D.," that his pain in his hip-joint might be a neurosis—neuralgia—which, in my experience, is much more developed by climatic changes than "rheumatism," the latter also usually being improved by exercise? All "gout" is atonic nowadays, often showing itself as neuralgia pure and simple, and one constantly finds people calling a pain, especially if near a joint, "rheumatism," and considering the treatment for neuralgia and rheumatism is essentially opposite the mistake is a fatal one as regards curing the pain. I believe "M.D." would not find it to be a dangerous experiment were he to try a tumbler of Guinness's stout at luncheon and dinner—say, for a week—then alternate with the same quantity of champagne. Frequent gentle exercise with light dumb-bells (three pounds each) and a Turkish bath twice a week before dinner might in addition prove useful.

I am, Sirs, yours faithfully,

July 9th, 1900. F. ORTON, M.D. Dub.

"THE TREATMENT OF MORPHINOMANIA."

To the Editors of THE LANCET.

SIRS,—In reply to your correspondent's inquiry in THE LANCET of July 7th I had recently occasion to write to Dr. Emmerich of Baden-Baden *re* his treatment for morphinomania. Dr. Emmerich informed me that the articles he employs are already known pharmacopœial preparations, that he does not provide his material for general use, but retains it solely for his "Heilanstalt" (health resort). I enclose a pamphlet issued by Dr. Emmerich but regret that I cannot supply your correspondent with papers written by Dr. E. I had two which treated on "Morphinismus." From one I abstracted the following note: "The substitute (for morphia) is stated to be a plant decoction without a trace of narcotic, to which a considerable quantity of bodies containing tannin has been added, producing a mixture of acrid taste. This mixture precipitates morphia completely from its solutions."

I am, Sirs, yours faithfully,

W. HARRISON MARTINDALE.

New Cavendish-street, W., July 9th, 1900.

"A GOOD BICYCLE SADDLE."

SEVERAL correspondents have written in reply to our correspondent "B" in THE LANCET of July 7th, with regard to a bicycle saddle that does not chafe the thighs. Two strongly recommend the "Esmond" saddle, which is so suspended that it has a forward and lateral motion, the saddle moving with the rider. "There is no chafing and perineal pressure is almost abolished," says one of the writers. Another correspondent recommends the "Christie" saddle. Brook's B 90 receives two testimonials, while Dr. Churchward's patent hygienic saddle is said by the inventor not to produce "perineal pressure or friction" and receives the encomiums of an independent rider. Dr. Churchward, whose address is 206, Selhurst-road, South Norwood, writes to say that he will be willing to let any member of the profession have one of his saddles for approval if they will apply to him. One gentleman prefers a lady's saddle and finds the one that suits him best to be a Lycett pneumatic. From the correspondence we extract a hint that may prove useful to riders generally—namely, that by painting a saddle underneath twice a week with soft soap and paraffin the leather will become as soft as a glove.

A. A. B.—1. The *Ophthalmic Record*. 2. The Royal Eye Hospital, Southwark, or the Royal Westminster Ophthalmic Hospital, King William-street, Strand. 3. Swanzy's "Handbook of Diseases of the Eye" (Lewis, 12*s.* 6*d.*) for a general knowledge, or Professor Fuchs's "Text-book of Ophthalmology," translated by A. Duane (Lewis, 21*s.*), for more advanced studies.

Scandal.—So long as the tenants are orderly and well conducted—and our correspondent says that he has never seen anything to the contrary—we presume he can do nothing, but of course it depends upon the terms of the lease. Our correspondent is not the leaseholder. If he does not like the house he can leave it.

During the week marked copies of the following newspapers have been received: *Coventry Standard, Leeds Mercury, Bolton Journal, Sun (London), South Wales News, Southampton Observer, Nottingham Daily Guardian, Blackburn Weekly Standard, Liverpool Daily Post, Manchester Guardian, Bradford Observer, Birmingham Daily Post, Cornishman, Dundee Advertiser, Sussex Daily News, Oldbury Weekly News, Pioneer Mail, Times of India, Architect, Scotsman, Citizen, Builder, Yorkshire Post, Bristol Mercury, Newbury Weekly News, African Times, Devon Gazette, Umpire, British Invention, Kentish Mercury, Derby Mercury, Local Government Chronicle, Bristol Times and Mirror, Hertfordshire Mercury, City Press, Reading Mercury, Catholic Times, Surrey Advertiser, Local Government Journal, Brisbane Courier, Clifton Chronicle, The Telegraph (Brisbane), Nature, Justice, Chatham News, Blackpool Gazette, Leamington News, Dewsbury Reporter, Brighouse News Ashton Herald, Exmouth Chronicle, Goole Weekly Herald, Kettering Guardian, Nuneaton Observer, &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 12th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 6	29·93	N.W.	...	115	70	58	56	61	Cloudy
,, 7	30·08	N.W.	...	115	66	54	53	58	Cloudy
,, 8	30·23	N.W.	...	108	63	51	53	60	Cloudy
,, 9	30·21	S.W.	...	112	73	58	56	61	Cloudy
,, 10	30·13	S.W.	...	125	88	55	57	62	Fine
,, 11	29·97	SSW	...	129	89	61	64	71	Fine
,, 12	29·93	S.E.	...	122	82	65	65	69	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

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SATURDAY (21st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Davis: Nasal Obstruction. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. A. Baldwin: The Importance of Methodical Physical Examination.

TUESDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.)—3.30 P.M. Dr. Batten: Subacute Combined Degeneration of the Spinal Cord.

WEDNESDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. M. Robson: Clinical Lecture:—Chronic Pancreatitis.

THURSDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

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THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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Two Clinical Lectures
ON
MALARIA AND THE MALARIAL PARASITE.

Delivered at the Medical Graduates' College and Polyclinic,

BY PATRICK MANSON, M.D., LL.D. ABERD., F.R.C.P. LOND., C.M.G.,

LECTURER ON TROPICAL DISEASES AT ST. GEORGE'S HOSPITAL AND CHARING-CROSS HOSPITAL MEDICAL SCHOOLS AND AT THE LONDON SCHOOL OF TROPICAL MEDICINE.

LECTURE II.[1]

Delivered on Feb. 28th, 1900.

GENTLEMEN,—The morbid anatomy of malaria is fairly constant, consisting principally of enlargement of the spleen, congestion of the liver and portal circulation, and pigmentation of the spleen, liver, brain, and many other viscera. The microscopic anatomy, too, is fairly constant. In sections of all the organs mentioned, in the vessels in every instance, and, in the case of the spleen and bone-marrow, in the parenchyma also, there is to be found a remarkable deposit of the peculiar pigment which is so characteristic of malaria. This pigmentation arises from (*a*) the pigment belonging to and contained in living parasites—those little aggregations of pigment which I described as a feature in all mature malaria parasites—and (*b*) from the same pigment included in leucocytes, in endothelium, and, in the case of the spleen and bone-marrow, in the cells of the parenchyma. If you study sections of brain from cases of fatal malarial fever you will often see the capillaries distinctly outlined by the pigmented malaria organisms which they contain. The whole of the lumen of the capillary network is occupied by corpuscles containing little pigment masses. By carefully focussing you will see that each pigment mass is included in a red blood-corpuscle. Sometimes about the centre of a corpuscle you will see the mass of black pigment and surrounding this a body which you may be able to resolve into a cluster of minute sporules. This crowding of the vessels of the brain with parasites affords ample explanation of many of the phenomena of that type of malaria known as pernicious cerebral malaria. In sections of liver you will see a similar arrangement—pigmented parasites, and, much more abundantly than in the case of the brain, masses of pigment in leucocytes and here and there in endothelium. In the case of the spleen in one of the preparations which I show this afternoon you can see, besides the small parasites, each with its little mass of melanin in the capillaries, and besides small pigment-laden splenic cells, huge cells filled apparently with large block-like masses as of charcoal. The bone-marrow specimen exhibits similar appearances. Like the spleen, it contains the malarial pigment outside as well as inside the vessels. In the preparation of mesentery also you can trace a delicate capillary dotted here and there with pigmented sporulating parasites. In chronic malarial conditions you have secondary changes, fibrotic and so forth. These, of course, are not peculiar to malarial disease.

In addition to the black pigment, particularly in those cases of malaria which are accompanied with extensive rapid destruction of blood-corpuscles, you will find another type of pigment—a yellow pigment. This pigment is present in all conditions, accompanied by acute blood destruction. It is not peculiar to malaria; it is found in the hæmolysis attending extensive burns, in poisoning by chlorate of potash or arseniuretted hydrogen, in paroxysmal hæmoglobinuria, and so forth. This pigment is deposited hæmoglobin.

Another and important feature in the pathological anatomy of malaria, and one which you will discover by a careful examination of the blood in the living subject, is anæmia—an intense and, in acute cases, generally a rapidly advancing anæmia. If you examine a patient from time to time after successive malarial paroxysms you will find that the drop in the number of blood-corpuscles per cubic millimetre is very great indeed. In the course of a severe untreated attack the patient is reduced to a condition of intense pallor with a rapidity hardly equalled in any other disease. It is not so, of course, in every case, but in bad types you will find that this holds true. The cause of this excessive anæmia is not very obvious if we rely simply on examination of the blood from the finger for an explanation. If you place finger-blood from a case of malaria under the microscope you may find one or two parasites perhaps in each field. In many cases of severe malaria you will not find so many as that even; sometimes you will have to search through three, four, or five fields before you find one parasite.

How, you may ask, could so small a number of blood-destroying parasites account for anæmia so pronounced and so rapidly evolved? The reason is that the malaria parasite is not especially, or even ordinarily, a parasite of the peripheral circulation. It is a parasite of the blood of the central organs, as evidenced by the specimens shown this afternoon under the microscope. In a case of comatose pernicious malarial fever, with perhaps only three or four or five parasites in every field of finger-blood, you will find post mortem almost every blood-corpuscle in the capillaries of the brain carrying its own parasite. That is the reason why blood destruction is so prominent a feature in severe malarial attacks. The blood is not destroyed by the few straggling parasites seen in the peripheral circulation, but by the myriads of parasites in the blood of the viscera—the brain, the liver, the spleen, the bone-marrow, and so forth.

The behaviour of the leucocytes also is an interesting feature in the pathology of malaria. The polynuclear leucocytes decrease notably in number during the acute stages of malarial attacks; sometimes you may have a difficulty in finding them in the peripheral blood. The large mono-nuclear white cells increase as a rule and often contain malarial pigment. These large mononuclear corpuscles, as well as a certain number of the polynuclear corpuscles, carry the pigment to the spleen and there deposit their burden, which is taken up by the cells of this organ, producing the greater part of that enormous deposit of pigment so clearly illustrated by one of the sections under the microscope.

A peculiar feature clinically about malarial disease is its periodicity. This periodicity is accounted for by the periodicity and simultaneity of development of the parasites; they all seem to keep together as a swarm. At a particular time of the malarial clinical cycle you will find a certain form of parasite in the blood. Just before the explosion of the fever you will find a predominance of the rosette bodies; after the fever has subsided you will find the small form of the parasite as the predominant feature. and so on. Why should this be? Why should there be a conspiracy, as it were, among the different parasites all to mature at a certain time and all at the same stage? This simultaneity of maturation, so to speak, is the reason for the intermittence and regular periodicity of malarial fever. But what is the reason for the parasites observing this periodicity? The question is a very difficult one to answer. I believe the reason is twofold: first, the habit of the parasite to live a more or less definite number of hours; and, secondly, the diurnal rhythm in the periodicity of the physiological processes of the human body. At a certain time of the day in health the body temperature begins to rise and at a certain time it begins to fall; so with the tendency to sleep, to eat, to secrete, and to excrete particular substances there is a definite diurnal periodicity in the normal physiological cycle. This diurnal physiological periodicity, combined with the tendency of the parasite to live for a definite time impresses, I would suggest, the periodicity on the parasite of malaria which is so very characteristic of it and of the disease it produces.

So far as is known the lower animals are absolutely immune as regards the human forms of malarial disease. If you inject human malarial blood into a monkey there is no subsequent proliferation of the parasite and no fever. The same is the case with the dog or horse or other animals. Therefore in the lower animals there is complete immunity as regards the malarial parasite. We also know that certain human beings, very few it is true, enjoy a similar absolute immunity as regards this parasite. Some people coming into a malarial district contract the disease within a week or ten days of their arrival, others resist the disease for months, and a very few resist it permanently. That fact shows that *qua* the malarial parasite there is a varying degree of immunity in the same human body and in different individuals. I believe that this immunity possessed by the human body, like other physiological properties, has, as regards its amount a diurnal rhythm. At one time of the day the resistive power against a malaria parasite is greater

[1] Lecture I. was published in THE LANCET of May 19th, 1900, p. 1417.

than at another time of the day. I think that any malaria parasite which might enter or be set free in the blood when the immunising power of the body is at its height is likely to be destroyed by the resistive power. Should it happen that the power of resistance is at its minimum, then the parasite would survive, enter a blood-corpuscle, mature, and propagate its kind. In that way, it may be, the periodicity of malaria is caused—viz., by the combination of physiological conditions and the properties, so to speak, of the parasites.

We know when the new-comer arrives in a malarial country his first attack of malaria is usually a very severe one; it is usually either a continued or a remittent fever; that is to say, the fever does not exhibit in any marked way the definite periodicity which we are accustomed to associate with malaria. Apparently the parasites are permitted to enter the blood-corpuscles and mature at all times of the 24 hours. After a time, however, the body seems to become educated to a certain extent, so that by-and-by a definite periodicity is impressed upon the parasite and the continued fever after a time becomes remittent and by-and-by intermittent. I would interpret this by supposing that the body gradually acquires a certain degree of immunity and reaches at some time in the 24 hours the standard of absolute immunity and that in this way the parasite and the symptoms it gives rise to get a definite periodicity impressed upon them.

It is almost useless for me to attempt to describe the manifold clinical forms of malarial disease. We know that malarial fevers tend to assume a quotidian, a tertian, or a quartan type. We also know that in certain cases the quotidian becomes a remittent or continued fever. We also know that if we examine the blood in remittent or in continued malarial fevers we sometimes find in it the type of parasite characteristic of tertian, sometimes of quartan, sometimes of the æstivo-autumnal infection, and sometimes a mixture of two or even of all the types of parasites. At first it seems difficult to understand how a tertian or a quartan parasite could give rise to a quotidian fever. But such is the case and there can be no doubt that it can be explained. If you look at the blood of a patient with quotidian fever in very few instances will you find a quotidian parasite, which is amongst the rarest of malarial infections, if, indeed, it exists at all. You will find generally either a tertian, a quartan, or an æstivo-autumnal, which is also tertian in its periodicity. In the case of a quotidian fever arising from a tertian infection there are two generations of parasites, one which is half-matured and one which is practically matured. The half-matured parasites will produce the fever of to-morrow and of three days hence, the fully-matured will produce the fever of to-day and that of the day after to-morrow, and so on. A double quartan infection will produce a double quartan fever. You get fever to-day and to-morrow but no fever the day after to-morrow. A treble quartan infection, in the same way, will produce a quotidian fever. If the three forms of parasites concur you will have a corresponding mixture of clinical symptoms. You will easily understand how confused the resulting clinical manifestation will be from this fusion of forms, but with the microscope and the temperature chart you can unravel the clinical puzzle and read, so to speak, the writing in the blood.

Disregarding the ordinary intermittents, I will say a word about pernicious malarial fevers, a type which has been very much neglected by English writers and which is better understood by our French colleagues—at all events it is more dwelt on by them.

In the course of what appears to be an ordinary ague, and which we do not ordinarily associate with any particular danger, there is suddenly developed some alarming symptom which if it be not properly appreciated may prove fatal, and that in the course of a very few hours. These are called pernicious attacks (*accès pernicieux*), and are classified under two headings, one conveniently called "cerebral" and the other "algid," the latter being associated with adynamic conditions, the former with manifest implications of the central nervous system.

The most common type of pernicious attack is known as "pernicious comatose malaria." The patient in the course of what apparently is an ordinary malarial attack suddenly becomes comatose; he cannot be roused, he has stertorous breathing, and unless skilfully treated he may die. Occasionally he comes out of this condition and temporarily recovers, but possibly at the next paroxysm of the fever he will fall into the same condition and die. Often these sudden attacks of insensibility are put down to apoplexy and very often a prognosis of hemiplegia is given. Fortunately for the patient this prognosis is sometimes upset by his coming out of the comatose condition without showing any evidence of hemiplegia.

Another type of pernicious cerebral fever, often mistaken for, and generally called, sunstroke, is hyperpyrexia. The patient has an attack of apparently ordinary ague, in the course of which, instead of his bursting out into perspiration and the symptoms subsiding when the thermometer reaches 105° F., the temperature may go on rising to 107° or 110° or even higher. Wild delirium merges into coma and death. Hyperpyrexial attacks are terrible things to witness. I have seen a good many and at first was prone to fall into the ordinary mistake of diagnosing heat-stroke. They occur very often during oppressive weather and are common in intemperate people. The diagnosis of heat-stroke, under the circumstances, is a somewhat natural one to make. On more careful consideration, particularly if the patient's blood is examined or a post-mortem examination is made, you will find, either from the presence of parasites or from pigmentation in the viscera, that the patient died not from heat-stroke but from malarial poisoning. Thus malarial coma and malarial hyperpyrexia are the most frequent and important of the cerebral pernicious types. But there are other forms: a not unusual one, particularly in children, is the epileptiform seizure.

In tropical countries it often happens that the first intimation of malarial infection in a child is an epileptiform seizure. Perhaps two days later there is a similar attack. You are inclined to give a gloomy prognosis; you tell the mother that the child is possibly an epileptic and you prescribe bromide. If you wait for 48 hours longer there is a third seizure and then if you use the microscope and the thermometer you will find that the child is not suffering from true epilepsy but from malarial fever. In adults also you sometimes have strange periodic seizures. One is a suddenly developed aphasia. I have seen this on more than one occasion. You are asked to visit a patient and you find him in bed exhibiting all the peculiarity of some form of aphasia, unable to speak, or using wrong words, misplacing them, and so on, and you are prone to diagnose grave cerebral disease. Occasionally the extrinsic muscles of the eyes are affected with some form of paresis. These cases are more common than is supposed but they are very frequently overlooked.

An explanation of these and similar conditions — the comatose cerebral attacks, the hyperpyrexial attacks, the epileptic seizures, the paretic conditions—is supplied by the brain sections shown under the microscope. You will see that the capillaries of the brain are crowded with malarial parasites. Should one particular centre of the brain be specially affected by the parasites, as, for instance, Broca's convolution, then you have a corresponding symptom. Should the heat-regulating centre—if there be such a centre—be selected then you may have hyperpyretic conditions. The algid attacks are somewhat rarer but they are equally important. It is necessary that one should be aware that such attacks do occur. A malarial fever very like cholera is not an unusual thing in certain districts. The patient, instead of getting an ordinary malarial attack, is suddenly seized with choleraic symptoms—vomiting, purging, rice-water stools, cramps, vox cholerica, and all the other signs of epidemic cholera. If you inquire into the history you may learn that he had malarial attacks perhaps only one or two days before. You examine the blood and you find malarial parasites, and if you treat the patient for malaria you will cure his cholera. It is well to recollect the possibility of such attacks in tropical countries. Dangerous syncopal attacks may occur in association with the symptom which we usually hail as heralding relief in a malarial paroxysm. Profuse perspiration occurs till the bedding is drenched; if the patient gets up and tries to stand he has, it may be, a fatal syncopal attack. Sometimes profuse sweating occurs at the very commencement of the fever paroxysm; the patient is cold and algid and the profuse sweatings may end perhaps in collapse. In other forms vomiting, dysenteric conditions, and so on occur. Indeed, the variety of clinical features exhibited in malarial infections is too great for me to fully discuss on this occasion.

A practitioner in tropical countries ought always to suspect that any sudden and inexplicable attack may be attributable to malaria. I would emphasise the word *may* because I do not wish it to be understood that such an attack *must* be malarial. We should not conclude, as is so often done, that every case of disease connected with the tropics which we

cannot diagnose is malaria; still, we ought to suspect it. There is one important type of what is believed to be malarial disease which has of late come into prominent notice, partly in consequence of the opening up of Africa and partly in consequence of the utterances of a well-known pioneer in pathology—Professor Koch. I refer to blackwater fever. This is a disease which, strange to say, has not been recognised till within the last 30 or 40 years. If you search the writings of the old Indian physicians you will find no mention of blackwater fever or of any corresponding disease. Some time in the "fifties" certain French physicians first drew attention to its occurrence in one island off the coast of Madagascar, and since that time the disease has been recognised in the West Indies, in South America, in the southern parts of the United States, and in the Malay Archipelago. It is known to be the most common cause of mortality among Europeans on the West Coast of Africa. It exhibits all degrees of intensity. A patient resident in one of the endemic districts who perhaps has had many attacks of ordinary malarial fever develops what at first he considers as one of his usual malarial attacks and he does not think much of it. Suddenly he is seized with severe rigor. (Strange to say, rigor, so prominent a symptom of agues and intermittent fevers in the temperate zones, is singularly rare in the tropical zones. In those countries in which malarial fever is a really dangerous item in the pathology rigor is not as a rule a prominent malarial symptom. In blackwater fever it is different in this respect—violent shivering is a usual initial symptom.) The patient may then be seized with the desire to pass urine; he is astonished to find that his urine is black. He goes on urinating frequently and the urine continues to have this peculiar colour. He looks at himself in the mirror and finds that his face has become as yellow as saffron. This condition is associated very generally with fever, vomiting of biliary material, pain about the loins and back, and severe hepatalgia and intense prostration. Often as the case advances the patient exhibits all the symptoms of sudden profuse hæmorrhage (doubtless associated with the great discharge of hæmoglobin), giddiness, sweating, sighing, restlessness, and syncope. In many cases fortunately the hæmoglobinuria—for such is the symptom—gradually disappears with the fever, the urine becoming less dark and after a time natural in colour, but the patient is left intensely anæmic and jaundiced and only slowly recovers. Very likely there is no relapse. In some cases, however, the symptoms do not subside, the hæmoglobinuria persists, and the patient may die from syncope or exhaustion; or, the hæmoglobinuria persisting, the urine gradually gets smaller in quantity and becomes thicker and almost glutinous, being reduced to two or three ounces in the 24 hours. It may be entirely suppressed and the patient may die with uræmic symptoms, or he may recover temporarily and the discharge of urine may be re established, but in two or three days or weeks he may die with symptoms of acute nephritis. Blackwater fever is a terrible disease; the mortality from it is enormous, amounting in some epidemics to as much as 50 per cent., in others to 25 per cent. Occasionally the mortality is as low as 10 or 15 per cent. The disease, however, is always a dangerous one, and it is one that is almost sure sooner or later, if the patient remains in the endemic area, to recur. The liability to recurrence unfortunately does not cease when the patient has left the endemic area, for, as with other malarial disease (if it be a malarial disease), symptoms are liable to return or even to appear for the first time after the patient has returned to Europe. I have seen a good many cases in England. Only three weeks ago I saw a young Englishman die from this disease in London. I do not know how long the liability to recurrence persists after return to temperate climates, but certainly it persists for five months. I have known of such cases.

There are certain popular fallacies about the diagnosis of malaria which it is well to bear in mind. The principal of these is that everybody who has passed through the Suez Canal, or who has visited Rome, or has lived in a tropical country, is the subject of malarial infection. That is about the commonest and the most vicious fallacy among practitioners in this country. Fortunately many tropical lands are absolutely free, or relatively free, from malaria; it is only in certain places even in tropical countries that malaria exists. Do not, therefore, when a patient comes from a tropical country complaining of some more or less obscure symptoms, jump to the conclusion that those symptoms are the outcome of a malarial infection. One sees curious mistakes in connexion with this popular fallacy. I recollect reading some time ago in one of the medical papers two cases of what was called "malarial neuritis." I was very much struck with the evidence for founding his diagnosis of malarial neuritis with which the writer appeared to be satisfied. One patient was a sailor, and doubtless in the course of his life as a sailor he had visited malarial countries—*ergo*, his neuritis was malarial; that was all the evidence for the diagnosis. The other case was very much the same, the patient being a sailor who at one time—many years ago—had had malaria; and that was all the evidence which the writer had for diagnosing the case as one of malarial neuritis. This is typical of the diagnosis one often finds of obscure disease in patients from tropical countries.

Few diseases are so easily diagnosed as malaria. We have three pathognomonic tests which, intelligently applied, are absolutely infallible. There is the clinical test of periodicity, but diurnal periodicity is of no value in the diagnosis of malaria. A periodicity of 24 hours is shared with malaria by many diseases, but it is otherwise with a periodicity of 48 hours or 72 hours. Only one pathological condition exhibits this feature and that is the malarial infection. Any disease exhibiting a tertian or quartan periodicity is certainly malarial. But I strongly dissuade you from putting any reliance upon quotidian periodicity in the diagnosis of malaria; it is most misleading and constantly gives rise to mistake. If a patient has well-marked rigor followed by pyrexia, and that by profuse perspiration, and if this occurs day after day, do not jump to the conclusion that the case must be malarial because of the periodicity and because the patient is from a tropical country. In diagnosis quotidian periodicity should be absolutely ignored. I have seen a patient with well-marked abscess of the liver, the patient himself being a medical man, and yet because he had rigor, pyrexia, and perspiration day after day he was sure that he was suffering from malarial fever, and he was taking quinine in consequence. Nearly all suppurative processes are attended by a fever with a quotidian periodicity more or less marked. Osler says that he never sees a case of abscess of liver that has not been drenched with quinine, the diagnosis of malaria having been made doubtless in consequence of the quotidian recurrent pyrexia. Many diseases—ulcerative endocarditis, surgical kidney, gallstones, syphilis, tubercle, almost every disease with febrile associations—may exhibit quotidian periodicity. But it is otherwise with tertian and quartan periodicity; these are both absolutely pathognomonic of malaria. Then we have the therapeutic test—the test by quinine. Quinine properly administered in a case of malarial disease in 48 hours is in my experience invariably followed by abatement of the symptoms. If you give a patient quinine for 72 hours and there is no abatement of fever you should revise your diagnosis; the patient is not suffering from malaria. There is no use in persisting with quinine for days and weeks on the supposition that the case is malaria. You can poison the malaria parasite with quinine as certainly as you can poison a man with arsenic.

It is not sufficient, however, to rely on the therapeutic test, because in many instances we have no time to wait for its application, as in grave cerebral attacks. In such cases you cannot wait to see the effect of quinine before making the diagnosis. By the time the diagnosis is established the patient might be dead. It is necessary to have some more rapid means of arriving at the conclusion of what is the matter with the patient. That is supplied by the microscope; it is an immediate and invaluable test for malaria. Practitioners in tropical countries fail in their duty to their patients if they do not acquaint themselves with the application of the microscope in the diagnosis of malaria. For the practitioner nowadays to undertake the care of life in tropical countries and to be ignorant of the use of the microscope in malarial diagnosis is positively culpable. I think that the practitioner who visits a tropical country and pretends to take care of patients there and who cannot use his microscope is like a physician in England who is ignorant of the use of the stethoscope. Of the two instruments by far the more valuable in tropical practice is the microscope. The microscopic test is easily applied. All that is required is a high-power lens, a $\frac{1}{12}$ objective, a fair illumination and two or three slides, some cover slips, and a patient. In five minutes you can tell whether the patient is suffering from malaria or not. Anyone who ignores

this simple method is not only foolish but I say he is also sinful.

One word in conclusion about the treatment of malaria. This resolves itself into one word, the use of quinine. We have in quinine really a specific (about the only real specific in the Pharmacopœia), and if we can properly apply the specific in 99 cases out of 100 we can save the patient from the effects of the parasite. It is one thing, however, to possess the specific and it is another to be able to apply it. In cases of violent remittent fever and grave cerebral attacks the patient may be vomiting and unable to absorb the drug, or he may be insensible and unable to swallow it. You must have recourse to other means and give five or ten grains of a soluble salt of quinine hypodermically or rather intra-muscularly. This may save the patient; he may die without it. At one time this method of using quinine got out of favour because in several instances the hypodermic injection had been followed by tetanus and the death of the patient. Now, tetanus is not caused by quinine; it is caused by the tetanus bacillus. Death from tetanus following on the hypodermic injection of quinine is caused by the culpable carelessness of the physician who, in ignorance of course, has used an injection containing the tetanus bacillus. The hypodermic injection of quinine, though painful and often objected to by the patient, is free from risk provided that ordinary precautions are taken to render the syringe, the skin, and the solution aseptic.

A certain number of patients appear to have peculiar sensibilities as regards the action of quinine. In some it gives rise to urticaria, in some to peculiar toxic effects, and therefore to some patients it cannot be given at all. In these cases methylene blue is of service. I have not much experience of its use; I have not the same faith in it as I have in quinine. Professor Koch is one authority for its use. It is given in doses of from three to five grains three or four times a day. Another and graver accusation against quinine is that it is apt to give rise to hæmoglobinuria. Professor Koch's utterances in regard to this have been somewhat misunderstood. Many people suppose that Koch said that quinine gave rise to—is the cause or virus, as it were, of—hæmoglobinuria. What he did say was that quinine under certain conditions brought on hæmoglobinuric symptoms, and what he said is in my opinion, true, only he has expressed himself somewhat vaguely. A man is responsible not for his words only but also for the effect which they produce, and Koch's words have had a most prejudicial effect in this matter. In consequence of what he has said quinine is looked upon with suspicion, if it be not absolutely tabooed, in some tropical countries. This is unfortunate, for even if quinine is a danger in certain cases, if it does tend to produce hæmoglobinuria in some cases, it is not a one-hundredth part so dangerous in this respect as the malaria parasite. Of the two evils the parasite is infinitely the greater one, and therefore the withholding of quinine from a patient in whom the parasite is circulating is more apt to be followed by blackwater symptoms than if the drug be given.

In cases of blackwater fever examine the blood and if you find in it the fever forms of the malarial parasite give quinine; if you do not find the parasite withhold the quinine. This is a good rule. It is a fortunate circumstance that hæmoglobinuria frequently kills the parasite in the circulation. If you look at preparations of blood made just before the appearance of hæmoglobinuric symptoms you will often find the malarial parasite; if you examine the blood of the same patient just after the appearance of the hæmoglobinuric symptoms you may find a very few parasites; and if you examine it a little later, say 12 hours after, you may fail to find any parasites at all. Apparently there is a process of natural cure caused by the parasite itself when it brings about hæmoglobinuria. That should encourage us to withhold quinine in many cases of blackwater fever, especially when the parasite cannot be detected by patient and competent observation with the microscope.

INSPECTION OF COWS TO DETECT TUBERCULOSIS.—The Dartford Urban Council, after communication with the urban district councils of Bexley, Erith, and Dartford Rural Council have jointly appointed for one year Mr. A. Edgar, F.R.C.V.S., on terms agreed upon, to undertake the duties of periodically inspecting cows in the respective districts under their control.

A Clinical Lecture

ON

MODERN METHODS OF AMPUTATING AT THE HIP-JOINT,

WITH A TABLE OF 15 CASES.

Delivered at the General Hospital, Birmingham, on March 1st, 1900,

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GENTLEMEN,—The patient here presented is rather an unusual case, for you will see that she has had both her lower limbs removed at the hip-joint. The clinical history is briefly this. Her age at present is 27 years and for some years she had suffered from tuberculous caries of the tarsal bones of the right foot, so that in October, 1895, it was necessary to perform a Symes's amputation at the ankle-joint. Some months later tuberculous osteitis manifested itself at the end of the tibia, and in October, 1896, Stephen Smith's amputation was performed at the knee joint. The stump never properly healed, and, becoming the site of another tuberculous deposit, she was re-admitted into hospital in May, 1897, and on the 29th of that month I removed the femur at the hip joint. Healing was extremely protracted, and it was six months before the stump was sound. She was then lost sight of for some time, but she re-appeared at the hospital in April, 1899. The left foot and ankle were found to be much swollen and œdematous and there were signs of fluctuation on the outer side of the ankle-joint. On the lower third of the leg was a large tuberculous ulcer which had existed for three months; the knee-joint was filled with fluid and presented the usual symptoms of tuberculous disease. In the middle of the quadriceps extensor was a large caseating mass of the size of a clenched fist. The patient was emaciated and hectic. After a consultation with my colleague, Mr. Haslam, it was deemed desirable on April 20th to remove the left limb at the hip-joint. The healing of the stump was again protracted, but, as you now see, only two minute spots at the top of the external incision remain unhealed. The general health of the patient seems good, she has gained flesh and she takes her food and digests it well. At present there are no signs of any tuberculous deposit in any of the other joints of the body or in the internal organs.

I have now performed 15 amputations at the hip-joint upon 14 different individuals and herewith is presented in tabular form the sex and age of each patient, the disease for which the operation was undertaken, the plans adopted for restraining the hæmorrhage, the method of operating, and the results. On looking at the table you will see that in the series only two methods of operating have been practised. In the first anterior and posterior skin-flaps have been shaped from without inwards, and the muscles and vessels divided high up as close as possible to the pelvic bones by a circular incision. This method has been adopted in three cases (Cases 1, 2, and 9), each time with success, and theoretically it is the best method to be adopted when a malignant neoplasm has to be dealt with. Its drawbacks are that it undoubtedly increases somewhat the shock attendant upon the operation and the high division of the muscles necessitates the direct compression of the aorta for the restraint of hæmorrhage.

The second method is for practical purposes that known as the external racket operation and is really a combination of the vertical and circular incisions. The names of many eminent surgeons are associated with this plan of operation, notably, Furneaux Jordan, Lister, Esmarch, &c.; but I have preferred to speak of it as the external racket method as thereby the general principle of the operation is more likely to be impressed upon your minds than if it be associated with the name of any distinguished surgeon of the present or past generation. The precise steps will differ somewhat in a case in which the operation is undertaken for malignant disease from those taken when it is performed for the disease

of the hip joint. In the latter condition the lower the mass of muscles of the thigh are divided the less the shock to the patient, and the bone can be readily shelled out, subperiosteally or otherwise, especially when excision of the head has previously been performed, without interfering materially with the muscles on the inside of the thigh. For drawing special attention to these facts and demonstrating their utility in actual practice Mr. Furneaux Jordan, of this city, deserves all praise. In case of a malignant growth it is obvious that the further all the soft structures are divided from the growth the better are the prospects of success as far as recurrence in the stump is concerned. In such instances a circular incision may be made round the limb at about six inches from Poupart's ligament, merely dividing the skin and subcutaneous tissues; a vertical incision is then made commencing just above the great trochanter and carried downwards on the outer aspect of the limb until it meets the circular cut previously made. The skin is then reflected upwards all round as high as the lesser trochanter. At this point all the muscles and other soft parts are cut through by a circular incision reaching the bone, the femoral vessels are at once seized and ligatured, and steps are taken for the disarticulation of the head of the femur. For this purpose it is better to change the amputating knife for a large scalpel, as with this the joint is more readily entered, the ligamentum teres divided, and the head of the bone dislocated. A few cuts with the knife behind the head of the femur enable the removal of the limb to be completed. The remaining known vessels are then secured and the wound is closed in the usual manner as expeditiously as possible, after the tourniquet has been removed and any spouting arteries ligatured. It is better to drain the acetabulum either with a fair-sized drainage tube or with an iodoform gauze drain.

There is another method to which I should like to direct your attention and which might be especially serviceable when the operation is undertaken for an emergency and skilled assistance is not attainable. Personally I have had no experience of the operation, but it is described by Dr. W. L. Estes[1] as the "gradual dissection method" and is practically a modification of the German operation suggested by Professor Rose. The first step of the operation is the ligation of the common femoral vessels at Poupart's ligament and division of the same between double ligatures; short anterior and posterior skin flaps are then formed from without inwards, and the soft parts are divided by gradual dissection close up to the pelvis, all known vessels being secured before they are divided, the smaller ones being clipped immediately afterwards. It is at once apparent that the method takes more time for its accomplishment than the other plans, but it can be carried out with one assistant, who need not be a very highly trained one, and the surgical apparatus required is simple and slight.

The two main risks of the operation for amputating at the hip-joint to which I propose shortly to direct your attention are hæmorrhage and shock.

Hæmorrhage.—Many ingenious inventions have been introduced to obviate hæmorrhage, such as tourniquets, a rectal staff, clamps, &c.; but until a few years ago most practical surgeons relied mainly upon rapid execution and the dexterity of an assistant in digitally compressing the vessels before and after division. I may at once say that owing to a plan advocated by Professor Wyeth of New York City any fears as regards profuse hæmorrhage during this operation exist no longer. Professor Wyeth's idea is directed to the prevention of the slipping of the elastic tourniquet which is applied over the femoral vessels at the moment when the disarticulation of the limb is effected. This is accomplished by means of two steel skewers or pins, which have a head, and are rounded and sharp pointed at the other end, ten inches in length and three-sixteenths of an inch in diameter. They may seem rather formidable instruments at first sight, but for an adult in actual practice they are none too strongly made, as the strain upon them to keep the elastic tourniquet *in situ* during the necessary manipulations is severe. I show you two pins that I have used in three operations upon adults and you will perceive that they are considerably bent, this being accomplished by the tourniquet pressure. The elastic tourniquet employed should be half an inch in diameter and long enough to encircle the top of the thigh four or five times. In young children, however, a tourniquet of very much smaller calibre will suffice and instead of Wyeth's pins I employ two much smaller steel skewers such as a cook uses for trussing game or chickens for cooking purposes and which can be procured at any ironmongers, and I find that they answer very well. They are not, however, trustworthy for an adult, and on one occasion, when using them on a full-grown person, the outer one snapped off short and becoming useless had to be replaced in the middle of the operation. Fortunately the main vessels had been secured before the mishap occurred. The accompanying illustration will show the use of the pins. It is taken from Professor Wyeth's paper.[2] The outer needle is introduced a quarter of an inch below the anterior superior iliac spine and somewhat to its inner side, passing through the muscles to the outer side of the hip, and is made to emerge three or four inches from its point of entrance. Its direction should be a little backwards so as to keep it as far as possible from the great trochanter of the femur. The inner needle is inserted through the skin and the adductor longus muscle half an inch below the fork in the male and is brought out one inch in front of the tuberosity of the ischium. To protect the operator's hands a piece of cork is applied to the sharpened end of each needle as soon as it is in position. The limb is then emptied of its blood by elevation and the elastic tourniquet is wound tightly round the limb above the pins. Wyeth recommends that a compress four inches square and two inches thick be laid over the femoral vessels as they cross the brim of the pelvis before the tourniquet is applied. I have not, however, carried out this detail in any of my own cases. By applying the tourniquet effectively in the above manner hæmorrhage both from the anterior and posterior vessels is absolutely prevented, but the limb becomes very tense, and I have found that it takes a little more time to complete the disarticulation, as the free movements of the operator are somewhat hampered by the presence of the tourniquet and the pins, but this is quite a small matter as compared with the advantages obtained by immunity from bleeding. Before the pins and tourniquet are removed practically all the known arteries can be secured, and although there may be some general oozing subsequently it can be readily restrained by a good-sized flat sponge. On looking at the table you will see that eight cases out of the 15 have been treated in this manner and with, I think, such marked success that I have no hesitation in saying that at the present time it is the best method which we have at our disposal.

The second plan I have employed to restrain hæmorrhage is by directly compressing the abdominal aorta by placing a fair-sized pincushion or pad over it and protecting the spine and flanks of the patient with pads of lint, then encircling the abdomen with a thick elastic tourniquet. It is a very effective method, especially in children, but it is not so desirable in adults because the cushion is more apt to slip and the tight constriction necessary to stop the arterial circulation compresses also the intestines and may also embarrass the breathing of the patients. It has the advantage of not interfering in any way with the part to be operated on and permits the unimpeded formation of anterior and posterior skin flaps and the high division of the muscles attached to the pelvis, whilst the manipulations of the hip joint can be freely effected. It has been employed four times in the series (in Cases 1, 2, 4, and 9), and invariably with success as far as loss of blood is concerned.

The third method employed in the series is digital compression by a skilled assistant, and although in the three cases (Cases 3, 5, and 6) this has been carried out and the femoral vessels have been secured at an early stage of the operation, and I have also had the great advantage of the skilled fingers of my colleagues, yet I am bound to say that all three patients lost more blood during the operation than those subjected to the other two methods and that most of the blood so lost came from the vessels posterior to the joint.

Shock.—The shock will generally be severe, but its dangers can, I think, be reduced by certain routine observances. In the first place, the theatre or room in which the operation is conducted should be well warmed; 65°F. is a good temperature. Then a hot water table or a water bed filled with hot water for the patient to lie upon should be provided,

[1] Lehigh Valley Medical Magazine, January, 1894, and Philadelphia Polyclinic, March 24th, 1894.

[2] Annals of Surgery, vol. xxv., 1897.

and the extremities, excepting that to be removed, and the trunk should be enveloped in cotton-wool. The apparatus should be at hand for the intravenous injection of normal saline fluid and it is as well if the basilic vein of the arm on the opposite side to which the removal of the lower extremity is to be effected is dissected out by an assistant before the operator actually commences. I say on the opposite side because it is advisable to undertake the injection when the closure and dressing of the wound are being performed and the manipulations of the injector will thus not be impeded by the chief operator and his other assistant. I have now carried out the injection of saline fluid in my last eight cases and the effects have been so marked, and I believe so beneficial, that in my judgment it ought to form part of the routine of the operation in every case. One cannot say that it will invariably save life, still, it may be the means of tiding the patient over the most critical time and so allow the opportunity for the administration of liquid foods and the exhibition of other remedies.

The most prominent symptoms of the shock following the operation are cold clammy sweating of the body, cold extremities, extreme restlessness, small rapid pulse, and constant efforts at vomiting.

All the cases in the series, excepting Case 6, have been hospital cases, and in this class of patient it is often extremely difficult to make the patients or their friends realise the necessity for the removal of the limb. Cases 3, 10, and 13 are examples. Case 3 was that of a man, aged 32 years, who had had excision of the left femur performed and a large portion of his acetabulum removed for long-standing hip-disease. Osteitis of the shaft of the bone ensued and the amount of pus discharged daily was more than a pint, yet for more than nine months after he had been informed that it was impossible to save the limb he refused to have amputation performed. The patient in Case 10, a girl aged 14 years, had her hip-joint explored in June, 1896, and it was found that the acetabulum was perforated and the tuber ischii carious, yet her parents declined to have the major operation carried out until January, 1897. She recovered well from the shock of the operation but she gradually sank and died on the evening of the third day exhausted. In Case 13, that of a girl aged eight years, the head of the left femur was excised on Feb. 26th, 1897. By the beginning of 1898 the cicatrix broke down and disease of the acetabulum and shaft of the femur were detected, but the parents refused to have amputation performed for 14 months, by which time there was amyloid disease of the liver, the edge of the organ being readily detected below the ribs, and the urine contained albumin and waxy casts, besides being increased in quantity. When she was admitted into hospital in April, 1899, there were no fewer than 12 discharging sinuses round the hip-joint, the pus being of the most offensive description, yet after the operation the health of the child immediately began to improve, the size of her liver gradually diminished, the polyuria and albuminuria disappeared, and she is to-day alive and well, although in September last it was necessary to remove a loose piece of the pelvis and to scrape out several unhealed sinuses.[3]

Age is an important factor to be considered when a successful issue is sought for, and at one time I thought that in those patients much over 20 years of age who had to undergo this operation each added year of life increased the risk in a disproportionate degree. But the certain restraint of hæmorrhage and the injection of normal saline fluid before the patient is removed from the table has modified this idea. Eight of the patients in the tabulated cases were well over this age and of these six recovered. The oldest patient was 56 years of age, and he had been an inmate of the hospital in November, 1898, but then declined to undergo amputation. Nearly three months afterwards, when the sarcoma had increased very much in size, he was going upstairs at his own house and slipping on a step he felt his femur break in the situation of the neoplasm. This induced him to return to the hospital to have the limb removed and although convalescence was slow the stump was soundly healed in two months. Perhaps, therefore, we are justified in concluding that modern methods of performing the operation have considerably reduced the age mortality.

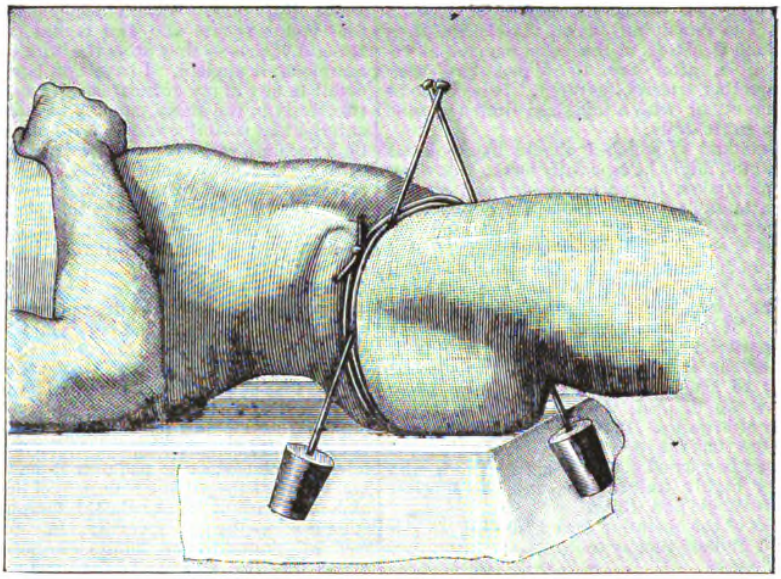


Illustration showing tourniquet and pins in position.

Pregnancy need not be considered to be a bar to the operation. In Case 8 the woman was 29 years of age and was six months pregnant, yet she bore the operation well and did not miscarry until a month afterwards, when the stump was practically healed. She survived the operation long enough to give birth to a healthy child after leaving the hospital. Case 15 was a woman, aged 23 years, whom I saw in the Rugeley Cottage Hospital with Mr. H. D. Chapman. She was over eight months pregnant with her first child and had a fungating sarcoma originating in the head of the tibia and implicating the right knee-joint and the belly of the semimembranosus muscle. We decided in consultation to induce premature labour and ten days later, a healthy living child having been born, the physical pain was so great that with the assistance of Mr. George Heaton and Mr. H. D. Chapman I thought it desirable to remove the entire

[3] The patient now (July, 1900) shows signs of caries of the second lumbar vertebra.

TABLE OF 15 CASES OF AMPUTATION AT THE HIP-JOINT.

No.	Sex and age.	Date of operation.	Disease.	Restraint of hæmorrhage.	Operation.	Result.	Remarks.
1	F., 15 years.	June 3rd, 1882.	Periosteal sarcoma of the lower third of the left femur.	Compression of the abdominal aorta by pin-cushion and elastic tourniquet.	Anterior and posterior skin-flaps and circular division of the remaining soft parts close to the pelvis.	Healed in six weeks. Recurrence in the right lung and death in six months.	Recorded in Brit. Med. Jour., vol. i., 1884.
2	M., 5 years.	Oct. 13th, 1882.	Morbus coxæ with necrosis and fracture of the lower third of the right femur.	Compression of the abdominal aorta by pin-cushion and elastic tourniquet.	Anterior and posterior skin-flaps.	Healed by Dec. 3rd, 1882.	The patient is still alive. Recorded in Brit. Med. Jour., vol. i., 1884.
3	M., 32 years.	Feb. 27th, 1883.	Left morbus coxæ of long standing. Head of the femur and part of the acetabulum removed in 1882.	Digital compression of the common femoral artery.	External racket method.	Death from shock on March 1st.	Large white kidneys were found post mortem. Brit. Med. Jour., vol. i., 1884.
4	M., 5 years.	July 1st, 1890.	Right morbus coxæ.	Compression of the abdominal aorta by pin-cushion and elastic tourniquet.	External racket method (sub-periosteal).	Sent to a convalescent home on August 22nd.	The patient is still alive; anterior excision was performed on April 26th, 1890. The acetabulum was diseased.
5	M., 16 years.	Oct. 17th, 1890.	Left morbus coxæ.	Digital compression of the common femoral artery.	External racket method.	Death from shock nine hours afterwards.	The patient was much emaciated from prolonged suppuration. At various times he had spent many months in hospitals.
6	M., 26 years.	May 31st, 1892.	Purulent osteo-myelitis of the right femur.	Digital compression of the common femoral artery.	External racket method.	Healed by June 8th.	The lower third of the thigh was amputated by Carden's method in November, 1891, for ununited fracture through the head of the tibia affecting the knee-joint. The patient fell on the stump a month before the last operation. There was a family history of tuberculosis.
7	F., 39 years.	Feb. 20th, 1896.	Endosteal sarcoma of the lower third of the left femur.	Pin method (Wyeth).	External racket method.	Death from shock in 10 hours.	The patient had sustained a fracture of the lower third of the femur six months previously.
8	F., 29 years.	March 26th, 1896.	Endosteal sarcoma of the lower third of the right femur.	Pin method (Wyeth).	External racket method. Intravenous injection of 15 ounces of saline fluid.	Healed by June 5th. Died on May 25th, 1897, from recurrence in the left lung.	The patient was six months pregnant at the time of the operation. Abortion took place on April 26th. The fœtus was dead.
9	M., 10 years.	Nov. 13th, 1896.	Periosteal sarcoma of the lower third of the right femur implicating the knee-joint.	Compression of the abdominal aorta by pin-cushion and elastic tourniquet.	Anterior-posterior skin-flaps and circular division of the soft parts close to the pelvis. Intravenous injection of half a pint of saline fluid.	The wound healed in three weeks except a small sinus.	The patient was alive 18 months after the operation.
10	F., 14 years.	Jan. 1st, 1897.	Right morbus coxæ. The acetabulum was perforated and the tuber ischii was carious.	Pin method (Wyeth).	External racket method. Sub-periosteal enucleation. Intravenous injection of half a pint of saline fluid.	Death from exhaustion on Jan. 4th.	The joint had been explored in June, 1896, but amputation was delayed at the request of the relatives of the patient.
11	F., 24 years.	May 29th, 1897.	Tuberculous osteitis of the stump following amputation at the right knee-joint.	Pin method (Wyeth).	External racket method. Intravenous injection of one pint of saline fluid.	Healed.	Syme's amputation at the ankle-joint for tarsal caries was performed on Oct. 8th, 1895, and Stephen Smith's amputation at the knee-joint on Oct. 9th, 1896, for osteitis of the tibia.
12	M., 56 years.	Jan. 26th, 1899.	Periosteal sarcoma of the lower third of the left femur.	Pin method (Wyeth).	External racket method. Rectus muscle infiltrated with new growth and divided high up close to the acetabulum. Intravenous injection of saline fluid (one pint).	Healed by March 27th.	The patient fractured his femur when walking upstairs on Jan. 23rd, 1899.
13	F, 8 years.	April 6th, 1899.	Left morbus coxæ. (Amyloid degeneration of the liver and kidneys.)	Pin method (Wyeth).	External racket method; intravenous injection of saline fluid (half a pint).	Sent to a convalescent home on June 6th. Sequestrum removed from the pelvis on Sept. 14th, 1899.	The head of the bone was excised on Feb. 26th, 1897, and scraping was done on Oct. 30th, 1897. The parents refused amputation in December, 1897.
14	F., 26 years.	April 20th, 1899.	Tuberculous disease of the left knee-joint and ankle-joint; caseating mass infiltrating the anterior muscles of the thigh. Tuberculous ulcer of the middle third of the leg.	Pin method (Wyeth).	External racket method; intravenous injection of saline fluid (one pint).	Healed.	This was the same patient as in Case 11.
15	F., 23 years.	Nov. 19th, 1899.	Endosteal sarcoma of the head of the right tibia, implicating the knee-joint and infiltrating the belly of the semi-membranosus muscle.	Pin method (Wyeth).	External racket method. Saline fluid injected into the cellular tissue of the axilla (12 ounces).	Healed.	The patient was over eight months pregnant with her first child and premature labour was induced 10 days before operation. Convalescence was retarded by a mammary abcess.

lower extremity. Convalescence, as might be expected, was tedious and was also complicated by a mammary abscess, yet with care and good nursing the patient has at length made a satisfactory recovery.

Of the 15 tabulated operations performed on 14 patients 11 of the patients recovered and four died, a mortality of 26·6 per cent. These cases were taken just as they occurred in practice and there was no selection of patients. In six instances the operation was performed for sarcomatous growths (four women and two men) and of these one died from shock. In the remaining nine the removal of the limb was undertaken for bone disease. The malignant cases were: Case 1, periosteal origin, round-celled growth; Case 7, endosteal, mixed celled with a preponderance of round cells; Case 8, endosteal, round-celled; Case 9, periosteal, mixed celled with a preponderance of round cells; Case 12, periosteal, mixed celled (round and spindle cells about equally distributed); and Case 15, periosteal, mixed celled with a preponderance of round cells. In three of the fatal cases the cause of death was shock pure and simple (Cases 3, 5, and 7), and it was after the death of the patient in Case 7 that I began systematically to inject saline fluid at the conclusion of the operation and since then no patient has succumbed from this cause. The patient in Case 10 rallied well from the immediate effects of the operation and did not cause anxiety until the third day when she began to sink slowly without any assignable cause except that apparently she had no rallying power. You will note that in this case as well as in Cases 3 and 5 permission to amputate was not obtained until a long time after the patient and the friends had been warned that the limb must be sacrificed. In fact, in three out of the four fatalities this prolonged wait was, I believe, the factor that caused the operation to be unsuccessful. Yet it is not to be wondered at that patients or their friends procrastinate in these instances, for a surgeon will generally find that assent to perform an operation is obtained readily enough when a really good prospect of recovery can be promised, whilst waiting is preferred if only a *dernier ressort* can be offered.

The tables of Dr. Sheppard of Philadelphia published in Ashhurst's "International Encyclopædia of Surgery"[4] show that 245 cases undertaken in civil practice give a mortality of 41·1 per cent. Mr. Frederick Page[5] gives 16 cases in which the operation was undertaken for disease in the Royal Infirmary, Newcastle-on-Tyne, with 10 recoveries and six deaths—mortality of 37·5 per cent. Dr. John Erdmann[6] of New York, collecting the figures of eight hospitals in that city, shows 18 cases with eight deaths, or a mortality of 44·4 per cent., but it is quite possible and probable that cases operated upon by a variety of surgeons will show a larger mortality-rate than if one particular surgeon had had the entire experience. Hence Dr. Estes[7] in his own tables had seven cases with one death, or a mortality of 14·2 per cent. But the most remarkable and most successful number of cases that have yet been collected are those of Professor Wyeth[8] who has brought together 69 cases in which hæmorrhage has been restrained by the application of his pin method. Four of these were primary cases and cannot fairly be included in the series as test cases. Their exclusion reduces the number to 65 in which the operation was performed for disease, with eight deaths, a mortality of 12 3 per cent. Of these eight one died from pneumonia on the thirty-second day when the patient was getting about, and one from tuberculous peritonitis on the eleventh day. If these be omitted as not being directly attributable to the operation we have 63 cases and six deaths, a mortality of 9·5 per cent., and one of these was due to a preventable cause, septicæmia.

From these figures I think that we are justified in concluding that an improved modern technique of operating, which includes the antiseptic and aseptic methods, has reduced the mortality of a formidable procedure to such really small dimensions that in suitable cases there is no longer any actual excuse for procrastination and that we are justified in urging operation in cases in which up to now we have been content merely to recommend it. If we can do this the immediate mortality of the operation will in future be possibly reduced even below Wyeth's figures.

[4] Vol. i., 1882.
[5] THE LANCET, March 5th, 1892, p. 523.
[6] Annals of Surgery, vol. xxii., 1895.
[7] New York Medical Record, Nov. 3rd, 1894.
[8] Annals of Surgery, vol. xxv., 1897.

ON RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS.[1]

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CASES of the above occurrence are rare—so rare that having lately observed one I have thought it well to collect the others which have been recorded and endeavour to present as accurate a picture as possible of this hitherto invariably fatal accident. The occurrence seems worthy of attention, not only on account of the interest attaching to its rarity and the peculiar and alarming symptoms with which it is attended, but also because the cases resemble each other so closely in previous history, signs, and symptoms that a correct diagnosis is quite within the bounds of possibility and modern advances in the surgery of the mediastinum seem to warrant a hope in the feasibility of successful intervention in some future case. I shall first detail particulars of a case under my own observation.

A man, aged 40 years (Case 17 in the table) was admitted to the Mater Misericordiæ Hospital at 1 P.M. on Nov. 18th, 1899, complaining of pain, not very intense, in the lower part of the chest and of swelling of the neck. His face was deeply cyanosed, he seemed to be gasping for breath, the pulse was quick and weak, and his general condition was somewhat collapsed. The neck and face were much swollen on both sides and palpation at once revealed the fact that the swelling was due to subcutaneous emphysema. His voice was low and hoarse and he spoke little and that with much difficulty. No treatment had any effect and the dyspnœa became more intense, the pulse weaker, and the emphysema meanwhile crept up to the eyelids and down the thorax. Death occurred at 8 P.M. His friends stated that he was of alcoholic habits and that he "had been more or less drunk every night for the last 20 years." He used to vomit every morning and was much given to "dry retching." On the evening before his death he had had tinned salmon for dinner and the following morning had retched worse than usual. Nevertheless he went to his work and whilst there noticed that his neck was swollen so that his collar became uncomfortably tight. His breathing became difficult and he felt a good deal of pain in the lower part of the chest. The exact period of onset of the symptoms could not, however, be certainly determined. At about noon he left his work and went home, whence his friends took him to the hospital.

Necropsy.—At the necropsy, which was performed by me 40 hours after death, the body was found to be that of a muscular middle-aged man. Post-mortem lividity was extensive and the features were almost obliterated from emphysema which extended from the eyelids to the mammary level. A brownish frothy fluid flowed from the mouth and nose. Post-mortem rigidity was well marked in the legs and elbow-joints, but was absent from the shoulders. On removing the sternum the cellular tissue of the anterior mediastinum was seen to be emphysematous. The left pleural cavity was partly obliterated by adhesions in front and behind it was filled with brown pultaceous fluid in which were bubbles of gas. The left lung was collapsed so far as the adherent pleura would allow and was almost solid with œdema. On removing the lung and sponging out the pleural cavity a slit-like aperture was seen at its lower and back part leading into the œsophagus. The right pleural cavity, almost obliterated by adhesions, contained a little brownish fluid, whilst the lung was covered behind with a layer of discoloured fibrinous exudate which felt greasy. It was intensely œdematous and almost airless. The pericardium contained four ounces of pink serum in which gas-bubbles appeared when the heart was raised up. These were seen detaching themselves from the point of entrance of the pulmonary vessels into the pericardium. The size and weight of the heart were normal, but it was very flabby; there were atheroma of the commencement of the aorta and some

[1] A paper read before the Pathological Section of the Royal Academy of Medicine in Ireland on May 4th, 1900.

fatty degeneration of the left ventricle was noticed. On removal of the heart and the lungs the whole contents of the mediastinum from the root of the neck to the diaphragm were seen coated with brown pultaceous material mingled with bubbles of gas. The matter was seen issuing from a slit-like aperture nearly 1·5 centimetres long in the anterior surface of the œsophagus immediately above the diaphragm. The opening was quite clean cut, with sharp edges from which a few small blood-clots projected—evidently thrombosed veins. The opening extended down quite to the level of the diaphragm and from its lower end a linear tear in the mucous membrane ran some distance into the cardia. There was no trace of ulceration and the wall of the gullet was fully as thick as normal. The wall of the gullet on each side of the rupture felt somewhat softened, but there was no discolouration of the mucous membrane. The mucosa of the stomach was, however, distinctly discoloured—blackened—with hæmorrhagic erosions at the cardiac end, and was streaked with dark lines corresponding to the veins. It was decidedly softer than normal, but could not be said to have been digested. It contained a good deal of brownish fluid identical with that found in the pleural cavities and mediastinum. The abdominal organs seemed healthy, except the liver, which was enlarged and fatty, but, contrary to expectation, not in the least cirrhotic. The omentum was much infiltrated with fat and the pelvis contained a few ounces of serum.

Morbid histology.—The specimen was dissected out and placed in 20 per cent. solution of formalin. The removal from the side of the rent of pieces of tissue comprising the entire thickness of the gullet wall could of course not be practised without materially injuring the macroscopic appearance of the specimen. This drawback was, however, the more readily put up with, because, so far as could be ascertained, no detailed microscopic examination of such a case had ever been published. Three pieces of tissue were therefore removed from different levels at one side of the laceration, comprising the edge of the actual rent and imbedded in paraffin, whilst a much larger piece, comprising a nearly complete transverse slice of the œsophagus, was taken from a point below the lower end of the rupture, so as to include the above-mentioned tear in the mucous membrane, and imbedded in celloidin. This gave the best results as the formalin fixation proved a little too "light" for the best class of paraffin work. 1. The *epithelium* at the level of the rupture was well preserved except on the top of the folds that projected into the lumen. In the crypt-like spaces between the folds it was particularly well preserved and the prickle-junctions of the cells were quite distinct; about 0·1 millimetre from the edge of the rupture it ceased quite suddenly. The tear above mentioned as prolonging the rupture proper down into the stomach was found to be in reality a deep groove between two projecting folds of mucous membrane. The sides of this fold were partly stripped of epithelium, and its floor was broken through so as to lead into a minute cavity in the sub-mucosa crammed with leucocytes and containing clusters of cocci. On the surface of the epithelium there were but few micro-organisms. 2. The *sub-epithelial tissue* near the rupture and below it was much damaged and had to some extent lost its staining power. It consisted for the most part of unstriped muscle in a markedly dissociated state, with a few compound racemose glands, and numerous veins which were strikingly large and for the most part collapsed and empty. Here and there, however, one was seen to contain an organised thrombus containing round mononuclear elements and fibroblasts. There was also diffuse leucocytic infiltration. 3. The muscular coats, longitudinal and circular, were quite thick and well developed. The individual bundles were somewhat loosely compacted, as though they had undergone partial dissociation. Towards the edge of the rupture their outlines became less distinct and faded away amidst masses of multifarious micro-organisms. In both the muscular layers were sinuous tracks crammed with polynuclear elements amongst which spherical and elongated masses of cocci were readily demonstrated in preparations stained by Gram's method (Czaplewski's modification), after previous treatment with lithiocarmine and differentiation in acidulated alcohol. In the bundles of circular muscle, which were of course divided longitudinally on the transverse section of the gullet, patches free from nuclei and presenting a hyaline-degenerate appearance, were here and there detected. 4. The outer fibrous coat contained adipose tissue in small amount, whilst a few nerve-fibres and an occasional ganglionic cell were seen. Its outer surface where it had been in contact with the extravasated gastric contents was quite necrotic and swarmed with various bacterial forms. The nuclei had lost their staining power. The inner part adjacent to the longitudinal muscle coat was in a state of intense leucocytic infiltration and contained numerous colonies of cocci. Other forms of bacteria were not seen. Here were also many large veins, most of them quite solidly thrombosed, the process being of recent date, as was evidenced by the outline of the red discs being still visible. Organisation was, however, in progress, as was evidenced by the presence of mononuclear elements and fibroblasts. Immediately outside these veins were numerous polynuclear leucocytes and cocci. The general impression produced by a study of these sections was that whilst the outside of the gullet and the sides of the rupture were gangrenous and swarmed with the multifarious organisms derived from the gastric contents with which they had been in contact, the deeper parts of the gullet wall were in a state of purulent inflammation owing to their invasion by pus-cocci. There was also a thrombo-phlebitis of the œsophageal veins which, however, could not have been septic in the first instance. Had it been so organisation would hardly have occurred. I cannot look upon either the thrombo-phlebitis or the purulent infiltration as having developed during the few hours that elapsed between the occurrence of rupture and the termination of life. The loss of epithelium and of staining-power and the dissociation of the submucous structures may be interpreted as evidence of a process of intra-vital digestion. Considering, however, the fact that 40 hours elapsed before the necropsy was made, it would not perhaps be justifiable to attribute these changes to other than post-mortem alteration.

PREVIOUS RECORDS.

In searching the records it is important to exclude cases in which the œsophagus has been perforated—(*a*) from within by foreign bodies, such as bones, false teeth, &c., or by bougies, probangs, and the like introduced for diagnostic or therapeutic purposes, or by ulceration,[2] malignant or otherwise; and (*b*) from without, by the erosion of aneurysms, adherent masses of caseous glands, tumours, and the like. The possibility of the occurrence of post-mortem digestion and of agonal œsophago-malacia has also to be borne in mind, and the appearances so produced carefully distinguished from the results of sudden rupture taking place *intra vitam*. Failure to appreciate this distinction is responsible for several erroneous records.[3] Eliminating these faulty observations, there remain 17 indubitable and more or less carefully observed cases of rupture of an apparently healthy gullet. In the appended table I have endeavoured to bring out the salient features of these 17 cases, so far as I have been able to collate them.

The first of these observations, and in some respects the most interesting, was made by the illustrious Boerhaave, who published a full account of it in Latin. His patient was the celebrated Dutch Admiral Baron Wassenaer, and the following is an abstract of Boerhaave's description, which from its fulness and scientific minuteness may well be looked upon as classical. (Case 1 in table.) The baron, a man about 50 years of age, moved in the best society of Holland, and was a diner-out and a large eater, though not a heavy drinker. After meals he used to feel a disagreeable sensation in the cardiac region of the stomach and obtained relief by the use of emetics. On the day of his attack, being in the best of health, the baron partook at his early dinner of the following substantial repast: Veal soup with herbs, boiled lamb with cabbage, fried sweetbread and spinach, a duck, two larks, and a compôte of apples. For dessert he had pears and grapes, followed by sweetmeats. His beverages were beer and moselle. Afterwards he went out riding and on his return, feeling uncomfortable in the epigastrium, he took three cups of hot *thistle tea* to induce vomiting; but with poor success. He then drank four cups more of the same decoction, and whilst straining violently in his efforts to vomit he was suddenly seized with a terrible pain and shrieked aloud so that his servants rushed to his assistance. He exclaimed that something had given way in his stomach and

[2] In excluding cases of ulcer it is important to remember that the mere solution of continuity due to rupture is liable to be described as an "ulcer." Compare the case of Lindemann and that of Lindsay and Lorrain-Smith.

[3] Kade: De Morbis Ventriculi, Halæ, 1798, p. 16. Guersent: Bulletin de la Faculté de Médecine de Paris, 1812, tome i., p. 73. Bouillaud: Archives Générales de Médecine, 1823, tome i., p. 531.

TABLE OF 17 CASES OF RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS.

No. of case.	Sex and age.	Alcoholic.	Previous history.	Onset.	Symptoms.	Emphysema.	Duration of life in hours.	Shape and position of rupture.	Results as determined by necropsy.	Authority and date.
1	Male, over 50.	?	Gouty; heavy eater; accustomed to use emetics.	Sudden, whilst retching.	Felt something give way; intense pain; collapse; typical situs; dyspnœa.	Yes.	18	Complete transverse rent three fingers' breadth above the diaphragm.	Collapse of the lungs; air and gastric contents (104 oz.) in both pleural cavities.	Boerhaave,[1] 1724.
2	Male, ? age.	Yes.	"Debauch" the previous night.	Sudden, after drinking hot water to induce vomiting.	Felt something give way; slight hæmatemesis; severe pain; dyspnœa; collapse.	"	About 12	Longitudinal slit just above the diaphragm big enough to admit two fingers.	Double pneumothorax; gastric contents in both pleural cavities.	Dryden,[2] 1787.
3	Male, 24.	"	Severe epigastric pain and vomiting for several months.	Sudden, after public dinner, during vomiting.	Slight vomiting; severe epigastric pain; typical situs.	"	14	Large rent just above the diaphragm.	"Portions of food in the lower part of the chest."	Wilkinson King,[3] 1843.
4	Male, 38.	"	"Took lye when a child and since then food has stuck near pit of stomach."	Sudden, after attempting to swallow a sausage which became impacted and caused straining.	After striving to vomit, some hæmatemesis; pain; oppression; dyspnœa; typical situs.	"	50	Gaping rent one and a quarter inches long by three-eighths of an inch wide three inches above the cardia; edges sharply defined.	Gangrenous cavity in the posterior mediastinum; "exudation" in both pleural cavities.	Meyer,[4] 1858.
5	Male, 35.	...	Gastric disturbance six weeks previously when a bone was thought to have been swallowed.	Sudden, after carouse.	Vomiting at first, then pain; dyspnœa; collapse; typical situs.	"	11½	Longitudinal tear five centimetres long, encroaching on the stomach.	Double pneumothorax; six to eight ounces of reddish fluid containing solids and fat in each pleural cavity; gangrenous cavity in the mediastinum.	Gramatzki,[5] 1867.
6	Male, 49.	? Probably.	—	Sudden, after meal of ducks, green peas, and plum-pudding.	Felt something give way during vomiting; pain; dyspnœa; collapse; died asphyxiated.	"	16	Longitudinal slit one inch long just above the diaphragm.	Three quarts of fluid containing food in the left pleural cavity; lung collapsed.	Griffin,[6] 1869.
7	Male, 35.	Yes.	Drinking hard for several days before onset; from infancy had some dysphagia.	Sudden, after vomiting and whilst exercising a horse.	Felt something give way; pain; dyspnœa; intense thirst; collapse.	Not stated.	7½	Slit one and a half inches long in the left side of the lowest part of the gullet, extending further in the mucous than in the other coats; edges well defined above; irregular and softened below.	Gangrenous cavity in the posterior mediastinum opening into the left pleural cavity, which contained two quarts of fluid containing starch and oil; lung collapsed.	Charles,[7] 1870.
8	Male, 31.	"	Repeated attacks of gastritis; delirium tremens; hæmatemesis.	Sudden, during violent efforts to dislodge a piece of meat impacted in œsophagus.	Pain and dyspnœa, not very prominent at first; fever.	Yes.	180	Rent two inches long at the level of the bifurcation of the trachea.	Cavity in the right side of the posterior mediastinum crossed by fibrous bands and filled with clot; overlying pleura adherent.	Fitz,[8] 1877.
9	Male, 17.	No.	Attack of blood-poisoning a short time previously.	Sudden, during vomiting.	Hæmatemesis: intense feeling of suffocation; pain; collapse.	Stated to have been present before date of rupture; but?	4	Rent 1·5 centimetres long at one inch above the cardia.	Opened into the left pleural cavity, which contained gastric contents.	Taendler,[9] 1878.
10	Male, 53.	"	Dyspeptic for many years with occasional vomiting.	Sudden, after feeling unwell for two hours after dinner.	Severe pain in the left side and shoulder; collapse.	Not stated.	7	In posterior wall of the gullet one and a half inches long just above the diaphragm; through the mucous and submucous coats only above.	—	Adams,[10] 1878.

TABLE OF 17 CASES OF RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS—(*Continued*).

No. of case.	Sex and age.	Alcoholic.	Previous history.	Onset.	Symptoms.	Emphysema.	Duration of life in hours.	Shape and position of rupture.	Results as determined by necropsy.	Authority and date.
11	Male, 48.	?	Chronic gastric ulcer.	Sudden.	Vomiting, followed by pain and collapse.	No.	15	"Ulcer" two centimetres long by one centimetre wide in the posterior wall of the gullet two centimetres above the cardia and a little to the right; edges thickened, somewhat funnel-shaped.	Double pneumothorax; food in both pleural cavities; infiltration of the posterior mediastinum with gastric contents.	Lindemann,[11] 1887.
12	Male, 32.	No.	"Good eater; drank little."	Sudden attack of nausea causing the patient to tickle the fauces with his finger; during retching agonising pain and sensation of something having given way.	Pain; collapse; cyanosis.	Yes.	"A few."	Clean tear one centimetre long just above the cardia.	Left pleural cavity full of gas and food.	Wolff,[12] 1894.
13	Male, 47.	No.	Vomiting; dyspeptic.	Sudden, whilst vomiting.	Pain; collapse; dyspnœa; voice higher pitched than usual; disappearance of cardiac dulness.	Yes.	13½	Sharply defined rent one and a half inches long immediately above the cardia.	Left pneumothorax; in each pleural cavity was a pint of grumous fluid like gastric contents.	Harrison,[13] 1893.
14	Male, 59.	Yes.	Drinking hard for a week previously to admission.	Sudden.	Pain; dyspnœa; effusion into the left pleural cavity.	Yes.	37	Sharply defined "ulcer" one and a half inches long two inches above the cardia, involving the mucous membrane only below.	Accumulation in the posterior mediastinum, bursting into the lung but not communicating with the pleural cavity; gas in the mediastinum; acute pleurisy on both sides.	Lindsay and Lorrain Smith,[14] 1899.
15	Male, 43.	?	"Quite healthy."	Sudden; illness and vomiting after eating.	Collapse.	?	6	Rent two centimetres long in the gullet six centimetres above the cardia.	Food in the left pleural cavity.	Heintze,[15] 1900.
16	Female, 62.	No.	?	Sudden, after vomiting induced by salt and water.	Intense epigastric pain aggravated by swallowing; dyspnœa; collapse.	Yes.	22½	Rent five-eighths of an inch long one and a half inches above the diaphragm.	Lower part of the gullet was much softened; brownish fluid in the posterior mediastinum and the left pleural cavity; collapse of the left lung.	Bowles and Turner,[16] 1900.
17	Male, 40.	Yes.	"Drunk every night for 20 years;" much addicted to retching.	Sudden, probably during retching.	Pain not the most prominent symptom; intense dyspnœa; cyanosis; collapse.	Yes.	About 10	Slit-like rent 1·5 centimetres long in the anterior surface of the gullet just above the diaphragm, prolonged into the stomach by a fissure in the mucosa.	Contents of the stomach in the posterior mediastinum and the left pleural cavity; collapse of the left lung; acute pleurisy of the back of the right lung; gas in the mediastinum and the pericardium.	McWeeney, 1900.

[1] Atrocis nec descripti prius Morbi Historia secundum medicæ Artis Leges Conscripta, Lugd. Batav., 1724.

[2] Medical Commentaries, Edinburgh, 1788, Dec. ii., vol. iii., p. 308.

[3] Guy's Hospital Reports, 1843, second series, vol. i., p. 113.

[4] Medicinische Vereinszeitung in Preussen, 1858, No. 39, No. 40, and No. 41.

[5] Ueber die Rupturen der Speiseröhre, Inaugural Dissertation, Königsberg, 1867.

[6] THE LANCET, Sept. 4th, 1869, p. 337.

[7] Dublin Quarterly Journal of Medical Science, 1870, vol. i., p. 311 gives literature).

[8] American Journal of the Medical Sciences, 1877, p. 17 (gives literature).

[9] Deutsche Zeitschrift für praktische Medicin, 1878, No, 52.

[10] Transactions of the Pathological Society of London, vol. xxix., p. 113.

[11] Münchener Medicinische Wochenschrift, 1887, No. 26.

[12] Medical News, 1894, No. 19.

[13] THE LANCET, April 8th, 1894, p. 784.

[14] Lindsay: Transactions of the Royal Academy of Medicine in Ireland, 1899, vol. xvii., p. 53.

[15] Freie Vereinigung der Chirurgen Berlins. Sitzung vom 12 Feb., 1900, abstracted in the Medicinische Woche, 1900, No. 7, p. 63.

[16] Brit. Med. Jour., 1900, vol. i., p. 763.

that he felt sure he must die at once. In a cold perspiration and ghastly pale he was taken to bed and the nearest medical man was sent for who resorted to friction with warm cloths, administration of mucilaginous drinks, olive oil, and poultices. There was no more vomiting and everything taken was retained. Boerhaave, who then came on the scene, found the patient complaining only of an intense pain in the epigastrium much increased by eructation and by movements of the spinal column. He was sitting up in bed with his body bent forward almost doubled in two. There was no nausea, no difficulty in swallowing, no hiccough, and no abdominal tenderness. The patient's mind was quite clear, and he assured Boerhaave that some change must have taken place in the position of parts within the chest. Diagnosis was impossible, and the measures resorted to—hot fomentations, venesection, &c.—were unavailing to give the slightest relief. Very little urine was passed despite the large amount of fluids swallowed. After a night of the most intense agony, dyspnœa began to come on; the pulse began to fail about 3 o'clock in the following afternoon, and death supervened at 5 o'clock. 24 hours afterwards Boerhaave made the necropsy. He found extensive subcutaneous emphysema, the heart normal, and both lungs collapsed. The pleural cavities contained 104 ounces of fluid, consisting for the most part of what had been taken by the patient during the last hours of life. The material smelt of roast duck. On the pleura covering the œsophagus was a flabby blackish spot about three inches in diameter in the centre of which was a rent one and a half inches long by about a third of an inch wide, from which fluid similar to that in the pleural cavities could be squeezed, and which communicated with the lumen of the gullet. This was found to have been ruptured and the two ends retracted in opposite directions. The most careful examination failed to reveal the existence of any ulcerative or other morbid process in the coats of the gullet which appeared quite healthy. The stomach and intestines were distended with gas but otherwise normal.

This case recorded by Boerhaave is unique in presenting a complete transverse division of the gullet. Its rapid course and severe symptoms are in harmony with what is usually observed. Fitz's case (Case 8 in the table), on the other hand, lasted no less than seven and a half days, and as the observation has been very carefully and fully recorded by its author, who was at that time assistant professor of pathology at Harvard, it may properly be abstracted in this place. The patient, a merchant, aged 31 years, was in a debilitated condition from over-indulgence in alcohol, and suffered from gastritis and hæmatemesis. For years he was in the habit of cutting his food into small pieces, and he ate slowly, but never complained of pain or difficulty in swallowing. Whilst at supper a morsel of food lodged in his gullet, and it was only after an hour of great discomfort that he succeeded in ejecting the substance, which proved to be a piece of gristly meat nearly circular in shape, about an inch in length and rather more than half an inch in diameter. It came from his mouth with noise and force as if propelled from a popgun; he sank back exhausted and ejected a moderate quantity of clotted and liquid blood. A swelling was then noticed at the angle of the lower jaw on each side (emphysema). In the subsequent progress of the case but little pain was complained of till the sixth day, when it became sharp and excruciating and was accompanied by tonic spasms of the flexor muscles of the limbs. Swallowing and vomiting could both be quite well performed. Respiration was likewise not interfered with until the last day of life. Emphysema was extremely pronounced; the whole subcutaneous tissue of the body appeared to be undergoing a process of inflation. The face, the eyelids, the upper part of the chest in front, and the entire back were swollen; the scrotum was enormously distended and the inflation extended to the middle of the thighs. At the necropsy Dr. Fitz found the anterior mediastinum to be emphysematous, independently of the conditions produced on removal of the sternum. The left pleural cavity was obliterated by old adhesions which were emphysematous and the costal pleura contained numerous bullæ distended with air. The lungs were œdematous and the lower lobes were moderately collapsed. In front and to the right, at and below the bifurcation of the trachea was found a longitudinal rupture of the œsophagus two inches in length extending through all its coats. Its edges were sharply defined and gave no evidence microscopically or otherwise of a pre-existing ulcerative or degenerative process. A communication was thus established between the œsophagus and mediastinum in all directions and behind the former to a limited extent. This cavity was of the volume of a small lemon, was crossed by fibrous trabeculæ, and was filled with clotted blood. Its walls, neither soft nor pulpy, were of greenish hue, and the thickened and reddened left pneumogastric nerve could be seen projecting behind. The tissues of the posterior mediastinum on the left side were spongy and stained with blood. The pleura covering the cavity mentioned on the right side was adherent to the opposed upper lobe of the lung, the adhesions being recent, discoloured, and offensive. The inner surface of the œsophagus, from the bifurcation of the trachea to the cardiac orifice of the stomach, was of a greenish colour. Its epithelium was slightly flocculent, occasionally thickened in patches, and was entirely absent over a space an inch in diameter below the rent, the exposed surface being smooth and shining; its walls were of normal consistence. The appearances presented by the stomach were those of chronic gastritis and there was no indication of post-mortem softening.

To the cases of undoubted rupture of the œsophagus (17 in number) which have been sufficiently recorded for inclusion in the table, there must be added, as almost certainly belonging to this category yet not recounted in sufficient detail for tabulation, the cases of Williams[4] (1848), Oppolzer[5] (1851), Bailey[6] (1873), and Heyfelder.[7] A case recorded as rupture of the œsophagus by Colegrove,[8] the account of which is not accessible to me, seems to have escaped the notice of Fitz, who, writing in America, might have been expected to have come across it in his review of the literature.

The subject has been discussed and the literature up to date collected by my friend and colleague on the examining board of the Royal University, Professor Charles of Queen's College, Cork, in 1870. This was in connexion with a study of the case that came under his own notice. In 1877 Fitz published the case above abstracted, which was under the care of Dr. Adams of Baltimore. Fitz also took occasion to collect the literature up to date and discussed it very ably, though I cannot agree with him in his exclusion of several records which appear to me to be genuine cases of intra-vital rupture, such as those of Boerhaave (Case 1 in table), Dryden (Case 2), King (Case 3), and Charles (Case 7). Dr. John Knott of Dublin has also treated of the subject in a very admirable way in an "Essay on the Pathology of the Œsophagus," which gained the gold medal of the Dublin Pathological Society at the close of the session of 1877. There is, further, a full notice of the accident and a discussion of its distinction from agonal and post-mortem œsophago-malacia in Zenker and von Ziemssen's "Cyclopædia of Medicine."[9] Finally, Sir Morell Mackenzie has dealt with the subject in his work on "Diseases of the Nose and Throat," and extended our knowledge by a series of experiments the outcome of which I shall return to later.

A number of cases described or quoted as examples of this condition prove on examination to be examples of agonal or post-mortem œsophago-malacia. Details of such up to 1877 will be found in the work of Fitz and that of Zenker and von Ziemssen, and references to some of these have already been given here. In collating the records I have considered it necessary to eliminate two cases published by Stanley Boyd.[10] One was that of a child, aged four months, who had been suffering from high fever and quick pulse, with an erysipelatous rash. Difficulty in breathing came on two hours before death. There was no emphysema. At the necropsy an aperture two millimetres in diameter was found midway between the bifurcation of the trachea and the cardia. For a short distance above and below it the circular muscle fibres were exposed between two separated longitudinal bands. Except for several narrow clots about an inch long, lying in furrows between the longitudinal folds, no morbid change was detected in the

[4] Transactions of the Pathological Society of London, 1848, vol. i., p. 151.

[5] Wiener Medicinische Wochenschrift, 1851, p. 65. (The patient in this case was presumably a female who strained herself during ironing.)

[6] New York Medical Journal, May 1873. (The patient in this case was a robust negro. There was a longitudinal rent three-quarters of an inch long one inch above the cardia. He lived 24 hours. ? emphysema.)

[7] Sanitätsbericht ueber das Fürstenthum Hohenzollern-Sigmaringen, 1837. (The patient was a male drunkard. There was a very large rent of the size of a threepenny piece close to the cardia.)

[8] Buffalo Medical Journal, 1849 and 1850.

[9] English edition, 1878, p. 90, et seq.

[10] Transactions of the Pathological Society of London, vol. xxxiii., p. 123.

gullet. At the necropsy extravasation of gastric contents is not mentioned. The left pleural cavity was normal; the right contained an ounce of bloody fluid; the lungs were not collapsed. The committee (Dr. J. F. Goodhart and Mr. H. T. Butlin) to which the specimen was referred reported on it as a case of "gastric solution," and from the age of the patient, her previous illness, and the absence of emphysema and of extravasation of gastric contents, I have little doubt that the case was an example of agonal œsophagomalacia.

Boyd's second case was that of a girl, aged 18 years, who was the subject of Addison's disease and who had suffered from persistent vomiting for several months. There was no sudden pain, no pneumothorax, no emphysema, and no dyspnœa. At the necropsy there was a longitudinal rent five centimetres long in the left side of the œsophagus immediately above the cardia; part of the overlying pleura had disappeared, and "this must have been due to digestion." The stomach showed some deep circular erosions and black lines marking the course of the vessels. The same committee reported on this specimen also and found that "the mucous membrane at the level of the opening was dark and thickened as if from pre-existing disease, but the slit-like character of the opening and an uneven furrow between the longitudinal rugæ parallel to it are suggestive of gastric solution. But it seems probable that the œsophagus had been weakened by pre-existing disease and gastric solution, or both together, and had given way during the last few hours of life, and we think the specimen may serve to call attention to the occurrence of gastric solution during the enfeeblement immediately preceding death—an occurrence which is probably not very uncommon, which has never yet been adequately described, and which has produced within our knowledge most puzzling appearances." These reports manifestly place the cases in question outside the category of spontaneous rupture of the apparently healthy œsophagus. On the other hand one meets with cases described under the name of ulcer which undoubtedly belong to the category now under notice. Lindemann's (Case 11 in table) is one of these, and the case reported by Professor J. A. Lindsay and Professor Lorrain Smith (Case 14) is another. To the courtesy of Dr. Lorrain Smith I am indebted for an opportunity of examining the specimen, which is preserved in the pathological collection at the Queen's College, Belfast, and have been able to convince myself that it is of a similar nature to my own. A solution of continuity in the wall of any tubular viscus is by many pathologists termed an "ulcer," especially when gaping of the sides of the rent suggests loss of substance.

General Features of the Cases.

Sex.—Of the 17 cases 16 were those of men: one of the non-tabulated cases (Oppolzer's) was that of a woman.

Age.—The subjects were mostly men in the prime of life, the average age of those of whom it is recorded being 42 years.

Alcoholism.—This seems to be a pre-disposing cause, and in eight of the 17 cases there is a distinct history of excessive drinking.

Vomiting.—In eight of the cases this was of frequent occurrence, whether the result of excessive eating or drinking or induced by emetics. It is, however, as an exciting cause that vomiting is especially prominent in connexion with rupture of the œsophagus, for in every one of the cases tabulated the accident seems to have occurred either during vomiting or whilst the patient was straining to accomplish the act (retching).

Symptoms.—In a number of the cases there was a distinct feeling that something had given way within, and in all there was pain, usually of the most agonising character, speedily followed by collapse and nearly always associated with dyspnœa. The position adopted by the sufferer was characteristic—sitting up with the trunk stooped forward as much as possible. The pain was usually aggravated by swallowing and sometimes by eructation. The most striking of all the symptoms and one of the most constant is emphysema. It appears first in the neck spreading up to the face, causing more or less obliteration of the features, and downwards over the trunk, reaching to the scrotum and thighs. The symptom was present in 12 of the cases and probably in several of the others, but the records of some of these are imperfect [Adams (Case 10 in table), Taendler (Case 9), and Heintze (Case 15.] These characters make up an extremely well-marked and very unusual clinical picture, which, once seen, is indelibly imprinted on the recollection.

Duration of life.—Fitz's case (Case 8 in table) survived by far the longest—seven and a half days. The other 15 cases in which the duration is stated lasted on an average only 17 hours.

Position and shape of rupture.—In all the cases save that of Fitz, the opening was immediately above the diaphragm, and was often prolonged upwards or downwards by a sort of fissure in the mucous membrane. This feature was especially well marked in my case. Save in the case of Boerhaave (Case 1 in table) the shape of the rupture was a longitudinal slit opening usually into the left pleural cavity, sometimes into both, occasionally (Lindsay and Lorrain Smith, Case 14 in table) into neither.

Etiology.—Charles in his very able paper[11] considers that "the rupture followed softening which may have resulted from chronic inflammation of the stomach and lower third of the œsophagus. The continued ingestion of alcohol probably induced a chronic gastritis or gastro-enteritis, the inflammation involving also the lower third of the œsophagus. Softening of the mucous membrane occurred as a consequence. ..... Immediately preceding or accompanying the vomiting there may have been temporary spasm of this tube resembling the 'hour-glass' contraction of the uterus, and under these circumstances the contents would be impelled against its parietes close to the cardiac orifice." This view is practically identical with that subsequently adopted by Zenker and von Ziemssen. Fitz[12] considers that "two factors are essential—the impaction of a foreign body in the œsophagus and the exercise of great muscular force in the attempts to remove it." This opinion is manifestly incorrect, inasmuch as the factors in question were present only in two of the cases—that of Meyer (Case 4 in table) and his own.

A much better grounded opinion is that of Zenker and von Ziemssen[13] who look upon rupture as the consequence of a digestive softening of the œsophagus occurring *intra vitam* in persons who are quite well otherwise. They lay down the following conditions as pre-requisite for the production of the softening: (1) regurgitation of stomach contents rich in pepsin and acid; (2) protracted retention of regurgitated food in the œsophagus; and (3) cessation or great weakness of the circulation. The first of these conditions occurs when the stomach is over-distended, or in association with attempts at vomiting. The protracted retention would be realised if there were diminished muscular energy in the œsophagus such as might readily be occasioned by the exhaustion due to continuous and violent vomiting. The local circulatory disturbance is harder to account for. Zenker and von Ziemssen think that the œsophagus, on account of its much less abundant blood-supply, is proportionally less protected against the gastric juice than the stomach, and, as regards the nature of the disturbance the authors reject infarction and embolism, curiously enough omitting to mention thrombosis, which, in view of the frequency of varicose veins in the lower part of the gullet, seems the most probable cause. They speak of a "spastic ischæmia" and conclude as follows: "And hence, accepting Andral's witty remark that in consequence of varied emotions the stomach, quite as well as the skin, may now turn pale and now be suffused, we shall certainly ask whether the striking pallor of the face and lips during vomiting does not extend to the stomach and œsophagus. This ischæmia may not ordinarily extend to a degree where the tissues would be exposed to the action of the gastric juice, but an unwonted increase in the same would open the door for a catastrophe. After all we have said we hold that the view is well founded that all cases of spontaneous rupture of the œsophagus may be referred to an intra-vital œsophago-malacia."

Mackenzie considers that the immediate cause of rupture is vomiting, and that "vomiting only causes rupture when the contents of the stomach cannot be expelled through the gullet at the same rate that they leave the viscus. ..... It is probable that some temporary obstruction near the upper end of the gullet preventing the flow of fluid matters from the stomach is the essential feature in rupture." He then points out that "to determine the cause of this obstruction is not always possible. In two cases, as already remarked, a foreign body was impacted in the œsophagus, but these were

[11] Loc. cit. [12] Loc. cit. p. 34.
[13] Loc. cit., vol. viii., p. 106.

exceptions. In all the others the obstruction, if present, must have been due to something inherent in the tube itself. This is probably to be found in strong contraction of the circular fibres of the gullet at the upper part of the œsophagus. In two cases—those of Fitz (Case 8 in table), and of Wilkinson King (Case 3)—there was tetanic spasm, affecting in the one the flexors of the limbs and in the other the abdominal muscles; and it need hardly be pointed out that if such a condition existed at the same time in the muscular walls of the gullet rupture would be likely to take place." In writing the above Mackenzie must have forgotten that the cramp did not come on till long after the occurrence of the rupture—on the seventh day of the illness in Fitz's case, and after the onset of pain and dyspnœa in that of Wilkinson King. Mackenzie endeavoured to found his view on a basis of experiment by testing a number of normal gullets removed post mortem in order to find out at what point and in what manner they underwent rupture when overstrained by excessive pressure from within. He concluded (1) that rupture by direct pressure applied within the œsophagus always takes place in a longitudinal direction; (2) that the rent never occurs in the upper part of the tube and in most cases is confined to the lower third; and (3) that the mucous membrane offers greater resistance to strain than the muscular covering.

Before dismissing from our attention the valuable work of Mackenzie on this subject, it is only right to say that, in rejecting the auto-digestion theory of Zenker and von Ziemssen, he has quite failed to grasp the exact nature of their position. He quotes them as considering that the accident results chiefly from "intra-mortem œsophageal malacia," or softening of the coats from peptic solution in the last hours of life. But the German authors distinctly lay down[14] "that œsophago-malacia may be developed in rare cases *intra vitam* in a patient who is perfectly well, without any connexion with any preceding serious disease, and form the basis of the so-called spontaneous rupture of the œsophagus."

That intra-vital digestion is not the sole cause is clearly proved by the uniformly longitudinal form of the aperture and its sharply-defined edges—characters which are just the opposite of those met with in gastro-malacia. That pressure from within cannot be the sole cause is, I think, evident from the exceeding rarity of the accident despite the frequency with which the œsophagus is distended by relatively enormous foreign bodies.

The conclusion to which I have arrived as the result of a careful study of existing data is, that the two main factors that are operative in causing rupture of the macroscopically normal gullet are (*a*) softening of the coats and (*b*) sudden increase of pressure from within. The softening is due partly to intra-vital digestion, and partly (at least in the case which I observed) to inflammatory infiltration. The intra-vital digestion is to be accounted for by (*a*) circulatory disturbance, which in my case took the form of venous thrombosis, and (*b*) prolonged sojourn of peptic matters in the gullet from prolonged retching. The increased pressure from within is doubtless ascribable to the violent propulsion of the gastric contents into the lower part of the gullet whilst its upper outlet is obstructed by the contracted state of the muscle—in other words to want of coördination of the muscular action of the tube, probably due to exhaustion from prolonged over-activity. Whether a localised phlegmonous œsophagitis—for that is the condition which existed in the case now recorded—is a constant factor in these cases, it is of course impossible to assert in the absence of microscopical details of the other cases. I believe I may lay claim to be the first to establish the existence of this condition as a possible cause of rupture of the apparently healthy gullet.

Dublin.

[14] Loc. cit., p. 105.

BATH MINERAL WATER HOSPITAL.—At the meeting of the committee of this institution held last week it was decided to make alterations and improvements in the hospital at a cost of upwards of £5000. Our commissioner's strictures seem to have had a good effect.

THE Professor of Physiology in Tübingen, Dr. Willy Kühne, who died last month, left directions that his body was to be cremated and that during the process the first movement of Beethoven's Ninth Symphony was to be performed; also that no memorial festival should be held.

A CASE OF PERNICIOUS ANÆMIA FOLLOWING ON TRAUMATIC STRICTURE OF THE SMALL INTESTINE.

BY ARTHUR E. BARKER, F.R.C.S. ENG. & IREL.,
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(With Pathological Report by W. Hunter, M.D.)

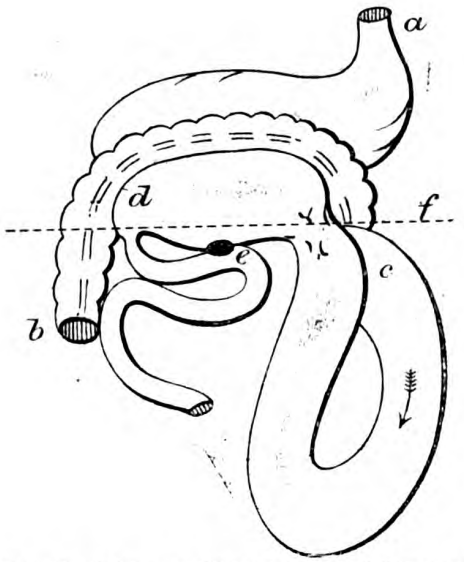
A CAREFUL perusal of Dr. William Hunter's most suggestive essays on pernicious anæmia has convinced me that the following case ought to be put on record. I do not feel competent to pronounce on the general questions which this writer so ably raises, but the case appears to me to lend strong support to his views as far as it goes. It has also some points of intrinsic surgical interest and especially the effect of cart-wheel accidents upon the intestine short of actual rupture. The notes and observations on the blood, &c., were accurately kept by my house surgeon, Dr. F. H. Thiele, whose abstract of them forms the basis of this record. Dr. Hunter has also kindly added a report on his study of specimens obtained at the post-mortem examination which adds great interest to the case.

A man, aged 28 years, a sawyer, was admitted into University College Hospital on Feb. 5th, 1900. He had always enjoyed good health until seven years ago when he was run over by a loaded wagon. The two near wheels, which were broad, passed over the lower part of the thorax, breaking, it is stated, five ribs and splintering another. This was followed by "pleurisy and inflammation." He was ill for 14 weeks, and after this began to have the attacks now complained of. There was no history of syphilis, rheumatic fever, or tumours, but the patient had always suffered from "heartburn," which had been worse since the accident. The patient had always been quite temperate. He had been well fed and had lived among healthy surroundings.

On admission he was noted as being very well nourished, inclining to fat, but extremely anæmic. This was most marked in the conjunctivæ, lips, and finger-nails. An examination of the abdomen revealed no abnormality of the internal organs and only a slight tenderness and increased resistance midway between the right iliac spine and the navel. Nothing unusual could be felt from or in the rectum. His reason for seeking treatment now was extreme weakness and anæmia with periodic attacks of pain and vomiting which set in soon after the accident seven years ago. These had occurred at intervals of from a week to a month and lasted from a week to a fortnight. During these attacks pain and swelling began about two inches to the right and below the umbilicus and spread from there all over the abdomen. At the same time the patient had vomiting and diarrhœa. The vomit consisted of food and green fluid which tasted bitter and sour. The motions during these attacks were much lighter in colour than usual, and sometimes very pale indeed. The pain was much relieved by change of posture in any direction. The great pallor was first noticed in the summer of 1899, and since September, 1899, the patient had suffered from shortness of breath on exertion accompanied by palpitations. During and after September, 1899, the patient was prevented from working for about 10 weeks by vomiting and diarrhœa. On admission the temperature was 99·4° F. and the pulse was 112. This was about the average for nearly a week, when the fever slightly increased to about 100° or a little over this. He then (Feb. 17th) had the first attack of pain since admission. It began at the point described and spread all over the abdomen, lasting about one and a half hours. He vomited at this time both food and bile, and had a loose stool without any undigested food or fat and not offensive. Dr. Thiele's analysis of the blood showed red corpuscles 2,000,000, white 54,000, and hæmoglobin 30 per cent. The optic discs were now examined and were found to be normal. On Feb. 16th the stomach was washed out, but showed nothing abnormal. On the 17th a hæmorrhage was noticed in the left eye above and to the outer side of the optic disc. Pain and vomiting occurred on the previous night. The vomited matter was bile-stained with very little undigested food. It contained free hydrochloric acid. Reduced iron was now

given. The diet was full and was eaten with appetite except in the morning. The patient was growing paler. On the 21st he vomited twice with but little pain. The urine had been free from albumin since admission. It was acid and of normal colour with an excess of indican. Urea 2·5 per cent. There had been no loss of flesh, but the pallor was increasing very much and severe headache had been complained of for some days. On the same day (the 21st) an examination of the blood showed red corpuscles 1,000,000, hæmoglobin 20 per cent., and white corpuscles 1 : 450. The blood itself to the naked eye was very thin and watery; megalocytes and microcytes, but no nucleated red corpuscles, were seen. Feeling now satisfied that there was some serious lesion high up in the small bowel, probably of the nature of a stricture, I decided to explore the abdomen.

Operation was performed on Feb. 22nd. The abdomen was opened in the mid-line above the umbilicus. The first thing noticed was a coil of enormously distended and thickened small intestine of white colour, which for the moment was taken to be the stomach. It was seen, however, on nearer inspection to lie below the colon, but to overlap it above. The distension terminated to the right of the spine in a sharp kink among many old smooth adhesions,



a, Stomach. *b*, Colon. *c*, Dilated jejunum, coil 7 ft. long. *d*, Dilated jejunum above stricture. *e*, Anastomosis between dilated and healthy jejunum. *f*, Obvious course of cart-wheel.

and below this the intestine was normal and empty. On pushing the finger into the distended coil so as to invaginate it a narrow stricture could be felt at the kinked spot. To the left the dilated coil was held down to the spine by adhesions which led me to the conclusion that I was dealing with the first part of the jejunum as it emerged from under the plica. These adhesions, too, were all smooth and evidently old. I now anastomosed the distended loop with the empty portion below the kink and stricture. This was done by a double row of silk sutures in the usual way. In making the openings in the contiguous loops the contrast between the thick-walled upper portion and the thin-walled normal viscus below was very striking. The abdomen was now closed in with silk sutures. The operation lasted 50 minutes and towards the end the condition of the patient was not very good. On this account a pint of normal saline solution was injected hypodermically during its concluding stages. After the operation there was a good deal of pain which was relieved by morphia, after which the patient fell asleep. The pulse was 116, the temperature was 102·2°, and the respiration was 38. The next morning he was not so well. The temperature was 102·8° and the pulse was 136. Death took place at 5.15 on the 24th.

The condition of things at the post-mortem examination was most instructive. The anastomosis left nothing to be desired as to water-tightness. Union was sound as tested in various ways and there was no peritonitis. The point of anastomosis lay in front of the spine nearly in the middle line. It united an enormously distended and thick-walled loop of small intestine with an empty coil lying below it. The cause of the distension was seen to be a tight stricture of the gut lying just to the right of the spinal column below the transverse colon, where the small intestine was kinked on itself as well. This kink was glued to the spinal column by many adhesions of old date. To the left of the spine the dilated coil was similarly held down by adhesions close to the termination of the duodenum. This had given the wrong impression at the operation that the distended coil was the first foot or so of the jejunum as it emerged from under the fold containing the mesenteric artery. On further examination now it was seen that the point glued by adhesions to the spine corresponded to a spot about seven feet below the commencement of the jejunum and that the whole of the left side of the abdomen was filled by a very much dilated and thick-walled coil of the latter some seven feet long. This coil was distended to about the size of an adult forearm with pale yellow fluid which was only escaping slowly through the anastomosis into the healthy bowel below (*vide* diagram). The crushing injury from the cart-wheel had also caused adhesions between the transverse colon and adjacent small intestine and had destroyed the upper end of the right kidney which was converted into a fibrous mass. The second part of the duodenum had also been damaged by the wheel. Its serous coat had been cracked in places, leaving the muscular coat exposed. These patches were glazed over and healed but stood out clearly against the normal bowel. The cracks reminded one of what is seen in cases of intussusception where the serous coat gives way, but I had never before had an opportunity of seeing such a crack healed. It was seen in this case that such a lesion could be repaired without the muscular coat adhering to any surrounding organ. The liver as tested by Dr. W. Hunter, who was present, contained a large excess of iron. On opening the distended bowel the stricture was found to be due to the contraction of an ulcer produced by the crushing of the mucous membrane where the cartwheel caught it against the spine. It was annular and the lumen was only about the size of a cedar pencil. Other healed ulcers were seen above it and some partially healed. The seven feet of bowel between the stricture and the duodenum were enormously dilated and full of pale yellow fluid like thin custard. This was taken away by Dr. Hunter for analysis. On examining the mouth and nose the ethmoidal sinuses were found to be full of pus. In all these factors the conditions were present which Dr. Hunter believes to be at the root of pernicious anæmia—suppuration connected with the mouth, a stricture of the intestine retaining the contents long enough to ensure their decomposition, and the formation of a specific poison.

The cause of death was probably the escape of the poison through the anastomosis and its rapid absorption by the previously healthy and empty intestine as indicated by high temperature and rapid pulse. One can only regret that no opportunity had been given for the performance of the same operation some months earlier before the patient had become so profoundly overcome by the disease.

Pathological Report.

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I am indebted to Mr. Barker for the opportunity of seeing the case above described, which has proved to be one of especial interest in relation to the pathology of pernicious anæmia. I only saw the patient a few hours before his death when he was too ill to be thoroughly examined. Nevertheless, from the account of his illness, his appearance, the degree of oligocythæmia (far greater than any ever caused by ordinary malnutrition or wasting disease however profound), and the character of his gastro-intestinal symptoms, I regarded the case as one of pernicious anæmia. This view was fully confirmed by the result of the necropsy, and still further by the subsequent investigation, both microscopic and chemical, which, thanks to Mr. Barker's courtesy, I was enabled to make on the material obtained from the case.

Nature of examination.—I was afforded the opportunity of being present at the necropsy, and I append the notes which I then made. I have subsequently examined microscopically the following tissues and organs—viz., blood, spleen, lymph

glands (gastric and mesenteric), liver, kidney, tongue, gums, teeth, stomach, small intestine, and colon; also chemically the liver, spleen, and kidney for iron; and, lastly, both microscopically and chemically the stomach contents. The number of sections so far microscopically examined has been close on 200.

Summary of results.—1. There were characteristic pigment changes with large excess of iron in the liver and kidney and intensely deep colour of bile denoting excessive hæmolysis. 2. The ordinary blood changes of pernicious anæmia, including the presence of nucleated red corpuscles in the blood, spleen, and glands. 3. Dental decay and necrosis with pus sacs at the roots of the teeth, collection of pus in the ethmoidal sinuses, and foul granulations around a necrotic tooth. 4. Stomach: fatty infiltration, degeneration, catarrh, and desquamation of the glandular cells; presence of cocci (oxyntic cells least affected) in the perivascular lymphatics of the submucosa at certain parts. 5. Intestine: there were no post-mortem changes. There were a number of ulcers in various stages (active, healing, and healed) above the constricted portion of the gut. At other parts there was thinning of the mucosa; the cells of the glands generally were normal; at parts there was superficial inflammatory necrosis of the mucosa due to the presence of organisms, at others replacement of glands by cicatricial tissue amidst which streptococcal organisms were numerous, and at others the presence of cocci in the perivascular lymphatics of the submucosa. 6. Colon: there were no post-mortem changes. The lymphoid elements of the mucosa were well preserved and staining was normal. (*a*) There was intense degeneration and necrosis of the glandular cells, hardly a normal cell remaining. The cells represented by granular detritus were crowded with organisms, most of them cocci, only a few bacilli; (*b*) cocci, both single and in chains, were very abundant in the deeper parts of the mucosa around the base of the glands (they were absent from the superficial mucosa) and at parts they were very numerous in the lymphatics of the submucosa. Their streptococcal nature in parts was very obvious. 7. Pus of ethmoidal sinus: "Staphylococcus pyogenes aureus and bacillus coli communis, the latter being probably a post-mortem contamination" (Dr. Eyre, Bacteriologist, Charing-cross Hospital). 8. Stomach contents: chemically there was neither free hydrochloric acid nor butyric acid. Lactic acid was present. Microscopically there were numerous organisms, including mouth bacilli. All of them were decolourised by Gram's method with the exception of a streptococcus form (streptococcus longus). The contents were deeply bile-stained, resembling closely in appearance and character the contents of the jejunum. No cultures were obtainable owing to excess of formalin. 9. The percentage of iron in the liver was 0·360; in the spleen, 0·069; and in the kidney, 0·330. To show the notable increase of iron in the liver and kidney I append for purposes of comparison the results of a similar analysis recently made in a case of gastric cancer—a case which resembled pernicious anæmia in the high degree of lemon colour and in the absence of any notable emaciation. Percentage of iron in the liver, spleen, and kideny in the gastric cancer: liver, 0·022; spleen, 0·013; and kidney 0·003.

Necropsy.—The necropsy was performed 12 or 15 hours after death. The weather was cold. There were no post-mortem changes. The body was fairly nourished. The blood was watery. The liver weighed 4 lb. 10 oz. and was fatty; the centre of the lobules was pale and the periphery was rust-coloured. A piece of liver placed in sulphide of ammonium gave marked iron reaction (blackening). The gall-bladder was filled with extremely deep golden-yellow-coloured bile. The mucosa was normal. As to the kidney, the right weighed four and a half ounces and showed a cicatrix at the lower end, the result of an old crush. The left weighed seven ounces. It was comparatively enlarged. The spleen weighed five ounces; it was red and firm, not soft. The stomach contained 120 cubic centimetres of bile-stained contents with food. There was no cadaveric softening. The mucosa showed punctiform hæmorrhages; there was considerable increase of mucus. The duodenum and intestine contents were fluid and very deeply bile-stained. The jejunum was much dilated and the walls were considerably hypertrophied above the point of narrowing (from six to seven feet below the stomach). The mucosa above the stricture showed a number of irregular ulcers, some of them cicatricial, others partially healed, and others still showing hyperæmic edges. Elsewhere the mucosa of the intestine, colon, and rectum showed nothing obviously abnormal. In the gastric and mesenteric glands there was no trace of hæmorrhages. Microscopically there was no pigment. The heart muscle was red and hyaline; there was no tabby-cat striation. The musculi papillares of the left ventricle were hypertrophied. There were a few punctiform hæmorrhages under the epicardium. The tongue was very soft on the sides; there were no ulcers. There were compound papillæ on the back part of the dorsum in front of the epiglottis slightly red and prominent. The tonsils were red. The œsophagus was normal in appearance. With regard to the teeth the incisors and canines were small, regular, and pearly white, looking quite normal. The bicuspids and molars were very bad, represented for the most part by necrotic atrophied-looking stumps, the gums around which presented a peculiar whitish sodden appearance. In the right upper jaw the first bicuspid was represented by a black stump, very small and atrophied (10 millimetres long by five millimetres wide), with a small abscess sac of about the size of a pea at its apex. The fang at the apex was dead and necrosed. The second bicuspid and first molar were represented by black fangs, the second molar had a black carious cavity in the crown, and the third molar a dark carious cavity on the outer side of the crown. In the jaw beneath these teeth was a large abscess sac 13 millimetres in diameter communicating by a fistulous sinus with the root of the second bicuspid or first molar above; bare bone was felt at the upper end of the sinus. In the left upper jaw there was a similar white sodden appearance of gums immediately around decayed roots. The wisdom tooth alone remained; the gum around it was swollen and at the back part was detached from the tooth. It was red, granulating, and inflamed; the fang of the tooth beneath was exposed and carious. On opening the left orbital cavity a large quantity of pus welled up, appearing at first as if coming from the orbital cavity; afterwards it was found to come from the ethmoidal sinuses. There were no subdural hæmorrhages in the brain. With regard to the lungs there were subpleural, punctiform hæmorrhages near the base. In the marrow of the long bones there was transformation of yellow into red marrow.

Remarks.—The case as a whole appears to me to support in a striking manner the conclusions which I put forward in the recent studies to which Mr. Barker refers. These observations denoted, I concluded, the infective nature of the condition termed pernicious anæmia, "the infection being confined to the alimentary tract, chiefly the stomach, no part of that tract from mouth to anus being safe from it." The source of infection I traced to the mouth, arising either within the mouth itself "in connexion with long-continued and neglected cario-necrotic conditions of teeth, sometimes possibly from stomatitis arising from other causes—e.g., drain poisons." The infection was "chiefly streptococcal, probably deriving its special (i.e. hæmolytic) characters from being of a 'mixed' character, the infection the more readily occurring if the stomach or intestine were already from any cause the seat of disease."

The anæmia was not due to any mere disturbances of nutrition arising from the stomatitis, glossitis, or any conditions of gastritis or enteritis which might be, and often were, found, but to the destruction of blood occasioned by the special infection. The whole group of conditions in the alimentary tract "were the local lesions of an infection, chiefly cæcal, the anæmia being the result of the destructive action of the poisons absorbed into the blood." Mr. Barker's case appears to me to present points of special interest in relation to the foregoing conclusions.

1. *Nature of the anæmia.*—That the case was one of pernicious anæmia is, I consider, conclusively established by the results of chemical analysis, showing a characteristic increase in the percentage of iron in the liver (also in the kidney). Microscopically the pigment was found within the liver cells in the outer zone of the hepatic lobule, with characteristic fatty changes in the centre of the lobule. The anæmia was thus hæmolytic in its nature.

2. *Mode of development.*—The patient suffered from more or less abdominal discomfort from the time of his accident seven years before without the development of any special degree of anæmia till the previous summer—i.e., seven months—before his death. His great pallor then became noticeable and he soon after began to suffer from shortness of breath and palpitation—i.e., five months before death. The conclusion which I form, then, is that at the time of his death he was in his first year of illness from pernicious anæmia. In his case the unhealthy conditions

of some part or other of the alimentary canal which according to my studies always precede and are necessary to successful infection, were created in the intestine above the point of stricture. As shown by the character and severity of his gastro-intestinal symptoms (pain and vomiting) these unhealthy conditions had existed from the time of his accident seven years before and it is, I consider, exceedingly probable that some of the healed ulcers found post-mortem above the seat of stricture were remains of lesions resulting therefrom. With comparative suddenness there was superadded to his general abdominal discomfort the feature of intense pallor with all the symptoms—e.g., palpitation, breathlessness, diarrhœa, and vomiting, varying febrile attacks (see Mr. Barker's account of the illness in September, 1899)—which are so characteristic of pernicious anæmia, and from that time forward what troubled him most—what he sought admission into hospital for—was his extreme weakness and anæmia complicated by periodical attacks of pain and vomiting connected with his intestinal condition. This relation of events—a history of antecedent gastric or intestinal trouble extending usually over many years, more or less suddenly followed by a rapidly developing anæmia out of all proportion to the actual extent or severity of lesion existing in the stomach or intestine—I find in my experience of the disease to be the typical mode of development of pernicious anæmia. And this more or less suddenness of development, with the extraordinarily high degree of anæmia (exceeding anything ever met with even in the severest forms of wasting anæmia) are the clinical features which I have come to regard as denoting the supervention of a new factor—viz., successful infection of some part or other of the alimentary canal.

3. *Evidences of infection.*—In the present case the evidences of infection of the mucosa, to a slight extent of the stomach and to a still greater extent of the intestine and colon were undoubted—notably (1) the small areas of the superficial ulceration and necrosis with inflammatory changes in certain parts of the mucosa of the small intestine, with presence of organisms confined to these areas and to the lymphatics of the submucosa; and (2) the very striking degeneration and necrosis of the cells of the tubules in the colon associated with presence of organisms also confined to the tubules and to the subjacent lymphatics of the mucosa and submucosa.

That the invasion of the mucosa was no mere post-mortem phenomenon is, I consider, clear from the following: (*a*) In the case of the stomach only in one part microscoped was there slight superficial post-mortem change in the mucosa, and at this point no organisms at all were found. On the other hand, the organisms were found in the lymphatics of the mucosa at prolated parts where no post-mortem changes were shown. (*b*) In the case of the small intestine the cells of the tubules generally showed no change and no organisms were present in them. On the other hand, where the organisms were present they were surrounded by evidences of inflammatory reaction—viz., nuclear fragmentation and necrosis. (*c*) In the case of the colon the organisms were confined to the degenerated and necrosed cells of the glands and to the lymphatics underlying them. They were not present amidst the lymphoid tissue of the general mucosa.

4. *Nature of infection.*—As regards the nature of the organisms present and their relative importance any decision from their microscopical characters alone is naturally impossible. The contents of stomach and intestine were much alike in character and both were bile-stained, so that it is certain that the ordinary intestinal organisms (bacillus coli) were present in the stomach no less than in the intestine. In the mucosa, and especially within the lymphatics, however, the organisms present were not bacilli but cocci, and especially streptococci (Zeiss, $\frac{1}{12}$ oil immersion), and a streptococcus was also present in the stomach contents. As this organism is undoubtedly pathogenic I am disposed to attach to it the chief importance. The infection of the mucosa was chiefly coccal and streptococcal.

5. *Source of infection.*—On this point—the one to which my recent observations more especially referred—no information was forthcoming from the history of the patient. He was too ill to be questioned. He had been well fed and had lived among healthy surroundings. With regard to any dental or oral trouble his wife informed me in reply to inquiry that he had not suffered in that respect. The examination, cursory in character, which I made at the time I saw him a few hours before his death, when he was already sinking, seemed to bear out this statement, for the front teeth which he showed me on opening his mouth seemed exceptionally good and healthy, so much so that I mentally registered the case as one affording no support to the recent conclusions regarding the prevalence of decayed teeth and their importance as a possible source of pyogenic infection in pernicious anæmia.

As it turns out, I cannot but regard the case as a most remarkable one in this relation, for I found at the necropsy that the front teeth were the only good ones. The remainder were for the most part represented by black roots lying in sodden white gums. At the roots of these, in one side of the jaw alone, were two abscess sacs, the larger being of the size of a small hazel nut. Moreover, on opening the left orbital cavity pus welled out in quantity from the ethmoidal sinuses. Of this condition of mouth or nose there was not, be it noted, the slightest suspicion during life and not the slightest symptom. This was one of the points to which I drew special attention in the observations recently recorded. I considered it "all-important in all cases of commencing anæmia that special attention should be directed to the condition of the teeth ..... by removal not only of old stumps, but also of all black teeth, and of teeth showing commencing cario-necrosis ..... these precautionary measures being necessary, irrespective of any statements made by the patient as to the degree of discomfort his teeth are causing. For in no single case observed, however bad I found the teeth to be, was my attention drawn to the teeth by the patient or any complaint made of them by him. There is a stage in pyogenic conditions as in other forms of infection when local reaction—e.g., pain or inflammation—is absent or insignificant at the very time when the general septic effects are most marked."

The case just recorded bears out—if possible even more fully than I had anticipated—the correctness of these statements. Without occasioning the slightest local discomfort there existed a profoundly septic condition both of jaw and ethmoidal sinuses. How long these decayed teeth had existed I have no means of knowing. But I note with interest the statement in his history that "he had always suffered from 'heartburn' worse since the accident," a symptom denoting existence of chronic gastric catarrh. The close relationship between dental cario-necrosis and gastric catarrh is the point which I have recently had occasion to elucidate. The two conditions are precisely those most favourable to infection of the mucosa of the stomach, and ultimately, if the conditions be favourable, as in the present case, to infection of the intestine lower down. For on the one hand there is diminished resistance on the part of the stomach from the diminished acidity of gastric secretion consequent on the catarrh; while on the other hand there is increase of dose from continuous swallowing of pus organisms from the necrotic teeth. In the present case both these conditions were met. The patient had infection of the mouth, and the gastric contents contained no free hydrochloric acid.

SUMMARY.

The relations of events in the case I would then summarise as follows:—

1. A man, temperate, well fed, and living in healthy surroundings.
2. Bad teeth causing alternately alveolar and ethmoidal suppuration without at any time occasioning local discomfort.
3. Always suffered from "heartburn" (denoting chronic gastric catarrh with diminished acidity of gastric juice).
4. Accident causing stricture of jejunum.
5. More or less severe abdominal and gastric symptoms lasting six years.
6. More or less rapid supervention of the features of pernicious anæmia nine months before death.
7. Post mortem (1) dental decay with local complications—e.g., alveolar and ethmoidal suppuration; and (2) definite infection (coccal and streptococcal) of the mucosa of the intestine and colon, with definite catarrhal, inflammatory, and necrotic changes—to a less extent of the stomach.

THE LATE MR. J. FLINT SOUTH, F.R.C.S.—Mrs. C. Stuart Andreae and Miss Mary F. South have forwarded to the treasurer of St. Thomas's Hospital a donation of £1000 to endow, in perpetuity, the "South Bed, as a memorial of the late Mr. J. F. South, who was for some years surgeon to that institution."

A CASE OF ULCERATIVE ENDOCARDITIS, WITH RECOVERY UNDER THE USE OF ANTI-STREPTOCOCCIC SERUM.

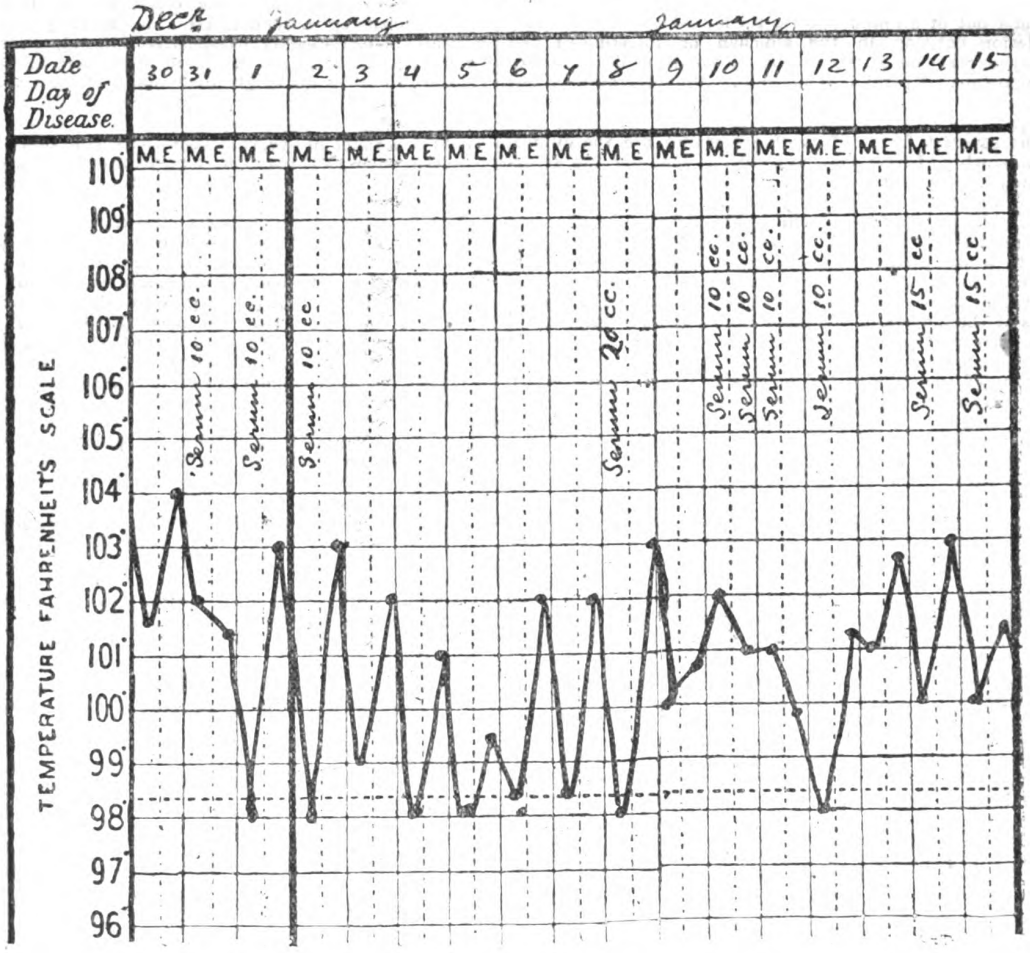
BY J. MICHELL CLARKE, M.A., M.D. CANTAB., F.R.C.P. LOND.,

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As the employment of anti-streptococcic serum in ulcerative endocarditis is still on its trial I have thought it worth while to report the following case in which it was successfully used. The patient was a single woman, 22 years of age. She had enjoyed good health until the age of 18 years, when she had what was called an attack of muscular rheumatism which laid her up in bed for six weeks. She then improved and was able to get about for two weeks, but developed pleurisy with effusion on the left side. She recovered from this and subsequently remained fairly well, but was delicate and liable to suffer from cough and from shortness of breath on exertion. She came to me on Nov. 14th, 1899, complaining of weakness, shortness of breath, pain in the præcordial region, and slight swelling of the ankles. She also said that during the previous fortnight she had felt hot in bed at night and had had two attacks of slight shivering accompanied by blueness of the lips and pallor of the face. She was tall, thin, and anæmic. The temperature was normal and the pulse was 110 and weak. The lower part of the left side of the chest was slightly contracted as a result of the attack of pleurisy. The heart's apex gave a forcible impulse in the nipple line in the left fifth space; dulness extended transversely from the nipple line to the right border of the sternum and upwards into the second left intercostal space; and a loud systolic murmur was present at the apex and right base and was audible at the angle of the left scapula. The liver was slightly enlarged. The urine contained no albumin.

The patient was kept in bed; the temperature rose two or three times in the evening to 100° or 101° F., and she appeared to be doing well, when on Dec. 6th she had a rigor and the temperature rose to 103°. On the 7th a small patch of broncho-pneumonia developed just below the angle of the right scapula and she expectorated a little blood-stained sputum. In the light of the subsequent progress of the illness this attack was probably due to an infarct into the lung. The temperature remained at from 102° to 103° for three or four days and then fell to normal and remained so for about a week when it began to rise again in an irregular fashion. The subsequent course of the temperature was as follows from the 19th to the 28th, 1899, inclusive:—

FIG. 1.

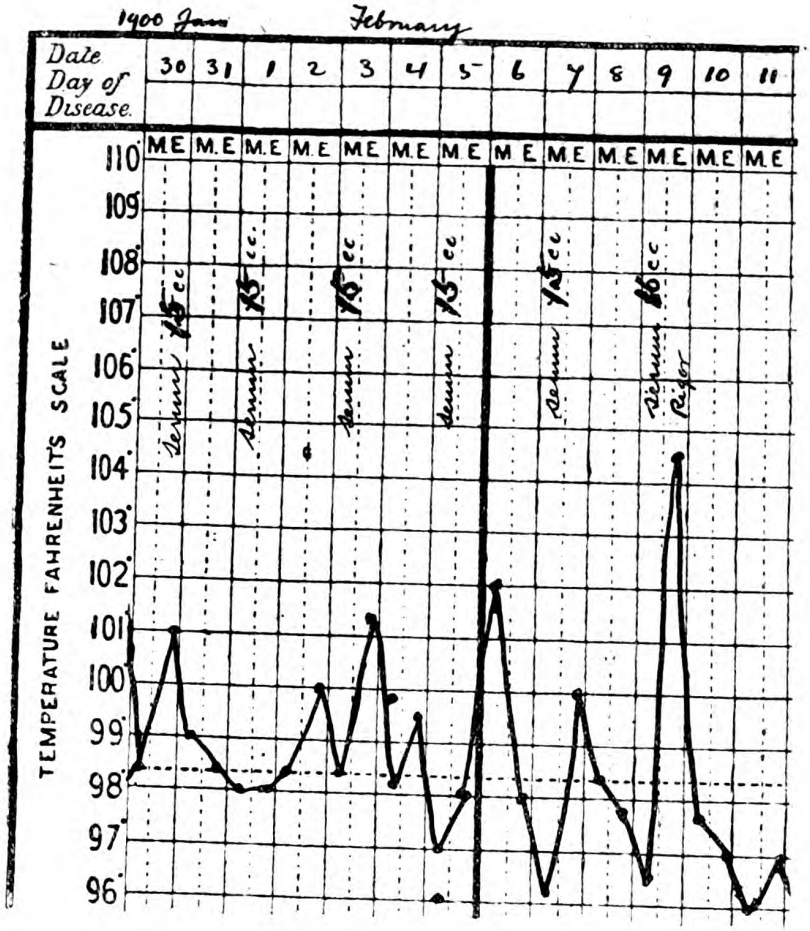


Date.	Morning.	Evening.
Dec. 19th ...	— ...	102·0° F.
,, 20th ...	98·0° F. ...	102·6°
,, 21st ...	97·4° ...	102·0°
,, 22nd ...	96·8° ...	103·0°
,, 23rd ...	97·6° ...	102·6°
,, 24th ...	97·0° F. ...	104·0° F.
,, 25th ...	98·0° ...	103·0°
,, 26th ...	99·0° ...	101·6°
,, 27th ...	97·0° ...	101·4°
,, 28th ...	98·0° ...	100·0°

From the 29th to Jan. 15th, 1900, inclusive, the course of the temperature is shown in the accompanying chart (Fig. 1).

On Dec. 23rd the patient felt weak and she was anæmic; there was a peculiar deep-red, at times almost livid, flush on the cheeks. No spots were seen, no hæmorrhages occurred, she took food well, and there was no vomiting or headache. Except for a few râles at the bases the lungs were normal. The heart's apex was forcible and slapping in the nipple line; there were dulness, some bulging, and forcible pulsation in the second and third intercostal spaces close to the left border of the sternum. In addition to a systolic murmur at the apex a loud systolic murmur had appeared over the pulmonary area and a faint diastolic murmur at the right base. The pulse was 120, weak, and collapsing in character; the respirations were 26 to the minute. The edge of the liver could be felt and the spleen was not enlarged. There was no albuminuria. On Dec. 28th and again on the 31st a hypodermic syringeful of blood was withdrawn from the median basilic vein. Dr. D. S. Davies kindly undertook the bacteriological examination of the specimens, which proved to be free from micro-organisms. On the 31st treatment with anti-streptococcic serum was begun. Previously to this the patient had been treated with full doses of sodium salicylate, salicin, and salol, but without any effect on the irregular rises of temperature. On Jan. 6th, 1900, the systolic and diastolic murmurs at the base resembled a friction sound; the latter, however, was conducted down the left sternal border and was audible over the ensiform cartilage. Dr. Shingleton Smith saw her with me about this time and he agreed in the diagnosis of ulcerative endocarditis. On Jan. 12th the patient seemed weak; the pulse was 96, weak, and collapsing; the respirations were 24. 40 ounces of urine were passed, of specific gravity 1022; it was acid and was loaded with urates, but was free from albumin. The appetite was poor; there were no spots and there was no headache or sickness; the cheeks were still deeply flushed. There was no cyanosis; the veins in the neck were rather full. The heart's apex was now half an inch outside the nipple line; dulness extended upwards to the second rib and one inch beyond the right border of the sternum. The systolic murmur was now loudest in the second left intercostal space and less distinct at the apex and the aortic area. The to-and-fro systolic and diastolic murmur was still audible over the sternum; this murmur varied much in intensity from day to day, sometimes being loud and at other times almost inaudible. A systolic murmur was now generally audible to the right of the sternum in the fourth and fifth spaces. All the murmurs showed much variation on different days. The course of the temperature from Jan. 16th to Jan. 29th inclusive was as follows:—

FIG. 2.



Date.	Morning.	Evening.	Date.	Morning.	Even
Jan. 16th	99·8° F.	103·0° F.	Jan. 23rd	98·4° F.	99·8° F.
,, 17th	97·0°	100·8°	,, 24th	98·0°	100·2°
,, 18th	98·4°	101·0°	,, 25th	98·0°	101·0°
,, 19th	98·4°	100·2°	,, 26th	98·0°	101·0°
,, 20th	98·4°	101·4°	,, 27th	98·0°	101·6°
,, 21st	98·0°	102·0°	,, 28th	97·0°	101·0°
,, 22nd	97·8°	101·4°	,, 29th	99·6°	101·4

On Jan. 21st the heart sounds at the apex had an approach to a galloping rhythm with a double second sound.

From about Jan. 20th the patient began to improve; she gained strength and was cheerful and anxious to get up; her colour improved and the flush left her cheeks, her appetite returned, and her temperature took a lower level. The pulse varied from 84 to 96 and the respiration rate was 22. From Jan. 28th she was carefully lifted on to a couch for some hours each day. From Jan. 30th to Feb. 11th inclusive the course of the temperature is shown in the accompanying chart (Fig. 2). On Feb. 3rd the chief murmur was a soft to-and-fro systolic and diastolic murmur at the base, loudest over the pulmonary area. No thrill was ever felt over any part of the area of cardiac dulness. The lungs were normal. She improved all through February, the temperature remaining subnormal after Feb. 9th. By Feb. 21st the cardiac dulness was much diminished in size; it still extended to half an inch outside the nipple line to the left, but above it stopped at the upper border of the third costal cartilage, and to the right it did not go beyond the right border of the sternum. The diastolic murmur had disappeared and there was only a long churning or grinding systolic murmur, loudest at the left base.

After this time it is sufficient to say that the patient steadily improved. On account of anæmia she was now given 10 minims of tincture of perchloride of iron three times a day. On March 4th she was allowed to walk about in her room and on the 11th to walk downstairs. On the 18th she was able to walk upstairs and downstairs without difficulty or shortness of breath, and after being up the greater part of the day there was no œdema of the ankles at night. The temperature was generally a little subnormal, the pulse-rate was 84 and regular, the respiration rate was 20, and the lungs were normal. The heart's apex had returned to the nipple line, the area of dulness had diminished, and the only murmur present was a quiet systolic murmur loudest over the aortic orifice, but also plainly audible at the apex and angle of the left scapula. The aortic second sound was accentuated.

The catamenia, which had been absent since October, returned at this time. The patient remained well for another three weeks and then went to the seaside. The anti-streptococcic serum used was obtained from the Jenner Institute. Mr. George Dean, bacteriologist in charge of the antitoxin department, kindly wrote to say that this serum "was derived from four horses. I used several races of streptococci in immunising these horses; the serum therefore was a polyvalent one. These streptococci were derived from cases of (1) acute abscess; (2) ulcerative endocarditis; and (3) puerperal septicæmia. Two of the races had been exalted to a very high virulence by passage through rabbits." 232 cubic centimetres of the serum were used. 10 cubic centimetres were given at each injection at first; the first injections were followed by a great deal of pain and acute tenderness at the site of inoculation, which became red, swollen, and infiltrated, this swelling and tenderness lasting for a period of from 36 to 48 hours. To secure sleep 15 minims of liquor morphinæ were sometimes given on the night following the injection. After the first five or six injections the patient was troubled with general urticaria which came on three or four hours after each injection. This urticaria was very pronounced and caused intense irritation; it invariably disappeared in the most remarkable way about half an hour after the administration of 15 grains of calcium chloride. The same serum was used throughout.

It will be seen from the chart (Fig. 1) that after the first three injections the temperature fell steadily (by lysis) for four days. As it began to rise again I thought it advisable to give a larger dose and I injected 20 cubic centimetres on Jan. 8th. For some hours after this the patient seemed very poorly, faint, and weak, with a feeble pulse. I did not think it advisable to give so large a dose at one time again, and after giving a dose of 10 cubic centimetres twice a day for two days I administered a dose of 15 cubic centimetres, which seemed to be the proper one in her case. From the 15th to the 28th the improvement in her general condition was so marked that I stopped the injection of serum. So far the injections had always given her much local pain and discomfort, as above stated, and this upset her and kept her back, so that partly on this account I was glad to give her an interval of rest. But on the 28th, as the temperature, though lower in range, was still oscillating in character and above normal, I recommenced the injections. From this time they gave rise to no local pain, urticaria, or red blush at the site of injection, and very slight swelling, but now to constitutional symptoms, consisting of headache and a feeling of malaise for some hours. The same serum was used throughout. On Feb. 9th, at 10 P.M., on the occasion of the sixth injection of the second series, a few minutes after injecting 16 cubic centimetres the patient said that she felt very ill; the respiration became rapid, there was well-marked cyanosis, the pulse was 120 and very weak, and she seemed very ill. She took a teaspoonful of sal volatile and in a little time she was better. The cyanosis lasted about 10 minutes. About noon she had a slight rigor and the temperature rose to 104·6°. She felt ill all day but improved towards evening, the temperature falling to 101° by 9.30 P.M. It is remarkable that after this injection her temperature never rose again but remained for some time subnormal, and her pulse varied from 72 to 80. This seemed the turning-point of her illness, which thus appeared to end by a sort of crisis. Interesting points are the pronounced local effects of the first injections, their disappearance with later ones, and the occurence of constitutional (general) effects. I may add that no changes were found in the urine after the injections and that the punctures all remained aseptic.

I saw the patient on May 3rd after she had spent a month at the seaside and she looked fat and rosy. At first there had been some œdema of the ankles, but this had now passed off and her only trouble was slight shortness of breath on exertion. The heart's apex was in the fifth space in the nipple line, and there was a loud blowing systolic murmur accompanying the first sound, loudest in the aortic area, but audible over the whole of the præcordium and in the back.

Since recovery from ulcerative endocarditis is very rare it may be objected that this was not a case of that disease, but should rather be considered one of rheumatism with pericarditis. But in favour of the former diagnosis are (1) the presence of a chronic valvular lesion on which an infective process is apt to graft itself; (2) the fact that the illness did not yield to the several salicylic compounds which were tried in full doses without effect; (3) the occurrence of a pulmonary infarct; and (4) the steady progress of the patient from bad to worse until treatment by serum was begun, which treatment again would have had no influence on acute rheumatism. I may also mention as possibly of importance in etiology that the patient's house adjoined a large graveyard, now, however, only occasionally opened, that there were several large trees in front of it, and that the first symptoms began in the autumn. These facts are interesting in connexion with Sir T. Lauder Brunton's suggestion that endocarditis is more liable to come on at the time when the leaf falls.[1] I think it also of importance that the serum treatment was begun early.

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THE VARIETIES OF ACUTE PNEUMONIA.[2]

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THIS subject is far too large for me to deal with exhaustively. I will confine myself to two points—varieties in symptoms and physical signs and varieties in causation. I am speaking only of lobar pneumonia and not at all of lobular or broncho-pneumonia. In an ordinary typical case no difficulty in diagnosis can arise, but exceptional cases may puzzle the most experienced. A physician so expert in physical diagnosis as Dr. Samuel Gee[3] writes: "A physician well read in the book of nature knows that he cannot *always* distinguish between pleurisy and pneumonia. ..... It much more often happens that a small pleural effusion is mistaken for pneumonia. The physical signs of the two diseases may be the same and even puncture is not always decisive."

A rare but somewhat puzzling symptom is low temperature. The following was a serious case of pneumonia where the temperature never exceeded 100·5° F. It occurred in the person of a stout, active man, aged about 56 years, vigorous both in mind and body. One morning, feeling

[1] On Endocarditis and the Use of the Thermometer in its Diagnosis, Edinburgh Medical Journal, May, 1897.

[2] A paper read before the Nottingham Medico-Chirurgical Society on Feb. 21st.

[3] Allbutt's System of Medicine, vol. v., p. 369.

upset, he remained in bed and in the evening had a temperature of 100·5°, cough, and signs of bronchitis. On the following morning—the second of his illness—his temperature was 99·8°, his respiration was 32, and his pulse was 104. He had a frequent irritable cough, which was increased by any movement; his tongue was coated with a yellow fur and there was general prostration. He was coughing up abundant, sticky, fibrinous sputa which adhered to the vessel and did not move when the vessel was inverted. The sputa were abundantly stained with bright blood. On examination impaired percussion resonance was discovered in the left axilla and at the left base, where also there was distinct tubular breathing and bronchophony. Pleuritic friction was audible over a limited area at the lower and back part of the axilla. He was given three grains of calomel and a mixture containing carbonate of ammonia and ipecacuanha. Notwithstanding the moderate temperature he was very ill and prostrate and seemed more likely to die than recover. On the third day his temperature in the morning was 99·8°, his pulse was 104, and his respiration was 28; and in the evening his temperature was 100·1°, his pulse was 108, and his respiration was 30. He was still spitting blood but was decidedly improved. On the fourth day his temperature in the morning was 97°, his respiration was 24, and his pulse was 96. His midday temperature was 98·4°. In the evening his temperature was 97·6°, his respiration was 24, and his pulse was 83. He was improved. The sputum was still fibrinous and it adhered to the vessel but it was less blood-stained. There was pleuritic pain on coughing. Dulness and tubular breathing were still quite distinct. On the fifth day his morning temperature was 97·8°, his respiration was 24, and his pulse was 80. There was now no pain on coughing. For the first time he could lie on the left side. The sputa were barely blood-stained and were becoming frothy. Tubular breathing was still distinctly audible at the left base but was quite gone from the axilla. On the seventh day his morning temperature was 99·2° and his pulse was 100. His evening temperature was 100°. There were occasional râles at the back and a rub in the axilla. He was over-fatigued by having several business interviews in bed. On the ninth day his temperature was 99·0° and his pulse was 88. The pleuritic rub and tubular breathing were quite gone. On the tenth day and afterwards his temperature remained normal and he was convalescent, but it was a fortnight before he regained strength sufficiently to walk out of doors and to go away from home.

In this case the patient's age, stoutness, and habits all tended to make an attack of pneumonia unusually dangerous; but by the fourth day all immediate danger had subsided, although the physical signs remained typical. From the amount of sputa and the area of dulness the extent of lung consolidation could not have been very small and yet there was never high fever. Wilson Fox [4] says: "A few rare and exceptional cases of pneumonia existing without fever have been recorded, but it must be remembered that the pyrexia of pneumonia may last in some cases for only a few hours while the consolidation persists after the fever has disappeared. The occasional apyrexial character of pneumonia is supported by the high authority of Wunderlich. Lebert observed a case where the temperature only reached 100° F. on the sixth day." As a marked contrast to this may be mentioned cases recorded by first-rate observers where the symptoms, both general and special, are well-marked and undoubted, but physical signs are scanty or absent. Some of these it has been proposed to explain by suggesting that the area of lung affected is near the root and does not reach the surface. In other cases it has been suggested that the general symptoms of pneumonia are caused by the products (toxins) of the pneumococcus which may be growing in other organs or places than the lung. As has been recently written: [5] "Most physicians have seen cases of acute pleurisy the clinical course of which has been indistinguishable from that of a pneumonia, but in which post mortem the lung is not found hepatised. In these it is not surprising to learn that the pneumococcus has been found in the pleural lymph by Dr. Washbourn."

This leads me to the second part of my subject—namely, varieties in causation. I hope it will be agreed that it is not sufficient nowadays merely to diagnose pneumonia, but that an attempt should be made to ascertain the cause. Much, both in prognosis and in treatment, may depend upon the cause. Many years ago Skoda,[6] in Vienna, taught that pneumonia was a specific *general* disease, and, pointing to a patient with the general symptoms of pneumonia but with no physical signs in his lungs, argued that this proved that there was a general infection of the blood before the local changes occurred. Some years ago, too, Wilson Fox in his monograph on Pneumonia came to the conclusion that the causes of acute pneumonia were not one but varied.

Of recent years more precision has been given to the question by bacteriology, but much remains to be done, and the subject is by no means worked out. Weichselbaum,[7] in Vienna, in 129 cases of pneumonia discovered the pneumococcus (Fränkel's diplococcus) in 94, Friedländer's bacillus in nine, streptococcus pyogenes in 21, and staphylococcus pyogenes aureus in five. There is also the rod-shaped microbe which was found by Dr. Klein in the epidemic pneumonia of Middlesbrough. Thus the theory of a variety in causation is supported by the variety of micro-organisms found. Moreover, the pneumococcus, which is the micro-organism most commonly found in pneumonia, is sometimes found in lobular pneumonia, sometimes in pleurisy without pneumonia, sometimes in endocarditis and in epidemic cerebro-spinal meningitis, and sometimes in healthy saliva.

It is hardly necessary to point out that the symptoms of pneumonia are not entirely due to the local inflammation of the lung tissue, but in great part to the specific nature of the poison. Not infrequently the symptoms precede the physical signs by several days; the temperature and even the number of respirations fall when the crisis comes, long before the solidified lung has cleared up; and the violence of the fever is not in proportion to the extent of the local lesions. There is much reason to think that the wide variations in symptoms, course, and fatality may coincide with differences in the micro-organisms which predominate in the diseased lung. No one could expect a plague pneumonia, a typhoid pneumonia, and an influenza pneumonia to run the same course.

One of the best examples of specific pneumonia is influenza pneumonia. This usually follows an attack of evident influenza, but in some cases it is the only manifestation of the disease. Probably the latter group accounts for most of the instances of *infection in pneumonia*.

Although the question of infection has been occasionally mooted for many years past its exact position is hardly yet accurately defined. In an experience of over 20 years I have never seen a case of pneumonia in the general hospital give rise to a second case in the same ward or building, neither have I ever known a nurse or medical man to be infected from a patient. We may therefore take it that under hospital conditions, with good sanitation and free ventilation, pneumonia does not ordinarily spread to patients in adjoining beds or to attendants. But in spite of this experience and of the long-established tradition that pneumonia is not an infectious disease cases do occasionally arise which clearly show that under less favourable circumstances pneumonia does spread by direct infection. Wilson Fox [8] quotes Hardwick to the effect that "(1) a priest attacked by pneumonia communicated it to a relation who visited him, and who again communicated it to another relative; and (2) an old man at the point of death from pneumonia sent for his relatives, each of whom was subsequently attacked." It may very well be that some kinds of pneumonia are more infectious than others, especially the pneumonia of influenza. It is highly probable that the six cases which I am about to describe were of this nature. Although influenza was not prevalent at the time in that neighbourhood there were no other signs of influenza and there were no cases of simple influenza or other illness in the house. The first two cases I saw in consultation with Dr. J. J Bingham of Alfreton, the other four were less severe and were kindly communicated to me by Dr. Bingham. The cases occurred in January and February, 1899, in the members of one well-to-do family and in one house.

On Jan. 7th, 1899, a little girl, aged 6 years, was taken ill with symptoms of pneumonia and very soon there were signs

[4] Diseases of the Lungs, 1891, p. 314
[5] Albutt's System of Medicine, vol. i., p. 674.
[6] Brit. Med. Jour., Nov. 4th, 1899, p. 1268.
[7] Allbutt's System of Medicine, vol. v., p. 113.
[8] Diseases of the Lungs, 1891, p. 262.

of consolidation of the right base with a temperature of 104° F. Four days later the left base became affected. On Jan. 16th, the ninth day of illness, I was asked to see her and found her with a frequent, distressing cough. Her temperature was 101° F., her respiration was 64 per minute, and her pulse-rate was 140. There were Skodaic resonance at the left apex, dulness to percussion in the axilla and lower three-quarters of the left back, increased vocal resonance with loud tubular breathing, and râles over the dull areas. The heart was not displaced. The right base had nearly cleared up. She was nursed chiefly by her mother and spent many hours lying in her mother's arms. I saw her again nine days later—i.e., the eighteenth day—when she was approaching convalescence with a nearly normal temperature and greatly improved general condition, but the dulness and whiffing tubular breathing still remained. She ultimately got quite well.

On Jan. 20th, four days after my first visit to the preceding patient, the mother had a severe rigor and a temperature of 104° F. on the following morning. At my second visit on Jan. 25th her temperature was 102° F., her respiration was 64, her pulse was 160, and she was constantly delirious. There was pneumonic consolidation of the right base and of almost the whole of the left lung. She died early on the following morning, the sixth day of her illness.

A week later, Feb. 2nd, the elder girl, aged eight years, was taken ill with pneumonia. Four days later, on Feb. 6th, a brother, aged 12 years, was seized; and on the next day another brother aged 14 years. Again, one day later, on Feb. 8th, the father was affected. With the exception of the mother, who died, all the patients were ill in bed at the same time suffering from pneumonia and they recovered.

In April, 1900, I was asked to see in consultation with Dr. Buckley of this city a child, aged one year and three months, who was suffering from well-marked lobar pneumonia of both bases. Her temperature was 103·6°, her pulse was 150, and her respiration was 60. The child died. I ascertained that the child's aunt, living in the same house, had only just recovered from a very severe attack of pneumonia in which the temperature had reached 104·6° and in which resolution was by crisis.

There is no doubt that pneumonia does not occur uniformly distributed throughout the year, but is frequently met with in groups of cases not necessarily directly connected, or in small local epidemics. Most of the numerous recorded epidemics have occurred in prisons, workhouses, or ships, and have been associated with overcrowding and bad sanitation. That has not, however, always been the case. I have a letter from Dr. Cardno Still of Shepshed, dated June 15th, 1894, in which he writes: "From a scientific point of view I thought you might be interested to know that we have an epidemic of pneumonia. It has been going on since the end of January. There have been 28 cases and eight deaths. It seems to be almost entirely lobar. The epidemic is confined to the parish—not the village alone—and the surrounding villages are exempt. We have nothing in common here except the atmosphere, for the water-supply is from wells, the sewerage is limited, and the milk is from 20 or more sources. Those following indoor and outdoor occupations are alike attacked. It affects both sexes, but chiefly males, and with few exceptions all are adults." In a subsequent letter he writes: "In 1896, between Dec. 11th and 31st, we had 11 cases and one death."

I had neither the time nor the opportunity to make any local investigation and I believe the cause was never ascertained, but it reminds one somewhat of the Middlesbrough epidemic. That was an example of the next group I come to—namely, *food pneumonias*—that is to say, pneumonia produced by eating poisonous food. "The Middlesbrough epidemic of pleuro-pneumonia was clearly traced by the late Dr. Ballard to the use of American bacon which was made by soaking in water and then only slightly drying salted pork. This bacon was proved to be poisonous to animals fed with it and lung lesions were produced. ..... The Middlesbrough epidemic of food poisoning is to be looked upon as the result of the ingestion of a pneumonia-producing micro-organism."[9] In this instance a pulmonary lesion was caused by infection through the alimentary canal, lacteals, mesenteric glands, thoracic duct, subclavian vein, right side of the heart, and pulmonary arteries, just as no doubt many cases of pulmonary tuberculosis arise through the alimentary canal from the ingestion of the tubercle bacillus in milk.

Another form of pneumonia of which we have seen nothing in modern times in this country is *plague pneumonia*, but the experiences of Vienna as well as of India show that in this exceptional form of plague the resemblance to ordinary (croupous) pneumonia is so close that the first cases are seldom diagnosed. Bubonic plague, as is known, specially implicates the lymphatic system and glands, and it is conceivable that the early infection of the lung is due to the failure of the glands to check the course of the poison on its way to the veins and right side of the heart.

The last form of pneumonia of which I propose to speak is *typhoid pneumonia*. I do not allude to the pulmonary catarrh, or broncho-pneumonia, which is found in some degree in a large majority of the severe cases of enteric fever. I refer to a very much more restricted but sharply defined class of cases, of which I have seen several. They commence with an attack of acute lobar pneumonia displaying the usual symptoms and physical signs, and it is only by the prolonged duration and after-course of the illness that enteric fever is suspected. In three cases at present in my mind the pneumonia attack was typical and was the commencement of the illness. In one the presence of enteric fever was proved by finding well-marked intestinal lesions post mortem. In a second the presence of spots, intestinal distension, and copious intestinal hæmorrhages established the diagnosis beyond doubt. This patient recovered. The third occurred in a lad, aged about 15 years, who was admitted into the Nottingham General Hospital with a sharp attack of acute pneumonia. By the seventh or eighth day the temperature fell to about 100° F., but after a few days it began to rise again. He then went through a well-marked attack of enteric fever and recovered. In this case, although the temperature did not reach normal between the two illnesses, there was more of an interval than in the other two. Dietl thought that "the poison of typhoid might attack the lungs instead of the intestines, and Sturges has also expressed the opinion that pneumonia may be only another localisation of typhoid." Wilson Fox[10] writes: "There are, it is true, a certain number of cases where pneumonia commences early in typhoid fever and where it is liable to be mistaken for the primary disease. Such cases are very rare; they do not show critical symptoms and with the further progress of the case the character of the typhoid fever become marked." Bonnemaison relates how in one house a man and his wife died from malignant pneumonia; soon after a son and daughter suffered from typhoid fever.

I do not know whether the typhoid bacillus was present in the lung in the cases which I have mentioned. They occurred several years ago when the micro-organisms associated with pneumonia were less well known. I was inclined at the time to consider them as instances of double infection, the pneumonia organism developing more quickly in the lung than the enteric organism in the intestine, but I have been led to think that there may have been only one poison and one channel of infection. We have seen that the infection of pneumonia may enter the lung through the intestine (e.g., Middlesbrough food epidemic); and I am equally convinced that the poison of enteric fever may enter through the air passages. I am aware that this is denied, but until comparatively recently it had been erroneously taught for one or two generations that there was an absence of direct infection in typhoid fever.

One further point and I have done, and that is the influence of bad sanitation in producing pneumonia. To quote Wilson Fox[11] again: "Many isolated cases of pneumonia orginate in insanitary conditions of house drainage." Out of 1065 cases of pneumonia from the Collective Investigation Record in 47·5 per cent. the sanitary state of the house was bad, doubtful, or indifferent.

In conclusion, I think I have now given some reason for the opinion with which I commenced, that the causes of pneumonia are various, and have offered some explanation, however inadequate, of the fact that several micro-organisms have been found associated with the same disease.

Nottingham.

[9] Report of the Medical Officer to the Local Government Board for 1888.

[10] Diseases of the Lungs, p. 268.

[11] Ibid., p. 265.

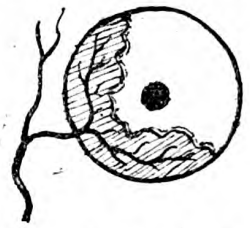
RODENT CANCER OF THE CORNEA; OPERATION; RECOVERY WITH RETENTION OF GOOD SIGHT.

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RODENT cancer of the cornea is undoubtedly one of the rarest affections of the eye. Indeed, so far as I know, not a single case has yet been reported in periodical English literature. Since the malady was described by Mooren in 1867[1] several excellent papers upon the subject have been published abroad. One of the latest, by Schmidt-Rimpler of Göttingen, is especially valuable. It contains the first account of the pathological examination of an eye affected with rodent ulcer. It may be found by those interested in the *Bericht der Ophthalmologischen Gesellschaft*, Heidelberg, 1898, p. 114. The rarity of rodent corneal cancer renders it almost unnecessary to offer any apology for recording a case which I was enabled to follow rather closely and to operate upon with success.

The patient, a female, 60 years of age, was seen by me on May 17th, 1897, in consultation with Mr. Frederick E. Fenton of Ealing. It appeared from the history of the case that the left cornea had become ulcerated in the previous March, but under Mr. Fenton's treatment that soon subsided, only to be followed by redness of the right eye. The patient, a hale and hearty person of determined character, had herself never suffered from definite gout or rheumatism, although her maternal grandfather had died at an advanced age from the former affection. The patient regarded herself as extremely subject to "colds." Upon examination the right eye showed several of the curious violet elevations or nodules characteristic of scleritis. Two months later (July 16th) the condition was as follows: Right eye.—A large, somewhat elevated patch of episcleritis lay on the outer side of the eyeball, its central parts being rusty and soft-looking and its peripheral parts pinkish-red. The nodule was not tender. There was a little photophobia, but tension was normal and there was no iritis. The lower outer quadrant of the cornea was rather hazy and a few vessels ran into it from the neighbouring sclero-corneal margin. There had been some pain, chiefly nocturnal, in the right temple. Left eye.—A corneal haze was present in the lower inner quadrant of the cornea. A change to the seaside was recommended and the patient was not seen again until Sept. 16th. On that date the outer side of the right eyeball showed a large patch the centre of which was slate-coloured and the periphery dull-red. Its central, dark-coloured area looked almost pulpy in consistence. Neither tenderness nor pain existed. The general condition was good.

The patient was not seen again until May 10th, 1898, when Mr. Fenton asked me again to examine her. The episcleritis from which she suffered was said to have made slow though satisfactory progress until April 24th when the cornea was slightly injured whilst taking off her glasses. The eye since then had watered, been sensitive to light, and had felt generally uncomfortable. Right eye. — The episcleritis had left behind it a slightly depressed, lenticular patch of slaty hue. An oval ulcer of singular appearance now involved a limited portion of the outer side of the cornea below the horizontal meridian. Towards the sclera it was bounded by a vascular area and enlarged conjunctival vessels, and its cavity appeared to be filled with some kind of gelatinous material. The palpebral conjunctiva was slightly reddened. The iris was active and not discoloured. There was no lacrymal mischief. Tension was normal. Vision, $\frac{6}{18}$. Left eye.—There was a haze over the cornea, as mentioned previously. Tension was normal. Vision, $\frac{6}{12}$. The treatment advised included (*a*) the application of iodoform to the ulcer; (*b*) the wearing of dark, protective goggles; and (*c*) the administration of a pill of carbonate of iron twice a day. By June 2nd the ulcer of the right cornea had increased in size, its advancing edge had become irregular, and small vessels were present at its base. There was no actual pain, although the affected eye felt uneasy from time to time. On June 30th there was slight photophobia and watering of the right eye, but no pain. The ulcerated spot in the right cornea was larger, and now presented a raised, sinuous edge, advancing towards the central region. My suspicions with regard to the malignant character of the ulcer were hinted to the patient and explained fully to the medical attendant, Mr. Fenton. On August 4th, the patient complained of an occasional sensation as of a foreign body in the eye; there was, however, little actual pain. Some photophobia was present, but there was no especial redness. The outer and lower part of the right cornea was occupied by a grey, depressed, and uneven ulceration, the advancing edge of which was grey, sinuous, and rather raised. A number of fine vessels, derived from a large trunk in the conjunctiva, ramified over the base of the ulcer. The appearance of the parts is shown in the appended diagram. The lesion, it will



Diagrammatic representation of cornea, showing ulcerated portion and vessels derived from trunk in conjunctiva. Right cornea, August 4th, 1898.

be observed, did not encroach upon the pupillary region of the cornea. The pupil was small and active and there were no signs of iritis. The fundus was in its normal state. Tension was normal. Vision, $\frac{6}{12}$ + 1·5 D. spherical = $\frac{6}{6}$. The glands were not involved. A definite diagnosis was made of rodent cancer on the cornea and operation was advised.

On the following day, under cocaine anæsthesia, the ulcer was thoroughly burnt with the galvano-cautery, special attention being paid to the aggressive margin. The operation (at which Mr. Fenton assisted) was of a somewhat delicate character owing to the care that had to be exercised not to interfere with the clear cornea that lay in front of the pupil. It was followed by pain, œdema and ecchymosis of the eyelids, as well as by marked redness of the globe. On Oct. 13th the lower half or so of the ulcer had cicatrised in a smooth and satisfactory way, but the remainder was uneven, rugous, and permeated by fine vessels. The corneal sensibility as regards both eyes was certainly diminished. This last observation is interesting and bears out Ahlström's statement[2] that such is the case in rodent ulcer of the cornea. Two days later, under local anæsthesia, the galvano-cautery was freely applied to the roughened portions of the cornea. By Feb. 2nd, 1899, the ulcer had completely healed. Right vision, $\frac{6}{18}$. On June 8th the outer third of the right cornea was the seat of a slight opacity, delicate extensions from which crossed the pupillary region. Vision, $\frac{6}{18}$ + 1 D. cylinder axis horizontal $\frac{6}{12}$ iv. With presbyopic correction (+ 3·5 D. spherical) the patient could read slowly the smallest type on Jaeger's test-card. To judge from the refraction, which had formerly been spherical, the operations had slightly altered the curvature of the affected cornea.

Upon inquiry I learn from Mr. Fenton that the patient died on Jan. 12th, 1900, from influenza and failure of the heart. The corneal mischief, however, never recurred, nor did the eyes cause any further trouble.

Welbeck-street, W.

[1] Ophthalmiatrische Beobachtungen, Berlin, p. 107.

[2] Klinische Monatsblatt für Augenheilkunde, Mai, 1898.

FOUR CASES OF PUERPERAL ECLAMPSIA.

BY T. B. BROADWAY, M.B., CH.B. GLASG.

THE cases of eclampsia now to be described occurred in my practice during the last six months and presented some points of interest. In the first case the high temperature and the length of time for which it kept up were remarkable, especially as there was nothing septic to account for it.

CASE 1.—In the last week of December, 1899, I was called to a primipara attended by Mr. Goodfellow of Roche. She

was a strong, healthy woman, aged 19 years, and had a normal labour except that Mr. Goodfellow removed the placenta by inserting his hand. She did well for three days, then convulsions came on; Mr. Goodfellow saw her and gave a hopeless prognosis. I was called in on the fifth day; she was then lying comatose, with dilated pupils, a pulse of 140 per minute, and a temperature of 106·2° F.; her mother also stated that she had not passed urine for the last 24 hours. I gave her an hypodermic injection of two grains of pilocarpin nitrate. Shortly before I left, as convulsions again came on, I gave her an enema of one ounce of sulphate of magnesium and one drachm of bromide of potassium as well as douched out her uterus and ordered her mother to keep her on milk and soda-water, feeding her every half hour. On the following day I found her temperature still 106°, but there had been no recurrence of fits and she had passed both fæces and urine in her bed unconsciously. On account of the high temperature I gave her three-grain doses of phenacetin every three hours and put her on the following mixture: solution of perchloride of iron, two drachms; sulphate of magnesium, two ounces; tincture of digitalis, half a drachm; spirit of nitrous ether, two drachms; water to make up eight ounces; one ounce to be taken every four hours. On Dec. 23rd I found her temperature to be 104·8°, and as she was still insensible I asked Dr. Shaw of St. Austell to see her with me. As he thought there might be some uterine mischief, though there was no discharge, I again douched out the uterus with perchloride (1 in 2000). On the following day as her temperature was still 104·4°, I again douched her out with chinosol. On the 25th I found her temperature to be 102·4° and her pulse 120, and for the first time she seemed to notice things—she inquired who I was, and on being asked how she felt she made a complaint of pain in her head and back. I now managed for the first time to obtain some urine and found it loaded with albumin; her recovery, however, from this period was steady, though she was on my hands till the end of January, 1900.

CASE 2.—This patient was a young woman 4 feet 8½ inches in height and very spare. Mr. Goodfellow was attending her; she had been in labour for 48 hours when he telegraphed for me. He told me that she had had several fits and that her labour pains were very unsatisfactory. I found the woman conscious but looking anxious and worn. On examination per vaginam I found the os dilated to the size of half-a-crown. I advised rapid dilatation and instrumental delivery under an anæsthetic. As Mr. Goodfellow agreed we gave her chloroform and delivered her after a little trouble. Her further progress, so far as I am aware, was uneventful.

CASE 3.—I saw this patient for Dr. Shaw of St. Austell. The woman was a multipara, this being her fourth confinement. She had an ordinary labour and was attended by a midwife. On the following day she had convulsions when Dr. Shaw asked me to see her. I found her lying semi-conscious with the muscles of her face twitching; her temperature was 99·4° F.; and her pulse was 110 and irregular. I gave her an injection of half a grain of pilocarpine along with a quarter of a grain of morphine and a mixture containing bromide of potassium and sulphate of magnesium. Since then she has had no more fits, but is still in our hands for albuminuria and anæmia.

CASE 4.—I was called to this patient on June 23rd; on arriving I heard that she had been having labour pains for the last 13 hours but that the friends had sent for me as she had had two or three fits the hour previous to my arrival. The patient was very anæmic. I found her tongue bitten and could elicit no replies to my questions; the os was dilated to about the size of a sixpence. I gave her the following mixture: sulphate of magnesium, one ounce; bromide of potassium, three drachms; water to make up two ounces; one ounce to be taken every three hours. This lessened the number though not the severity of the convulsions, and as on a later visit, some six or seven hours after the first, I found the os dilated to the size of a florin and as she had passed no urine I asked Dr. Shaw to see her with me. We agreed to give an anæsthetic and deliver under it. In this we found no difficulty. We passed a catheter previously to using instruments and drew off half a teacupful of bloody urine. The patient is progressing fairly, though she is not very clear in her answers; there is still a little trouble in her passing urine. Previously to this she was being treated by Dr. Shaw for anæmia and amenorrhœa.

St. Denys, Cornwall.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

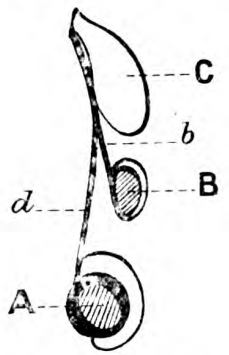
ST. GEORGE'S HOSPITAL.

A CASE OF SUPERNUMERARY TESTIS.

(Under the care of Mr. G. R. TURNER.)

UP to a recent date the possibility of a third testis has been denied. For instance, Mr. Jeremiah McCarthy in Quain's Dictionary, 1882, p. 1606, wrote: "Supernumerary testicles have been described and men not unfrequently believe themselves to be so gifted. The mistake has arisen from the presence of encysted hydroceles or of fatty or fibrous tumours of the cord, or of an old epiplocele. There is no well-authenticated case recorded of the presence of more than two testicles." The same opinion has been expressed in a still more recent work. Lydston,[1] writing in 1899, says: "It is probable that the third testicle is a myth." Yet a few indubitable cases have been recorded in which the supernumerary testis has been removed and examined microscopically. A very remarkable case is described in the *New York Medical Record* of Feb. 23rd, 1895. A recruit of the Eighth Cavalry was found to be possessed of four testicles, three of them being well developed; but in this case, as no operation was performed, no histological examination was made, and the diagnosis may reasonably be considered unsettled.

A healthy-looking child, aged three and a half years, was admitted into St. George's Hospital on July 30th, 1894. On the right side of the scrotum there was an irreducible swelling which was transparent and looked at first sight



A represents the lower (larger) testicle with its hydrocele. B represents the upper testicle with a normal tunica vaginalis. C represents the serous sac in front of the upper part of the cord, with apparently no communication with the peritoneal cavity. *b* and *d* represent the cords of the two testes which seemed to join above.

like a hernia above a hydrocele. The testicle could be felt at the bottom of the scrotum and above this another rounded lump could be distinguished. Mr. Turner cut down on the swelling and separated it from the cord. The upper part was a serous sac full of clear straw-coloured fluid but containing no gut and not communicating with the peritoneal cavity. This cyst was removed. Below it were two testicles; the upper one had a normal tunica vaginalis and a distinct cord of its own and the lower and larger one was in the usual position of the testis with the sac of the tunica vaginalis the seat of hydrocele. This was laid open and its margins were stitched to the skin wound. The boy did well afterwards, though his convalescence was retarded by a whitlow and a portion of the wound healing of necessity by granulation. The left testis appeared to be normal.

[1] Surgical Diseases of the Genito-urinary Tract, p. 921.

Remarks by Mr. TURNER.—An almost exactly similar case was, curiously enough, a fortnight later under the care of Mr. Arbuthnot Lane in Guy's Hospital and has been reported by him.[2] In his case, too, the cord of the supernumerary testis blended above with the spermatic cord but there was no hydrocele. Microscopical examination of the supernumerary testis which Mr. Lane removed showed "well-formed tubules with spermatogenesis proceeding." His patient was a youth, 17 years of age. In the case above related, as in Mr. Lane's case, it would seem that the supernumerary testis is developmentally a subdivision of the larger organ on the same side.

QUEEN'S HOSPITAL, BIRMINGHAM.

FOUR CASES OF CHOREA TREATED WITH LARGE DOSES OF ARSENIC.

(Under the care of Dr. A. H. CARTER.)

IN the successful employment of arsenic in chorea it is now generally agreed that large doses must be administered, and if the initial dose is small it may be slowly or rapidly increased to the maximum. It is now recognised that a large dose of arsenic for a short time is better borne than a smaller dose for a long time. De Renzi[1] has advised that 20 minims of the liquor arsenicalis should be given at first in the case of children and double that amount in the case of adults. These amounts are probably a little excessive as initial doses, but on the whole children stand arsenic well. In all cases much better results are obtainable if the patient is confined strictly to bed. For the notes of the cases we are indebted to Dr. W. Billington, house physician.

CASE 1.—A girl, aged 13 years, was admitted into the Queen's Hospital, Birmingham, on Feb. 13th, 1900. For five weeks she had had choreiform movements and these, in spite of treatment at home, had got worse. Three years previously the patient had acute rheumatism. This was followed by an attack of chorea lasting four weeks. 18 months before admission she had a second attack of chorea. The third and present attack was the most marked and the most resistant to ordinary treatment. The movements were general but not violent, taking the form of persistent "fidgeting." The patient was unable to write or to hold anything in her hands and her speech was slightly affected. The first heart sound was blurred in the mitral area and the apex beat was in the nipple line, but compensation was good. On Feb. 14th the patient was ordered to have 15 minims of solution of arsenic three times a day. The medicine in this case, as in all the others, was given in the middle of a meal in a wine-glassful of water. No signs of intolerance appeared until the 20th, when she vomited once shortly after taking the arsenic. On the 21st the arsenic was stopped altogether, 315 minims of Fowler's solution having been taken in a week. During the time the patient was taking the arsenic she ate and slept well and exhibited no signs of intolerance except the single occasion on which she vomited. A marked improvement in the chorea was noticed on the fourth day and at the end of the week all movement had practically ceased. On Feb. 24th she was allowed to get up and on March 1st she was discharged from the hospital quite cured. She was subsequently under observation for two months and during that time she showed no signs of a relapse.

CASE 2.—A girl, aged six years, was admitted into the Queen's Hospital, Birmingham, on April 23rd, 1900. Chorea had come on for the first time 10 days before admission and quickly became very violent, so much so that her mother was scarcely able to hold her in her arms. The whole body was affected and she was very excited and passionate. There was no very definite history of rheumatism, but the child was said to have had indefinite pains in her legs and thighs for the last six months. These were described as "growing pains." The heart was unaffected. On April 23rd the child was put on 15 minims of solution of arsenic three times a day, and on the 24th this was increased to 18 minims three times a day. There was an immediate and marked improvement and on the 28th the chorea had almost subsided and the patient was eating ravenously and sleeping well without sedatives. No signs of intolerance appeared until the 29th, when she vomited twice after taking her medicine. On the 30th the arsenic was stopped, 354 minims of solution of arsenic having been given in seven days. On May 1st the patient vomited after each meal. The breath was foul, the tongue was furred, the bowels were constipated, and the abdomen was retracted. She was perfectly quiet and seemed to be heavy and dull. An aperient was given together with a simple enema, and the bowels having been freely opened bismuth was given every four hours in 10 grain doses for 24 hours. The vomiting persisted for several days and then stopped, and the patient rapidly convalesced. On May 5th she had a slight twitching of the hands, but this disappeared in a day or two. On the 8th she was allowed to get up and on the 14th she went out of hospital without a trace of chorea having been noticed for a week. She was in hospital for 21 days.

CASE 3.—A married woman, aged 25 years, was admitted into the Queen's Hospital, Birmingham, on April 21st, 1900, with hemichorea of the left side. The chorea had come on a fortnight before admission. 15 weeks previously she had an attack of acute rheumatism and at the time of admission she still complained of obscure pains in her joints, though there were no objective joint changes. She had had three children and at the time of admission was probably two or three months pregnant. She had never had chorea before and only the one attack of rheumatism. The movements were confined to the left arm, the left leg, and the left side of the face, and the patient was unable to hold anything in her left hand on account, as she said, of the jerky movements and a sense of weakness in it. Since the onset of the chorea she had slept badly, had lost her appetite, and had become very excited and emotional. The knee-jerk and plantar reflex on the left side were very lively and a spurious ankle clonus was obtained. The first heart sound was impure, but there were no definite murmurs. On April 22nd the patient was put on 15 minims of solution of arsenic three times a day. On the 24th she vomited once, but three hours after taking her medicine. After this she gradually became worse, the chorea became more marked, and, passing to the other side, affected the whole body. The movements became very violent, the patient got out of bed, shouted, and wept, and did not sleep at all for two days and two nights. When spoken to she answered rationally for a moment, but at once wandered off to something else and at times was very delirious. The bowels were confined, the urine was scanty, and the appetite was very poor. The arsenic was steadily persisted with and on April 28th she began to improve, she slept better, and was much quieter. On the 29th the arsenic was stopped, 315 minims having been taken in seven days. On the 30th the movements had almost ceased and no symptoms of intolerance appeared from first to last. After this improvement was steady and on May 6th all movement had ceased and the patient was able to sew and to read. She ate well and slept well. On the 11th she went out quite well, no movements having been noticed for six days. Ten days later she again reported herself and was then looking much better and stated that she was quite steady and had had no relapse.

CASE 4.—A girl, aged seven years, was admitted into the Queen's Hospital, Birmingham, on May 3rd, 1900, with mild general chorea. The patient had always been excitable and irritable and was "very bright at school." There was no history of rheumatism obtainable. The chorea came on for the first time three weeks before admission, and at the same time her temper became worse and she was very peevish. No improvement followed treatment with small doses of arsenic as an out-patient. On admission the movements were slight, but affected the face and all the limbs. There were no heart murmurs and all the organs appeared to be healthy. On May 6th the child was put on 15 minims of solution of arsenic three times a day. She vomited once on the 7th and twice on the 8th, after which the dose was reduced to 10 minims. She continued to vomit once or twice every day until May 13th, when the arsenic was stopped, 240 minims having been taken in seven days. The vomiting was the only sign of intolerance. During the whole time the patient was taking the arsenic she rapidly improved and on the 13th there were no signs of chorea present. On the 14th she got up and walked about steadily and did some knitting. She was discharged quite cured on the 18th, no movements having been noticed for six days.

Remarks by Dr. BILLINGTON.—These four cases being fairly representative of chorea as commonly met with strongly emphasize the value of arsenic in large doses as a curative remedy and prove the efficiency of Dr. William Murray's

[2] Transactions of the Clinical Society of London, vol. xxviii., 1895, page 59.

[1] American Journal of Medical Science, May, 1896.

method of administration. In none of the cases was any other remedy used; the patient was simply kept in bed on a good diet, with the bed screened off from the rest of the ward. The two points of especial interest which the above cases present are the rapidity with which a cure was affected and the ease with which large doses of arsenic were borne and the insignificance of the symptoms of intolerance. Looking over the hospital records of cases of chorea treated as in-patients I find that the average length of stay is about six weeks, and even after much longer periods many cases have been sent away only partially cured. The average stay in hospital of the above four cases was only 18 days, and all four had shown no signs of chorea for at least five or six days before they were discharged, and all four were allowed to get up and mix with the other patients for several days before going away. This in itself is a very important advantage in a general hospital where there is always great pressure on the beds. With regard to the second point, I am fully in accord with Dr. Murray's statement that large doses of arsenic given for a short space of time in the way he recommends are much less likely to be followed by serious symptoms of poisoning than when it is given in steadily increasing doses over a much longer period of time. It is well known that the latter procedure only brings about appreciable improvement when the dose has become relatively large and the system is brought thoroughly under the influence of the drug. Of course, the treatment adopted in the above cases can only be undertaken when the patient can be kept under close observation and seen at least once a day. In such cases it would seem to be of great service and may with advantage be employed in preference to the persistent administration of small doses of arsenic, the results of which are often very tedious and unsatisfactory.

Medical Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens. — Residual Urine in Cases of Enlarged Prostate.—Paralysis of the Vertical Movements of the Eye.—Landry's Paralysis.

THE ninth ordinary meeting of this society was held on July 4th, Mr. A. G. MILLER, the President, being in the chair.

Dr. NORMAN WALKER showed two cases of late Syphilides. The first was that of a woman with an affection of the skin over the nose. The diagnosis lay between it being a specific lesion or lupus erythematosus. It was even suggested that it might be a case of lupus vulgaris closely simulating lupus erythematosus. The appearance, however, of a small, sharply punched-out ulcer, the history of a sore-throat, and the rapid development of the affection (within six months), together with the fact that the patient had improved under the administration of iodide of potassium, pointed undoubtedly to its specific origin. The case illustrated the fact that specific lesions might closely simulate any other disease. The second syphilide occurred in a girl, aged nine years. A large number of crusted nummular masses were scattered over the skin of the left side of the body and thigh. Where these had healed deep round scars were left. The treatment in this case consisted in the application of mercury by means of a bib applied to the skin of the chest. No medicine was required to be taken inwardly when it was administered in this way.

Dr. WALKER also showed a man suffering from Ringworm of the Beard. An unusual deformity resulted on the healing of the pustules—a whole crop of tiny little nodules was left on the side of the face and chin.

Mr. J. W. DOWDEN showed a boy, aged five years, after operations for Tubercle of the Upper Ulnar Epiphysis. The abscess had been opened and the sinuses scraped several times. Now the wound was completely healed and perfect movement of the joint persisted.

Dr. LOGAN TURNER showed a case of Asthma in a man associated with Chronic Suppuration in the Left Frontal and Maxillary Sinuses. The first operation consisted in opening the left antral cavity, and later the left frontal sinus was opened through a very small buttonhole-shaped incision towards the inner side of the left eyebrow and curetted. Since these operations there had been no escape of pus into the nose and the asthma had greatly improved. The case was one of double interest—the co-existence of asthma along with disease of the left antrum and frontal sinus.

Dr. WILLIAM RUSSELL exhibited a man, aged 58 years, showing the typical signs and symptoms of Myxœdema—a condition which was much more rarely met with in men than in women. The scalp was completely devoid of hair and the beard and whiskers were scanty. The baldness began to show itself three years previously. The condition of mental lethargy, slowness of speech, apathetic facies, swelling of the eyelids, and malar flush were characteristic.

Dr. WILLIAM RUSSELL showed the following specimens: 1. The Brain and Heart from a case of long-standing Aphasia and Hemiplegia. The patient was a man who was said to have had a sunstroke 12 years previously to his death which was due to phthisis. In the left hemisphere a series of large cysts filled with fluid was present. These had resulted from an embolism in one of the branches of the middle cerebral artery. The heart showed the evidences of an old vegetative endocarditis specially affecting the mitral valve. These vegetations had become quite fibrous. An old aneurysm below the aortic segment was also present. 2. The Brain from a recent case of Aphasia and Hemiplegia. The lesion in this specimen occupied almost the same situation as in the preceding and was quite as extensive. A thrombosis was the cause in this case and this resulted from extensive atheroma of the cerebral vessels. The woman did not die from this disease. Thrombosis or embolism produced the same effect in the brain, a softening of the brain substance resulting, and, if the patients lived long enough, cyst formation resulted.

Dr. PEARSON (for Dr. G. A. GIBSON) exhibited: (1) a specimen showing Patency of the Ductus Arteriosus which was diagnosed during life and proved to exist after death which was due to pneumonia of the right lung; and (2) microscopic specimens of the Filaria Sanguinis in the Proboscis and in the Muscle of the Mosquito.

Mr. HARVEY LITTLEJOHN exhibited: 1. A Heart ruptured by Traumatism. The case was that of a young man who was crushed between the buffers of two railway carriages. The railway company denied any liability as there were no external signs of injury or any fracture of the ribs. The post-mortem examination revealed an extensive rupture of the right auricle fully one and a half inches in length. 2. The Stomachs from two fatal cases of Carbolic Acid Poisoning. One of these resulted from the drinking of 10 ounces of the acid and in this case the stomach showed the ordinary typical appearance, being contracted and leathery and covered with a white putty-like material. In the second case some of the crude carbolic acid used for ordinary disinfection had been drunk out of a beer bottle, and yet though this is much weaker than ordinary carbolic acid the patient died in 15 or 20 minutes. Mr. Littlejohn drew attention to the fact that the proper treatment of all of these cases of poisoning even by the corrosive poisons was the passage of the stomach-tube and the washing out of the stomach. It was better to run the risk of perforating the stomach than the greater risk of death from the action of the drug. 3. The Liver and other Organs from a case of Acute Yellow Atrophy. The case was that of a young woman who had become pregnant and whose lover had refused to marry her. She was seized with intense jaundice and vomiting. Labour ensued and she was delivered by forceps but died 36 hours later. The post-mortem examination showed the presence of numerous hæmorrhages in the skin and organs of the body. The case was one of phosphorus poisoning or acute yellow atrophy (the liver was much atrophied). Tests for phosphorus proved negative, but this did not exclude the possibility of her having swallowed the poison. Her mental condition was such as might have induced her to commit suicide. The uterus was perfectly healthy and presented the normal appearances of the organ at this period after delivery and its condition precluded the idea of acute septicæmia. The stomach was also shown to illustrate the appearance of post-mortem digestion.

Dr. R. A. FLEMING showed: (1) Tuberculous Pericarditis (a rare condition) from a man, aged 40 years, who died from general miliary tuberculosis; (2) Hearts with Patent Foramen Ovale—in one case the opening was very large;

and (3) Fatty Degeneration of the Heart Muscle from a case of Pernicious Anæmia.

Dr. ALEXANDER BRUCE exhibited the Brain from a case of Aphasia. The specimen was from a man who had suffered for a long time from right-sided hemiplegia with aphasia. He was capable of understanding what was said to him but could not read. He spoke volubly but unintelligibly. Being very musical he could sing several tunes perfectly, but the words were gibberish though the rhymes were always conserved. He also retained the power of mimicry to a remarkable extent. The post-mortem examination showed a line of softening running along the whole length of the Sylvian fissure. The superficial portion of the first temporal lobe was conserved and there was only a very slight softening in the angular and supramarginal gyri.

Mr. DOWDEN showed a specimen removed from a child, 14 months old, who had suffered during five days from sickness and vomiting. The left thigh was kept flexed and there was a swelling in the left groin of the size of a hen's egg. The bowels acted properly. On opening the sac the testicle was found with the cord twisted several times. The testicle and part of the cord were removed.

Dr. ALEXANDER JAMES exhibited a specimen from the body of a man who was supposed to have suffered from Abdominal Aneurysm. The deceased was aged 40 years; he was an old soldier, had suffered from syphilis, and had atheromatous arteries. There were a double aortic murmur and a large pulsating tumour over the abdominal aorta. The post-mortem examination showed the presence of a tumour lying over and around one side of the abdominal aorta; the growth was malignant, very vascular, and with many hæmorrhages in it. Dr. James had not made a diagnosis of aneurysm as the aorta seemed a little more fixed than usual and there was no alteration in the pulsations of the femoral arteries as shown by the sphygmograph.

Mr. A. G. MILLER read a clinical note on Residual Urine in cases of Enlarged Prostate. He stated that an enlarged prostate by itself was often enough harmless and was frequently unattended by any symptoms. The danger lay in the residual urine left in the bladder and at present the usual remedy for this was the systematic use of the catheter. Mr. Miller advocated the importance of voluntarily emptying the bladder a second time a few minutes after apparently emptying that organ. He described the case of an active man in whose bladder about three ounces of residual urine were always present. This patient by a systematic voluntary emptying of his bladder by again trying gradually decreased the amount of residual urine until, perhaps, only from two to seven drachms were found retained. He found that he did not require to get up so often during the night and generally improved greatly in health. Mr. Miller thought that usually the bladder was not emptied because a sufficient effort was not made to do so. He asked why an old man with an enlarged prostate did not empty his bladder completely. In old age the muscular power generally diminished and consequently the muscles of the bladder were feebler, and this was associated with an enlarged condition of the prostate. There were two important factors and there might be a third unrecognised factor in this causation—i.e., laziness, impatience, or indifference—which might make the patient stop emptying his bladder as soon as the feeling of distension was relieved. Mr. Miller stated that the great cause of residual urine at first was neglect to empty the bladder; later there might be inability to empty it but neglect was the initial factor. In normal conditions the emptying of the bladder took place without any effort, there being merely the relaxation of certain muscles and the contraction of others, assisted by the atmospheric pressure. The action was partly voluntary and partly involuntary, but the whole process partook more of relaxation than effort, and the relief was pleasant because it was unattended by effort. When a man began to suffer from enlarged prostate, as he had hitherto passed water without effort he consequently did not exert himself. It was much a matter of habit. The rational treatment was to break off the habit at the beginning and to establish the habit of emptying the bladder by a second trial. In advanced cases of prostatic hypertrophy the patient strained to pass water, but atony of the bladder had taken place and the effort was almost useless. The voluntary emptying of the bladder ought to be commenced early. In advanced cases the bladder become hypertrophied, enlarged, and sacculated. The conclusions arrived at were that (1) residual urine was due at first to neglect to empty the bladder; and (2) the accumulation was then due to this becoming a habit. The patient ought to be taught in the beginning of the disease to wait a minute or two after passing water and to try again. He ought to practise this until the residual urine amounted to perhaps only half an ounce. This second trial might be practised twice or thrice daily until the residual urine was got rid of and the bladder regained its tone and resumed its function. This treatment was a safe and easy method and one which might postpone the otherwise almost inevitable period of catheter life.—Dr. ALEXANDER JAMES thought that there was a strong analogy between the condition in the bladder and that found in the lungs. As age advanced the residual air in the lungs went on increasing until emphysema resulted. He stated that a singer must be taught to get rid of this residual air before beginning a new inspiration. He must end a note by compressing his chest and must not begin inspiration until the chest was empty of air.

Dr. ALEXANDER BRUCE read a note of a case of Paralysis of the Vertical Movements of the Eye with Conservation of the Lateral Conjugate Deviation without Ptosis. Cases of paralysis of conjugate deviation with retention of the up-and-down movements of the eyeball were, he said, frequent enough and the reason was well understood. Lateral conjugate deviation was effected through the sixth nucleus which supplied not merely the external rectus muscle of its own side but also indirectly the internal rectus of the opposite side, very much as the reins acted in the hands of a coachman driving a pair of horses. The sixth nucleus was at a considerable distance from the third and fourth nuclei or the other nuclei for the muscles of the eye. A lesion might consequently destroy the sixth nucleus without disturbing the other movements of the eyeball. The opposite condition, however—viz., paralysis of the upward and downward movements of the eye with conservation of the lateral movements—was extremely rare. The cases of this kind described were not more than five in number. *A priori* it might be thought to occur in certain lesions of the middle lobe of the cerebellum. Ferrier stimulated the anterior portion of the middle lobe of the cerebellum and the eyes moved upwards while the head moved backwards. Stimulation of the posterior part of this same lobe caused the eyeballs to be directed downwards and the head forwards. Stimulation still further back caused lateral movements of both eyeballs. A lesion of the upper part of the middle lobe of the cerebellum causing destruction might produce inability to raise the two eyeballs. In one of the cases related a girl lost the power of raising the eyeballs though there was no ptosis. At the post-mortem examination it was found that there was a small tumour at the upper part of the middle lobe of the cerebellum destroying the valve of Vieussens, part of the middle cerebellum lobe itself, and part of the path from the middle lobe; in other words, the centre for the upward movement of the eyeballs was destroyed. The case which Dr. Bruce himself investigated was that of a hard-working female mill-worker, aged about 45 years, who had suffered from what was said to be influenza. She had had some difficulty in walking but had recovered from this. On examination there was found to be a practically complete inability to raise the two eyes in the least and only a very feeble power in depressing the eyes. When asked to raise the eyes she merely looked straight forward; there was no ptosis. When asked to look downwards the eyes descended only very slightly. The lateral movements of the eyeballs were, however, brisk and complete, as was also at first the power of convergence, though this gradually failed. She showed a remarkable unsteadiness. She could not stand erect, but always leaned back strongly on some support as if she were voluntarily pressing backwards. When she was made to sit up straight in bed she always fell back. When made to lean forwards in bed with her hands on her knees she remained so, but whenever she lifted her hands up her back at once straightened itself. The inference was that she suffered from a tumour situated in the cerebellum as described. The patient became gradually more and more unconscious and a greater degree of blindness ensued until death supervened. There was evidently an obstruction to the outflow of cerebro-spinal fluid from the third ventricle backwards. The post-mortem examination showed the presence of a small tumour of about the size of a bean just below the pineal gland and pressing into the third ventricle. The sections through the brain showed a small lenticular tumour right in the middle line and projecting into the hinder part of the third ventricle, and growing not from the optic tract but from

the grey matter around the aqueduct of Sylvius. The symptoms must have been due to a gradual involvement of the external muscles of the eyeball but sparing those for accommodation. The sixth nucleus had been entirely unaffected. The glioma arising in the grey matter had grown backwards along the aqueduct and upwards into the third ventricle.

Dr. ALEXANDER JAMES read a description of a case of Landry's Paralysis and Dr. R. A. FLEMING gave an account of the pathological conditions present in the case. Dr. James stated that when influenza attacked the nervous system specially all kinds of effects might be produced. It might affect special nerves alone. In three patients admitted into Dr. James's ward within a few weeks of one another, all suffering from influenza, a rapidly produced paralysis extending from below upwards was noticed (Landry's paralysis). One typical case was the following. A young woman, aged 23 years, was admitted to the Edinburgh Royal Infirmary on Jan. 31st, 1900, suffering from pains in the head and back and delirium. The influenza had existed for two weeks previously to her admission and she had also suffered from the same disease seven months previously. The headache had been very severe and before her admission she had suffered much from insomnia, crying out constantly and meaninglessly, and being so noisy that her friends thought of sending her to an asylum. She was sensible at times and complained of the globus hystericus. When first examined on Jan. 31st her temperature was 103° F., her pulse was 130, and her respiration was 22. She would not answer questions, but cried out continuously for hours together. She lay on her back and did not move either her legs or arms. The urine and fæces were passed involuntarily. Sensibility to touch and pain seemed normal. The volitional power of arms and legs was lost. There was no distinct evidence of paralysis of the diaphragm. Cheyne-Stokes breathing was present while the girl was awake, but during sleep the breathing was normal. Both superficial and deep reflexes were absent and the power of swallowing was greatly impaired. Later the breathing became more rapid for perhaps half a minute and then quieter. She complained of pain behind the sternum and the upper lip was noticed not to move well as she spoke. Shortly after this her head shook violently, she became wildly delirious, and died soon afterwards. For about 10 days she exhibited the ordinary symptoms of influenza, then a paralysis gradually spreading from the lower extremities to the nervous centres in the medulla ensued.—Dr. FLEMING described the pathological conditions which were present. Excepting an incipient broncho-pneumonia near the root of the left lung no other marked visceral lesion was present. The liver and kidneys showed cloudy swelling; the spleen weighed only four and a half ounces and was acutely congested with a number of small hæmorrhages. In the brain the dura mater was firmly adherent posteriorly. The grey matter was markedly congested and showed general œdema. The pia and arachnoid mater appeared to be normal. There were no degenerations in the columns of the spinal cord and an examination of the cells gave disappointing results. In the medulla the cells were swollen and in the anterior cornua of the cord the multipolar cells were also swollen. The nuclei of these were distinctly eccentric in position and chromatolysis was present in a considerable degree in these swollen cells. The cells in the anterior horns in the lumbar and cervical regions of the cord showed a marked atrophy but stained deeply, and numerous small microscopic hæmorrhages (really microscopic diapedesis of red corpuscles) not visible to the naked eye were present.

THE ROYAL HOSPITAL FOR INCURABLES AT PUTNEY.—By the death of Mr. William Loney of St. Heliers, Jersey, this hospital becomes entitled to the residue of his estate, which it is estimated will eventually amount to about £14,000.

THE PARISH OF ST. GEORGE'S, HANOVER-SQUARE, AND THE ST. PANCRAS SCANDAL.—In consequence of the recent evidence adduced at the official inquiry into this scandal the Relief Committee of St. George's, Hanover-square, has reported that "the question of gratuities was inquired into in August, 1898, by the Schools and Asylums Committee, and in September of the same year by this committee, and on several occasions since the matter has been before other committees of the board, and we are satisfied that so far as this union is concerned no such practice exists."

Reviews and Notices of Books.

Refraction and How to Refract: including Sections on Optics, Retinoscopy, the Fitting of Spectacles and Eyeglasses, &c. By JAMES THORINGTON, A.M., M.D., Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic. With 200 Illustrations, 13 of which are coloured. London: Rebman Limited. 1900. 8vo, pp. 301. Price 7*s.* 6*d.*

THE number of treatises dealing with the subject of refraction since the appearance of Donders's essay on the Refraction and Accommodation of the Eye, which it is the special glory of the New Sydenham Society to have caused to be written and published, is so great, the details have been so thoroughly worked out and presented to the student in so many forms from the elaborate work of Landolt, who seems to have almost exhausted this branch of ophthalmic work and practice, to the pamphlet of a few pages, that it is difficult for any writer, whatever may be his ability, to say much that is new or to do more than refer to such recent improvements or aids to examination as may have come under his notice.

Dr. Thorington's volume commences with a series of definitions of the terms commonly used in optics, giving brief explanations of incident, emergent, reflected, refracted, divergent, and convergent rays; positive and visual foci; the formation of images; the numbering of prisms, and the forms and action of lenses. In regard to the numbering of prisms the author remarks that formerly prisms were numbered by their refracting angles, but that now other methods are in use known as Dennett's and Prentice's methods. The unit or centrad in Dennett's method is a prism that will deviate a ray of light the one-hundredth part of the arc of the radian. The radian is so much of the circumference of a circle as will equal the length of its radius of curvation. This is called the arc of the radian and equals 57·295 degrees. It is divided into 100 parts, and a prism base down at the centre of curvation that will deviate a ray of light downwards just one-hundredth part of the arc is a one centrad. M. Prentice's method, the unit or prism dioptre, is a prism that will deflect a ray of light just one centimetre for each metre of distance, that is the one-hundredth part of the radius measured on the tangent. The various forms of test cards for the determination of the sharpness of vision and the particulars of the mode of examination of the fundus by the direct and the indirect methods are fully given and there is an interesting chart showing at one view all or most of the different forms of clocks that have been proposed for the recognition of astigmia. The whole chapter on Astigmatism is well written, the author describing no less than 15 methods for its discovery. These are: corneal reflex, confusion letters, Placido's disc, stenopæic slit, astigmatic chart, the pointed line test, perforated chart or disc, Pray's letters, Schriner's test, chromo-aberration or cobalt-blue test, Thomson's ametrometer, the ophthalmometer, direct ophthalmoscopy, cylinder lenses, and retinoscopy, and yet with all these mutually supporting or corrective methods mistakes sometimes occur.

The etymology of the various terms in use is given, and in general correctly, but there are some oversights. Thus the derivation of "ametropia" is given ἀ priv., μέτρον, "a measure"; ὄφις, "sight," instead of ὤψ or ὄψις; and on the next page "hyperopia" is derived from ὑπέρ, "over"; ὤφ, eye, and the same error is repeated under "anisometropia." Pince-nez is spelt "pinc-nez." The reader will find some useful information not usually given in similar treatises in regard to bifocal lenses and spectacle frames. The book will prove serviceable to those who are dressers and house

surgeons in ophthalmic wards or to practitioners who wish to familiarise themselves with the modern methods of correcting ametropia.

Commercial Organic Analysis. Vol. II., Part II. By ALFRED H. ALLEN, F.I.C., F.C.S. Third edition, with revisions and additions by the Author and HENRY LEFFMAN, M.A., M.D. Philadelphia. London: J. & A. Churchill. 1900. Pp. 330. Price 14*s*.

IT was inevitable that Mr. Allen's valuable series of volumes on Commercial Organic Analysis should sooner or later have to undergo revision. The progress of analytical chemistry is so rapid as soon to render published methods either obsolete altogether or unsatisfactory in some respect. The work as a whole, indeed, is chiefly valuable because in reality it consists of a trustworthy record of modern analytical processes as applied to those substances which come under the classification of the title of the work. Moreover, Mr. Allen's experience as an analytical and consulting chemist gives him the position of being able to confirm or disprove any given process in vogue. Thus he frequently records his own experience of various analytical processes which when he has found them unsatisfactory he has set to work upon with the view of making them more reliable and perhaps at the same time more expeditious. In this task he has met with considerable success. The volume under notice deals with the very important class of bodies—hydrocarbons, petroleum and coal tar products, asphalt, phenols, and creosote. There are, therefore, chapters in it which relate to the purity of many antiseptics employed in medicine and in sanitation. The valuation of a given antiseptic by bacteriological methods is not described, though we think a short chapter on this subject would have been useful to the practising analyst. The chapter on Petroleum and Shale Products, as well as the chapters on Coal-tar Derivatives, are most valuable. Obviously the present volume deals with the petroleum question in its relation to a legalised flash-point. Mr. Allen points out that all petroleum with a flash-point above 73° F. was by the Act of 1879, and contrary to the 1871 Act, freed from legislative restriction. The purpose of a Bill now (1899) pending in Parliament, he adds, is to substitute the accurate or close test for the inaccurate or open test in the Act of 1871 and to restore the 100° flash-point prescribed by that Act. Though this very accurately and simply defines the position we doubt whether an Act will ever be introduced which will seriously interfere with the sale of petroleum, which is being sold without restriction at the present time. Again, opinion is very much divided as to whether this interference is needed.

The work is one which is indispensable to the analyst, while chemists generally will consult its pages with advantage and confidence.

Micro-organisms and Fermentation. By ALFRED JÖRGENSEN. Translated by A. K. MILLER, Ph.D., F.I.C., and A. E. LEMMHOLM. Third Edition. London: Macmillan and Co. 1900. Pp. 318. Price 10*s*.

WE have before remarked upon the extraordinary economic influence which a study of the habits of micro-organisms is bringing to bear upon several great industries; indeed, it is not too much to say that as our knowledge of fermentative processes has deepened so has sprung up a complete reformation in many industrial processes in which the action of micro-organisms is so intimately concerned. After all, the application of this kind of knowledge is quite old in principle, as must be admitted in the cases of horticulture and agriculture, for, in the last words of the volume before us, "in order to obtain the desired species of plant its seed should be sown free from the seed of all other plants." It was Hansen of the Carlsberg laboratories who first showed that by cultivating a pure yeast a uniform product, whether wine or beer, could be obtained, and the results of this important discovery are now applied on a manufacturing scale in breweries, distilleries, and in the preparation of wines from the grape and other fruit. Nor have Hansen's discoveries stopped here, for pure cultures of lactic acid bacteria have been successfully employed for the souring of cream on a large scale much in the same way as pure yeast has been employed for the manufacture of sound beer. Again, very important experiments have been obtained with encouraging results in tobacco fermentation with the view of producing a definite aroma in tobacco leaves by the addition during fermentation of pure cultures of certain species of bacteria. It is all, in a word, a question of the cultivation of species, the separation of the weed, so to speak, from the true seed. This is the alpha and omega of the work before us. Mr. Jörgensen is a director of the laboratory for the physiology and technology of fermentation at Copenhagen, and his work is therefore closely associated with the classic researches of Hansen of the Carlsberg laboratories. The present volume, it is not surprising to find, is the third edition. The work of revision has been brought into line with modern knowledge. The illustrations are 83 in number, but though true to the original subject they have no special merit of an artistic kind. The work of translation is well done, and a clearer account of the subject we have not had the pleasure of reading. The book is eminently practical in character and thus appeals, as the author states, to chemists, botanists, and biologists, and likewise to those technologists who are engaged in the fermentation industries. Mr. Jörgensen is well known as a most active worker in the direction of the biology of yeasts in its application to industrial processes. His book is therefore not only an excellent text-book for the man who requires to study the subject practically, but it is also educational in another direction, since it contains accounts of the results of his researches during recent years on many interesting aspects of the methods of cultivation. The book opens with chapters on the apparatus used in bio-technical work and an account of the methods of examination. In fine the author grapples with his subject in that clear and intelligible manner which admirably justifies the work being regarded as an excellent laboratory companion on this special branch of bacteriology which might be called "bio-technology."

Richter's Organic Chemistry. Edited by Professor R. ANSCHUTZ. Authorised translation by EDGAR F. SMITH, Professor of Chemistry, University of Pennsylvania. Third edition from the eighth German edition. Vol. II., Carbocyclic and Heterocyclic Series. London: Kegan, Paul, Trench, Trübner, and Co., Limited. 1900. Pp. 671. Price 15*s*.

THERE is something to be said in favour of the classification of the carbon compounds which Victor von Richter has adopted in his classic work. In Vol. I, which was reviewed in THE LANCET of May 27th, 1899, p. 1436, the author dealt with the chemistry of the aliphatic series—that is, with the so-called fatty compounds. In the present volume he deals with carbocyclic compounds—that is, compounds containing closed carbon chains or rings. In general these are also isocyclic compounds, because they consist of rings of atoms of one or the same element, as distinguished from heterocyclic compounds which may be regarded as ring skeletons consisting of atoms of various elements. Thus we have a sharp classification of the whole of the compounds known to us which come under the generic term "organic." The alkaloids and a great number of the active principles of plants used in medicine come obviously under consideration in the present volume. The work, however, deals with theoretical rather than with practical considerations, and since von Richter is one of the greatest authorities on classification and constitution the work is one for acceptance. No subject

could be wider than that of organic chemistry, but to deal with it as the author and translator have done within the compass of the comparatively small size of these two volumes is an achievement which has its demerits as well as its merits. Every conceivable space on the pages has been utilised, the paragraphs are very much crowded, and the type generally is very small. On this account the classification of the various compounds does not appear to be as distinct as would have been the case had the volumes been larger and the printed matter less congested. The preparation of the work from the point of view of the printer must have entailed enormous labour and care with proof-sheets. The work, of course, is a standard one, considering the very high position which the author holds as one of the best exponents of the "organic" side of chemical science.

JOURNALS.

The *Veterinarian* for July is an improvement on its predecessor of the previous month, although original articles from English practitioners are still wanting. Summaries are given from colonial reports upon Actinomycosis and Tuberculosis in New Zealand Cattle, the original work having been done by, or under the supervision of, Mr. J. A. Gilruth, M.R.C.V.S. There is an interesting extract from an American journal upon the subject of Oöphorectomy of the Mare, the operation being done per vaginam, the way now almost universally practised. The Glasgow Tramways and Omnibus Company have recently carried out some valuable investigations into the use of mallein as a curative agent in cases of glanders and their conclusions are given in full. Under the "Month's Progress" there are a number of scientific extracts, those bearing upon the latest researches into rabies raising great hope that a rapid method of forming an early and certain diagnosis after the death of the suspected animal can be made. According to work done by M. Nocard of Alfort and also by Cuillé and Vallée of Toulouse the results of the researches of van Gehuchten and Nélis must not at present be absolutely accepted, and whatever opinion is given from a microscopical examination the duty of the veterinary expert is to advise the person bitten to proceed at once to the Pasteur Institute.

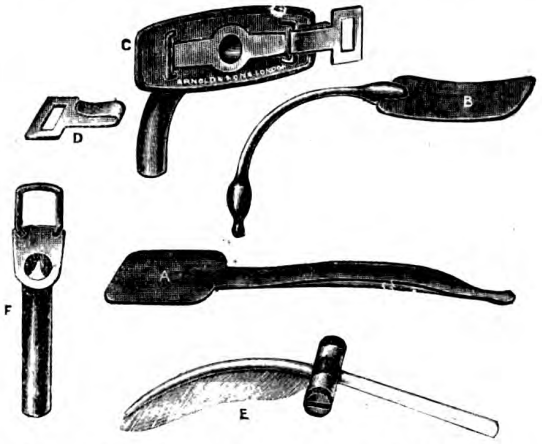
THE SANITARY INSPECTORS' ASSOCIATION.—The annual meeting of the western branch of this association held its annual meeting at Dartmouth on July 7th. The mayor read a paper on the Disposal of House Refuse and the medical officer of health (Mr. J. H. Harris), in the course of an interesting address upon the position of sanitary inspectors said that such inspectors should be officials of the Local Government Board, appointed and salaried by that body instead of the local authority, so that they could be thoroughly independent. The mayor afterwards entertained the members at dinner.

HOUSING AND IMPROVEMENT ASSOCIATION.—A conference was held recently in Hulme "to consider the housing question as affected by the past clearance of low-rented houses and the threatened closing by the Sanitary Committee of the Manchester Corporation of many more, because of their alleged unfitness for human habitation." It was attended by many representative people. Resolutions were passed appreciating the action of the City Council in declining to sanction the further closing of houses in Hulme till provision has been made for those displaced, and yet assuring the Sanitary Committee of its support if they will only build as they pull down. The landlord of some of the condemned property brought forward a very familiar argument that there had been no infectious disease in that property for 20 years, and said that "there was too much of this pulling houses down." Such statements are always made where the death-rate is highest. The conference was constituted a permanent Housing and Improvement Association, and may, it is hoped, do useful work.

New Inventions.

NEW TRACHEOTOMY INSTRUMENTS.

THE dilating director A is inserted by the side of the knife before the latter is withdrawn from the trachea; on turning it transversely it both dilates the wound and serves as a director for the tube. The pilot B is original only in its probe point. The outer tube C is shaped like Parker's but has larger wings. The tape holders D are hooked on to the bars of the shield before use; they prevent the tube from being coughed out but allow it free movement. The cleaner E, of stiff plumed feather, is guarded by two little ebonite bars united by rubber rings and adjusted to the length of the tube. It is easily sterilised and cannot reach the



trachea. Where an inner tube is necessary the pattern F is used. Like Durham's it is self-retaining without key. The single handle is placed in the position of greatest mechanical advantage and taken well out of the way. As there is room for a finger on either wing of the outer tube the latter can and should be fixed during the removal of the inner and is then not jogged about in the trachea, nor can it be pulled through the shield. There is nothing about the orifice of the tube or within it likely to catch dirt, every part is readily taken to pieces for cleaning, and the tapes being inserted without any disturbance of the shield are not introduced until all is clean. Messrs. Arnold and Son are the makers.

G. C. GARRATT, M.B. Cantab.,
Assistant Resident Medical Officer at the London Fever Hospital.

AT the meeting of the general committee of the French Hospital, London, on July 12th, Dr. George Ogilvie was unanimously elected physician to the hospital. The committee cordially expressed their appreciation of his services during the past year when acting for Dr. J. S. Keser during his absence abroad.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Wednesday, July 11th, the acting treasurer, Dr. Potter, being in the chair. One new member was elected, the deaths of three members were reported, and three persons had ceased to be members since April last. The death of a widow who had received £35 a year since 1886 was announced. An application for grants for herself and seven children was read from a widow, and grants at the rate of £100 a year were made. The husband, who met with a fatal accident in Australia, had only been elected a member in 1891 and had paid 18 guineas in subscriptions. A sum of £1197 was voted for distribution among 48 widows, 14 orphans, and six recipients from the Copeland Fund. The expenses of the quarter were £44 12*s*. A vote of "God-speed" was passed to Dr. W. S. Church, one of the treasurers of the society, on his appointment on the commission of inquiry into the working of the hospitals in South Africa.

REPORT OF

The Lancet Special Commission

ON THE

METROPOLITAN WATER-SUPPLY

THE QUESTION OF CONTROL.

I.—THE HISTORY AND DEFINITION OF CONTROL.

The Control of the Metropolitan Water-supply: Introductory; An Ideal Supply of Water for London; Recent Royal Commissions on the Metropolitan Water-supply.—Definition of Control: Control of the Water-supplies in Mediæval London; The Earliest Example of Financial Control; Control with Regard to Smoke; Competition amongst the Water Companies, "Reasonable Charges"; Complaints in Respect of Charges; Complaints in Respect of Quality; New Supply or Efficient Control?

THE CONTROL OF THE METROPOLITAN WATER-SUPPLY.

Introductory.

THERE is perhaps no matter of greater importance to the people of London than the question of their present and future water-supply. During the last few years the East London Waterworks Company have on more than one occasion failed to give an adequate supply to their customers and about two years ago the Lambeth Waterworks Company for a time also failed to give a continuous supply to the people who lived within their Parliamentary area; and although it is provided that the metropolitan water companies shall be fined should they fail to give a continuous supply, in the case of neither of these companies, as far as we are aware, has any serious effort been made to punish them for their neglect of their statutory duties. Some of the other companies have given their customers no reason to complain, but the fact that parts of the London district have been inadequately supplied has once more brought into prominence the whole question of the metropolitan water-supply as it at present exists. In the case of a rapidly spreading city like London, however, a knowledge of the present requirements is not sufficient; it is necessary to look forward to the future.

An Ideal Supply of Water for London.

An ideal supply of water for London would ensure that the quality of the water should be pure and derived from sources beyond the suspicion of pollution; and that the quantity should be adequate not only for domestic supplies, but sufficient to give an unstinted amount for municipal purposes. The public fountains would not be allowed to run dry, the ornamental waters of London (the Serpentine and the ponds in Regent's Park) and the canals would be clear and bright—a state of things which could only be made possible by frequent change of the water, necessarily involving a supply greatly in excess of that which obtains to-day. The Thames, also, should not be allowed to suffer from excessive depletion and it would be far better if its whole natural flow and the whole flow of the Lee were allowed to pass down to cleanse and scour out the lower reaches of the river. Whether London will ever have such a supply in the future the future alone will show. A scheme which would give such results has yet to be devised, and if it were devised it would take many years to carry out.

Recent Royal Commissions on the Metropolitan Water-supply.

The question as to whether the people of London should obtain their supply of drinking water from some pure source at a distance is one upon which at present there is difference of opinion and it is not likely that the question will be settled until the amount of the present sources of supply is definitely known. It cannot at present be said that we are in possession of complete and accurate information on this matter. More than one Royal Commission on the subject of the London water-supply has, it is true, investigated the subject, but it is to be feared that the results of the investigations have not been thoroughly satisfactory, although the time occupied in making them has been very considerable and the expenses incurred have been by no means small. Many of the more thoughtful people of London are regretfully coming to the conclusion that the members of the present Government who have been responsible for the appointment of the last two Royal Commissions on the metropolitan water-supply have adopted this method of proceeding rather with a view to evade for the time their own responsibilities in matters which have been "under investigation"; and the somewhat cynical remarks on the alcohol question lately made by Lord Salisbury with reference to the Licensing Commission Report have given countenance to this opinion. It is also feared that the choice of the members of a Royal Commission is sometimes made rather with a view to avoid criticism than with any hope that the members selected will seriously do their best to get to the bottom of the problem which they are called upon to solve. On such occasions "vested interests" are by no means always ignored.

Lord Balfour's Commission reported on the quantity of water which was available in the valleys of the Thames and the Lee. Unfortunately the figures which were given to the Commission have, as we shall see, proved to be erroneous. It therefore follows that the report on the available quantity of water is not entirely reliable.

Lord Llandaff's Commission were instructed to investigate the financial expediency of purchase of the metropolitan water companies' undertakings and were asked to advise as to whether it would be well for the water-supply to be placed under the care of one or more authorities, and if so, as to

what authority should be empowered to undertake the management, should the purchase of the present companies' undertakings be considered advisable. They were asked to report also as to whether any additional measures of control of the water undertakings were needed.

A great part of the evidence given at Lord Llandaff's Commission had reference to the expediency of purchase and dealt with the financial history and the present state of the eight metropolitan water companies. Anyone who may read and digest all the evidence carefully must entertain grave doubts as to the expediency of purchase from the point of view of the water consumer, even if, as Lord Llandaff's Commission assumed, the present sources of supply will be sufficient for many years to come. It may also be pointed out that the metropolitan water companies, as far as they themselves are concerned, are entirely opposed to an amalgamation of the different businesses into one organisation; that is to say, the engineers and directors of the companies who are naturally the persons most intimately acquainted with the working of their own businesses are decidedly of opinion that they are better carried on as separate entities than they would be under one central management. This in itself is a strong argument against placing the present undertakings under one management. The opinion of the engineers and directors of the water companies is formed with a thorough knowledge of all the facts of the case and there are many details of administration and difficulties of organisation known to them which are not by any means common knowledge and which are probably neither appreciated nor even suspected by some of the people who think that under any circumstances the mere possession of a number of different businesses by one Board could ensure unity of management. "Unity of management" is a well-sounding phrase, but a well-sounding phrase will not alter physical facts. The possession of the water mains of two companies by the same Board will not cause unity of pressure of the water conducted through the mains. The pressure in the pipes will depend on the same physical causes whoever be the owner of the pipes. The fact that the metropolitan water companies differ in the details of their method of supply renders it physically impossible that "unity of management" could be of any value or could become an effective fact without a great many changes in the plant and apparatus used for the distribution of the water. A real "unity of management" as understood by those who glibly use the phrase, therefore, must necessarily involve a large outlay—a point which they apparently have not grasped with equal tenacity. A careful study of the Llandaff report throws very great doubt on the financial expediency of purchase even if the Thames and Lee be able to give a sufficient supply of water. The report shows that the Commission had, as a matter of fact, considerable doubt as to the future cost of the London water-supply, and that they did not disguise from themselves the real danger of financial disaster which might ensue to the buyer. This fact is shown clearly enough by the powers for obtaining money which they suggested should be conferred on the Board which they proposed should be empowered to carry on the work of the present undertakings. No consideration of the question of a new Water Board would be complete if no account were taken of the fact that the representatives of the metropolitan counties are entirely opposed to the formation of such a Board and to the purchase of the present water companies' undertakings. There is no doubt that very considerable opposition would arise if any attempt were to be made by the Government to carry out the recommendations of the Llandaff Commission for the formation of such a Board. The question is a large and intricate one, and up to the present time there is a lack of accurate information in regard to the water-bearing capacities of parts which are within the area of Water London. It would be a waste of time for Parliament in the present state of knowledge to attempt any legislation dealing financially with the water-supply of London. It by no means follows that nothing at all should be done. On the contrary, it is highly desirable that information which is at present lacking should be collected and weighed and it is necessary that this should be done before any final decision is arrived at with regard to the future sources of the water-supply of London. This information can only be obtained by instituting additional measures of control over the metropolitan water companies. Up to the present time the companies' witnesses who have appeared before the Royal Commissions have been extremely reticent and no information has been given with regard to the effect of pumping on the wells of the companies.

DEFINITION OF CONTROL.

In the evidence which he gave before Lord Llandaff's Commission Mr. Whitmore, Member of Parliament for Chelsea, who was also a member of the London County Council, said that he had given a great deal of attention to the question of the metropolitan water-supply, and in the course of a lengthy oration he said that he had never been able to understand what control as applied to water companies means. In the following pages an attempt has been made to explain what measures of control at present exist and what new measures of control are desirable.

Briefly stated control as applied to the metropolitan water companies means that some superior authority should have statutory powers to enforce obligations which have been imposed by law on the companies which supply the water. Powers of control already exist in regard to the financial management of the water companies, in regard to the quantity and quality of the water supplied by them, and in regard to the charges they are allowed to make to their customers. Additional powers of control have been recommended by the Balfour and Llandaff Commissions, but up to the present time the Government has made no attempt to translate these recommendations into statutory life.

Control of the Water-supplies in Mediæval London.

The origin and history of the control exercised over the supply of water for the people of London can be only briefly sketched. Until the reign of Elizabeth the citizens of London obtained their water either from the river, from springs or wells, or from the public conduits. The conduits were the property of the City of London, and regulations were made by the Corporation in regard to the time and manner in which water could be obtained from them. The keepers of the conduits were removeable at the discretion of the civic authorities. A small amount of water was sold to brewers and other tradesmen, and a few noblemen had "quills" or small pipes laid on from the public mains for the supply of their houses, and for this accommodation it does not appear that any charge was made. The greater part of the water was distributed gratuitously but those who wanted it had either themselves to carry it away from the public conduits or to buy it from those who made it a business to carry it round to private houses. Briefly, at this time the control of the water-supplies in the City was in the hands of the Corporation of London.

At the end of the sixteenth century (1581) a lease of one of the arches under London Bridge was granted to an engineer for the purpose of putting up a water-wheel to pump from the Thames. This venture was subsidised by the city authorities and the water was supplied to some of their conduits. The profit of the undertaking, which was a private enterprise, was derived from the rents paid by those to whose houses the water was laid on. The price paid was a matter of bargain. Early in the seventeenth century (1613) the water of the New River was brought to London and was soon afterwards distributed to the houses of those who were willing to pay for it. In this case, also, the price paid was purely a matter of arrangement between the buyer and the seller. The city conduits were still supplied with water but the amount was inadequate, and James I., who was the chief shareholder in the New River undertaking, did not encourage either the introduction of new supplies or the repair of the conduits which belonged to the City and which served to bring the water from the distant springs. The public supplies fell off, and finally the Great Fire hopelessly damaged the leaden pipes and cisterns.[1]

The Earliest Example of Financial Control.

The earliest example of control which occurs in the history of the metropolitan water companies is probably a section of an Act of the Chelsea Company (8 Geo. I., cap. 26) which prohibited dealing in the shares until the works undertaken

[1] The conduits, according to a contemporary authority, "stood like so many little but strong forts to confront and give check to the great enemy; and as enemies are wont to deal with castles, thought impregnable, by attempting to carry them by storm, so went the fire to work with these little castles of stone, which were not easy for it to burn down ..... and spoiled them, or almost spoiled them, by melting the leaden channels through which their supplies of water came."

by the company were completed, "and for preventing all sinister practices or abuses of this Act ..... it shall not be lawful for any person or persons whatsoever having any stock or share in the said undertaking to transfer or assign the same before or until such time as water be brought into the grand reservatory or reservatories intended to be at or near Oliver's Mount."

Control with Regard to Smoke.

It may not be without interest to note that one of the earliest measures of control contained in an Act of a metropolitan water company had reference to the consumption of smoke. The Grand Junction Waterworks Company was incorporated (51 Geo. III., cap. 169) to supply the parish of Paddington and the parishes and streets near, and a section of the Act provided that every furnace used by the company should consume its own smoke and every chimney should have its shaft at least 130 feet above the ground level, and that the smoke issuing therefrom should not at any one time exceed the quantity of smoke usually issuing from the chimneys of 24 fires for domestic uses.[2] It was provided that any chimney or furnace belonging to the company which broke this regulation might be dealt with as a common nuisance. The Act contained also provisions forbidding the erection of a furnace or steam-engine within a quarter of a mile of Edgware-road without the sanction of Mr. Edward Berkeley Portman. Another provision in the Act had reference to the water rents chargeable by the company to the effect that tenants on the Bishop of London's estate at Paddington were to have a reduction of 10 per cent. on the average rates paid by other customers.[3]

Competition amongst the Water Companies: "Reasonable Charges."

During the early part of the present century there was keen competition between the new companies which had then lately arisen—the West Middlesex and the Grand Junction—and the older companies—the London Bridge, the New River, the York Buildings, and the Chelsea. The new companies offered water at higher pressure and at a reduced price. The amount charged was a matter of bargain. The West Middlesex Company according to the terms of their Act were allowed only to make reasonable charges, but the meaning of the word "reasonable" was left to the discretion of the company. During the height of the competition there was an acrimonious correspondence between the New River Company and the West Middlesex Company (1811–12), but soon afterwards (1815) a Bill was introduced into Parliament for the amalgamation of these two businesses. The metropolitan water companies had found it inconvenient to undersell one another and they ultimately agreed amongst themselves to partition the town between them so that there should be no longer any active competition.

Complaints in respect of Charges.

The amount charged for water was immediately raised by all the companies and between the years 1810 and 1821 the increase in the water rentals amounted to about 25 per cent. A Parliamentary committee which investigated the complaints which were made on this score reported that in every instance the rentals were left solely to the agents of the different companies to charge as they should think fit and that the charges were not regulated either by the quantity of water consumed or by the distance to which it was conveyed. After the reception of the Parliamentary report in 1828 Mr. Peel, who was at the time Home Secretary, suggested that if the public were dissatisfied a new company would arise. He did not wish to encourage such a speculation; he did not indeed think it would be well for the Government to interfere or to appoint engineers to suggest the manner in which individuals (water company shareholders) should manage their own property.

Complaints in respect of Quality.

The prices charged by the companies formed the first ground of grievance which the public thought they had against them, but at a later period the quality of the water aroused somewhat general disapproval. The spread of cholera was distinctly traced to the water-supply and when this fact was at length thoroughly realised there was a general feeling that the public had not been well treated.

New Supply or Efficient Control.

The question arose as to whether a new supply should be obtained and placed under the Board of Health, but finally the action of Parliament was decided in accordance with advice given by Lord Seymour (1852) whose opinion was that all it behoved Parliament to do was to provide for an efficient control over the companies so that water should be supplied good in quality, sufficient in quantity, and at a cheap rate. The companies, he said, had better be left to act separately or in conjunction as they should find best.

The Metropolis Water Act was passed in the year 1852. Under this enactment provisions were made with regard to the quantity and quality of water which the companies were called upon to supply and during the same year arrangements were made by which within a certain time the intakes of the companies from the Thames were to be moved to points higher up the river than the places from which the water had previously been taken.

After the year 1852 the next important general Act which dealt with the metropolitan water-supply was that of 1871 which provided for the appointment of a water examiner and altered the regulations under which a continuous service of water could be insisted on by the inhabitants of the metropolitan area. In the year 1887 an Act was passed giving increased power to local authorities in regard to questions of control. These regulations are given fully in the pages which follow.

II.—THE EXISTING STATUTORY PROVISIONS FOR CONTROL.

Obligations of Water Companies to Lay Mains and to Provide and Supply Water for Domestic Purposes: Supply of Water for Domestic Purposes; Provisions as to Water Rates; Provisions as to the cutting off Supplies; Constant Supply for Domestic Use; Constant Supply for Municipal Purposes.—Control now exercised in respect of Quality, &c.: Quality and Quantity, Regulations concerning Reservoirs and Aqueducts; Water Examiner; Prevention of Waste, Misuse, and Contamination of Water; Accounts and Audit of the Water Companies' Businesses; Limitation of the Dividends of the Companies.

THE statutory provisions with regard to control of the metropolitan water companies undertakings have reference to—1. The obligation to lay mains and to provide and supply water throughout their districts. 2. The obligation to supply the water in sufficient quantity and of good quality. 3. The financial management of the undertakings and the amount which they are allowed to charge for the water which they supply.

In the account which follows of the provisions for control which now exist a statement given by Mr. E. A. Bonnor-Maurice to the Llandaff Commission has been closely followed and the sections of the general Acts of Parliament in which the provisions with regard to control are contained are in most cases quoted *in extenso*. In the case of the private Acts of the companies references are given to the sections of the Acts which bear on the subject, and in all these cases either the exact words or the gist of the section referred to are given. The interpretation of the Acts put in by Mr. Bonnor-Maurice gave rise to a little discussion between the members of Lord Llandaff's Commission and some points which were raised will be briefly noted in their proper place.

[2] It need hardly be said that since the date of that Act (1811) the regulations made with regard to smoke have been made very much more stringent.

[3] The Bishop of London was the owner of land from which water was formerly obtained by the Corporation of London for the supply of the City. The spring was situated near the Bayswater-road.

OBLIGATIONS OF WATER COMPANIES TO LAY MAINS AND TO PROVIDE AND SUPPLY WATER FOR DOMESTIC PURPOSES.

The companies are required to cause main pipes to be laid down and pure and wholesome water to be brought to every part of the district within the limits of supply on the requisition of so many owners and occupiers in that part of the district so that the aggregate amount of water-rates payable by them annually at rates specified in the Acts of Parliament of the respective companies shall be not less than one-third part of the expense of providing and laying down such pipes: provided that no such requisition shall be binding on the companies unless those owners and occupiers severally execute agreements binding them to take a supply for domestic purposes for three consecutive years.

The sections in the private Acts of the metropolitan companies which refer to the laying of mains and the provision of water are not identical. The Kent Company have no Act which contains specific provisions bearing on these matters. In the case of the other companies the provisions are as follows:—

The *New River* (15 & 16 Vict., cap. 160, sec. 34), the *Grand Junction* (15 & 16 Vict., cap. 157, sec. 40), the *Southwark and Vauxhall* (15 & 16 Vict., cap. 158, sec. 47), and the *West Middlesex* (15 & 16 Vict., cap. 149, sec. 33) companies have each and all the following statutory provision:—

The company shall cause main pipes to be laid down and pure and wholesome water to be brought to every part of the district within the limits of this Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the district, as that the aggregate amount of water-rate payable by them annually at the rates specified in this Act shall not be less than one-tenth part of the expenses of providing and laying down such pipes: Provided always that no such requisition shall be binding on the company unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least: Provided also that the company shall not be bound to provide or lay down any communication pipes for any such supply of water except at the expense of the persons requiring the supply: Provided also that the company shall not be bound to furnish any such supply of water or lay down any pipe for such purpose in any part of the district which part is, for the time being, supplied with water by any other company.

The *Chelsea Company* (15 & 16 Vict., cap. 156, sections 64 and 65) and the *East London Company* (16 & 17 Vict., cap. 166, sections 57 to 61) are each controlled by the following regulation:—

That the company shall cause main pipes to be laid down, and pure and wholesome water to be brought to every part of the district within the limits of this Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the district as that the aggregate amount of water-rate payable by them annually at the rates specified in this Act shall be not less than one-tenth part of the expense of providing and laying down such pipes: Provided always that no such requisition shall be binding on the company unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least: Provided also that the company shall not be bound to provide or lay down any communication pipes for any such supply of water except at the expense of the persons requiring the supply: Provided also that the company shall not be bound to furnish any such supply of water or lay down any pipe for such purpose in any part of the district which part is, for the time being, supplied with water by any other company.

That if for twenty-eight days after demand in writing made to the company and tender made of an agreement signed by such number of owners or occupiers as aforesaid, to take and pay for a supply of water for three years or more, the company shall refuse or neglect to lay down pipes in the manner hereinbefore directed, and to provide such supply of water as aforesaid, they shall forfeit to each of such owners and occupiers the amount of rate which he would be liable to pay under such agreement, and also the further sum of forty shillings for every day during which they shall refuse or neglect to lay down such pipes or to provide such supply of water: Provided always that the company shall not be liable to any penalty for not supplying water if the want of such supply shall arise from frost, unusual drought, or other unavoidable cause or accident.

The case of the *Lambeth Company* is somewhat different. Under the Waterworks Clauses Act, 1847, sections 35 and 36, the following clauses (which are not incorporated by the other companies) are in force:—

The undertakers shall provide and keep in the pipes to be laid down by them a supply of pure and wholesome water sufficient for the domestic use of all the inhabitants of the town or district within the limits of the special Act, who, as hereinafter provided, shall be entitled to demand a supply, and shall be willing to pay water rate for the same, and such supply shall be constantly laid on at such a pressure as will make the water reach the top storey of the highest house within the said limits, unless it be provided by the special Act that the water to be supplied by the undertakers need not be constantly laid on under pressure, and the undertakers shall cause pipes to be laid down and water to be brought to every part of the town or district within the limits of the special Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the town or district as that the aggregate amount of water rate payable by them annually at the rates specified in the special Act shall be not less than one-tenth part of the expense of providing and laying down such pipes: Provided that no such requisition shall be binding on the undertakers unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least.

If, for twenty-eight days after demand in writing, made to the undertakers, and tender made of an agreement signed by such number of owners or occupiers as aforesaid, to take and pay for a supply of water for three years or more, the undertakers shall refuse or neglect to lay down pipes in the manner hereinbefore directed and to provide such supply of water as aforesaid or as provided by the special Act, they shall forfeit to each of such owners or occupiers the amount of rate which he would be liable to pay under such agreement, and also the further sum of forty shillings for every day during which they shall refuse or neglect to lay down such pipes or to provide such supply of water: Provided always that the undertakers shall not be liable to any penalty for not supplying water if the want of such supply shall arise from frost, unusual drought, or other unavoidable cause or accident.

During the sixtieth sitting of Lord Llandaff's Commission (which was held on March 14th, 1899) a rather interesting discussion arose with regard to the interpretation of this clause. The late Major-General Scott asked Mr. Bonnor-Maurice whether he could tell him if a water company having neglected to provide storage to meet the ordinary increase of supply which is always required in a dry summer and if in that particular summer there happened to be an unusual drought the company would be exempted under this section of the Act on a default of that kind. Mr. Bonnor-Maurice said he thought that the question would be decided according to the facts of the case. The Act said frost or unusual drought. If the company could show it was frost or unusual drought which caused the deficiency they would be exempt. "But," he added, "this question is one which is at the present moment before the law courts in the form of an application by the Hackney Vestry against the East London Company." Major-General Scott asked the witness to state what the question exactly was and the witness, in reply, said it was as to whether if the company could by reasonable forethought have foreseen the drought they ought to have prepared for it. Mr. Pember, who appeared as counsel for the East London and some of the other water companies, interposed by asking whether there would not be the question as to the exercise of reasonable foresight and if the company had taken reasonable precaution whether that plea would avail against the words of the section of the Act which had been quoted. Major-General Scott said that a company might be so much short in their provisions that they might in an ordinary dry summer fail to give a constant supply for six weeks perhaps. Assuming, then, that an unusual drought occurred in that year or in any year which caused them to fail in their supply for four months instead of six weeks, could they plead an unusual drought? Mr. Bonnor-Maurice replied that he thought the plea might be admissible, but in that case the *onus probandi* would be thrown upon the company to show that the want of the usual supply arose from unusual drought. The company were bound to take reasonable precautions to meet as far as they could what could be reasonably expected in the future. If they failed to do that there might be some question as to whether they would be liable; but if, on the other hand, they could distinctly bring themselves within the section that the want of supply arose from unusual drought, the exemption would apply. Major-General Scott said that in the supposititious case that he gave the assumption was that the reservoirs of the company were so deficient that six weeks' failure would have arisen as the result of an ordinary drought in an ordinary summer. Mr. Bonnor-Maurice said that he imagined that the company would not be able to plead that the deficiency of supply arose from an unusual drought if the failure occurred under such conditions. Lord Llandaff remarked that if he understood Major-General Scott aright the question was, supposing a company had failed in exercising reasonable forethought and then there supervened one of the statutory extraordinary contingencies, did the supervention of frost, drought, or unusual accident excuse them from what would be otherwise an undoubted default? In short, Major-General Scott was suggesting that a case of supervening drought might cover, as it were, and excuse the preliminary default. Mr. Pember said that if he were the judge he should say that he was not going to try the issue of what would have happened if there had not been a drought. There was no drought, and what they wanted was the real exciting cause. Mr. Pope, Q.C., who appeared for the New River Company and the Southwark and Vauxhall Company, pointed out that the words of the section "or other unavoidable cause or accident" referred, he thought, to the provisions expressed. It must be a default which could not reasonably

be provided against. For example, in the case of a culvert which a company were bound to provide under a railway the culvert must be sufficient to take all reasonably anticipated floods, but if a flood greater than ever before known should arise and sweep away the whole of the culvert there was no liability on the part of the company because the accident was unavoidable, inasmuch as the flood was greater than it was reasonably necessary to provide against. Mr. Pember said that he might have to argue a case like that which had been referred to by Major-General Scott, and Lord Llandaff remarked that he thought the Commission could not decide these nice questions on points of law.[4]

In their report, however, the Commission advise (p. 71) that "it should be made clear that 'frost, unusual drought, or unavoidable accident,' would not excuse a failure of supply, if it be shown that the failure occurred because the works of the company were not in an efficient condition and have not sufficient reserve capacity of supply."

Supply of Water for Domestic Purposes.

At the request of any owner or occupier (who shall have laid the communication pipes between the companies' mains and the premises to be supplied, and paid or tendered the water rate) of any house in any street within the limits of supply in which any pipe of a company shall be laid, or of any person who is entitled to demand a supply of water for domestic purposes, the company is required to furnish to such person a sufficient supply of water for his domestic purposes, at the rates specified in the Acts of Parliament of the respective company.

The special obligations of the metropolitan water companies to furnish a supply of water to the inhabitants of their authorised areas of distribution are as follows:—

Lambeth (11 Vict., cap. 7, sec. 37).—And be it enacted that the company shall, at the request of the owner or occupier of any house or part of a house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic uses, at the rates hereinafter specified.

Chelsea (15 & 16 Vict., cap. 156, sec. 60).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes, at the rates hereinafter specified.*

New River (15 & 16 Vict., cap. 160, sec. 35).—That the company shall, at the request of the owner or occupier of any house or part of a house in any street within the limits in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person, a sufficient supply of water for domestic purposes at the rates hereinafter specified.*

Southwark and Vauxhall (15 & 16 Vict., cap. 158, sec. 53).—That the company shall, at the request of the owner or occupier of any house or part of a house occupied as a separate tenement in any street within their limits in which any main or service pipe of the company shall be laid, or of any other person who, under this Act, shall be entitled to demand a supply of water for domestic purposes, furnish to such person, by means of communication pipes and other necessary and proper apparatus, to be provided, laid down, and maintained at the cost of such person, a sufficient supply of water for his domestic purposes, at a rate per centum per annum on the annual value of the house not exceeding five pounds.*

West Middlesex (15 & 16 Vict., cap. 159, sec. 39).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes at the rates hereinafter specified.*

Grand Junction (15 & 16 Vict., cap. 157, sec. 46).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes at the rates hereinafter specified.*

East London (16 & 17 Vict., cap. 166, sec. 74).—That the company shall, at the request of the owner or occupier of any house, or any part of a house occupied as a separate tenement, in any street within their limits in which any main or service pipe of the company is or shall be laid, or of any person who, under this Act shall be entitled to demand a supply of water for domestic purposes, furnish to such person by means of communication pipes and other necessary and proper apparatus to be provided, laid down, and maintained at the cost of such person, a sufficient supply of water for his domestic purposes, at a rate per centum per annum on the annual value of the house not exceeding .....*

Kent (27 & 28 Vict., cap. 146, sec. 28).—The company shall, at the request of the owner or occupier of any house or part of a house in any street in which from time to time any pipe of the company is laid, or of any person who, under the provisions of this Act is entitled to demand a supply of water for domestic purposes, furnish to him a sufficient supply of water for domestic purposes at rates not exceeding the following .....*

* In every case the maximum legal water-rate which may be charged is named in the Act.

It is, however, provided that the companies shall not be bound to supply water under pressure at any higher level than the levels fixed by the Acts of Parliament of the respective companies.

The maximum height to which each of the metropolitan water companies is bound to supply water, and the Act of Parliament under which each provision is made is given below.

Chelsea (15 & 16 Vict., cap. 156, sec. 54).—To a height which is ensured by a pressure in a reservoir, the level of which shall not be less than 148 feet above Trinity high-water mark.

East London (Sch. B of the Metropolis Water Act, 1871, and sec. 15 of the Metropolis Water Act, 1852).—40 feet above level of pavement nearest the point at which supply shall be required.

Grand Junction (15 & 16 Vict., cap. 157, sec. 41).—150 feet above the level of high-water mark at Vauxhall Bridge, computed according to the Trinity standard.

Kent (Sch. B of the Metropolis Water Act, 1871, and sec. 15 of the Metropolis Water Act, 1852).—180 feet above Trinity high-water mark.

Lambeth (11 Vict., cap. 7, sec. 35).—To 150 feet above Trinity high-water mark of river Thames.

New River (15 & 16 Vict., cap. 160, sec. 28).—70 feet in height from the pavement of the street in which the house supplied is situate.

Southwark and Vauxhall (15 & 16 Vict., cap. 158, sec. 48).—150 feet above the level of high-water mark at Vauxhall Bridge, computed according to the Trinity standard.

West Middlesex (15 & 16 Vict., cap. 159, sec. 34).—200 feet above the level of Trinity high-water mark at Hammersmith Bridge, computed according to the Trinity standard.

The companies are not bound to furnish a supply of water or to lay down any pipe for that purpose in any part of a district which is for the time being supplied with water by any other company, but this exemption does not apply in the cases of the Kent and Lambeth companies.

The statutory provisions with regard to the supply of water are contained in the Waterworks Clauses Act (1847) and are as follows (sections 43 and 53):—

If, except when prevented as aforesaid, the undertakers neglect or refuse to fix, maintain, or repair such fireplug, or to furnish to the Town Commissioners a sufficient supply of water for the public purposes aforesaid, upon such terms as shall have been agreed on or settled as aforesaid, or if, except as aforesaid, they neglect to keep their pipes charged under such pressure as aforesaid, or neglect or refuse to furnish to any owner or occupier entitled under this or the special Act to receive a supply of water during any part of the time for which the rates for such supply have been paid or tendered, they shall be liable to a penalty of ten pounds and shall also forfeit to the Town Commissioners, and to every person having paid or tendered the rate, the sum of forty shillings for every day during which such refusal or neglect shall continue after notice in writing shall have been given to the undertakers of the want of supply.

Every owner and occupier of any dwelling-house or part of a dwelling-house within the limits of the special Act shall, when he has laid such communication pipes as aforesaid, and paid or tendered the water-rate payable in respect thereof, according to the provisions of this and the special Act, be entitled to demand and receive from the undertakers a sufficient supply of water for his purposes.

Provisions as to Water-rates.

The rates chargeable by the water companies are fixed by the Acts of Parliament of the companies and are based upon the annual value of the premises, with fixed maximum charges in addition for water-closets, baths, &c. These rates and charges vary in the case of the different companies. Outside the metropolis the rates have been charged upon the annual value of the premises; in cases of difference of opinion as to what is the annual value the matter may be determined by two justices (section 68 of the Waterworks Clauses Act, 1847). This provision is as follows:—

The water-rates, except as hereinafter and in the special Act mentioned, shall be paid by and be recoverable from the person requiring, receiving, or using the supply of water, and shall be payable according to the annual value of the tenement supplied with water, and if any dispute arise as to such value the same shall be determined by two justices.

A dispute which arose as to the interpretation of this section led to the celebrated case of Dobbs *versus* The Grand Junction Water Works Company. (L. R. 9 App. Cas. 49; 53 L. J. Q. B. 50; 49 L. T. (N.S.) 541; 32 W. R. 432; 48 J. P. 5.) It was decided that the value of the premises was to be ascertained on the same principles as those which apply to the ascertainment of the rateable value for the purposes of

[4] Minutes of Proceedings taken before the Royal Commission on London Water Supply, Tuesday, March 14th, 1899. Sixtieth day. Dyson and Co., 9, St. George-street, Westminster, S.W. Pp. 470–473. These are the shorthand notes taken at the sittings of the Llandaff Commission, and supplied to the Commission (gratuitously) and to the water companies and "parties interested" on payment of a proportional part of the expenses. The notes were at the sittings of the Commission commonly referred to as the "County Council Print."

the poor-rate. In the year 1885 the Water Rate Definition Act (48 & 49 Vict., cap. 34, sec. 1) was passed and it was enacted that the words "annual value of the tenement supplied with water" shall mean "rateable value as set from time to time by the local authority as duly constituted."

Owners of property in the districts supplied by the East London, Grand Junction, Kent, Southwark and Vauxhall, and West Middlesex companies are, under the special Acts of those companies, liable to pay the water-rate where the value of the premises does not exceed £20 per annum. In the case of the Chelsea, the New River, and the Lambeth companies owners of property are liable to pay the water-rate where the value of the premises does not exceed £10 per annum. This is provided by the Waterworks Clauses Acts, 1847, section 72 of which is as follows:—

The owners of all dwelling houses or parts of dwelling houses occupied as separate tenements, the annual value of which houses or tenements shall not exceed the sum of ten pounds, shall be liable to the payment of the rates instead of the occupiers thereof; and the powers and provisions herein or in the special Act contained for the recovery of rates from occupiers shall be construed to apply to the owners of such houses and tenements; and the person receiving the rents of any such house or tenement as aforesaid from the occupier thereof, on his own account, or as agent, or receiver for any person interested therein, shall be deemed the owner of such house or tenement.

Water-rates are payable quarterly in advance under a provision of the Waterworks Clauses Act, 1847, of which section 70 is as follows:—

The rates shall be paid in advance by equal quarterly payments, in England or Ireland at Christmas Day, Lady Day, Midsummer Day, and Michaelmas Day, and in Scotland at Martinmas, Candlemas, Whitsuntide, and Lammas, and the first payment shall be made at the time when the pipe by which the water is supplied is made to communicate with the pipes of the undertakers or at the time when the agreement to take water from the undertakers is made.

Payment of water-rates may be enforced by cutting off the supply and recovery of the amount due in a court of summary jurisdiction. This is provided under the Waterworks Clauses Act, 1847, section 74 of which is as follows:—

If any person supplied with water by the undertakers, or liable as herein or in the special Act provided to pay the water-rate, neglect to pay such water-rate at any of the said times of payment thereof, the undertakers may stop the water from flowing into the premises in respect of which such rate is payable by cutting off the pipe to such premises or by such means as the undertakers shall think fit, and may recover the rate due from such person, if less than twenty pounds, with the expenses of cutting off the water and costs of recovering the rate, in the same manner as any damages for the recovery of which no special provision is made are recoverable by this or the special Act; or if the rate so due amount to twenty pounds or upwards the undertakers may recover the same with the exception of cutting off the water by action in any court of competent jurisdiction.

Provisions as to Cutting Off Supplies.

In the cases in which the owner and not the occupier is liable whether by law or by agreement with the water company to pay the water-rate the companies are not allowed to cut off the water-supply for non-payment of water-rate, but they may sue the owner or, failing him, the occupier, and the rate may become a charge on the premises. Section 4 of the Water Companies (Regulation of Powers) Act, contains this provision.

"Every water company which is a trading company supplying water for profit and to which any of the provisions of the Waterworks Clauses Act, 1847, have been or shall be made applicable by any special Act or provisional Order confirmed by Parliament."

Water companies are required to give notice in writing to the sanitary authority within 24 hours of their having cut off the water-supply to any inhabited dwelling-house, subject to the payment of a penalty of £10. The Public Health (London) Act, 1891, section 49 (54 & 55 Vict., cap. 76), provides that—

1. Where a water company may lawfully cut off the water-supply to any inhabited dwelling-house and cease to supply such house with water for non-payment of water-rate or other cause, the company shall in every case, within twenty-four hours after exercising the said right, give notice thereof in writing to the sanitary authority of the district in which the house is situated.
2. Any company which neglects to comply with the foregoing provision shall be liable to a fine not exceeding ten pounds, and it shall be the duty of the sanitary authority to take proceedings against any company in default.
3. This section shall apply to every water company which is a trading company supplying water for profit.

Unless an incoming tenant shall have agreed with the outgoing tenant who is in default in respect of the water-rate, to pay such arrears the companies are not allowed to require payment of arrears of water-rate from the incoming tenant as a condition of supply, but must supply water to the incoming tenant upon being required by him so to do. This is provided for by the Metropolis Water Act, 1871, section 48, which is as follows:—

In case any consumer leave the premises where water was supplied to him without paying to the Company the rate due from him, the Company shall not require from the next tenant of the premises payment of the arrears so left unpaid, unless the incoming tenant agreed with the defaulting consumer to pay the arrears, but the Company shall, notwithstanding any such arrears, supply water to the incoming tenant, on being required by him so to do.

The obligation under which the companies are placed to lay mains and supply water may be enforced in a court of summary jurisdiction by the recovery of penalties, at the suit of the owner or occupier, under the provisions of the Waterworks Clauses Act, 1847, and the Acts of Parliament of the companies, or by the recovery of penalties on the order of the Railway and Canal Commission under the Metropolis Water Act, 1897, at the suit of the consumer or of the local authority; a local authority may also aid a consumer to take proceedings and may pay any legal expenses (if necessary).

Constant Supply for Domestic Use.

The metropolitan water companies are required to provide and keep throughout their water limits a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within such limits constantly laid on at such pressure as will make the water reach the top storey of the highest houses within such limits (but not exceeding the levels prescribed by the Acts of Parliament of the respective companies) and, subject to the Acts of Parliament of the respective companies as amended by the Metropolis Water Act, 1871, to give to the inhabitants a constant supply of water for domestic purposes. By the Metropolis Water Act, 1871, the companies are, under a penalty of £200 and a further penalty of £100 per month, bound to provide a "constant supply" of pure and wholesome water within the area of the metropolis if required by the metropolitan authority or by the Local Government Board at such times as may be fixed by the Local Government Board who may in certain conditions extend such times, but the companies are not liable to penalties if the want of supply arises from frost, unusual drought, or other unavoidable cause or accident.

The statutory provisions are contained in the Metropolis Water Act, 1871 (34 & 35 Vict., cap. 113), sections 7, 8, 11, 13, 15, 16, 44, and 45). These provisions are as follows:—

Subject to the provisions of this Act, every Company may, and from and after the expiration of eight months from the passing of this Act every Company shall, when required so to do, in the manner directed by this Act, provide and keep throughout their water limits, or throughout such parts of such limits as they may be required in manner aforesaid, a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within such water limits, constantly laid on at such pressure as will make such water reach the top storey of the highest houses within such water limits (but not exceeding the level prescribed by the special Act) of such Company (which supply is in this Act referred to as a "constant supply"); and every such Company shall, subject to the provisions of the special Act as the same are amended by this Act, give and continue to give to such inhabitants a constant supply for domestic purposes in manner prescribed.

The Metropolitan Authority shall, whenever they are of opinion that there should be in any district a constant supply, make application to the Company within the water limits in which such districts is situate, requiring a constant supply in such district, and any Company may without any such application propose to the Metropolitan Authority to give a constant supply in any district.

It shall be lawful for the Board of Trade at any time to require a constant supply to be provided in any district by the Company within the water limits of which such district is situate upon complaint made, and in case it appears to such Board, after due inquiry:

That the Metropolitan Authority refuses to make or unreasonably delay making application for such constant supply, or

That by reason of the insufficiency of the existing supply of water in such district, or the unwholesomeness of such water in consequence of its being improperly stored, the health of the inhabitants of such district is, or is likely to be, prejudicially affected.

Where a constant supply is required in any district and the Company is unable from want of funds or other cause of any kind to execute all the necessary works within the time prescribed by this Act the Board of Trade, if they think fit, may extend the time for the giving of such supply generally or may extend the time and direct such supply to be given at different times in succession to the several parts of such district in such a manner as may be found most convenient: Provided that application be made by the Company for such extension of time within one month after the notice referred to in the last preceding section has been served upon them.

Notwithstanding anything in this Act a Company shall not be subject to any liability for not giving a constant supply if the want of such supply arises from the frost, unusual drought, or other unavoidable cause or accident.

Any Company which violates, refuses, or neglects to comply with any of the preceding provisions of this Act shall be liable to a penalty not exceeding two hundred pounds and to a further penalty not exceeding one hundred pounds for every month during which such violation or refusal or neglect to comply with the said provisions continues after they shall have received notice in writing from the Board of Trade (Local Government Board) to discontinue such violation, refusal, or neglect as aforesaid.

Every penalty incurred by any Company by reason of non-compliance

with any of the provisions of this Act shall go and belong to the Metropolitan Authority within the jurisdiction of which the same has been incurred, and may be sued for and recovered by such Metropolitan Authority in any court of competent jurisdiction for the recovery of any ordinary simple contract debt of the like amount, and shall be paid and applied as such Metropolitan Authority shall from time to time direct.

Every such penalty shall be borne and paid (to the satisfaction of the auditor appointed as in this Act provided) exclusively by and out of the divisible profits of the Company by whom the penalty is incurred, and by way of reduction of dividend.

Except as is by the next preceding section expressly provided, all penalties under this Act may be sued for and recovered in the "Court of Summary Jurisdiction."

The metropolitan authority is, in the metropolis, the London County Council; in the city, the corporation; in the urban sanitary districts outside the metropolis, the urban sanitary authority; and in rural parishes, the vestries.

Under the Metropolis Water Act, 1897, the statutory area of constant supply is extended so as to include the whole of the authorised area of the companies (Water London). The council of the county or of the county borough are the "Metropolitan Authority" empowered to exercise the control for which provision is made in the Act.

These obligations may be enforced in the usual way (see sections 44 and 45 of the Act of 1871) as to recovery of penalties, and in addition the remedies under the Metropolis Water Act, 1897, may be put in force by any consumer, or local authority, by obtaining through the Railway and Canal Commission the determination of any question of interest to water consumers as to the quantity or quality of water supplied or the charges therefor. (See sections of the Metropolis Water Act, 1897, quoted in the next column.)

Constant Supply for Municipal Purposes.

By the Waterworks Clauses Act, 1847, sections 37 to 43, the companies are under the obligation to fix fire-plugs within certain prescribed distances, and unless prevented as aforesaid to keep in all pipes to which a fire-plug is fixed a sufficient quantity of water for: (1) cleansing sewers and drains; (2) cleansing and watering streets; (3) supplying public pumps, baths, and washhouses; and (4) extinguishing fires.

The supply for public purposes is settled, in case of dispute with the local authority, by two justices or in London by a stipendiary magistrate (section 37). The supply for extinguishing fires is, and always has been, supplied without payment; the London County Council have succeeded to the duties of the late Metropolitan Board of Works and within the metropolis they make regulations as to the form, dimension, &c., of fire-plugs under the Metropolitan Fire Brigade Act, 1865, section 32, and as to the form, dimensions, position, number, &c., of the hydrants, under the Metropolis Water Act, 1871, section 34, which is as follows:—

Section 32 of the Metropolitan Fire Brigade Act, 1865, shall operate, subject and according to the provisions following; (that is to say,)

In that section and in this provision the term "fire-plug" and the term "plug" shall include hydrant and all other apparatus necessary or proper in connexion with the Company's pipes for supply of water in case of fire:

Where a Company give a constant supply in any part of their water limits they may, if they think fit, give notice thereof to the Metropolitan Board of Works:

If the Metropolitan Board of Works do not within two months after receipt of any such notice specify, as regards that part of the Company's water limits, what plugs for supply of water in case of fire, at what places, of what dimensions, and in what form they require the Company to provide, then, at any time after the expiration of that time, the Company may, if they think fit, provide in and for that part of their water limits such plugs for supply of water in case of fire, at such places, of such dimensions, and in such form as to the Company seem necessary or proper:

Thereupon, as regards that part of the Company's water limits, the Company shall be deemed to have fully discharged all obligations imposed on them by the said section 32:

All plugs provided by a Company in pursance of this provision may, for the purposes of the fire brigade, be used as if they had been provided on the requisition of the Metropolitan Board of Works under the said section 32.

The providing of plugs by a Company under this provision shall be at the expense of the Metropolitan Board of Works, and the costs, charges, and expenses of the Company in or about the providing of the same shall be paid to the Company by the Metropolitan Board of Works, on demand, out of their general rate, and in default may be sued for and recovered, with costs, by the Company in any court of competent jurisdiction for the recovery of any ordinary simple contract debt of the like amount.

The provisions of the Metropolis Water Act, 1897, apply an additional method of procedure in case of the failure of any statutory duty by the companies, and facilitate the investigation of any cause of complaint whether in regard to the quality or quantity of the water or of the charges imposed. (Section 1, sub-sections (1), (2), and (3).)

The sections of this Act which apply to these matters are given below.

Any water consumer or any local authority may complain to the Railway and Canal Commission that any of the metropolitan water Companies has failed to perform some statutory duty of the Company, and the Commission may hear and determine that complaint and if satisfied of such failure order the Company within the time limited by the order to fulfil the duty, and may, if they think fit, by any such order, impose any penalty for such failure which can be imposed under any Act, and enforce any such order in like manner as any other order of the Commission.

If at any time complaint as to the quantity or quality of the water supplied by any of the metropolitan water companies for domestic use is made to the Railway and Canal Commission by any water consumer or local authority, the Commission may hear and determine such complaint, and if satisfied that the complaint is well founded, may order the Company, within such reasonable time as is specified in the order, to remove the ground of such complaint, and may enforce such order in like manner as any other order of the Commission, and may award damages to the complainant.

All enactments relating to the Railway and Canal Commission (except section 2 of the Railway and Canal Traffic Act, 1894, which restricts the power to award costs) shall, with the necessary modifications, apply to the Railway and Canal Commission for the purpose of their jurisdiction under this Act.

CONTROL NOW EXERCISED IN RESPECT OF QUALITY, QUANTITY, FINANCE, &C.

The Metropolis Water Acts, 1852 and 1871, conferred to the Board of Trade powers of control in respect of the quality and the quantity of water to be supplied and in respect to the financial proceedings of the companies. These powers, under the Public Health Act, 1872, were transferred to the Local Government Board. Under the Metropolitan Water Act, 1897, the Railway and Canal Commission are empowered to make orders to compel the companies to perform any of their statutory duties.

New sources of supply.—**No company is allowed to resort to any new source of supply until it has given three months' previous notice in writing to the Local Government Board, who may appoint an inspector to visit and inspect any sources specially authorised by Parliament, and to see whether the directions contained in the special Act have been complied with. In regard to new sources not specially authorised by an Act of Parliament, the Board's inspector must examine whether they are capable of supplying good and wholesome water for domestic purposes. On his report the Local Government Board are to certify their approval or disapproval of sources not so specially authorised; and if disapproved the company is not allowed to use the new source.**

Quality and Quantity: Regulations concerning Reservoirs and Aqueducts.

Provision is made in sections 2, 3, and 4 of the Metropolis Water Act, 1852, that only covered reservoirs shall be used for the storage of filtered water at any place within five miles of St. Paul's Cathedral; and that covered aqueducts only shall be used for the filtered water and for the filtration of water (other than that derived from wells) used for domestic purposes.

The following are the statutory provisions of control in regard to the filtration, storage, and conveyance of water; they apply to all the metropolitan companies.

Efficient filtration.—**Every company shall effectually filter all water supplied by them within the metropolis for domestic use before the same shall pass into the pipes for distribution, excepting any water which may be pumped from wells into a covered reservoir or aqueduct without exposure to the atmosphere, and which shall not be afterwards mixed with unfiltered water. (15 & 16 Vict., cap. 84, sec. 4.)**

Storage reservoirs.—**Every reservoir within a distance in a straight line from St. Paul's Cathedral, in the City of London, of not more than five miles in which water for the supply for domestic use of the metropolis or any part thereof is stored or kept by any company shall be roofed in or otherwise covered over. (15 & 16 Vict., cap. 84, sec. 2.)**

Pipes and aqueducts.—**No water shall be brought or conducted within the metropolis by any company for the purpose of domestic use otherwise than through pipes or through covered aqueducts, unless the same shall be afterwards filtered before distribution. (15 & 16 Vict., cap. 84, sec. 3.)**

These provisions may be enforced by a penalty of £200 and £100 per month after receipt of notice from the Local Government Board or by order of the Railway and Canal Commission.

Under the provisions of the Metropolis Water Act of 1852, on the receipt of a complaint from 20 householders as to the quality or quantity of water for domestic use, the Local Government Board may appoint a competent person to inquire and report, with powers to inspect and examine

the waterworks. If he reports that the complaint is well founded the Local Government Board are authorised to give notice to the company, which must, within reasonable time, remove the grounds of complaint.

The provisions of the Metropolis Water Act, 1852, which bear on these points, are given below.

If at any time complaint as to the quantity or quality of the water supplied by any Company for domestic use be made to the Board of Trade (Local Government Board) by memorial in writing signed by not less than twenty inhabitant householders paying rents for and supplied with water by the Company, it shall be lawful for the Board of Trade (Local Government Board), at any time within one month after the receipt of such complaint, to appoint a competent person to inquire into and concerning the grounds of such complaint, and to report to the Board of Trade (Local Government Board) thereon.

The person so appointed as aforesaid shall, within three days after such appointment, give notice thereof in writing to the Company, and after such notice as aforesaid, he shall have power to inspect and examine the waterworks of the Company, and to inquire into and concerning the grounds of such complaint; and the Company and their officers shall afford all reasonable facilities for such inspection, examination, and inquiry.

Any person obstructing such inspector in the due prosecution of such inspection, examination, or inquiry, shall forfeit and pay any sum not exceeding ten pounds.

If after receipt of such report it shall appear to the Board of Trade (Local Government Board) that the said complaint is well founded, the Board of Trade (Local Government Board) shall give notice thereof in writing to the Company.

After the receipt of such notice the Company shall, and they are hereby required, within a reasonable time to remove the ground of such complaint.

Any Company which shall violate, refuse, or neglect to comply with any of the provisions hereinbefore contained shall forfeit to Her Majesty the sum of two hundred pounds, and the further sum of one hundred pounds for every month during which they shall continue to violate or to refuse or neglect to comply with the same after they shall have received notice in writing from the Board of Trade to discontinue such violation, refusal, or neglect as aforesaid.

The above powers of the Act of 1852 were extended in the year 1871, and now the Local Government Board may on their own initiative institute an inquiry into the quality of water at any time, with similar powers as if a complaint had been made. The Metropolis Water Act, 1897, extends these powers as to complaint to any consumer or local authority, and any local authority may aid any consumer in its district by prosecuting a defaulting company.

The following provisions of the Metropolis Water Act (1871) refer to these matters:—

The Board of Trade (Local Government Board) may at any time, if and when they think fit, appoint a competent person to inquire into, and report on, the quality of the water furnished by any Company, notwithstanding that no complaint has been made and signed by twenty inhabitant householders, as prescribed by section 9 of "The Metropolis Water Act, 1852," and sections 10, and 11, and 13, and the other provisions of that Act shall apply in every respect as if such person were appointed under section 9 of that Act and as if any matter reported to the Board of Trade (Local Government Board) as requiring alteration on the part of a Company had been the subject of a complaint by such householders as aforesaid.

Water Examiner.

Under section 36 of the Act of 1871 the Board of Trade appointed a Water Examiner—a competent and impartial person with full powers to examine the water, and to see whether it is efficiently filtered, and furnish reports, with information as to the supply, works, &c., of each company. These reports are circulated, and anyone interested can obtain them either directly or through any bookseller from Eyre and Spottiswoode, East Harding-street, Fleet-street, E.C. The reports are issued monthly and the price is 6*d.* per copy.

The provisions under which the Water Examiner is appointed are as follows:—

There shall be a Water Examiner, being a competent and impartial person, from time to time appointed by and removeable by the Board of Trade (Local Government Board), who shall from time to time, in such manner as the Board of Trade (Local Government Board) direct, examine the water supplied by any Company in order to ascertain whether or not the Company have complied with the requirements of section 4 of the Metropolis Water Act, 1852, and shall from time to time report the results of his several examinations to the Board of Trade (Local Government Board); and the Board of Trade (Local Government Board) shall send a copy of every such report to the Company to which the same relates, and the Company may, if they think fit, on each occasion of such examination be represented thereat by some officer, but such officer shall not interfere in the examination.

There shall be paid to such Water Examiner such remuneration by the Companies and in such proportions as such Board appoints.

Constant supply.—It has already been stated that the local authority, the Local Government Board, or any water consumer, can enforce a constant supply (see p. 187).

The method of dealing with a peccant water company has, it should be noted, been greatly simplified by the Metropolis Water Act, 1897. Under the provisions of this Act any aggrieved water consumer can appeal directly to the Railway and Canal Commission.

Prevention of Waste, Misuse, and Contamination of Water.

Such regulations as may be found necessary for the prevention of waste, misuse, undue consumption, or contamination of water, and as to prescribing the necessary fittings, have to be made by any company with the approval of the Local Government Board, and on failure by any company to make or, when required by the metropolitan authority or by 10 consumers, to alter or repeal such regulations, the Board may appoint a competent impartial person of engineering knowledge and experience to make, alter, or repeal such regulations or to advise as to their being sufficient, and on his recommendation the Local Government Board may make, alter, or repeal, and call in special expert assistance, and the metropolitan authority has the right to be heard before any regulations are made, repealed, or altered, and notice thereof has to be given to such authority. The companies are required also to keep and supply maps of their district and pipes.

The statutory provisions for these regulations are contained in the Metropolis Water Act, 1852, section 26, and the Metropolis Water Act, 1871, sections 17, 18, and 19, which are as follows:—

It shall be lawful for any Company from time to time with the approval of the Board of Trade to make such regulations as shall be necessary or expedient for the purpose of preventing the waste or misuse of water and therein amongst other things to prescribe the size, nature, and strength of the pipes, cocks, cisterns, and other apparatus to be used and to interdict any arrangement and the use of any pipes, cocks, cisterns, or other apparatus which may tend to such waste or misuse as aforesaid.

Every Company shall, within six months after the passing of this Act, make regulations for the purpose for which regulations may be made under the authority of section 26 of the Metropolis Water Act, 1852, and the provisions of that section shall apply also to the preventing of undue consumption or contamination of water.

Any Company, if it thinks fit, or if requested so to do by the Board of Trade, may repeal or alter any of the regulations made for the purposes aforesaid, or make new regulations instead of any of the same.

In case any Company does not make regulations within the time specified in this Act, or in case any Company, on being requested in writing by the metropolitan authority, or by any ten consumers of the water supplied by that Company, to repeal or alter any of the regulations for the time being in force, or to make new regulations instead of any of the same, refuses so to do, the Board of Trade may, if they think fit, appoint a competent and impartial person of engineering knowledge and experience to report to them as to such regulations as may be necessary for the execution of this Act, or as to the expediency of altering or repealing such regulations, or of making new regulations, in conformity with such request as aforesaid, and on the report of such person the Board of Trade may make such regulations, repeal, or alterations as they think fit.

Accounts and Audit of the Water Companies' Businesses.

Every company is required to make up and forward to the Local Government Board, to the town clerk of the City of London, and to the clerk to the County Council, and to keep for sale to any applicant, statements of account in the form and containing the particulars prescribed by the Local Government Board, and that Board is required to appoint a competent and impartial auditor (at such remuneration to be paid by the companies as the Board may fix) to investigate the accounts, ascertaining, distinguishing, and certifying share and loan capital, the amount of new capital, and its expenditure, and if *bonâ fide* made for the purpose of the undertaking. If he should find the accounts incorrect in principle or in detail he may require correction before giving his certificate, and the payment of future dividend is to be suspended until the correction be made and the certificate is given. The companies are bound under penalties of £10 for every default to comply strictly with these provisions and to give all facilities, access to books, and to produce vouchers and afford information to the auditor. Any questions between him and the companies may be referred to arbitration. And subject to this provision the companies are required to abide by the direction and determination of the auditor.

The provisions in regard to the accounts and audit are contained in the Metropolis Water Act, 1871, sections 37 to 42, which are as follows:—

Every Company shall, on or before the thirty-first day of July in each year, fill up and forward to the Board of Trade and to the town clerk of the City of London, and to the Metropolitan Board of Works, and to the vestry clerk of each parish within which water is supplied by each Company respectively not within the City of London, a statement of account, made up to the end of their financial year than last passed, in such form and containing such particulars as may from time to time be prescribed by the Board of Trade.

Each Company shall keep copies of such statement at their office for one year after the date thereof and sell the same to any applicant at a price not exceeding one shilling for each such copy.

In case any Company make default in complying with any of the provisions of this section they shall be liable to a penalty not exceeding ten pounds for each day during which such default continues.

There shall be an auditor of the accounts of the Companies, being a competent and impartial person, from time to time appointed by and removeable by the Board of Trade.

There shall be paid to such auditor such remuneration by the Companies and in such proportions as such Board appoints.

The auditor shall, with all practicable speed after the passing of this Act, investigate the accounts of the Companies, and ascertain and certify the amounts of their capitals, distinguishing share from loan capital, and shall ascertain and certify the capital of each Company and shall from time to time, as new capital shall be expended, in like manner ascertain and certify the amount of such new capital that has been *bond fide* expended for the purposes of the undertaking. Notwithstanding anything in this Act, the auditor shall not investigate the accounts of any Company antecedent to the date mentioned in that behalf in relation to such Company in the Schedule C to this Act annexed.

The auditor shall once in every half-year audit the accounts of the Companies.

If he finds the accounts correct he shall certify the same, but if in any instance he finds the accounts of any Company incorrect in principle or in detail, he shall require such Company to correct such accounts in such manner as he thinks right, and no future dividend shall in any case be declared by any Company until their accounts are certified by the auditor; provided that the suspension of a dividend under this section shall not operate until after the expiration of nine months from the date of the audit.

Each Company shall, during as well as subsequent to the close of that half-year to which the accounts relate, give to the auditor, his clerks, and assistants, access to the books and documents of such Company, and shall, when required, furnish to him and them all vouchers and information requisite for the purposes of the audit, and shall afford to him and them all facilities for the proper execution of his and their duty; and any Company making default in complying with any of the provisions of this section shall, for every such default, be liable to a penalty not exceeding ten pounds.

If any Company think themselves aggrieved by any act or determination of the auditor, the matter in difference shall be referred to the determination of an arbitrator agreed on between such Company and the auditor, or, in default of agreement, appointed, on the application of either party, by the Lord Chief Justice of the Court of Common Pleas; and the reference shall be subject and according to the provisions of the Common Law Procedure Act, 1854: and the decision of the arbitrator shall be final and conclusive; and, subject to this provision, such Company shall observe and abide by the directions and determinations of the auditor.

Limitation of the Dividends of the Companies.

By the Waterworks Clauses Act, 1847, the companies (except in the case of the New River Company) can only pay dividends on their ordinary share capital at the rate prescribed by their special Acts and in no case beyond a maximum of 10 per cent. per annum. They are, however, allowed to make up back dividends, and all surplus profits, subject to the formation of a reserve fund of limited amount, must be applied in making a reduction of the rates charged to the consumers for water. The West Middlesex Company having paid all the back dividends due to the shareholders and having formed a reserve fund are required at the present time to make a reduction in the rates they charge. This reduction, which is a statutory necessity, is noted on the water-rate bills sent out by the company and is called a "rebate"—a word possibly liable to the misinterpretation that the customer is enjoying some beneficent liberality on the part of the company.

The provision in regard to the limitations of the dividends, which may be paid by the companies is contained in the Waterworks Clauses Act, 1847, sections 75 to 82, which are as follows:—

And with respect to the amount of profit to be received by the undertakers when the waterworks are carried on for their benefit be it enacted as follows:—

The profits of the undertaking to be divided among the undertakers in any year shall not exceed the prescribed rate, or where no rate is prescribed they shall not exceed the rate of ten pounds in the hundred by the year on the paid up capital in the undertaking, which in such case shall be deemed the prescribed rate, unless a larger dividend be at any time necessary to make up the deficiency of any previous dividend which shall have fallen short of the said yearly rate.

If the clear profits of the undertaking in any year amount to a larger sum than is sufficient after making up the deficiency in the dividends of any previous year as aforesaid to make a dividend at the prescribed rate the excess beyond the sum necessary for such purpose shall from time to time be invested in Government or other securities and the dividends and interest arising from such securities shall also be invested in the same or like securities in order that the same may accumulate at compound interest until the fund so formed amounts to the prescribed sum, or if no sum be prescribed to a sum equal to one-tenth part of the nominal capital of the undertakers, which sum shall form a reserve fund to answer any deficiency which may at any time happen in the amount of divisible profits or to meet any extraordinary claim or demand which may at any time arise against the undertakers, and if such fund be at any time reduced it may thereafter be again restored to the said sum, and so from time to time as often as such reduction shall happen.

Provided always that no sum of money shall be taken from the said fund for the purpose of meeting any extraordinary claim unless it be first certified in England or Ireland by two Justices and in Scotland by the Sheriff that the sum so proposed to be taken is required for the purpose of meeting an extraordinary claim within the meaning of this or the special Act.

When such fund shall, by accumulation or otherwise, amount to the prescribed sum or one-tenth part of the nominal capital, as the case may be, the interest and dividends thereon shall no longer be invested, but shall be applied to any of the general purposes of the undertaking to which the profits thereof are applicable.

If in any year the profits of the undertaking divisible amongst the undertakers shall not amount to the prescribed rate such a sum may be taken from the reserved fund as, with the actual divisible profits of such year, will enable the undertakers to make a dividend of the amount aforesaid and so from time to time as often as the occasion shall require.

In England or Ireland the Court of Quarter Sessions and in Scotland the Sheriff of such county may, on the petition of any two water-rate payers within the limits of the special Act, appoint some accountant or other competent person, not being a proprietor of any waterworks, to examine and ascertain at the expense of the undertakers the actual state and condition of the concerns of the undertakers and make report thereof to the said Court at the then present or some following sessions, or to the Sheriff (the amount of such expense to be determined by the said Court or Sheriff), and the said Court or Sheriff may examine any witnesses upon oath touching the truth of the said accounts, and the matters therein referred to, and if it thereupon appear to the said Court or Sheriff that the profits of the undertakers for the preceding year have exceeded the prescribed rate the undertakers shall, in case the whole of the said reserved fund has been and then remains invested as aforesaid and in case dividends to the amount hereinbefore limited have been paid, make such a rateable reduction in the rates for water to be furnished by them as in the judgment of the said Court or Sheriff shall be proper, but so as such rates when reduced shall insure to the undertakers, regard being had to the amount of profit before received, a profit as near as may be to the prescribed rate.

Provided always that if, in the case of any petition so presented, it appear to the said Court or Sheriff that there was no sufficient ground for presenting the same the said Court or Sheriff may, if they or he think fit, order the petitioner to pay the whole or any part of the costs of or incident to such petition (the amount thereof to be determined by the said Court or Sheriff), and the costs so ordered to be paid shall be recoverable in the same way as damages are recoverable under this or the special Act.

If the undertakers shall, for seven days after being required to produce to the said Court or Sheriff or to the said accountant or other person as aforesaid, any books of account or other books, bills, receipts, vouchers, or papers relating to their pecuniary affairs refuse or neglect to produce such books, bills, receipts, vouchers, or papers, they shall forfeit the sum of one hundred pounds for every such refusal or wilful neglect and the further sum of ten pounds for every day during which such refusal or wilful neglect shall continue after the expiration of the said seven days, such respective penalties to be recovered by any person who will sue for the same, with full costs of suit, in any of the Superior Courts.

Issue of New Capital by the Companies; the Sinking Fund Clause.

The companies are now compelled to issue any new capital authorised by their recent private Acts under the "Auction Clauses," which provide that all new capital shall be offered either by sale or by public auction or by tender at a reserved price, to be sent under seal to the Board of Trade and after 28 days' previous notice, to be given to the Town Clerk of the City of London, the clerk of the London County Council and to the secretary of the London Stock Exchange, and after advertising the same four times during such period in two or more London daily papers (these conditions are supplemented in more recent Acts by provisions that the stock shall be issued at such rate of interest as in the opinion of the Governor of the Bank of England shall be best calculated to secure the issue of the stock at par), and further, that any premium derived from such issue shall not be considered profits of the company, but shall be expended in extending and improving their works and shall not be considered as part of the capital entitled to dividend.

The sinking fund clause has been inserted in special Acts of all the companies.

The first sinking fund clause was introduced at the instance of the City of London into the East London Company's Act of 1886. Since that time three other forms of the clause have been adopted in the case of the other companies, and now the clause has been applied to all the companies. Lord Llandaff's Commission which went carefully into the question reports that the operation of the clause in all cases is substantially this: "Whenever a company obtains power to borrow money on debenture stock the clause assumes that the money so borrowed earns profit at the average percentage of the dividend or interest paid on all capital of the company. The excess of that average percentage over the interest payable on the debenture stock *plus* 1 per cent. for management of such debenture stock is taken as the profit earned by the new money and the company are required to pay the whole of the excess to the Chamberlain of the City of London as trustee for the purpose of purchasing and holding shares of the company and of investing the dividends thereon with the view of ultimately extinguishing the capital of the company or for such other purpose as Parliament may from time to time determine." The effect of the clause is therefore to prevent any additional value accruing to the undertaking from the new loan capital.

III.—RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER CONTROL.

The Balfour Commission 1892-93: The Balfour Report on the Available Supply of Water; Available Sources of the New River Company as given to the Balfour Commission, 1892; Available Sources of the New River Company as given to Sir Joseph Pease's Committee, 1896; The Balfour Commission on the Quality of the Water; The Balfour Commission Advise Control of Filtration; Information with regard to the Wells and to the Effects of Pumping required from companies.—Llandaff Commission: Terms of Reference; Intercommunication Scheme Advised and Passed; Water Board Recommended by the Llandaff Commission; Establishment of a Water Board Impracticable at Present; Purchase of Water Companies Opposed by Surrey; Water Board Undesirable for Kent; Control Recommended by the Balfour and Llandaff Commissions; Financial Control; Sir John Lubbock on "Internal Control" (Financial); The Anomalous Position of the Auditor appointed by the Local Government Board; Quality of the Water Supplied, Position of the Water Examiner; Suggestions as to Control made by the late Major-General Scott.—Conclusion.

THE BALFOUR COMMISSION, 1892-93.

The Royal Commission which was appointed to inquire into the water-supply of the metropolis in the year 1892 consisted of Baron Balfour of Burleigh, Sir George Barclay Bruce, Kt., Civil Engineer; Sir Archibald Geikie, Kt., Doctor of Laws, Professor of Geology and Mineralogy in the University of Edinburgh; Mr. James Dewar, M.A., Jacksonian Professor of Experimental Philosophy, Cambridge; George Henry Hall, Civil Engineer; James Mansergh, Civil Engineer; and Dr. William Ogle. The sittings of the Commission extended over a long period of time. The first meeting took place on May 16th, 1892, and the Commission sat at intervals until June 30th, 1893. The result of their sittings was that a quantity of matter was ultimately published consisting of the report,[5] a large book containing the minutes of evidence, a still larger volume containing the appendices to the minutes of evidence, another volume containing maps, plans, and diagrams, and an index published separately.

The matters which were investigated by the Commissioners and on which they reported may be conveniently divided into three parts. First, as to the quantity of water required for the supply of the metropolis; secondly, as to the quality of the water supplied at the time when the Commission sat; and, thirdly, as to whether any additional control over the companies' undertakings was advisable.

Anyone wishing to obtain an accurate account of the proceedings must read the report of the evidence and the book containing the appendices. The volume of the minutes consists of over 550 closely printed pages; the appendices contain over 690 pages. The report of the evidence and of the matter contained in the appendices are of greater value than the report of the Commissioners. Unfortunately some of the evidence given has been proved since to be inaccurate, and as the report was presumably founded on the evidence the opinion of the Commissioners in as far as it was founded on incorrect statements which they received as facts is valueless. It is, therefore, not necessary to deal at any very great length either with the evidence or with the report, but it will be necessary only to show clearly and briefly why it is that the prolonged labours of the Balfour Commissioners have, it must be feared, been to some extent wasted.

It will be best to take the subjects dealt with by the Commission under the divisions already given.

The Balfour Report on the Available Supply of Water.

As to the quantity of water which is available from the present sources, the evidence given before the Balfour Commission was not complete, because there are many districts within the area of Water London whose sources of supply and future requirements were not fully taken into consideration. This, however, is not a matter of very great moment.

The engineers of the metropolitan water companies gave evidence with regard to their sources of supply. It is not necessary to go into detail in the case of the sources of each company. It is sufficient for our purposes to show that the evidence given in one case has since proved to be wrong.

Available Sources of the New River Company as given to the Balfour Commission.

The case is that of the New River Company and it is necessary to go a little into detail with regard to the evidence given by the engineer of that company at the time of the Balfour Commission and the evidence which he has since given with regard to the amount of water which can be obtained from wells belonging to the company.

At the first sitting of Lord Balfour's Commission which was held on May 16th, 1892, Mr. Joseph Francis, engineer to the New River Company, was examined in regard to the amount of water which the company could supply. The evidence appears on pages 2 to 11 of the volume containing the minutes of evidence. A statement of the quantity of water which the New River Company had available is also given in the Appendix of the Royal Commission on the Metropolitan Water-supply, page 1. The statement in the Appendix is as follows:—

At this time the Company have available a quantity of nearly fifty seven million (57,000,000) gallons derivable from the following sources:—

	Gallons per day.
River Lee	22,500,000
Chadwell spring and wells	34,000,000
Ponds for non-domestic use, nearly	330,000
Daily	56,830,000

The next paragraph states: "This quantity is being continually augmented by further development and extension of the chalk well system." Mr. Francis was examined by Lord Balfour in regard to the details of the available quantity of water, and in answer to questions he said that the amount then used was 33,000,000 gallons daily. Of this 22,500,000 gallons came from the Lee the remaining 10,500,000 from Chadwell spring and wells. During the year 1891 the average amount derived from Chadwell spring was 2,000,000 gallons per day.[6] In answer to Lord Balfour the witness gave the quantities which he said the wells could produce daily should that amount be required. The table given was as follows:—

Broadmead Well	1,500,000	Turnford Well	3,250,000
Amwell End Well	1,500,000	Cheshunt Well	750,000
Amwell Hill Well	3,250,000	Hoe Lane Well	3,300,000
Amwell Marsh Well ...	2,800,000	Highfield Well	3,000,000
Rye Common Well ...	3,750,000	Campsbourne Well ...	3,300,000
Hoddesdon Well	2,160,000	Betstile Well (nearly)	500,000
Broxbourne Well	4,500,000		

In answer to Lord Balfour Mr. Francis said that they had never taken these quantities simultaneously from the wells. "We have," he added, "never needed to do so. I may say that these figures which I give by no means represent what we can get out of the wells by working the engines a little faster, but they are all worked at very moderate speed. We actually do get these quantities whenever we are working; but

[5] Report of the Royal Commission appointed to inquire into the Water-supply of the Metropolis. London: Eyre and Spottiswoode, 1893.

[6] It may be here noted that tables given to Lord Llandaff's Commission by Lord Robert Cecil on behalf of the Hertfordshire County Council showed that the flow of Chadwell spring has steadily and continuously diminished. During the summer of 1897 the spring entirely failed. The amount of water derived from wells was on the average 8,500,000 gallons less than the amount derived from the spring. Mr. Francis admitted that if the company obtained 34,000,000 gallons a day from the springs and wells that amount would be 23,500,000 more gallons than were obtained at the time the evidence was given. The basis of calculation on which the figure 34,000,000 gallons was arrived at was by taking what each well could produce, and had produced, over a period of weeks together, pumping day and night, taking each well separately, and then adding them together and finding the total amount. It was not the maximum quantity that could be taken from the wells, but a fair average of what could be obtained daily in a fair week's work from all the wells.

if we needed more water we could, by increasing the speed, get a great deal more out." In their report Lord Balfour's Commission accepted the figures given, that is to say, that the Chadwell spring and wells were capable of providing 34,000,000 gallons of water daily.

Available Sources of the New River Company as given to Sir Joseph Pease's Committee, 1896.

In the year 1896 a Committee was appointed by the House of Commons to report on Bills which were promoted by the London water companies. Amongst these Bills was one promoted by the New River Company and another Bill in which that company was interested—the Staines Reservoirs Bill. The Select Committee was composed of the following gentlemen:—Mr. Baldwin, Mr. Bond, Mr. John Brunner, and Mr. James Stuart, who were nominated by the House, and Mr. Brigg, Mr. Lewis Fry, Mr. Lees Knowles, Mr. Muntz, and Sir Joseph W. Pease, who were added by the Committee of Selection of the House. Sir Joseph Pease was appointed chairman.

On June 5th, 1896, Mr. Joseph Francis was examined at some length with regard to the amount of water supplied by the wells of the New River Company.[7] In answer to Mr. Balfour Browne he said that in the evidence which he had given before Lord Balfour's Commission he had stated that 56,830,000 gallons a day could be supplied by the company and that they would be able with new machinery to get a great deal more water. The witness would not admit that he represented to the Commission that 56,830,000 gallons were practically in hand, and he said that the Commission "fully understood" that it was nothing of the kind. Sir Joseph Pease said that although he did not desire to interrupt the examination he wished to remark that it was difficult to know what the Commission did understand except what they had put in their report, and that on page 27 of that report they had said that Chadwell spring and wells could supply 34,000,000 gallons daily, and he further pointed out that the witness in his evidence before them had put down the amount which could be furnished by Chadwell spring and the wells at 24,000,000 gallons daily which was 10,000,000 gallons less than he had estimated in the year 1892. The Chairman asked how it was that the figure had been put down at 34,000,000 gallons in 1892 and 24,000,000 gallons in 1896, and the witness replied, "Because we cannot rely upon the machinery always working. In the first place we must make allowance for unavoidable stoppages, for oiling heated bearings, and various causes. Then beyond that, out of the very great number of engines we have there are always some that have to be set off for repairs, and 10,000,000 gallons is not too much allowance to make for that." But Mr. Francis had told the Balfour Commission that 34,000,000 gallons was a fair daily average of what could be obtained, but that it was not the maximum quantity which they would be able to get should they require more.

This evidence speaks for itself. Comment is not necessary. It is seen from the figures quoted and from the evidence which he gave that according to the engineer of the New River Company the amount of water available for the use of the metropolis was found in the year 1896 to be much less in quantity from that which he stated was available when he gave evidence before the Balfour Commission. Lately before the Llandaff Commission it was asked if the engineer could in any way reconcile the figures which had been given before the Balfour Commission with those which he had subsequently given. The answer was that he had made a mistake.

It is quite evident that the conclusion with regard to the quantity of water available arrived at by Lord Balfour's Commission, based on erroneous data, are worthless and no more need be said on the matter.

Balfour Commission on the Quality of the Water.

With regard to the quality of the water-supply an enormous amount of evidence was given as to the sources of the water used by the metropolitan companies. Broadly speaking, the evidence may be divided into two sections. First, that given by the late Sir George Buchanan and by men who had made independent investigations into the matter; and, secondly, that given by experts employed by the metropolitan water companies.

A very interesting and instructive interview took place between Sir George Buchanan and the Commission at Trafalgar-place, Charing-cross, on Tuesday, May 10th, 1892. Anyone interested in the subject of water-supply, and especially of the importance to be attached to the source of the supply, would do well to read carefully the report of this interview. It is to be found on page 428 of the minutes of evidence of the Balfour Commission.

Sir Archibald Geikie towards the end of the interview asked Sir George Buchanan whether there was any particular line of research which he could suggest or recommend to the Commission in regard to the contamination of the sources of supply. Sir George Buchanan replied by recommending the Commission to go and look for themselves or to send someone else to look for them. "I do not think," he said, "there is anything but what I may call field observation, but go and see that what ought not to get into the water does not get into it."

Now, Lord Balfour's Commission did not adopt the method of "field observation." They did not apparently attach such serious importance as did Sir George Buchanan to the evidence given with regard to the pollution of the Thames and to the pollution of the Lee. They apparently attached more importance to the evidence of the scientific experts who were employed by the metropolitan water companies, and placed great reliance in artificial purification methods.

The Balfour Commission Advise Control of Filtration.

With regard to the control of the water companies the Commission recommended that greater power should be placed in the hands of the Water Examiner and that regulations should be made with regard to the filtration of water.

They attached the greatest importance to the efficient filtration of river water and they made important suggestions as to the control of filtration and to the method by which this control should be exercised. These recommendations are embodied in sections 176 and 177 of their report and are as follows:—

> We have further to consider what steps should be taken to ensure the proper treatment of the water that is taken from these rivers for the supply of London. For the water that flows down to the intakes must be subjected to certain important processes before it is brought into a suitable condition for delivery and consumption. These processes consist of subsidence and filtration, and the quality of the water when delivered depends largely upon the thoroughness with which they are carried out. It does not come within the terms of our reference to lay down what should be the exact regulations as regards filtration, that is to say, what should be the proportionate area of the filtering beds, the depth of sand, the frequency of renewal, or the rate at which the water should be allowed to percolate; nor, as regards the subsidence tanks how many days' storage should be deemed sufficient so as to obviate the necessity of taking in turbid storm water and to allow of due settlement; but we cannot shut our eyes to the fact that the provision for these purposes differs enormously in the different companies and in some of them is to our mind quite inadequate.
>
> Regulations on these matters should be drawn up after competent inquiry and adherence to these regulations should be strictly enforced. This enforcement should be entrusted to the public water examiner, who should have the legal right of entry into all the waterworks and the duty of reporting periodically as to the due observance of the conditions laid down. At present the examiner is only admitted to the works on sufferance and, though he has distinctly informed us that he has always been admitted not only without hesitation but with all courtesy by the various companies, it is plain that the standing ground of a man who is inspecting by right is very different from that of one who is only present by courtesy.

Information with regard to the Wells and to the Effects of Pumping required.

Another recommendation given in the Balfour report relates to the obligations which the Commission advised should be imposed on the companies to give accurate information in regard to the amount of water pumped from their wells and in regard to the height of the water in the wells. As we have already seen the information given by the engineer of the New River Company to the Balfour Commission in May, 1892, did not accord with that given by the same witness to Sir Joseph Pease's Committee in June, 1896. Now the Balfour Commission not only felt, but they also expressed, the difficulty they were labouring under in getting "accurate and reliable information," and for that very reason, amongst others, they made the following important recommendation:—

> We think it of very great importance that distinct obligations should be laid upon any company or local authority which is allowed to pump water from the chalk for purposes of public supply to keep accurate observation of the effect of their operations on the level of the water in the wells from which they pump, and return the results to the water examiner under such regulations as may be framed. The great difficulty which we have had to encounter has been in getting accurate and reliable information as to the actual effect of the operations now carried on. The importance of procuring this will increase each year as the limit of what can be taken from any district with safety is gradually being reached

[7] Report on London Water Companies' Bills, ordered by the House of Commons to be printed July 7th, 1896, p. 131, et seq.

The Balfour Commission looked forward to an improvement in the water-supply and suggested two things which appeared to have struck them as the most important factors in the consideration of the question. In the first place they recommended that the powers of the Thames Conservancy Board should be extended and that they should have jurisdiction over the tributary streams of the Thames. An Act passed in the year 1896 gave this power to the Thames Conservancy Board and very great improvements have resulted from its use by that firm and judicious authority. The other matter which appears chiefly to have struck the Balfour Commission was the importance of filtration, and they looked forward to the possibility that the Water Examiner, if and when he were placed in a position firmly to exercise his authority would be able by supervising the methods of filtration to ensure a great improvement in the quality of the water supplied by the companies.

THE LLANDAFF COMMISSION.

A Royal Commission to inquire into the water-supply within the limits of the metropolitan water companies was appointed on May 1st, 1897. The Commissioners were Viscount Llandaff, the Right Hon. John William Mellor, Sir John Dorington, Sir George Barclay Bruce, Mr. Alfred de Bock Porter, the late Major-General Alexander de Courcy Scott (the Water Examiner appointed by the Local Government Board), the late Mr. Henry William Cripps, Q.C., and Mr. Robert Lewis.

Terms of Reference.

The terms of reference were as follows:—

1. Whether having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either—(a) by one authority; or (b) by several authorities; and if so, what should be such authority or authorities. To what extent physical severance of the works and other property and sources of supply of the several companies, and the division thereof between different local authorities within the limits of supply, are practicable and desirable; and what are the legal powers necessary to give effect to any such arrangements.
2. If the undertakings are not so acquired, whether additional powers of control should be exercised by local or other authorities; and if so, what those powers should be.
3. Whether it is practicable to connect any two or more of the different systems of supply now administered by the eight metropolitan companies; and if so, by whom and in what proportion should the cost of connecting them be borne and what are the legal powers necessary to give effect to any such arrangement.

Intercommunication Scheme Advised. Act Passed.

During the sittings of the Commission it was decided to take all the necessary evidence on the third term of reference in view of a possible water famine in the East-end of London. The Commission issued a report advising that steps should at once be taken to allow intercommunication between the companies' mains, a Government Bill was brought in to carry out the recommendation, the Bill became an Act of Parliament, and measures were taken by the water companies to give a supply of water to the East London Waterworks Company.[8] The promptitude with which the measure passed was creditable, and the ready way in which both Houses of Parliament, in case of a pressing emergency, passed a measure which was undoubtedly for the public interest will, we trust, encourage the Government to deal without delay with the pressing needs of the people of London in regard to the water-supply. It is in that hope that we now proceed to deal with some of the recommendations given in the Llandaff report. The columns of THE LANCET have contained *résumés* of the evidence given before the Llandaff Commission. We cannot reproduce the reports of the evidence or the digests of the Llandaff report which have appeared in our columns. We can only give in the most brief outline the gist of that report, and point out why the Government cannot be expected to frame a measure to carry out all the recommendations it contains, and why, on the other hand, the Government would not be justified in simply allowing things to remain as they are, or, to be more precise, why they cannot be permitted to allow things to drift any longer.

Water Board Recommended by the Llandaff Commission.

The gist of the Llandaff report is to the effect that a Water Board should be appointed to buy the present water undertakings and to carry on the business of supplying London with water. It is also recommended that additional measures of control should be put into force and that this should be done in case either of the formation of a Water Board or in case the water undertakings are carried on by the companies.

It is necessary to say a few words about the Water Board proposed by the Llandaff Commission. The Board proposed would be a body elected by the London County Council, the Corporation of London, and the County Councils and Town Councils of the counties and towns which are situated in Water London—that is to say, the area at present supplied by the metropolitan water companies. The county of London would have no preponderating vote (or "voice"), although the rateable value and population of London would be greater than the rateable value and population of the extra-metropolitan districts. It is doubtful if the composition of the Water Board as proposed by the Llandaff Commission would satisfy anyone. Mr. Whitmore, Member of Parliament for Chelsea and a member of the London County Council, in the evidence which he gave before the Llandaff Commission said that no solution of the metropolitan water question would satisfy the "sentiment" of the London County Councillors if it did not give them a preponderating "voice." In an article which he lately wrote, however, Mr. Whitmore presses the Government to undertake immediate legislation with a view to carry out the recommendations of the Llandaff Commission. Now, as Mr. Whitmore is a "practical politician" it is necessary from our point of view to show why it is that the Government could not, without the most violent opposition, pass such a measure as that recommended by Mr. Whitmore in his more recent utterances.

Establishment of a Water Board Impracticable at Present.

"Water London," in the whole of which the proposed Board would reign supreme in all questions of water-supply, occupies an area of 620 square miles. The administrative county of London has an area of 121 square miles. But the districts outside London have interests which are not of less importance to them than the districts within London are to Londoners themselves. This proposition will be readily admitted, and it may appear at first sight hardly necessary to state it, but when the minutes of evidence of the Llandaff Commission are published it will be seen what an enormous amount of space is taken up by the evidence of the witnesses employed by the London County Council and by the London water companies, and what a small space is occupied by the evidence given by the representatives of the extra-metropolitan authorities. Now the weight of the evidence must not be judged by the weight of the paper necessary to report it. To take an example, the case presented by the county of Surrey may well serve.

Purchase of Water Companies opposed by Surrey.

The county of Surrey was represented by one gentleman, who appeared alone, without counsel, and gave his evidence very briefly. When the manner and method in which this evidence was given on behalf of Surrey is compared with the evidence given by the London County Council, represented occasionally by two learned counsel in addition to two or more officials whom doubtless the ratepayers pay, the contrast is rather striking, but the evidence of one country gentleman who devotes his time to the interest of his county and submits himself to a cross-examination by hostile counsel without any other protection than a sense of the justice of his cause deserves to be considered of no less value because the case is stated simply without words of supererogation, and therefore evidence of this kind is of no less importance than is that of scientific experts. The evidence of Mr. Halsey, the chairman of the Surrey County Council, was given at the twenty-seventh sitting of the Commission and is reported in the County Council Print, pages 1689–1712. It

[8] The only exception which could be taken to the measure had regard to the manner in which money was to be raised for carrying out the engineering work necessarily involved. The measure was necessary because had it not been passed it seemed probable that the East London Waterworks Company would be unable to supply its customers, and this being so it was not evident why the ordinary sinking fund clause should not have been introduced into the measure on its introduction into the House of Commons. A Committee of the House of Lords recommended that this clause should be introduced and the Bill was returned to the Commons containing it. The Commons, however, rejected the clause and the Bill afterwards became an Act without it. This is not the first occasion on which the House of Lords has interfered with a Bill from the Commons in a manner favourable to the London water consumers. In a Bill which was introduced in the year 1819 for limiting the charges of the metropolitan water companies a Committee of the House of Lords presided over by Lord Donoughmore advised that the water rents should be reduced to a lower level than that recommended by the Commons. The result was that as it was pretended that an alteration in the money clause by the Lords affected the privileges of the Commons the Bil was dropped.

is not necessary here to go into the details of the evidence, it will be sufficient to say that the Surrey County Council wished that the present arrangements for a water-supply to be given by the existing companies should not be interfered with. The evidence was concluded by a short sentence which was produced by the hostile examination by the Parliamentary agent to the London County Council. The final answer of Mr. Halsey, which apparently deterred the agent from following up the matter further and which, indeed, appeared to clinch it finally, was to the effect that purchase by any authority was undesirable and that purchase by the London County Council of the water companies' undertakings, as far as Surrey was concerned, was the worst possible basis of settlement which could be arrived at.

Water Board Undesirable for Kent.

The case of the county of Kent seems to merit quite a separate and special consideration. The history of its water-supply differs very much from that of any other district which came within the scope of the inquiry. The area supplied by the Kent Waterworks Company is a very large one, no less than 179 square miles. The business of the Kent Company has greatly extended as years have passed and the districts beyond those already supplied by the company have in several instances requested them to extend their area so as to include them also. There has been practically no conflict between the local authorities and the Kent Company.

Evidence with regard to the water-bearing strata of Kent was given before the Commission and there seems to be no doubt that there is enough water in the area to supply the county for many years to come. The question arose as to whether it was advisable for the Kent Company to join the other water companies in the scheme of intercommunication. The engineer to the company did not strongly urge that they would be benefited by it, and was evidently convinced that as far as their own area was concerned they could do perfectly well without any intercommunication with the mains of the other metropolitan water companies, for during the drought of the year 1898, when one of their wells failed and there was a breakdown of the machinery at another station, the company still had a sufficiency of water for their own wants. It was, therefore, impossible for the Kent Company to make out a strong case in favour of the hypothesis that the area which they supplied was likely to derive any benefit from any intercommunication with the mains of other companies.

A good deal of evidence was given before the Commission with regard to the amount of the percolation of rain-water which takes place in the chalk, but a scientific witness who was examined on the subject admitted that the amount of water which actually percolates is really a matter rather of speculation than of actual knowledge.

However, the evidence given by all the witnesses pointed to the conclusion that the area supplied by the Kent Company has within its own limits a perfectly adequate supply for the requirements of that district and for the supply of that part of the metropolis which is included in the statutory area of the company. It would be extremely disadvantageous to the people of Kent if their water were pumped away in quantity to supply London with water which the Kentish people require for themselves. The amount which is pumped at present is about half that which it is assumed could possibly be obtained. It is perhaps hardly necessary to point out that it is much easier to get the first half of the water than the second half.

A study of the situation of the wells of the company also shows that many of them are quite close to the boundary of the district—that is to say, the company has gone as far afield as they are authorised—for example, the new well at West Wickham is right on the border of the company's area; that at Shortlands is also close to it; the new well at South Fleet is not far from the western boundary of the company's district; and the well near the Pilgrim's Way south of the North Downs is, as a matter of fact, in the county of Surrey. There is no doubt, therefore, that the Kent Company's wells are so arranged as to take as much water as possible at places near their boundaries. What, it may be asked, does this mean? What importance has it? What has it to do with the question as to whether purchase by a Water Board or by some other body is expedient? And what has it to do with the question as to whether the water companies' undertakings should belong to one or to separate authorities?

Briefly this. Kent has a sufficient amount of water for her own needs. The populatiou is at the present time in many parts, however, sparse, but it is likely to increase. On the other hand, the amount of underground water will not increase. If the water-bearing area were to be under the control of any authority other than the County Council of Kent the interests of the people of Kent would undoubtedly be sacrificed to the wants of London. With regard to the question of a supply of water from Kent passing to a district outside their authorised area, one fact which was mentioned in evidence to the Llandaff Commission is not unworthy of note. The Kent Company supplied to the East London Waterworks Company during the year 1898 a certain amount of their water. It is not explained by what authority this was done. Now, although no one can possibly grudge the people of East London the small amount that the Kent Company was able to send during a period of famine, speaking from the point of view of the people of Kent it does seem that they have the right to know on what authority the Kent Company supplied water beyond their statutory area. In this particular case no harm was done to the people of Kent, but proceedings of that sort are liable to abuse, and if the water interests of Kent are not looked after by Kentish people the county will doubtless suffer in the future no less than Hertfordshire has suffered in the past, suffers now, and is likely to suffer in the future.

The people of Kent have been somewhat fortunate in having the matter of their water-supply managed by local men. Most, if not all, of the directors of the company are residents in Kent, and it is a good general sign of the satisfaction of the Kentish people as to the way in which their interests have been looked after that they should in more than one case elect as Member of Parliament one of the directors of their own water company.

In the course of the inquiry which was carried on before Lord Llandaff it was suggested that it might be advisable that the area now supplied by the Kent Company should be left intact. This would doubtless be the best solution for the people of Kent.

The question as to the rights in underground water was prominently brought before Lord Llandaff's Commission by Lord Robert Cecil on behalf of the county council of Hertfordshire.

We cannot, however, dwell on this question. It is quite certain that the people of Kent are not entirely forgetful of their own interests. Lord Llandaff's Commission showed that both the rural and the urban districts of Kent were aware of the danger which they would run should any authority other than a Kentish one have any power to abstract water from Kent and send it in quantity beyond their boundaries. A Parliamentary proposal to form a Water Board on the lines sketched by the Llandaff Commission would meet with the strongest opposition from Kent. Nor would any one of the metropolitan counties be content with such a measure. Enough we hope has been said to show that the Government would be extremely ill advised to bring in a Bill which would meet with general and merited opposition in the metropolitan counties.

Control Recommended by the Balfour and Llandaff Commissions.

Members of the present Government are responsible for the appointment of the last two Royal Commissions which were constituted to consider the question of the London water-supply. Both the Balfour and the Llandaff Commissions have recommended additional measures of control. And there are measures of control which should be supported by both political parties. They demand immediate attention. The things of greatest urgency may be best considered under the headings of (1) financial control; and (2) general control.

1.—Financial Control.

At the present time the financial control of the companies is in many respects satisfactory. In the first place the water rents charged are not generally excessive and they have been fixed by Acts of Parliament. The dividends which can be paid by the companies (except in the case of the New River Company) are limited by Acts of Parliament. New capital raised by the companies is allowed to be obtained only when provisions for a sinking fund are made.

Sir John Lubbock on Internal Control (Financial).

Sir John Lubbock, now a peer, in the evidence which he gave

before the Llandaff Commission brought forward, we think for the first time, some valuable suggestions as to the additional financial control which he considered fair to the companies and a matter of simple justice to the water consumers. Sir John Lubbock said that in his opinion control may be looked at from two points of view. There was external control, of which an example was that of the power now invested in the London County Council and in the Railway Commissioners by the Act which was passed in the year 1897. This Act, which has reference chiefly to the continuous system of supply, ought, he thought, to have a fair trial. To the other method of control Sir John Lubbock said he attached considerable importance. In his opinion control ought to be exercised over the financial arrangements of the companies. Some of them which are now paying a maximum dividend cannot pay any more to their shareholders however much more they may earn, and it has been alleged that there is *primâ facie* evidence that some of them are inclined to increase their expenditure, perhaps unnecessarily. Sir John Lubbock thought that it was important in any concern that those who were financially interested should have a voice in the management of the business in regard to such questions as to what salaries should be paid, as to the number of the *employés* engaged, and as to the amount of work which should be done by them. These matters could only be managed by what might be called "inside control"—they could not be determined by any exterior controlling body. As an example of such internal control Sir John Lubbock referred to the case of Indian railways in which the Government has a large interest. In the case of these railways, he said, the Indian Government appointed one or more directors to look after their interests in the management of the railway. He thought that the case of the metropolitan water companies was somewhat analogous.[5] The people who paid water-rates in London were practically in the position of ordinary shareholders; for example, in the case of the customers of the West Middlesex Company those people who hold the ordinary shares are practically at the present time preference shareholders. They are entitled to a fixed dividend which they are receiving and they are not entitled to anything beyond this. The persons who really stand in the position of ordinary shareholders are the water-rent payers because they are actually the people who benefit by improved management and by increased profits. For at the present time now that the full dividend is being paid to the shareholders anything which remains over must necessarily be applied to reducing the price charged for water. It is therefore only reasonable that the water-rent payer should be allowed, either through local bodies or in some other way, to appoint representatives to the board of the company to see that their interests are properly looked after. Sir John Lubbock, in giving his evidence, said that he did not wish to suggest that the interests of the water-rent payers were not at the present time thoroughly looked after, but he strongly held that as a general rule and as a matter of principle those people who have a substantial financial interest in the success of a company ought to have a voice in the management of the concern, and it was from that point of view and because the water-rent payers had a direct interest in some of the water companies' earning powers and a contingent interest in others that it was only fair and right that they should have one or more directors on the board of managers. He thought, moreover, that the system would work well. There would be no conflict of interest between the company and the water-rent payers in these matters. Sir John Lubbock said he had not thoroughly considered the questions as to how and by whom the new directors should be elected. In the case of Kent, however, he thought it would be best that the nomination of them should be made by the Kent County Council or by the urban authorities, because if this were done they would get men who really understood the matter. He did not think that it would be well for the London County Council to elect the members because, as everyone knew, the election of members to that body depended on considerations which had no reference to the management of water undertakings. On the other hand, if members were appointed by a local authority those who had had previous experience of such undertakings would doubtless be elected.

With regard to the way in which the new directors would work with the old ones Sir John Lubbock said that his experience of boards was that they were very reasonable and that it very seldom happened that there was any division on the board. The advice of those most competent to judge was usually taken and there was no reason if his proposition were carried out why there should be any conflict of interest. His impression was therefore that things would work smoothly.

The Anomalous Position of the Auditor appointed by the Local Government Board.

There is another matter with regard to control which appears to be most unsatisfactory. The auditor of the accounts of the metropolitan water companies who is appointed by the Local Government Board is paid by the water companies and no provision is made for the payment for any legal advice which he may require in dealing with the accounts of the companies. Mr. Alan Stoneham, the gentleman appointed by the Local Government Board, gave a full account of his duties and of the way in which he carried them out at the thirtieth sitting of the Llandaff Commission. By the provisions of the Act of 1871, under which he was appointed, it was enacted that the auditor was limited with regard to the number of back years for which he was allowed to examine the capital accounts of the companies; that is to say, he could only examine the accounts back to a certain date in the case of each company. The dates in different cases varied from the years 1864 to 1869. Mr. Stoneham audited the accounts which were available in each case and ascertained the method in which they were kept. He had first to satisfy himself that the accounts were kept on a proper system. He had perforce to assume that the existing capital as stated in the accounts of each company was the correct amount of capital. But from the date at which he began his duties he was empowered to allow such sums only to be placed to capital account as in his opinion might properly be so placed. Lord Llandaff asked the witness what would happen when fresh capital was raised if the auditor suggested that some of the amount which the company proposed to spend could not properly be considered capital expenditure. Mr. Stoneham replied that he would not allow any sums which ought not to be credited to capital account to be put there. He looked upon it as a conversion of so much gold in the till into engines or pipes or whatever the money was spent on. Lord Llandaff pointed out that if that were so it was the conversion of a permanent asset into a perishable one and he inquired of Mr. Stoneham as to whether account was taken of the deterioration or depreciation of the plant. Mr. Stoneham said that there was no depreciation account and nothing was "written off" from the capital account for deterioration and depreciation. With regard to the machinery he said that if an engine wore out it was replaced and the charge was put against the revenue of the company, and he accepted the statement of the engineer that the new engine had been put to replace the old one. He did not assure himself with his own eyes that the engine had been replaced by another and proper engine. Mr. Stoneham said that he was not aware that before the water famine which occurred in the year 1894–95 a number of pipes were likely to burst. But the pipes did burst and the accounts of the outlay necessary for reinstatement were taken to him. The matter of how the pipes were to be paid for was discussed by him with the representatives of the companies. It was decided that a certain amount of the expenditure might fairly be charged to capital account and some to revenue. The reason why some part was charged to capital was that the pipes were placed at a greater depth below the surface of the ground than the pipes which they replaced. Mr. Stoneham thought that a certain proportion of the outlay might be reasonably considered to be new work and he had therefore allowed a certain proportion of the expenses incurred to be charged against capital because the pipes had been so lowered.

During his term of office a somewhat curious arbitration case had arisen between the New River Company and himself. It arose in this way. The New River Company had some land at Blackfriars which they sold at a price higher than that which they originally gave for it. The New River Company had contended that the profit should go to revenue and that it should be paid to the shareholders. On the other hand, the auditor contended that the sum so received should be written off the capital. The matter came before the Lord Chancellor who held that the appreciation of the value ought to be considered and treated as revenue. A member of the Commission (Mr. de Bock Porter) asked

[5] In the case of the Indian railways the Government representative has, we believe, much more power of control than Sir John Lubbock suggests should be exercised on the metropolitan water companies.

Mr. Stoneham whether he did not admit that in some cases, in which part of the plant and works of a company had been disused, they became of less value, and Mr. Stoneham replied that he had no official knowledge on that subject. On being further asked who had such a knowledge Mr. Stoneham pointed out that that was a question which did not appear in the accounts of the company, and that he only looked at the accounts which had been made up since the date of his appointment. The Local Government Board had not laid down any instructions for his guidance. If he misconducted himself the Board had the right to remove him, but otherwise they had no right to interfere with the way in which he carried out his duties.

With regard to the question of accounts of money paid in Parliamentary expenses, and as to whether it was debited to the capital account of the company, or whether it was paid out of revenue, Mr. Stoneham explained that before a Bill brought forward by a company became an Act the expenses were paid from the income of the company and in the case of a company opposing Bills all the expenses were paid from the income of the company. He could give no idea as to the amount which the companies had spent in opposing the Bills brought in by the London County Council. He carefully abstained from anything like interference. It may, perhaps, be worth while at this point to remark parenthetically that should a Bill be brought in by the West Middlesex Company and opposed by the London County Council (or *vice versâ*) the whole of the legal and Parliamentary expenses are paid by the London ratepayers and by the water consumers who live in the area supplied by the West Middlesex Company.

With regard to office expenses Mr. Stoneham said that he had the assistance of clerks, but should a dispute arise no provision was made by which he could obtain counsel's opinion, and he had himself borne this expense, paying the money out of his own pocket. In one case which came before Sir Henry James [9] as arbitrator the late Solicitor-General and Mr. Justice Wright were against him. Sir Henry James took the case and argued it so as to give the auditor as much help as possible. He said: "Mr. Stoneham is not represented by counsel and you will understand I will argue it for him." Lord Llandaff inquired whether the auditor meant that Sir Henry James argued to Sir Henry James on account of Mr. Stoneham, and the reply was that he, in fact, did argue the case to himself, appealing to Mr. Stoneham from time to time. Mr. Stoneham said that he found himself at a very great disadvantage in the case (a statement hardly complimentary to Sir Henry James) and therefore in the next case which occurred, when he appeared before Sir Robert Reed, counsel represented him and he paid the fees himself. Lord Llandaff asked whether when the auditor had a difficulty in discharging his duties and the matter had to go to arbitration there was any provision by Parliament that his expenses should be met out of some fund, and the auditor replied that there was no such provision. Lord Llandaff suggested that it was a very serious blot on the Act and the witness concurred that it was a very serious blot. He said that he had never applied to the Board of Trade for legal costs and the water companies had to pay for "taking up the case" (i.e., paying the arbitrator's fees).

It does seem most curious that an auditor appointed under an Act of Parliament by a public department should be in the position in which the auditor of the accounts of the metropolitan water companies showed that he was placed. Such an important officer ought surely to be provided with any legal help which he wants. Is it not a most monstrous state of things that a Parliamentary official acting on behalf of the public should be placed at such a disadvantage? Is it not certain that the interests of water consumers must necessarily suffer? However able and painstaking the auditor may be, is it likely that he has sufficient knowledge of legal technicalities to be able to hold his own against the most clever and skilled counsel who can be employed by the water companies? And to put the matter on higher ground, is it a dignified proceeding that a Parliamentary official should have to contend single-handed against counsel employed by rich trading companies? Surely this state of things should be altered without delay.

The report of the Llandaff Commission recommends that provision should be made for the auditor to have counsel's advice paid for by the Local Government Board. We are strongly of opinion that the auditor himself should also receive a liberal salary and that the money to provide it should not be paid by the trading companies whose financial peculiarities it is his duty to check in the public interest.

Quality of the Water Supplied: Position of the Water Examiner.

With respect to the control now exercised as to the quality of the water the Metropolitan Water Act of 1852 (as we have seen, p. 187) provided that no company should resort to any new source of supply without the permission of the Board of Trade.[10] The control with regard to the source of supply appears therefore to be adequate. Certain powers are also exercised under the Acts of 1852 and 1871 with regard to ensuring that water of good quality should be supplied (see p. 188). Under the latter Act the appointment of a Water Examiner by the Local Government Board caused a great improvement in the matter of control, but the provisions made as to the powers and payment of that officer need amendment.

At the present time the Water Examiner has no power of entry on to the premises of any metropolitan water company. This matter was referred to in the report of the Royal Commission presided over by Lord Balfour, and in their report the Commissioners recommended that power of entry to the company's works should be given to the Water Examiner and that he should therefore be able, as a matter of right, to enter any of the premises of the metropolitan water companies instead of visiting them as he now does on sufferance and as a matter of courtesy. Many witnesses who gave evidence to Lord Llandaff's Commission referred to this matter and no representative of any of the water companies made any objection whatever to the proposed alteration. Indeed, one witness who appeared on behalf of the water companies suggested that in his opinion the water analyst or any other person appointed by the Water Examiner for the Local Government Board might well receive the right at any time to make any investigation which he thought fit with regard to the manner in which the water companies carry on their business.

The question as to the remuneration of the Water Examiner is one which cannot be passed over without a few words. At present, as we have seen (see p. 188), under the regulations of the Act of 1871 the Water Examiner appointed by the Local Government Board is paid by the metropolitan water companies. It is not right that the water companies should be called upon to pay an officer of the Local Government Board. It is not suggested that there is really any want of dignity in the reception by the gentleman who holds the appointment of Water Examiner of money which is paid by the water companies. The payment is of course made through the Local Government Board, but it is not seemly that an officer of such importance, whose duties are so responsible, should be paid, either directly or indirectly, by a number of trading companies whose businesses he has to overlook in the public interest. The Water Examiner to the Local Government Board is in all respects a public official and he should be paid from public funds. It is neither right nor dignified for a public department to allow it to be truthfully said that one of their officers is paid out of the profits of private businesses. Now the representatives of the metropolitan water companies do say that they pay the Water Examiner, and it is true that they do. They do so because they are required to do so by a statutory enactment. This may possibly by some people be considered a trivial matter, but we maintain that it is not a trivial matter. The amount of payment which the Water Examiner receives is doubtless totally inadequate payment for the duties which he performs. Such an officer should be highly paid and should have at his command a sufficient and efficient staff. The information which he publishes for the public should be his own information and the information of his own officers. At the present time this is not the case. The monthly report of the Water Examiner contains a number of statements with regard to the quantity of the water-supply and details are given as to the quantity derived from the Thames, from the Lee, and from wells. These figures are supplied by the water companies' servants. The Water Examiner has no power to check them; they are published in an official report and then the figures become official and the "official figures" given by the Water

[9] Lord James of Hereford.

[10] This power is now vested in the Local Government Board.

Examiner are quoted as such by the representatives of the water companies. Major-General Scott, the late Water Examiner, pointed this out to his fellow members of Lord Llandaff's Commission. There is no secret about it. It is a matter which certainly ought to be altered.

These statistics are not the only things which are supplied by the companies to the Water Examiner. Every month he reports on the quality of the water supplied by the companies. Some of these reports are made by scientific experts who are employed by the companies and they are then published in the official monthly bulletin of the Water Examiner.

With regard to the quantity of water supplied to London, we have already quoted an important recommendation made in the report of Lord Balfour's Commission (see p. 191). We entirely agree with the suggestion that a distinct obligation should be laid upon any company or local authority which pumps water from the chalk for purposes of public supply to keep accurate observation of the effect of these operations on the level of the water in the wells from which they pump and return the results to the Water Examiner under such regulations as may be framed. The great difficulty which the Balfour Commission had to encounter, the report says, had been in getting accurate and reliable information as to the actual effect of the operations now carried on. The importance of procuring this will, as they say, increase each year as the limit of the amount which can be taken from any district with safety is gradually being reached. Now, this suggestion that accurate observations on the water level and the wells of the metropolitan companies should be given to the Water Examiner has not yet become a statutory obligation. The date of the report of Lord Balfour's Commission it may be remembered was 1893, and since that time nothing whatever has been done to carry out this important recommendation. Had it been carried out Lord Llandaff's Commission would have been in a position to see what changes, if any, had taken place in the water level of the wells belonging to the New River and to the Kent companies. At one of their sittings the Llandaff Commission decided that they would not "go behind" the evidence of Lord Balfour's Commission with regard to the quantity of water which could be obtained in the valley of the Thames and of the Lee. Lord Llandaff's Commission, in short, decided not to re-open this question. It is certain that changes have taken place and new conditions have arisen since the date of the Balfour inquiry.

At the Llandaff inquiry Mr. Bowles Bowles, chairman of the New River Company, absolutely declined to give information to Lord Llandaff's Commission with regard to the levels of the wells, and Mr. Francis, chief engineer to the company, objected to give such information because, he urged, the facts would be misleading. Lord Robert Cecil, who appeared before the Llandaff Commission on behalf of the Hertfordshire County Council, and in defence of the rights or alleged rights of the rural water consumers of that county, gave Mr. Bowles Bowles and Mr. Francis every opportunity of affording information, but they evidently had no wish to supply facts which would necessarily have been universally known had the recommendation of Lord Balfour's report been carried into effect by giving it the force of a statutory obligation. Now the study of the tables giving the flow of the New River Company's Chadwell Spring gives support to the general theory propounded by Lord Robert Cecil that the water levels of chalk in Hertfordshire are, and have been for years, gradually sinking.[11] Lord Llandaff pointed out to Lord Robert Cecil that the inquiry on which he was engaged did not embrace consideration of the depletion of the chalk of Hertfordshire. We must, however, suggest, and indeed insist as strongly as possible, that it is of great importance to the people of Hertfordshire, and it is of great importance to the people of Kent, to know accurately the state of the underground water in their respective counties. The measure of control which was recommended in Lord Balfour's report is a measure which Lord Llandaff's Commission have advised Parliament to carry out without further delay. The evidence which has been given by witnesses from the county of Hertfordshire, evidence which will be found in the notes of the report of the Llandaff Commission when they are published, conclusively proves that the people of Hertfordshire have suffered greatly from the depletion of their wells. The facts given have not been contradicted. The same thing may in the future possibly happen in Kent, but if the people of Kent are able to keep for themselves the water which is found "under their feet" they will have less reason to complain. Still in the case of Kent some of the representatives of local authorities have expressed the regret which they now feel that they have allowed the control of the water-supply to pass out of their own hands into that of a commercial company, and if any large amount of water were taken from Kent and sent to the metropolitan area it might well happen that a very inadequate supply would be left to the people of Kent, and it would become a very serious matter for them.

One of the directors of the Kent Company admitted that in any case of inadequacy of supply the fullest information should be given to the public with regard to their wells; but neither he nor the engineer to the company were willing to give to the Llandaff Commission all the information which they possessed as to the height of the water level in the wells. Now if the recommendation of Lord Balfour's report had been made a statutory necessity and a record had been kept of the amount of water pumped daily from each well and a record had been kept of the level of the water in each well daily, and if this information had been regularly published the people of Kent would be in a position to know from week to week or from month to month the state of the underground water in their county. We must insist that it is of the very greatest importance for the people of Kent that this should be done in the future and that a beginning should be made without delay. The County Council of Kent should know as much about the water-supply of their county as possible. From the point of view of the public it is not satisfactory to know that things which were of great moment to the water consumers and which were recommended in the Balfour report have never been carried out.

Suggestions for Control made by the late Major-General Scott.

With regard to the question of control of the metropolitan water companies Major-General Scott made some valuable suggestions in the course of his examination of some of the witnesses who appeared before Lord Llandaff's Commission. The suggestions were conveyed in the form of questions which he addressed to the witnesses. In his examination of Mr. Whitmore Major-General Scott asked the following question: "As regards control should not you consider that the supervising authority should acquaint itself with the state of the works thoroughly and continuously, as it were; that its supervision should be directed to see that every company maintains its works in a proper state of efficiency; and that it should look to the future efficiency from the point of view of starting works in a reasonable time so that there should be no failure from want of capacity in the water-supply? Would not you think that that kind of control would do good? There is no such control at present." Now, as we have seen, the West Middlesex Company pay their full dividend. The shareholders of the company cannot receive more than they do at present. Any money earned in excess of the amount necessary to pay dividends has either to be employed in the working of the business or paid back to the water renters in the form of a reduction in their rates. The West Middlesex Company have had a successful business for a considerable number of years and have not only kept their plant in a state of efficiency but have looked ahead and made provision for the development of future business. This course of conduct has not been adopted by all the metropolitan water companies. In the case, for example, of the Southwark and Vauxhall Company the amount of water abstracted from the Thames was for some time greatly in excess of the amount authorised by Parliament, and sufficient provision was not made for the treatment by sedimentation and filtration of the increased amount of water so taken. The Southwark and Vauxhall Company were not financialy in as flourishing a position as the West Middlesex Company. These are facts it is well to keep in mind because they have a direct bearing on the question asked by Major-General Scott, and which has just been quoted.

Another question which contains a valuable suggestion was the following: "Assuming that a company is in rather bad circumstances and that the directors

[11] The engineer to the New River Company suggested that Chadwell Spring had failed because there was a "crack in the basin." Later in the course of his examination he said that he thought that there was a 'crack in the basin" because the spring had failed.

do not like to face the shareholders from time to time with their diminishing dividends, then it is rather an inducement under those circumstances to postpone the construction of works that anyone who looks to the future must see would be absolutely necessary. As these works take as much as five or six years to construct, if they (the directors) postpone the work too long they will find themselves at the end of that time in this condition—that after a dry season (a season of drought or something of that sort) the supply fails and it is absolutely out of the power of anyone to remedy the defect, and then the people complain; but it is too late to complain, no remedy can be applied which would not take months or years to carry out, and therefore the thing is irretrievable. Would it not be a wiser kind of administration which would overlook the company in such a way as to be able to say to a company, 'The time has arrived when you should start certain works or you will find yourselves in a mess.' Would it not be better if such an authority should put for the public a pressure on such a company to oblige them to start the works. Would it not, I say, be a wiser system of administration than to wait until complaints arise of scarcity in a district and an enormous amount of privation occurs, a state in which it is impossible to remedy things?"

Here is another valuable suggestion. "If you look at the Acts of Parliament of 1852, 1871, &c., you will see that the idea of control of some sort or other pervades the whole of them, or a great portion of them. That control really amounts to this, that when anything goes wrong somebody is to be punished, but would it not be better to prevent the wrong originally so that the complaint of wrong-doing should not arise?"

These suggestions deserve the most careful consideration. It may be doubted if they could be carried into effect with the entire approval of those Members of Parliament who are also directors of water companies and who are often listened to in the House as "practical men" with a thorough working knowledge of all matters pertaining to water-supply. But Major-General Scott's questions were asked in the interest of water consumers who were not represented by counsel and the questions were based on a thorough and long experience of all the details of the metropolitan water-supply.

CONCLUSION.

The matters of greatest urgency in respect to control of the London water companies are:—

The auditor appointed by the Local Government Board should be in all respects an officer of that Board and his salary should be paid from public sources. He should, when he wishes it, in the case of any difference with the water companies have the advice and help of the law officers of the Crown.

The Water Examiner appointed by the Local Government Board should have access to all parts of the metropolitan water companies' undertakings. He should be entirely responsible for the report which he issues monthly. The companies should be obliged to place at his disposal every facility for making the several investigations which he wishes. Every investigation which the Water Examiner makes should be done either by himself or by officers appointed by him. Any analyst he may employ should be nominated by himself and all the necessary expenses entailed in carrying out the work necessary for him to give full and accurate information should be paid by the Government department.

No Member of Parliament who represents any part of Water London, whatever may be his political conviction, could fairly object to the measures of control which we have just indicated. The Government having appointed and received the reports of two Royal Commissions have no right to make any further delay, and as both the Balfour and Llandaff Commissions have distinctly reported in favour of increasing the power of the Water Examiner they have no legitimate reason for delay in passing a simple measure which will carry out this recommendation. Any Member of a metropolitan constituency who, either from indifference or because he is a director of a water company or from any other reason, failed to support the Government in passing a measure for the benefit of the whole of the water consumers would richly deserve to lose his seat at the next election. It is now some years ago that the Right Hon. A. J. Balfour said he would not have London water-supply considered as an Imperial question. It is not an Imperial question, but it is of great importance to the people of London and it ought not to be treated as a party question.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to July 18th, when the total exceeded £45,000:—

	£	s.	d.
St. Jude's, South Kensington	655	0	0
St. Matthew's, Bayswater	142	0	0
St. Bartholomew's, Sydenham	106	0	0
St. John's, Paddington	165	0	0
St. Paul's, Knightsbridge	268	0	0
Holy Trinity, Tulse-hill	171	0	0
St. Margaret's, Westminster	107	0	0
Portman Chapel, Baker-street	121	0	0
Holy Trinity, with St. Jude, Upper Chelsea	296	0	0
St. Peter's, Kensington-park-road	128	0	0
Parish of St. Peter's, Eaton-square: Parish Church, £542; St. John's, Wilton-road, £67; St. Peter's Chapel, £6; total	615	0	0
St. Peter's, Cranley-gardens	400	0	0
St. Michael's, Paddington	144	0	0
St. Stephen's, Gloucester-road	103	0	0
St. Michael and All Angels', Southfields	25	0	0
Holy Trinity, Islington	24	0	0
Ilford Parish Church and Chapel	33	0	0
St. Barnabas', Pimlico	32	0	0
St. Paul's, Greenwich	20	0	0
All Saints', Clapham-park	36	0	0
St. John the Evangelist, Upper Holloway	24	0	0
St. Mary's Parish Church, Wimbledon	51	0	0
St. John's, Wimbledon, and Missions	54	0	0
Heath-street Baptist Chapel, Hampstead	56	0	0
Essex Unitarian Church, Kensington	95	0	0
Christ Church, Forest Hill	54	0	0
St. Mary Magdalene, Paddington	32	0	0
St. John the Evangelist, Penge	96	0	0
St. George's Presbyterian Church, Brondesbury	20	0	0
Church of Ascension, Balham-hill	51	0	0
St. Mark's Presbyterian Church, Greenwich	33	0	0
St. Paul's, Harringay	28	0	0
Highbury-quadrant Congregational Church	65	0	0
Greek Church, Bayswater	72	0	0
Highbury Presbyterian Church	26	0	0
St. John the Divine, Kennington	51	0	0
St. Luke's, Redcliffe-square	90	0	0
St. Matthew's, Sydenham	26	0	0
Trinity Presbyterian Church, Notting Hill	29	0	0
Catholic Apostolic Church, Maida Hill West	25	0	0
Camden Church, Camberwell	44	0	0
Lyndhurst-road Church, Hampstead	75	0	0
St. Mildred's, Lee	32	0	0
St. Peter's, Streatham	45	0	0
St. Anne's, Soho	56	0	0
St. Andrew's, Wells-street	71	0	0
St. Mary's, Graham-street	27	0	0
St. Matthew's, Upper Clapton	30	0	0
St. Michael and All Angels, Blackheath-park	72	0	0
St. Luke's, Paddington	46	0	0
St. Mary's, Newington	21	0	0
Park Chapel, Crouch End	43	0	0
St. Paul's, Finchley	43	0	0
Christ Church, Ealing	20	0	0
St. Saviour's, Ealing	28	0	0
All Saints', Blackheath	43	0	0
St. Andrew's, South Streatham	22	0	0
Emmanuel, West Hampstead	36	0	0
Rosslyn-hill Unitarian Chapel, Hampstead	82	0	0
Morden Parish Church	22	0	0
St. Stephen's, Wandsworth	61	0	0
Eaton Chapel, Eaton-square	28	0	0
St. John's, Bromley, Kent	39	0	0
Acton Parish Church and Mission	42	0	0
Chipping Barnet Parish Church and Mission	23	0	0
All Saints', Hatcham-park	35	0	0
St. Luke's, Battersea	46	0	0
St. Matthew's, Sinclair-road	20	0	0
St. John's, Red Lion-square	21	0	0
St. Mary Magdalene, Wandsworth	31	0	0
St. James's, West Hampstead	83	0	0
"F."	50	0	0
Hendon Parish Church and Christ Church	42	0	0
German Lutheran Church, Denmark-hill	83	0	0
St. Alphege's, Greenwich	22	0	0
Spanish and Portuguese Synagogue, Bevis Marks	42	0	0
St. Saviour's, Brixton	44	0	0
Hillingdon Parish Church and Evelyn's School Chapel	34	0	0
Christ's Church, Streatham-hill	87	0	0
Magdalene Hospital Chapel, Streatham	28	0	0
Church of the Ascension, Blackheath	26	0	0
Mr. W. Mann Cross, C.C.	20	0	0
St. Augustine's, Honor Oak Park	44	0	0
Holy Trinity, Beckenham	27	0	0
St. Luke's, Deptford	43	0	0
St. Pancras Parish Church	42	0	0
St. Mary's, Spring-grove	33	0	0
Old Malden Parish Church	57	0	0
St. Paul's, Herne-hill	38	0	0
New Court Congregational Chapel	25	0	0

THE LANCET.

LONDON: SATURDAY, JULY 21, 1900.

WE have the highest of all authorities for believing that "Wisdom is justified of her children." The truth of the statement must occur to the minds of most of those who read, or were able to hear, the Croonian Lectures which Dr. F. W. MOTT has recently delivered before the Royal College of Physicians of London. They are for the most part the product of the far-seeing wisdom of the London County Council in establishing a laboratory with adequate means for the investigation of the minute pathology of the diseases under treatment at their asylum. It is also an illustration, although not the first, of the wisdom exercised in the selection of a superintendent, whose diligent use of the few years in which he has been at work and his utilisation of the material which has come under his disposal are conspicuously shown in these lectures. We find, indeed, throughout them abundant traces of the work which made Dr. MOTT'S name familiar before his appointment and which furnished the ground on which his appointment was made, but the chief part of their substance consists of the results of researches undertaken by him, or under his direction, at the County Council's Pathological Institute at Claybury; and the extent of this, its value, as well as the manner in which it is presented, must excite the admiration of all those who are capable of estimating its worth.

Originality is the key-note of the presentation which is here given to us of the pathology of nervous disease. All that is presented with this freshness is not indeed new. Many as are the references to the work of others, such a description of the facts, even in the light of original research, must traverse the results previously obtained at more points than it has been possible to indicate. But this does not diminish the interest of the account or its value to all those who are at work on the same subject, and indeed to all those who care to give to the lectures the careful perusal which they require if they are to be perfectly understood. The subject does not lend itself to simple statement. The rapid advance of neurology has brought into almost colloquial use among experts many terms which are still unfamiliar to the majority and the amount of fact with which the lecturer has had to deal has compelled a condensed style which certainly needs close attention to understand. But the requisite attention will be forthcoming from the readers to whom the lectures specially appeal.

The title of Dr. MOTT'S lectures is alike accurate and misleading. The transformation of our conceptions of the nervous system involved in the doctrine of the "neuron" is vaster than is commonly conceived and its wide extent is illustrated in the subjects considered in these lectures. It will be noticed that a final "e" is attached to the word. "Neurone" is the French term, but in all other countries, and generally in this country, the word "neuron" is employed. The addition of the "e" is apparently due to the persistence of Professor SCHÄFER in applying the word "neuron" to the axis-cylinder process, commonly termed the "axon," in opposition to the general use of the word. Dr. MOTT'S modification of the term is harmless, but we doubt whether it will be effective to prevent confusion, or is really required. The vitality of words is often insusceptible of control, even as regards their form. The fittest survives, in contempt of etymology.

Even those who have some acquaintance with neurology might conceive that the title "degeneration of the neurone" would cover a limited region of the minute pathology of the nervous system. The perusal of these lectures will reveal to many for the first time the extent of the change in our conceptions which is involved in the new doctrine. The neuron is now perceived to be the universal unit of the nervous system, the element of its constitution in all parts, so that the "degeneration of the neurone" becomes conterminous with all the processes of degeneration in the nervous system. Not only does the lecturer frankly employ this wide conception, but he includes under the term "degeneration" the changes which are produced by acute processes as well as those which constitute the chronic changes to which the word is often restricted. He is thus able to stretch his net so widely as to gather in it most of the maladies which are not the result of obvious external inflammation. The subject is thus a very large one, and the variety of diseases which it includes is such as to permit, in respect to many, only a glance at those features which have a relation to the special subject.

It is at first somewhat startling to remember that the doctrine of the neuron is one which is still without actual proof. It is essentially founded on the discontinuity of the nerve elements which proceed from each single nerve cell. They were formerly thought to unite at their extremities, their nutrition being still believed to depend on their connexion with the cell. The union of the divided terminations of the branches is now doubted by most histologists. They are believed to be only contiguous, and that the excitation of the adjacent fibrils is effected by a process of stimulation and not continuous conduction. The belief that there is discontinuity rests on the fact that union cannot be traced. But the conditions of observation are such as to leave some investigators still in doubt regarding the validity of the general inference, although the evidence has been accepted so generally that pathologists have no choice but to follow the lead presented to them. The result affords an explanation of so much that was before obscure in pathology as to constitute strong evidence of the truth of the doctrine. This evidence is presented to us by Dr. MOTT with great force and for the most part with effective cogency. But he recognises that, though discontinuity is probable, the union asserted by some does not lessen the general significance of the "neuron" conception of distinct nutritional units. While he regards separation of the elemental parts of the nervous system as probable, he considers that it is not essential to the neuron-conception. He believes that the terminal branches of the processes may be sometimes separate and sometimes continuous. Some hesitation

may be felt in following him here. It is not likely that both systems obtain in the nerve-centres. On either view we can understand that secondary degeneration does not pass into the nutritional domain of another cell. But continuity involves simple conduction; discontinuity implies re-excitation. A new nerve-impulse is excited by the stimulus of that which reaches the adjacent termination of the neuron which conducts the afferent impulse, and the enormous augmentation which occurs in many central processes, as in reflex action, seems more readily thus explained. It is doubtful if we can assume the existence of the double relation or the occurrence of the double process.

As an illustration of the fact that at the present time research is only laying the foundations on which the future superstructure of knowledge must be built may be mentioned the discrepancy in the results obtained by staining the nerve-cells in artificial cerebral anæmia. In the parts of the brain thus deprived of blood considerable alterations are seen in the cells and their processes when these are stained by the Nissl and other methods, but when treated by the chrome-silver method of Golgi both appear perfectly normal, including the gemmæ on the branches. Dr. MOTT draws the inference that only a few of the cells are stained by Golgi's method, and that a large number escape perception altogether in spite of the perfect staining of those which respond to the agents. Considering that it is by this method that the absence of union between branches has been discerned, that it is on the results obtained by this method that the doctrine of separate neuron-units entirely rests, the statement, if true, seems to throw a good deal of reputed fact back into the crucible. We have here an instance of the mental reservation which must be given to many of the conclusions which are put forward as established facts, but which only merit at present provisional acceptance.

The development of the elements of the central nervous system is a subject of which Dr. MOTT has given a full sketch in his introductory lecture. It may at first sight seem anomalous that development forms part of a study of degeneration. But the reason is obvious, and the only objection that can be taken is to the narrowness of the title given to that which has so wide a scope. Development and decay are processes of opposite nature. They underlie the progress and cessation of the vitality of the tissues. The one attends the development of functional capacity, the other its failure. Dr. MOTT has given useful descriptions and illustrations of the remarkable results of the investigations of FLECHSIG, BECHTEREW, and others, which have established the differences in time at which the fibres of the central nervous system acquire their full structural development by the formation of the myelin sheath. The relative time at which this takes place corresponds with the order in which the functions are acquired that the structures subserve. The afferent fibres to the brain develop before those that conduct voluntary impulses, and among the earliest to achieve the myelination necessary for function are those which conduct impulses from the skin, joints, and muscles of the fœtus, whose movements must continually generate afferent impulses through the fibres. The researches of HELD have shown that function exerts a marked influence on this process of myelination. If one eye is kept closed the fibres from it develop perfect structure later than those from the eye which is open, but this is not the case if the animal is kept in the dark. There is, however, a tendency to ordered myelination independent of function. The latter has only a modifying influence, but it can clearly accelerate or retard the process.

It is not practicable to epitomise Dr. MOTT'S condensed sketch of what has been ascertained regarding the histogenesis of the sheath of Schwann, and the conclusions at present reached in regard to the development of other structures are not yet of clear significance. The special subject of the lectures, the degeneration of the neuron and its varied relationships, must be reserved for notice in another article.

SEVERAL of the larger and smaller towns in this country have now come to be known, by their mortality and notification returns, to suffer to an exceptional degree from enteric fever in endemic form. In many of these places it has been found impossible to connect causally the continued prevalence of enteric fever with any of the agencies of infection to which pronounced epidemics of typhoid fever are commonly due. Specific pollution of drinking-water, milk, shellfish, ice-cream, and the like may indeed now and then have caused an increase of the customary amount of enteric fever; perhaps a particular period of sustained fever prevalence has seemed to have been started by an outbreak which was traceable to infected food or drink; but the appearance of enteric fever year after year in excessive amount has quite certainly not been occasioned by recurring exposure to infection through such agencies. Recently much attention has been given to the part which may be played by polluted soil in the transmission of enteric fever infection, and it becomes important to consider soil in this connexion. In individual instances the ability to carry infection of soil, using the word in the narrow sense of surface soil in the neighbourhood of dwellings, is often almost self-evident. Take the case, so common in many of our northern and midland towns, where there are rows of workmen's dwellings or cottages in which the houses open at the back to a common yard, unpaved, badly drained by open gutters, and served by one or more midden privies. Who that has seen the way in which slops are thrown about such yards and the manner in which refuse may be spilled over the surface when carried to, or removed from, the common midden can doubt that a case of enteric fever in a row of houses of this sort occasions risk by way of surface soil pollution to the occupants of the remaining houses—people who, for example, must needs be liable to carry into their dwellings on their hands or boots soil upon which infectious matter has been freshly deposited and to inhale infective dust blown about the common yard? To such and kindred causes, we may well believe, is due the contrast which medical officers of health have on occasion been able to demonstrate between a heavy incidence of enteric fever on particular groups of dwellings where these sanitary deficiencies abound and its much lighter incidence upon neighbouring groups of dwellings of similar class where opportunities of surface pollution are less.

To admit, however, that enteric fever may be locally

spread by way of the diverse and obvious opportunities of infection afforded by recently and specifically polluted surface soil brings us, it is to be feared, little nearer to understanding the causation of endemic enteric fever in the cases to which we alluded above. Ability of soil to act, as it were merely mechanically, as a vehicle of infectious matter which has just been deposited on its surface does not there meet the case. A satisfactory explanation as due to soil pollution of the endemic enteric fever to which we refer seems to require the further proposition that in certain circumstances the typhoid bacillus must be capable of maintaining for weeks and months an active existence in soil—an altogether different and more recondite question. The difficulties of the subject are well illustrated in the case of the city of Chichester, where enteric fever in endemic form has been excessively prevalent for a long series of years since 1870 and has remained prevalent notwithstanding that in the greater part of the city objectionable well waters have been replaced by a safer public supply and cesspools by a modern system of sewers. Dr. THEODORE THOMSON who, with Colonel MARSH, R.E., has lately made a highly instructive report to the Local Government Board on enteric fever at Chichester, a review of which will be found on p. 219, has brought to light many facts, positive as well as negative, which taken as a whole suggest that the explanation must be that there are circumstances of soil which in Chichester, or in certain parts of it, do in some way favour the viability and active growth of the typhoid bacillus in the soil. But what are these favouring circumstances? Dr. THOMSON shows that there exist in Chichester many and diverse potentialities of pollution of soil by organic matter. But, as he also points out, the mere fact that these potentialities exist is no explanation for a special proclivity of the typhoid bacillus for Chichester soil. They are present equally in other towns with no such enteric fever history as Chichester. If this special proclivity does exist—and in our present state of knowledge the assumption seems the one most likely to accord with the facts—it is probably determined by one or other of a large number of obscure conditions which have yet to be studied in this connexion, or by a combination of them. For the subject to be adequately pursued such factors as the physical and chemical characters of the soil, the degree of its moisture, the soil-temperature best adapted to the typhoid organism, and the nature of other organisms in the soil with which the typhoid bacillus has to compete for its existence must be reckoned with. Moreover, as Dr. THOMSON indicates, no investigation, however comprehensive, of soil in relation to endemic enteric fever would have much prospect of success if it were restricted to a single locality. We trust that the Medical Department of the Local Government Board, to which we already owe so much of our knowledge of the etiology of enteric fever, may be able to extend its researches in this matter into a wider field and to investigate endemic enteric fever differentially in typical instances in different parts of the country.

MR. GEORGE EASTES, on assuming the responsible position of President of the Metropolitan Counties Branch of the British Medical Association, delivered an address entitled "Our Numbers and our Work at the Close of the Century," which is of considerable interest to the medical profession. The general conclusions to which he came on this important subject may be summed up as follows:—that there are great fluctuations within comparatively short periods in the numbers of the profession and therefore, of course, in the amount of work for medical men to do; that there is a great variety in different parts as to the proportion of medical men to population; and that of recent years there has been a marked tendency to increase in the numbers on the Medical Register whilst general medical work has, from the operation of many causes, undergone marked shrinkage in several directions. Mr. EASTES is of opinion that the work for medical practitioners to do is not likely to reach its former dimensions except under very special and temporary circumstances, as in the recent epidemics of influenza; and, speaking generally, that the outlook for medical workers is that they are likely to work under conditions of ever-increasing competition. Recognising, perhaps, that he has given rather a pessimistic forecast of the immediate future for medical men, he does his best later to correct such an impression and shows that there are some facts on the other side—happy spots where rivalry is not so keen, an ever-widening empire in which the demand for medical practitioners is felt, and the occurrence of wars in various parts which entail a sudden and an enormous increase in the demand for medical men. "Give to us peace in our time" is, we are sure, the prayer of the medical man as truly as it is that of every good citizen, but it cannot be denied that times of war create a demand for medical service.

There are places in the kingdom where, if mere numbers of patients can make practitioners happy, their bliss should be without alloy. Mr. EASTES shows that the proportion of medical men to population in Huddersfield, Norwich, Hull, and Bolton is very low. The happy practitioners of these towns have theoretically over 2000 persons dependent upon each of them for medical attendance. The other extreme is to be found in Brighton, where in 1881 there were only 741 persons to each practitioner, and where now there are only 615. The practitioners of London come next in paucity of patients, having each barely 800 persons to attend. Mr. EASTES tells us that in South Paddington, where the population has grown less by 3000 since 1861, the numbers of the profession have increased by 20 and the average of persons for each practitioner can be very few more than 300. The practitioners of these districts ought obviously to be in a very bad way, but we are not aware of any facts which go to show that they are more unhappy or less prosperous than those in Huddersfield or Norwich. Probably it will turn out that the mere number of possible patients is not the chief factor in the prosperity and happiness of the profession. It is more important for medical men to have a number of clients to whose needs they can do justice and by whom they can be adequately appreciated and rewarded. It must be remembered that these figures are subject to fluctuation in every locality, while the proportion of medical men to their patients throughout the kingdom is also constantly changing. For

example, in 1881 it was as high as 1718; now it is as low as 1393, which is almost identical with the proportion in 1861. Mr. EASTES quotes the late Dr. FARR as having 25 years ago said that the medical profession would not grow in proportion to the population and as having feared that "there was imminent danger that medical attendance might become quite inaccessible to vast numbers of people." Dr. FARR is not the only authority who has been thus apprehensive. The late Lord PLAYFAIR used to address warnings to the same effect to those who advocated bold measures for straitening the gate of the medical profession so that few should enter it. And undoubtedly it would be possible to carry such measures too far. The medical art, it must be remembered, is a necessity to all classes. The poor and the humble have the same need of it as the rich and the luxurious classes. But there is no immediate need for much anxiety on this subject, for the additions to the profession amount to hundreds every year. There are, however, some new facts in the problem which must not be overlooked. In 1861 there was a large class of unqualified assistants who did, roughly perhaps, a third or a fourth of the work of general medical practice. That element has been eliminated by the action of the General Medical Council or is in course of elimination. Medical work has been multiplied in various ways by the specialisation of medicine and by the great developments of medical education. The growth of wealth and of commerce involves an increased demand for medical service in all its branches—sanitary, medical, surgical, and special. Then there is the great development of our empire which throws so much serious responsibility on us for the welfare of those by whom it is extended and of the communities which come by their agency under our rule and care. Nothing in the last century can exceed the significance of the events which are happening while we write, teaching us that the millennium is yet distant and that enormous medical and surgical and sanitary problems will have to be solved before Africa and China can be brought within the pale of civilisation as we understand it.

Mr. EASTES thinks that the work of the general practitioner is much less than it was 30 years ago and that it is likely to continue so. The isolation of infectious disease and its treatment by the State, the abuse of hospitals, the multiplication of cheap dispensaries, the growing tendency of the public to take their advice from consultants and specialists of all sorts, all tend to lessen the work of the general practitioner and to lead Mr. EASTES to the conclusion that the profession is overstocked. Such facts are very important and call for much consideration, but we do not regard them as ultimate facts that are to dominate and degrade general medical practice for all time. In the very nature of things the general practitioner must always be the first and chief resource of the public needing medical advice. Palpable abuses which affect him injuriously will not last for ever. The general practitioner must meet the competition of consultants by dignified protest or by specialising his own education. He has only to perfect himself as a general practitioner to make himself indispensable in every community and to make the consultant in nine cases out of ten a luxury.

Annotations.

"Ne quid nimis."

THE CENTENARY FESTIVAL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Thursday, July 12th, Sir William Mac Cormac was unanimously elected President of the Royal College of Surgeons of England for the fifth time in succession. No one has previously held the position for so many years, although the late Sir William Savory was President from 1885 to 1888. Thus Sir William Mac Cormac this year holds an exceptionally honourable post. The centenary festival of the Royal College of Surgeons falls in troublous times. One hundred years ago the shadow of the domination of the First Napoleon, who for a brief space held continental Europe under his feet was just beginning to obscure the sun of liberty. To-day Europe and the United States of America stand confronted with the shadow of a far more barbarous tyranny arising from that race of which 1500 years ago Attila was the incarnation. But the forthcoming festival is in reality a peace congress, a living testimony to the advance of the art and science of healing, and it is fitting that its chief should be one so lately returned from ministering on the battle-field.

THE TRAGEDY AT PEKING.

AFTER many days of conflicting rumours in which men expressed opinions and hopes that their reason refused to justify it has been borne in upon the civilised world that every man, women, and child in Peking foreign to China, and every Chinese native known to be in personal or religious sympathy with them, is dead. What horrors may have accompanied those deaths it is best not to conjecture, while the stories that have been circulated as to the way in which the women and children met their deaths within the walls of the British Legation are founded entirely upon imagination. Letters have been received in England speaking of revolvers carried by women in anticipation of the worst, while it is stated upon good authority that Lady Macdonald, the wife of the British Minister, went armed with poison even before the actual outbreak took place, knowing that she might need it for herself and for her children. In this course she cannot have been alone, but the actual events of the terrible closing scene are still unknown to us and may never be other than unknown. There have been massacres before where the natives of savage countries have wreaked their hatred suddenly upon the foreigner in their midst, but there has been nothing in history absolutely resembling the tragedy of Peking. England has had experience of terrible outbreaks of savagery at Cawnpore and elsewhere during the Indian Mutiny, and we have ever since had thrown in our teeth by European nations the penalties we exacted in reprisal and in reassertion of our authority. Now each nation of Europe having a political representative at Peking knows that that representative, with wife, children, and household, has been butchered, knows that every citizen it has sent out to spread its commerce, to preach its religion, to disseminate its science and its civilisation has either been slaughtered in the Chinese capital or in some other part of the Chinese empire stands in imminent danger of a hideous death, and the spirit that is abroad is certainly not one of meek forgiveness. Europe will exact a reckoning, though to whom the bill should be presented is, in the present state of our information, obscure. Every day makes it clearer that

the outbreak is not merely the work of a secret society in rebellion, too strong for the Imperial Government to cope with, but a national movement with which many in high places connived, which was incited and abetted by those who at different stages have professed hostility towards it, and with which the majority of those responsible for the government of the country sympathised in their hearts if not with their voices. In such circumstances it seems inevitable that there should be a war in which the combined forces of Western civilisation will meet the vast hordes that an ancient Eastern civilisation—for up to a point the Chinese are a civilised nation—can bring against them, and that such a war should be primarily a war of vengeance. Chinese cruelty and treachery have been brought home to European nations before, but an act that simultaneously involves them all with America and Japan in the cry for reprisals must, if the act is brought home to the Chinese Government, produce extraordinary consequences. The Chinese may possess an ignorant mob, but the mob has been led in its fury and instigated to its crime. Those who govern China are not uncivilised savages and cannot claim indulgence as such. Centuries have elapsed since their ancestors first rejected our envoys and refused to let them reside at their capital; since then they have for years had their own accredited representatives at European courts, while Chinamen of all classes have been brought into contact with Europeans all over the world; and yet the blow has been allowed to fall without warning, and as far as can be judged every artifice of Oriental duplicity has been employed to conceal the truth as long as concealment was possible. It may be easy to justify the resentment of the Chinese people at the encroachments of foreigners, or at what it has regarded as such; and to explain that the efforts of missionaries to propagate Christianity have not only been comparatively fruitless but have given opportunity for rousing all classes against all strangers whether missionaries or not, but the nations now apparently united in a common cause will not be easily persuaded that the tragedy of Peking, and others perhaps of less magnitude but no less terrible, that may follow, could not have been averted or delayed by those who can be made in some degree responsible. At present all the principal nations of the world seem in the last years of the nineteenth century and within a year of an international peace conference to be on the brink of a war that will demand for its successful prosecution all the resources of their science and civilisation, while all the moderating influences of Christianity and civilisation will be needed to limit its duration and mitigate its horrors. Possibly not till it is ended shall we know at all accurately what has already taken place, while it seems likely that the fate of individuals will, perhaps mercifully, remain for ever veiled. Among these are members of the medical profession. Some have been named already and our readers must be able to reckon others among their friends or acquaintances who may, or may not, have taken refuge in the capital hoping for comparative safety there. Others, again, at present survive, settled in towns that once seemed to be safe or scattered and isolated in spots where they hoped to benefit fellow-men, combining mission work with medicine. For all these the outlook is a very grave one, and if we may be cheered in time by finding that the rising has spread less widely than has been anticipated we may, on the other hand, still have news to face even worse than that which has come to hand. To all those, therefore, who have given up hope for those whom they loved, or who are suffering from the heavy strain of anxiety on their behalf without news to relieve it, we tender our deep and sincere sympathy.

THE LUNACY SCANDALS IN ST. PANCRAS.

As we announced in our issue of July 14th the Local Government Board by means of their inspectors, Mr. H. Lockwood and Dr. A. H. Downes, opened an inquiry on Tuesday, July 10th, into the alleged irregularities which have recently taken place with regard to the certification and removal of lunatics. The inquiry closed on Thursday evening, July 12th, and the evidence taken was chiefly that of parish medical officers and of relieving officers. Evidence showed that the relieving officers expected to get "tips" from both parish medical officers and from the proprietors of private lunatic asylums. If they did not get their tips from the parish medical men these latter got no lunatics to certify. Mr. Lockwood adjourned the inquiry, so at present we shall not comment upon the matter, it being practically *sub judice*. We may mention, however, that the Local Government Board have issued a letter to clerks of boards of guardians in which, without referring by name to any particular parish, they say that they know that payments have been received by relieving officers from parish medical men and proprietors of licensed houses in connexion with the certification and admission of lunatics in at least two parishes. Further, they have reason to believe that this practice exists in other parishes. The Board therefore wish it to be understood that they consider the practice as indefensible and that no officer offending in future should be allowed to retain his post. This expression of opinion does not mean that the past will be condoned.

SIR WALTER FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR.

REFERRING to an annotation in THE LANCET of July 7th Sir Walter Foster courteously furnished us with a reference to the seventh edition of Parkes's Practical Hygiene as the authority for his statement that in the opinion of the late Professor de Chaumont the amount of hospital accommodation to be provided for an army on field service should not be less than 25 per cent. We have now had the opportunity of verifying the correctness of Sir Walter Foster's quotation, which we gladly acknowledge. This amount of hospital accommodation struck us at the time as being very large and as impracticable, if not, indeed, unnecessary, for a force operating under the conditions and circumstances that ordinarily obtain in modern warfare. We desire to add that we are not only justified in holding that opinion, but in now claiming it as that also of those responsible for the subsequent edition (the eighth) of Parkes's Hygiene, and we can only regret that Sir Walter Foster did not prosecute his inquiries a little further by quoting the latest edition of that work in making a public statement, in which case he would have escaped being misled himself and of unwittingly misleading the House of Commons. The seventh edition of Parkes's Hygiene, edited by Professor de Chaumont, was published in 1887. A good deal has happened since then. In the succeeding edition (the eighth) published in 1891 and edited by Professor Lane Notter, the present professor of military hygiene at Netley, we read: "*Amount of hospital accommodation.*—This must not be less than for 10 per cent. of the force, with reserve tents in rear in case of need." This quotation is from page 674, Chapter VI. We could understand that for exceptionally unhealthy climates and seasons an exceptional rate of hospital accommodation might, of course, be necessary, but for an army of a strength of 200,000 operating in a climate like that of South Africa 25 per cent. seemed to us an unreasonably high estimate. But assuming that there had been hospital accommodation for 50,000 sick and wounded in South Africa we fail to see how it would have availed to meet such an emergency, say, as that

of a force outmarching its supplies—unless it was known beforehand where the army was going and the hospital supplies could have been sent there in advance. Be this as it may, there are a few other points to which we may take this opportunity of referring in connexion with the mortality of typhoid fever. If Sir Walter Foster will refer to the *Times* of July 12th he will find a communication from Mr. Sydney Holland in which Mr. Holland seeks to correct an erroneous inference deducible from a previous letter. Mr. Sydney Holland gives a statistical table of typhoid fever cases admitted into the London Hospital from 1895 to 1899 (inclusive) from which it will be seen that the rate of mortality per cent. among males between 20 and 30 (soldiers' ages) was 22·35. As regards Brand's statistics they do not seem to us to be to the point, unless the ages of the patients are stated and we know how many of the shortest and mildest forms of fever were included to make up the totals. If we recollect aright, too, those tables were to illustrate the beneficial results of the cold-bath treatment of typhoid fever, and we can scarcely suppose that Sir Walter Foster expects that this method of treatment can be had recourse to under all the conditions of war.

THE NEW INFIRMARY OF ST. MARY'S, ISLINGTON.

ISLINGTON justified its old title of "merrie" by the way in which its inhabitants received the Duke and Duchess of York on Monday, July 16th, when they went to open the new infirmary which is expected ultimately to have accommodation for 800 people. Nothing could be more satisfactory than the opening ceremony, and nothing could be more sensible and to the point than the address of H.R.H. the Duke of York. Whatever difference of opinion there may be about the expediency of providing palatial residences for paupers, there can be none about the propriety of providing infirmaries for the sick and dying poor with every amenity that can mitigate their suffering and give them a sense of being cared for and considered. The guardians of Islington confess to an expenditure on this institution of £273,000 and we shall not be far wrong in reckoning that it will cost the ratepayers £300,000 before it is finished. This is a royal expenditure and could scarcely have been exceeded by the Metropolitan Asylums Board. But it is not too much if the ratepayers and the poor for whom they cater have got a *quid pro quo*. We are not satisfied on this point. The beauty of the whole is spoilt by the way in which the various parts of the brick building are jumbled together. There is an absolute absence of all grace of structure and architecture. The operating theatre and the laboratory, which should have been cheerful and light chambers, were dark and dismal even in the bright summer day of the opening ceremony. It is perhaps premature to judge the operating chamber, but its essential faults of structure and lighting and the absence of safeguards against septic organisms are very obvious; such safeguards, too, are conspicuous by their absence in most of the wards. It is gratifying to us to be able to hope that there are no medical men on the building committee who must bear the responsibility of this building, which might have been graceful and perfect in its way, and ought to have been so considering the money of the ratepayers which has been lavishly spent upon it, but which in point of fact is in every way disappointing.

MR. LONG AND RABIES.

IT is probable that no one in England has been more abused by a certain section of the dog-owning public than has the present Minister of Agriculture. The application of the muzzling order has been the cause of a good deal of excitement at various times, but the results which have been attained have fully justified the means employed. There is less rabies in Great Britain than there has been for many years; in fact, it may be said to be practically stamped out. This splendid result, which has been achieved over a terrible disease at the inconvenience only of the canine world, is solely to be attributed to the energetic measures taken by Mr. Walter Long and his veterinary advisers, and too much praise cannot be given to those gentlemen for what they have done. There is no more awful disease, either in man or animals, than rabies, and the enviable position which has been attained for this country in being able to declare itself practically free is one which must be maintained at all costs. Strict quarantine regulations with veterinary and police supervision for a certain period of time are annoyances which owners ought to consider as very trivial when compared with the advantages and safety that they confer not only upon themselves but also upon their pets. According to the returns of the Board of Agriculture there were only nine cases of rabies reported in 1899, whereas the corresponding numbers in 1896, 1897, and 1898 were 438, 155, and 17 respectively in dogs alone, whilst in other animals no cases occurred in 1898 or 1899, but in 1896 and 1897 the numbers were 22 and 36 respectively. These statistics speak for themselves and although the time cannot be very far off when the muzzling order will be removed from every part of England it is to be hoped that if any error is made in this direction it will be rather on the side of safety than otherwise. Mr. Long has indeed earned the gratitude of the country for the extinction of rabies alone, and as a nation we are to be congratulated upon having a Minister of Agriculture who has so perseveringly carried through to a successful termination a measure which for a time caused a great outcry and brought down upon his head a violent torrent of sarcastic criticism.

THE EPIDEMIC OF FORTUNE-TELLING.

So long ago as March 31st last a person described as Zuleika Cavalier, aged 30 years, and married, was brought before the magistrate at Marlborough-street and charged with telling fortunes at an address in Bond-street. After being remanded she was eventually fined £25 and ordered to pay £10 costs, upon which she gave notice of appeal. In view of the appeal we did not criticise her case at the time, but now that Mr. McConnell, Q.C., sitting as Chairman of the Court of Quarter Sessions at Clerkenwell, has dismissed the appeal with costs we are at liberty to do so. The prosecution of gypsies for cozening servant-maids out of their wages by promises of wealthy suitors and other desirable prospects are more or less frequent, but it has been a matter of observation that of recent years persons professing to tell fortunes for the benefit of those moving in higher social circles than these have been permitted to ply and advertise their trade in the more fashionable streets of London and other towns with openness and impunity. We need not recapitulate the evidence given against Zuleika Cavalier, but we note that among the materials for her conviction found by the police in her room was a correspondence with a married woman who had inquired when she would be a widow and also as to who would be her next husband. It seems clear from such instances as these, if it required demonstration, that there are women who need protection from the suggestions of the fortune-teller apart from those whose credulity may merely cause them to suffer in pocket. The various devices most often associated with the ambition to pry into the future are of venerable antiquity, but Zuleika Cavalier does not seem to have earned the £1500 a year with which the police credited her by following

the methods of the orientals in whose costume she masqueraded. Perhaps her visitors were so numerous that she had no time to linger over her divination. She did not use the tarot or tarots, cards in a pack of 78, a very ancient device popular with gypsies of all ages and, as it seems to us, a somewhat mechanical means of lifting the veil of futurity. Nor did she produce in herself hypnotic conditions by gazing into the crystal ball or the ink-pool, a far more imposing and at least as venerable a form of divination; nor did she indulge in an exhibition of cheiromancy, lithomancy, pyromancy, or kapnomancy. According to her own account she adopted a plan which if not picturesque was businesslike and not altogether without precedent: she shut her eyes, ejaculated a prayer, touched the hand of her subject, and proceeded forthwith to see "mental pictures" on his behalf. These pictures in the case of the Hon. A. Macdonnell, to whom the public is indebted for the recent prosecution, were of a decidedly definite rather than of an impressionist character, one of the incidents foretold to him being that he would shortly receive a portrait of one of his ancestors anonymously and would find at the back of it a piece of paper leaving him a fortune which would partially atone for a great wrong done to him by an ancestor a long time ago. A lady who has extracted £1400 or £1500 a year from the credulous by simple and romantic tales of this hackneyed type will not find it difficult to pay the fine inflicted on her. She will, however, bear in mind that the powers of the magistrate who sentenced her were not limited to the power to inflict a fine and that moreover on a second conviction for a similar offence they are considerably increased, as he is then empowered to deal with her as an "incorrigible rogue." At the same time she will have good cause of complaint if after she has herself been punished according to the law her numerous rivals in trade are allowed to flourish in defiance of it.

REST-HOUSE *v.* WORKHOUSE.

WE have frequently pointed out that our modern Poor-law, forced into existence as it was by the spoliation of the monastic institutions which formerly ministered to the poor, was hopelessly defective in one respect—namely, that no line of demarcation as to treatment was drawn between those who had failed in life from sickness or bad fortune and those who were idle, drunken, and improvident. That a man or woman who had worked all his, or her, span of working life should when no longer able to work be relegated to the same place and the same treatment as the tramp and the loafer is not only inhuman but immoral, and we therefore offer our warmest congratulations to the guardians of the poor of St. Olave, Southwark, for the new departure which they have taken. The new rest-house, for so it should be called, is situated at Ladywell, and was formally opened upon July 12th by the Prince and Princess of Wales. The total extent of the site is 34 acres and there is accommodation for 812 persons. Although, of course, the institution is still under the Poor-law the inmates will be treated in a manner as home-like as possible and the stringency of workhouse regulations is much relaxed. In the words of Mr. Shand, the chairman of the board of guardians, the building is to be a "home of rest for those worn-out sons of the State who through no fault of their own have come to poverty in their old age and are in need and necessity." The Bishop of Southwark opened the proceedings with prayer and the Prince of Wales in a few simple words expressed his pleasure at the new departure in the treatment of the aged and infirm poor. The Bishop then pronounced the benediction and the proceedings ended. Ratepayers rightly grumble at the enormous sums which they are compelled to disburse for educational experiments, but no one will complain at having to pay to make the close of life easier for those who have reached the last stage of their pilgrimage here.

A FRENCH CRITIC ON BRITISH ARMY SURGEONS.

M. JEAN CARRÈRE, the able special correspondent of the Paris *Matin*, is now in South Africa. In the course of his very interesting letters he has on several occasions spoken in high terms of the British army surgeons with whom he chanced to make acquaintance. In a recent letter he described a visit to the hospital ship at Simonstown where he went to visit a French prisoner, M. du Feissal, who was wounded by the same shell which killed Colonel de Villebois-Mareuil. On reaching land again M. Carrère writes as follows, and in translating we seek to preserve his colloquial unconventional style:—

"We entered an hotel where they served us with unnameable things which we watered with a doubtful Moët violently acidulated. Then who should turn up but Dr. Carré whom we had searched for all the day. Thus we must never despair of anything. I am introduced. Dr. Gerard Carré, as his name indicates, is of French origin. He is young, about 30, fair, aquiline nose, fine beard, blue eyes. We drink and are 'chums' at once. He speaks to me about his patients with a fraternal gentleness that touches me and goes straight to my heart. I then remember the letter of Dr. Roë. What delightful beings these doctors are; and if ever I have said any evil about them I tender to them all collectively my apologies. During my journey I have frequented many of them and I have taken to love them sincerely. Evidently they do not cure death; but really, is that quite necessary? In my opinion they do better than this. They bring us the illusion of the life everlasting. And then, and above all, they are men of heart. From whatever country they may come they are all the same. The habit of living on the frontiers of humanity has conferred on them all pitiful and indulgent souls; and in the perpetual tumult of passions and conflicts, between men and races, they are the link of all possible concord and form in their immense federation of the Red Cross the International of Mercy."

ADULTERATED VINEGAR.

THE addition of sulphuric acid to vinegar, though in small quantity, is apparently still practised according to the recent report of the medical officer of health and public analyst for St. James's, Westminster, Dr. James Edmunds. He reports four cases dealing with this impurity in vinegar which were "tenaciously defended by manufacturers standing in the background." Convictions, however, were obtained in all the four cases. The chief question at issue in these cases is, it seems to us, whether such an addition is injurious. In a great number of instances there is no evidence forthcoming to show that the use of substitutes or the addition of preservatives or foreign substances is actually injurious to health, but we have always maintained that unless the purchaser is supplied with exactly the article which he asks for fraud is committed. In other words, if an article is substituted for the one demanded a case for prosecution is immediately established, although the substitute may be perfectly wholesome and non-injurious to health. These observations apply to vinegar. A pure malt vinegar should be nothing but what is in reality pure beer soured by acetic fermntation. But until the law states very precisely what this and other articles should consist of the increasing tide of substitutes will never be stayed. We doubt whether such a requirement will ever become a law of this country; it would not be practicable to enforce and it would be a source of great inconvenience, especially to the poorer class of consumers. The enormous increase in the consumption of food entailed by an ever-swelling population in our big towns and the demand for cheaper articles have brought about an

inevitable result—the production of various articles of food on a much larger scale and at a much cheaper rate. The materials used of yore have thus necessarily given place to substitutes which in their way are good and wholesome enough, although they cannot be regarded as conforming to the standard of the article produced in the time-honoured way. Beer may be quoted as an example. There is very little beer produced in this country which is brewed entirely from malt and hops. Both grain and bitter substitutes are employed and these produce an excellent and wholesome beverage, but it is not beer if we accept the definition of that article of consumption as being a fermented infusion only of malt and hops. We are inclined to take the view that the object of manufacturers on the whole is more to effect economy and to supply an attractive and uniform article than to create mischief. Indeed, in some instances different modes of manufacture have been adopted in accordance with modern scientific knowledge which have resulted in a better product. Though, strictly speaking, such recourses are not absolutely necessary, yet for all modern practical requirements they have become indispensable. It seems to us that there should be no difficulty in deciding when a manufacturing practice is objectionable or upon the suitability of a substitute for human consumption, while there can be no doubt at all as to the course to be taken when an article of food is proved to have been misnamed. This is exactly one of those matters with which we had hoped that the court of reference which it was suggested should be appointed to control the operations of the new Food and Drugs Act would deal.

EMPHYSEMATOUS GANGRENE FROM INFECTION BY THE BACILLUS AEROGENES CAPSULATUS.

IN 1891 Dr. Welch of the Johns Hopkins University reported the discovery of a gas-producing bacillus in the blood and tissues of a man who died after rupture of an aortic aneurysm. In 1892, with Nuttall, he published a study of this organism which he named the "bacillus aerogenes capsulatus."[1] It is one of a number of organisms capable of producing gaseous necrosis of living tissues—emphysematous gangrene. Koch's bacillus œdematis maligni is another organism of this group. Recently we have referred to cases in which gaseous abscesses followed hypodermic injections from infection by an organism discovered by Veillon and Zuber in various fœtid and gangrenous abscesses and termed by them the "bacillus perfringens."[2] In the *Boston Medical and Surgical Journal* of June 7th Dr. Paul Thorndike has described two cases of infection with the bacillus aerogenes capsulatus. A man, aged 45 years, fell to the ground from a height of 10 feet, sustaining a compound fracture of both bones of the forearms. Under ether the wound was thoroughly cleansed with sublimate solution and a sterile dressing and plaster-of-Paris were applied. At the end of the first day the plaster-of-Paris was removed in consequence of the pain. There was semi-delirium and the temperature was 102° F. On the following day cyanosis of the fingers and great swelling and emphysema of the forearm were present. On the third day he failed markedly and the emphysema extended to the shoulder and chest. Amputation was performed at the shoulder-joint. Both flaps were emphysematous. He rallied well, but 36 hours after the operation the septic symptoms returned and he died two days after the operation. The arm when removed was much swollen and tense. The forearm was of a deep plum-colour and the hand and fingers were dusky-red. Bullæ varying from five to 25 millimetres in diameter, filled with clear serum, were irregularly distributed over the forearm. Everywhere below the elbow the tissues were like a cushion and the slightest pressure produced crackling. In the upper arm along the brachial trunks crackling was also present. From a puncture in the forearm serum and gas were poured out. The cut surface was gelatinous and in parts semi-diffluent. Sections from several areas in the forearm showed its invasion by a long bacillus which had all the characteristics of the bacillus aerogenes capsulatus. In the spleen microscopical examination showed several foci of the bacillus. In the second case a man, aged 33 years, had compound fracture of the leg. On the third day the foot was cyanotic and painful and bluish mottled spots appeared on the leg. On the fourth day the leg was covered with blebs and there was a foul discharge from the wound. Emphysema appeared and extended above the middle of the thigh. Amputation was performed at the middle of the thigh through diseased tissue and drainage was provided. On the seventh day emphysema reached Poupart's ligament. Under ether long incisions were made in the crepitating area and the disease ceased to extend. Recovery ensued. Dr. Thorndike insists upon the necessity of operating as early as possible in these cases, and he thinks that the operation in the first case was performed 24 hours too late.

[1] Johns Hopkins Hospital Bulletin, vol. iii., 1892, p. 81.
[2] THE LANCET, April 7th, p. 1021.

THE CHEMISTRY OF SOOT.

THERE is a very general impression prevailing that soot is simply carbon, but chemists have long known that though carbon is its chief constituent yet there are present other elements, amongst which hydrogen and nitrogen may be counted as of some importance. Indeed, it has been stated that soot is an impure hydrocarbon containing a very large proportion of carbon relatively to the amount of hydrogen. Soot possesses some peculiar properties. As everybody knows, the fact of the very characteristic and so-called smell of soot being in a domestic apartment generally portends wet weather or it may occur simultaneously with the onset of hot weather. It is probable that a reduction in the height of the barometer and an increased amount of moisture in the air are conditions which combine to expel a substance from the soot of our chimneys the peculiar smell of which is so noticeable in the room. The smell suggests ammoniacal compounds, and we are not surprised to find that a recent analysis has shown that soot contains no less than 7·4 per cent. of ammonium salts. This fact amply accounts for the value placed on soot for agricultural purposes. Again, it may be remarked that soot on burning in a more or less confined area (as in the case of a chimney on fire) evolves a characteristically persistent and most nauseous smell. This peculiar characteristic is likely enough due to the presence of nitrogenous organic compounds. Needless to add it is very probable that partly on this account the horrible fumes emitted from a chimney on fire are intensely poisonous; and on this ground alone punishment should be severely dealt out to the person who allows this disgusting pollution of the air to take place.

A FORGOTTEN PHYSIOGNOMIST.

AT the present time the study of physiognomy has dropped so much out of sight that we are apt to forget the exaggerated importance that was attached to it in the distant past. The first student of physiognomy on record is Aristotle, who invented the term to designate the art of discerning character in man by means of the features of the face. Cicero was a notable physiognomist, but it was not until the dark ages began to be illuminated that the subject attracted popular attention, enlisting numerous exponents. In the eighteenth century Le Cat and Pernethy both produced elaborate essays on the subject, inaugurating the system

which is at present followed, but the best known authority during this period is Lavater who was led to undertake "the study of Physionomies" by "the turn of the neck" in a soldier who happened to pass by a window where the "citizen of Zürich" was standing with his friend "Mr. Zimmerman, physician to his Britannick Majesty of Hanover." Lavater informs us that he "began oftener than once to study the authors who have written on Physiognomy, but was soon disgusted with their verbose jargon ..... most of them chiefly pilfered from Aristotle." There is, nevertheless, an earlier physiognomist whose work, whatever may be the verdict as to verbosity, is certainly not jargon. Long buried in oblivion this remarkable volume, which bears the date of 1615, was brought once more to light a year or two since by Professor Mantovani of Bergamo. The name of the forgotten author is Samuel Fuchsius, but whether or not he was a relation or descendant of the celebrated botanist is uncertain. On his title-page he informs us that it is his purpose to treat of the "symptomatic values of the forehead and eyes in determining the characters as well as the ntellectual and affective aptitudes of men." Besides an introduction the treatise comprises 34 chapters, of which 15 are devoted to metoposcopy and 19 to ophthalmoscopy, both divisions being profusely illustrated by portraits, plates, and diagrams in the most approved style of the period. "I expose," says Fuchsius in his exordium, "if not perfectly at least to the best of my ability and in all honesty, the substance of physiognomy: if many bewail the sad fates of Cato and of Cæsar, the victims of adversity, how much more rational would it not be to explore the destinies of our own contemporaries and to foresee with quasi-divine prescience how much of criminality and how much of rectitude each one of us bears within him? You may, O Mortals! entrench your voices behind the double rampart of your lips and teeth, but for all that your foreheads and your eyes will continue to afford an infallible means of detecting your inmost thoughts in all their bareness, devoid of all the disguises of fiction." Before entering into details Fuchsius at considerable length, and exhibiting a quaint mixture of determinism and pessimism, maintains that since all qualities, good, bad, or indifferent, are part and parcel of human nature it follows that the means of giving outward and visible expression to those he possesses must necessarily exist somewhere in each individual's body. Then taking his examples from among the sculptured effigies of historic personages he proceeds to substantiate with more or less success the correctness of his theory. Foreheads he divides in the first place into large and small. "A small forehead is the index of a small, narrow, feminine mind, and rarely will the owner of such an one be found endowed with the qualities which conduct to the temple of glory and renown: he will be irascible, curious, prone to avenge himself, and credulous of falsehoods and old wives' tales." Next the author passes in review a whole regiment of foreheads of different shapes and sizes—long, broad, low, round, square, projecting, retreating, &c. Criminals with ambitious proclivities, such as assassins and highway robbers, have narrow foreheads; in fact, it is in people of this description that the minimum diameter is to be met with. A low-type forehead shown in one of the illustrations is remarkable as presenting an almost complete collection of the modern stigmata of degeneracy; and equally worthy of observation it is that Samuel Fuchsius in the seventeenth century should have regarded a profusion of coarse hair as usually associated with a feeble or disordered intellect. Among many other interesting points commented upon in the first part of the book the wrinkles in the foreheads of melancholiacs and also in those of the newly-born children of elderly parents may be mentioned. In the second part, under the head of Ophthalmoscopy, Fuchsius again displays wonderful perspicacity. More even than the forehead, he says, the eye is capable of betraying the most delicate play of passion in the human mind, as well as of indicating with the utmost preciseness the degree of intelligence which the individual possesses. In considering the eye we should take note of its accessory in addition to its essential parts. Heavy eyebrows are an attribute of robbers, liars, and homicides. When straightly drawn they denote sadness; if arched, arrogance; if bent inwards towards the root of the nose, austerity. Large eyes reveal laziness; small eyes are found in cowards and misers. An episcleral circle marks premature senility; strabismus is often the outward sign of partial amentia; while pigmentary anomalies in the iris betoken eccentricity and imbecility. "Eyes which are apt to tremble and be convulsed upwards indicate the sacred disorder, but are likewise a characteristic of cruel men, of murderers, and of all persons possessed by malignant spirits." The passions and affections, without exception, have their indices in the human eye. The descriptive list supplied by Samuel Fuchsius is admirably conceived and executed, but its great length renders it exclusory.

THE EARLY RECOGNITION AND TREATMENT OF NEUROSES IN CHILDHOOD.

DR. CHARLES L. DE MERRITT deals with this important subject in a paper published in the *New York Medical Journal* of June 16th. He refers to the common existence of hysteria and neurasthenia in children and urges the importance of recognising the symptoms early, as he believes that a majority of such cases among adults have their insidious beginning in childhood. A medical practitioner who is consulted by parents about an irritable, highly-strung, eccentric child will often give some commonplace advice about diet, rest, &c., and generally tell the parents that "the child will out-grow it," which assuredly he or she often will not. The neurotic element or morbid taint present is not detected in time, and for want of proper moral and hygienic restraint the child grows and reaches maturity with his or her nervous force already exhausted, "another recruit for the army of neurological wrecks whose existence is one of the most appalling problems of present-day society." In such cases it is often possible to trace heredity both as a direct and an indirect factor. By the latter is meant the deleterious influence exercised in infancy and early childhood by neurotic parents who scold and nag their children incessantly and yet have not the will power to enforce real discipline so that what little of mental equilibrium the child may possess is speedily destroyed. As regards overstudy in school Dr. Merritt does not regard it *per se* as the chief factor of breakdown in school children. "German children," he says, "study harder than ours, yet they collapse much less often because their home life is more sedate and precocity is suppressed, not encouraged as is too often the case in American homes." Lack of exercise and of fresh air are prolific causes of neurotic troubles. Other causes are poor or insufficient food, anæmia, and the infectious fevers. The symptoms most frequently met with are insomnia and pavor nocturnus, great irritability of temper and disposition, a tendency to lie and to impose upon people for no apparent reason but the love of so doing, masturbation, fits of crying and paroxysms of passion upon little or no provocation, habitual feigning of illness, and an undue desire and craving for sympathy. With reference to treatment the parents must first be scrutinised, the anomalous symptoms must be traced to their source and treatment must be adopted accordingly as experience directs. Rest from school study must be prescribed with caution, for the relaxation of the mental and moral discipline of school life may harm rather than benefit a young

hypochondriac who is disinclined to associate with his fellows, who prefers solitude, and who broods over his feelings. The gymnastics now taught in most schools constitute a very valuable means for promoting physical health and they deserve encouragement. If the parents are themselves neurotic and hypochondriacal it must be explained to them how such defects react upon the child and how the mischief of imitation should be obviated. Drugs are of secondary importance. Bromides and hyoscyamus may be used for a time, and warm sponge-bathing at bedtime is also useful. The distinction between hysteria and neurasthænia is of little practical importance in children and does not affect to any extent the treatment to be pursued.

A MEDICAL MAN'S HUNTING ADVENTURE.

IN his interesting and profusely illustrated work, "Under the African Sun" (London: William Heinemann, 1899), Dr. Ansorge graphically describes an exciting adventure which happily was not attended with the serious consequences that at first seemed probable if not inevitable. While he was crawling away "on all fours" from a wounded rhinoceros the author's Martini rifle which he was dragging along with the left hand suddenly exploded, its muzzle at the time being pointed at his left foot and almost in contact with it. He supposes that the trigger caught in some stubble, but be this as it may the bullet passed clean through his foot drilling a hole at the base of the great toe where it joins the metatarsus. The two natives who were with Dr. Ansorge at once jumped up and ran away, whereupon he too jumped up and ran, but within 50 yards or less he sank to the ground overpowered by the pain. Fortunately the vision of the rhinoceros is very dull; the animal galloped off without seeing any of the party, and so the wounded man was able to attend to his injury. With great difficulty he succeeded in removing his heavy shooting-boot and blood-stained sock, but by that time the toe was cold, blue, and apparently dead. Tearing off a long strip of cloth to serve as tourniquet and bandage, Dr. Ansorge contrived to staunch the flow of blood, and as he luckily had a light network hammock with him his servants found no difficulty in carrying him back to Fort Smith. "What worried me on the way," he adds, "was not so much the pain as the thought that, if the great toe was really done for, I should have to amputate my own toe, not a very pleasing prospect; or, as an alternative, something even more disagreeable to contemplate, I should have to ask one of the officials at the fort to cut the toe off, and not one of them had the necessary surgical knowledge." However, "all's well that ends well"—during the three hours occupied by the return journey the collateral circulation had time to establish itself, and eventually under simple antiseptic treatment the digit became for all practical purposes as good as ever. At first there was considerable stiffness of the joint, but the long tendon upon which so much of the movement of the hallux depends became thoroughly reunited, although it had been completely cut through by the bullet, and in the course of a few months the parts had regained most of their original efficiency.

THE NEW UNIVERSITY OF LONDON.

THE members of the respective faculties of the new University, whose names are published in the regulations, are requested by Sir H. E. Roscoe to attend on Oct. 12th at the University Buildings, South Kensington, at 4 P.M., for the purpose of the elections under the statutes. The elected members will serve upon the Senate, the first meeting of which is intended to take place on Oct. 24th. The members are thus divided in the various faculties: Theology, one; Arts, four; Laws, one; Music, one; Medicine, three; Science, four; Engineering, one; and Economics and Political Science, one. In addition to the members elected by the faculties, 16 will be elected on Oct. 9th by the graduates in Convocation, of whom two will be elected by the registered graduates in Medicine and Surgery, six in Arts, one in Laws, one in Music, and six in Science.

THE NEW PSYCHOLOGY.

DR. HENRY MAUDSLEY has published in the July number of the *Journal of Mental Science* a valuable contribution relating to the new psychology from a critical standpoint. Dr. Maudsley at the outset points out the various and somewhat arbitrary distinctions that have been drawn between the titles "mental science," "mental physiology," "psychology," and "mental philosophy." Under these titles we have at the present day "four formidable systems dealing with one and the same subject, yet having different names, pursuing separate paths, speaking different and mutually unintelligible languages, often hostile in attitude towards one another, almost as averse to meet as parallel lines." Leaving this subject, on which a good deal more could be said, Dr. Maudsley referred to two methods of research lately in vogue and large with promise—viz., the systematic study of child psychology and the so-called psycho-physical research. The results accumulated by child-study require to be interpreted with great caution. It is difficult for the adult to understand correctly and rightly to construe by the light of his ripe thought and feeling, his formed and conscious thought, that which is only forming and scarce conscious in the immature mind of the child. "In the immature mind the word, like the underlying idea or feeling, is simple, single, without associations, almost detached, naked, so to speak, whereas in the mature mind it is involute, containing layers on layers of experience, having manifold associations which are roused into more or less conscious thrills, emotional or intellectual, by every use of it." To strip off or abstract so much of the structure of his own mind as to reduce it to the simplicity of the child-mind, and then to use his so mutilated mind to observe and interpret, is a matter of exceeding difficulty. "He would find it easier, I think, to walk the walk and talk the talk of his infant." To give an illustration: When the child asks the astonished father, "Daddy, why doesn't God kill the Devil?" he puts as simple, correct, and natural a question as he would do were he to ask, "Why does not daddy kill the rat?" One question is not a whit more wonderful than the other. The child has been taught to picture God as a big, strong Being, living out of sight high up above, Who can do whatever He will, loving good deeds and good persons, angry with those who are naughty and do wrong—to picture Him mentally, in fact, as a kind of bigger and stronger father. And reasoning then from the particular to the particular, as incipient intelligence cannot choose but do, the child naturally wonders why God does not kill the Devil who is going about doing wrong and tempting to do wrong. The child's assertions are direct and simple, not trammelled as yet by modifying associations or vitiated by conventional errors and prejudices; therefore his utterance is sometimes singularly fresh, startling, and suggestive. Sentimental persons may detect "intuitions" and "trailing clouds of glory from afar" as they dote on children's innocent simplicities, but it is they, the enraptured gazers, who project them and read them into the child out of their own feelings, just as the fond mother watching the flicker of a smile across her sleeping baby's face projects a heavenly meaning into the purely reflex movement excited by a pleasant visceral stimulus. The real

babe, as a matter of fact, is a selfish parasitic creature, with all its instincts converging towards the animal self, exacting tyrannically all the services which, happily for it, maternal devotion likes instinctively to give. Child psychology should note and watch the performances of children and interpret them by the light of heredity and human evolution. As regards psycho-physics—the creation of Wundt in particular—its promises and expectations were very large, but the performance has been very small. In the end psycho-physics belongs more to physiology than to psychology, for the methods are physiological. Idiosyncrasy or personal equation is a complicated unknown quantity, containing several *x's*, and this enters into all equations of reaction, time, and other psycho-physical measurements. One person may feel faint because a cat is in the room, another may be poisoned by a strawberry, and a third may be unable to "contain his urine if he hears the sound of the bagpipe"; one may react deliriously to opium where another is not affected with the same dose. There are hosts of subtle and obscure factors entering into the composition of idiosyncrasy and temperament, which must always vitiate the measurements and reaction-times made on different subjects. The extensive and lengthy publications which have been issued from many psycho-physical laboratories must remain monuments of sterile industry, monumental mockeries of knowledge. An impassable gulf lies between measurements of objective reactions and the subjective state which is intangible and for which no common unit of measurement is possible. Man is too complex for psycho-physical measurements.

ARSENIC IN SODIUM PHOSPHATE.

IT must be admitted that the apparently uniform occurrence of arsenic in important quantity in ordinary phosphate of sodium is a revelation, although on reflection there is the possibility of arsenic being contained in all drugs in the preparation of which common sulphuric acid is concerned. Sulphuric acid is used, of course, for liberating phosphoric acid from phosphate of lime and the resulting phosphoric acid when neutralised with carbonate of sodium yields the ordinary phosphate of sodium. Any arsenic present, therefore, is most probably combined with the soda to form arsenate, a salt that in many respects closely resembles the phosphates. It is clear, however, that the contamination of phosphate of soda may become so marked as to render the salt distinctly poisonous. In the remarkable cases which were recently brought under the consideration of Mr. Plowden at the Marylebone Police-court, and upon which last week he delivered, as we consider, a very sensible pronouncement, it was shown that this arsenical impurity might easily amount to a dangerous quantity. The evidence that the arsenic occurred by accident or carelessness may be ignored in view of the fact recently elicited by the examination of a number of specimens of phosphate of soda which all showed the presence of more or less arsenic in the form of sodium salt. Even phosphate of soda crystals which have been supplied as chemically pure for analytical purposes have been found to contain an appreciable quantity of arsenic. There may well remain, therefore, some anxiety as to the destiny of impure phosphate of soda which was consigned before the fact of its arsenical impurity was known. The apprehension of mischief arising increases in intensity when we have regard to the fact that phosphate of soda is employed as an ingredient in a popular effervescing drink. The use of this drug in this indiscriminate way is much to be deprecated, and had it not been for the fact that phosphate of soda had been prescribed for a person under medical care it is quite probable that the presence of arsenic in phosphate of soda would still have remained undiscovered. It is not at all improbable that many persons addicted to this medicated beverage have been innocently poisoning themselves. The Pharmacopœia says nothing about arsenic as an impurity of phosphate of soda, although in the method of preparation described sulphuric acid is, of course, mentioned and under sulphuric acid a test is given for the presence of arsenical impurity. It would appear that the importance of the omission of any test for arsenic in phosphate of soda in the British Pharmacopœia was recognised previously to this prosecution, for a few days ago we received a specimen of the salt which is perfectly free from arsenic from Messrs. May and Baker of Garden Wharf, Church-road, Battersea, who have a stock of this article which they state they can supply without delay. It is a pity, we think, that if, as these druggists state, they knew of the important impurity they did not give greater and earlier publicity to the fact. In future, however, confidence may be felt that sodium phosphate will be supplied free from arsenic, for Mr. Plowden's ruling decides that a prosecution may properly be instituted under the Sale of Food and Drugs Act. Fines and costs were accordingly ordered to be paid by the defendants. The defendant druggists, of course, are entitled to the sympathy of the trade, but their annoyance should be considerably allayed by the fact that the publication of these proceedings has done an excellent service in the interests of public health, for vigorous steps are being taken both by wholesale and retail firms to provide in future nothing but absolutely arsenic-free phosphate of soda.

LEAD AND PHOSPHORUS POISONING.

IT is evident from the reply given by the Home Secretary to the questions raised by Sir Charles Dilke relating to the prevalence of lead-poisoning in the Potteries that no very substantial improvement has been effected amongst the work-people engaged in this dangerous trade. It is true that some diminution in the number of cases of lead-poisoning followed closely on the establishment of the new rules in 1898. According to the statement of Sir Charles Dilke, however, the diminution in 1899 was because the doctors now "suspended" from work people who had developed mild forms of lead-poisoning. This seems to us to imply an inadequate system of medical examination and the suggestion that a woman inspector should be appointed was made, a step which, however, Sir Matthew White Ridley declined to take. He admitted that lead-poisoning was a fearful thing in the Potteries and he promised that the Home Office would do everything that they possibly could to secure that the industry should be carried on in a manner as little harmful as possible to those engaged in it. The department hoped shortly to publish a new code of rules in accordance with the recommendations of Dr. Oliver and Dr. Thorpe, but there was to be no absolute prohibition of the use of raw lead. The Home Secretary did not think that much more could be done in regard to phosphorus, but he hoped that the cases of necrosis would continue to diminish as they had done in the past, one case only being reported during the past six months. Further, as a result of the public attention devoted to the subject, one large firm had abandoned the use of yellow phosphorus. The only really satisfactory issue of both these problems will be when it is found to be quite practicable to dispense altogether with both raw lead and yellow phosphorus.

THE SOUTH AFRICAN COMMISSION.

THE appointment of the two additional members to act upon the commission proceeding to South Africa to inquire into and report upon the arrangements for the care and treatment of the sick and wounded at the seat

of war has now been definitely settled and announced. The names of the new members are Sir David Richmond, ex-Lord Mayor of Glasgow, and Mr. Harrison, the general manager of the London and North-Western Railway. We do not think that a better choice could have been made. They will bring to the inquiry all the necessary business qualifications. We are especially glad that the traffic manager of a big line of railway has been selected, for we have strongly advocated this course, but we are of opinion that the constitution of the commission might have been further modified with advantage.

THE CONSTITUTION OF THE BRITISH MEDICAL ASSOCIATION.

AN extraordinary general meeting of the British Medical Association was held on July 18th at Exeter Hall to consider new articles of association providing, to sum up briefly, that the administration of the Association should remain in the hands of the Council. There was a fairly large attendance. The adoption of the new articles was proposed by Mr. Ward Cousins (President of the Association), supported by Dr. J. R. Thomson of Bournemouth (President of the Council). Neither of these gentlemen obtained the ear of the meeting. Mr. Victor Horsley spoke against the new articles, and after some words from Dr. F. M. Pope of Leicester and Dr. Lorimer Hart the business of the meeting terminated by the rejection of the Council's proposals for the adoption of the new articles.

AMONG the victims of the Peking massacre, concerning the occurrence of which there can no longer be more than the slenderest doubt, are three members of the medical profession, Dr. G. E. Morrison, Dr. Wordsworth Poole, and Miss Lillie E. V. Saville. Dr. Morrison, who was only 38 years of age, was an Australian by birth and received his medical education at Melbourne and Edinburgh. He was already a famous traveller and was the *Times* correspondent at Peking. Dr. Wordsworth Poole, who was also a young man, received his medical education at Cambridge, and had been principal medical officer at Zomba, Lake Nyassa, British Central Africa. He was staying at Peking with his wife. Miss Lillie Saville, M.D. Brux., received her medical education at the London School of Medicine for Women and had been a medical missionary in Peking for the past five years.

THE annual meeting of the subscribers to, and others interested in, the Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System, Portland-terrace, Regent's-park, will be held at the hospital (near St. John's Wood-road station), on Wednesday, July 25th, at 3 P.M., when the Right Hon. the Earl of Hardwicke, President, will be in the chair.

H.R.H. THE PRINCESS OF WALES paid a visit to the London Hospital on Friday, July 13th, accompanied by her daughter Princess Victoria. After inspecting the extensions in the hospital, especially the new room for the light treatment of lupus, they had tea with the nurses.

AT the forthcoming International Medical Congress in Paris Dr. the Hon. Alan Herbert, physician to the Hertford British Hospital, Paris, will be presented with an address by the former and present medical officers of the hospital, numbering 20.

SIR HECTOR C. CAMERON, M.D. Glasg., President of the Faculty of Physicians and Surgeons of Glasgow, received his knighthood at the hands of the Queen at Windsor Castle on June 30th, as did also Sir George Hare Philipson, M.D. Cantab.

A TELEGRAM from Sir H. A. Blake, Governor of Hong-Kong, received at the Colonial Office on July 16th, stated that during the previous week 57 fresh cases of plague had occurred with 58 deaths.

DR. MARC ARMAND RUFFER, President of the Sanitary Maritime and Quarantine Board of Egypt, has received from His Majesty the Sultan of Turkey the Order and Insignia of the Medjidieh of the Second Class.

THE dignity of a Knighthood of the United Kingdom has been conferred upon the Hon. William Bisset Berry, M.D. Aberd., Q.C., Speaker of the House of Assembly of the Colony of the Cape of Good Hope.

MR. JOHN H. MORGAN, on resigning the position of senior surgeon to the Hospital for Sick Children, Great Ormond-street, has been unanimously elected consulting surgeon.

THE WAR IN SOUTH AFRICA.

OUR morning papers are full of wars and the rumours of wars at the present time and this country is realising the responsibilities of empire. The deplorable events which have occurred in China and the extent and formidable nature of the task which has to be undertaken in that country have tended to withdraw public attention for the time being from the war in South Africa, and to minimise and nearly exclude from consideration what under other circumstances would be regarded as most exciting events connected with the little campaign on the West Coast of Africa. Confining our attention, however, to South Africa we may say that the news from that seat of war was at the end of last week of a disappointing character. Although it cannot have any effect on the ultimate issue or undo what has been already accomplished there, the intelligence that the Boers had again carried out one of their successful surprises and had defeated a small British force and captured a number of British troops and taken some guns was very unpleasant reading. That the occurrence took place at this stage of the war and almost, as it were, under Lord Roberts's eyes, took the public by surprise and did not tend to decrease the sense of disappointment with which the news was received. If such occurrences have almost ceased to be regarded as surprising on account of their frequency, still it cannot be said that they have brought about that equanimity which might be expected to come from our being accustomed to them. De Wet and Botha are still active and enterprising and show remarkable skill in raiding, retreating, and eluding capture. Their tactics as guerilla chiefs seem remarkably good. Spies and disaffected persons no doubt abound in our camps and furnish them with early and reliable information as to all our movements.

Though there is not much news to hand at the moment of writing what there is is satisfactory. There is a great and increasing amount of activity on the part of the British forces. So far as we can gather the British troops, notwithstanding their hardships and fatiguing marches, are in excellent fettle and their health, as a whole, is good. There is, of course, a large amount of enteric fever, but the prevalence of the disease is believed to be diminishing and it is hoped that, what with the cold weather and a decreasing amount of fatigue and exposure on the part of the troops, it will continue to diminish.

We would call attention to the remarks of our Special Correspondent writing from Bloemfontein. As we have repeatedly urged the great difficulty in modern warfare—especially in a country like South Africa—is transport. We have always contended that a certain amount of transport should be independently set apart for the medical requirements of war and that it should never be diverted from this object except at the express order of the general in command and, where possible, in writing. This obtains in the American army, and there is or was, we believe, an Act of Congress to that effect.

The total losses reported from the beginning of the war up to the end of last week (exclusive of sick and wounded men now in British hospitals in South Africa) amount to 32,524. These are made up as follows according to the latest return issued from the War Office —

—	Officers.	Non-commissioned officers and men.
Killed in action	261	2,434
Died from wounds	72	637
Missing and prisoners (excluding those who have been recovered)	61	1,900
Prisoners who have died in captivity	1	84
Died from disease	139	4,563
Accidental deaths	—	70
Sent home as invalids	965	21,337
Total	1499	31,025

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

No. 3 Hospital Train returned on June 21st from Mafeking bringing to us the whole of the sick and wounded who had accumulated there, and as that was the third train-load we had received in six days we have had a busy week. In the last train-load there was another poor fellow—I think I mentioned to you some time ago that we had one similar unfortunate—who had lost both his eyes, and in the hospital at the present time there is also a man who only missed a similar accident by a quarter of an inch. The bridge of his nose was blown away by a transversely crossing shell, but most fortunately neither of his eyes was damaged. Both of the blind men show a most splendid spirit and pluck in their fearful adversity.

Lord Chesham, who has left again for the front, tells us that our field hospital was captured by Christian De Wet at Rhenoster and that it was made to move its camp to a neighbouring valley and told to lie low there until he could supply it with wounded. De Wet's agility and daring, which have resulted in so many surprises to our forces of late, enabled him, as you know, to swoop down upon the Derbyshire Militia just as they were detraining, and he kept his word to our field hospital by sending to them the 70 or 80 Derbyshires who were wounded before the rest capitulated. This commander is a thorn in the side of those of our troops who are placed along the railway to keep the lines of communication open, and one cannot help admiring his skilful and brave movements. We are told that he visited Lord Methuen and said that he would like to stop fighting, as he knew "the game was up," but that he could not do so until he received instructions.

I am glad to say that our invalid staff are all going on well. Greenfield and Parker are both convalescent and out of danger, and none of the other surgeons who have been "warded" have shown any symptoms of enteric fever. One-third of our orderlies are still on the sick list, but none of them are dangerously ill. Several of them have influenza—indeed, there is quite an epidemic of it—and the sudden invasion, by this fever, of patients whose temperature charts are being anxiously watched on account of the other illnesses often gives rise to anxiety. It is no uncommon thing for patients who have come down with wounds to develop enteric fever some days after admission, and similarly a few patients who have come in with other complaints have developed scarlet fever, for which we had to establish several weeks ago an isolation camp. One of our surgeons' dressers, Blathwayt, is among the recent recruits and it is a dull look-out for him to be condemned to six weeks' or seven weeks' seclusion "across the line." Now that influenza has made its appearance, imported from England we suppose, we have been provided with a third illness which has to be considered in investigating the cause of any sudden rise of temperature in a patient. The presence of scarlet fever in the camp has been a very great nuisance, for it has entailed a large increase in the heavy amount of disinfection which is called for in a camp of this size, but by means of stringent regulations and perpetually looking out for the earliest signs of the disease we have been able to limit it to a very few cases indeed. There are 16 cases in the isolation camp at the present time and there have never been more, but as five of them, in addition to Blathwayt, are members of the staff, and as their absence from duty is necessarily for the long period that I have mentioned, it is a serious blow from an administrative point of view.

We are all very much disappointed that the war does not crumple up more rapidly. We feel as if we had been away from home for two or three years. Somebody was suggesting the other day that instead of our going home when this war is over we should have to go on and establish a hospital in China, but I sincerely hope that this will not be the case, for we all feel that we have had quite enough of war for the present.

We have done all we possibly can to give an occasional day off to some of the less strong of the sisters, but the very fact that they have been so hard at work as to need it badly, has made it very difficult to arrange. One or two of them have changed places with a sister on a hospital train for a few days at a time, and this has secured them, if not a holiday, at least a change of work and a novel experience. Now, however, the 10 extra nursing sisters, whom the committee kindly despatched directly they received my application for them, have arrived, and they will be invaluable. Already they have enabled one or two of the sisters who have been working here without a break of any kind for three months to have "a day off." Many other sisters travelled with our 10 sisters from England, some for the hospital at Wynberg, who told ours that they were very jealous of their luck in being sent so much nearer to the front. It is very striking how deeply this wish to go to the front is embedded in everybody—until they have been there. The staff of each of the hospitals that I have come across is anxious to be pushed further forward under some hazy sort of impression that they want to be as near to the hub of the universe as possible. They have not a notion how their efforts to do good would be discounted at every turn by the great difficulty, or in some cases the impossibility, of getting the essentials for good work. The story told by those people coming down from the front is very different. Medical officers one after the other come here and say, "How fortunate your hospital is to have this lovely site and opportunities for quiet and good work unimpaired by the contamination of air and water and soil and the frightful difficulties of transport which hamper everybody up north." That exactly tallies with the experience which I derived from my journey up to Kroonstad a month ago. The difficulty of transport north of Bloemfontein is really so great that it dominates the whole situation. Colonel W. H. MacNamara, R.A.M.C., the principal medical officer of the lines of communication, was visiting us two or three days ago and told me that it has not yet been possible to get up to Kroonstad more than one-quarter of the hospitals, which are waiting packed in trucks, and should have been delivered there four weeks ago. Hospitals are, of course, useless when packed in trucks, and what is wanted to render them useful is not so much more hospitals packed in trucks as more steam engines and more water-supply along the line and less interruption of railway traffic at the vulnerable points of the line, such as bridges, &c. The hospital trains can get up and down all right; they always have efficient engines and now that many of the hospitals have been moved up-country to Norval's Pont, Springfontein, and Bloemfontein, and so on from Cape Town, these trains are more than equal to the demands made upon them to keep us well supplied with patients.

If this hospital could be picked up bodily and dropped down again without any interference with its work—that is an important point—at Norval's Pont it would not be a bad thing, for it would save about eight hours on the run of each hospital train and would place us in a region where eggs, milk, and butter are plentiful and good. Norval's Pont, however, was not in British hands when we pitched our camp, and there is nowhere else in South Africa that from our point of view is more suitable than Deelfontein. The weather now, though cold except when the sun is shining, is on the whole quite lovely—day after day of cloudless sky—and everything goes well with us.

I think that, knowing what you do of the amount of trouble that was expended in London on the thinking out of the equipment of this hospital, and knowing what I have written of the complete success which has crowned that work—for really we have everything that we want and nothing that we do not want—you will be amused to hear that somebody has been amusing himself by trying to make out that we came out unequipped for our work. The only instance that he can cite in support of this charge is that we had to borrow in our earliest days a few blankets. Plenty of blankets were sent by the committee from home and they got here by the time we were fit to declare a section of our hospital "ready," but before we were so ready Surgeon General W. D. Wilson, P.M.O., urgently requested us to place a few beds at his disposal at the earliest

possible date, and it was in order to comply with the request and so to help by every means in our power, even though our equipment was not yet complete, that we had to ask for a loan of some blankets—a loan that we have more than repaid already by the odds and ends of equipment which we have from time to time been called upon to contribute to others whose stock was exhausted or lost. In this way we have been able to lend a hand to many surgeons with battalions of Yeomanry as they went past us, and Lord Chesham only this week took back with him to his battalion at the front a supply of warm underclothing, Balaclava helmets, and so on, which he said were urgently needed, and which we had been placed in the position to afford by the kindness and energy of friends at home. Many people have been extremely generous in the way they have responded to the appeal in one of these letters some weeks ago for tobacco and sweets. Quite a large number of the officers here do not smoke, but almost all the men do, and it takes my wife between five and six hours every day, Sundays included, to accomplish her round of the hospital now that there are from 700 to 800 patients. She tells me that each week she distributes about 70 lb. of cake tobacco, 40 lb. of cut or packet tobacco, and 7000 cigarettes—that or more, besides many other "comforts." Idiosyncrasies and longings come out strong in such a large and varied collection of men. One poor fellow who died from cancer last Saturday had a special craving, sometimes very weird, almost every day he saw her. On the morning of the day he died he enjoyed some Madeira cake and a glass of port wine and soda-water. The day before nothing would content him but a dish of potatoes. For a few days before that he practically lived on oranges, which luckily we are able to get here now. One day he suddenly asked her for a stick of "Spanish." Liquorice was what he meant, so we wired to Cape Town and got some up in time for him thoroughly to enjoy munching a great stick and having some more dissolved in water so that everything he ate or drank for a day or two was flavoured with it.

Deelfontein, June 25th.

(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

We are gradually getting the best of the epidemic, but still have a number of cases sent from outlying stations. At present there are roughly 1000 cases under treatment here in the various civil and military hospitals, but I trust that as the cold weather advances these numbers will materially decrease. No. 2 General Hospital went up to Pretoria yesterday and will be followed by the Irish Hospital in a few days. From all accounts there is not a great amount of sickness in Pretoria or Johannesburg, and it is at present doubtful, considering the very excellent hospitals that exist in these two towns whether it will be necessary to order up more general hospitals. One point has struck me during the war, and that is how well the enteric fever cases have done whilst under canvas; in fact, I think those treated in tents have certainly made more rapid recoveries than those treated in buildings. The cold is intense here mornings and evenings. There is a white frost on most days, but the sun has great power during the day, and given the absence of rain the climate at present ought to do wonders for the convalescents. I am glad to bear testimony to the excellent work performed by the men of the St. John Ambulance Corps who are out here; they have amply justified the good things said about them and they do their duty in an uncomplaining and willing manner and have been of the greatest assistance to us in our manifold duties. The lesson to be learnt for our next big campaign will, I trust, be impressed on the military authorities and the Treasury, and the system of starving the Royal Army Medical Corps during peace time with its attendant disadvantages rectified. The vital subject of transport, too, will require to be well looked into, as half of our difficulties at the present time are the result of deficient means of transporting the sick and wounded. In my own opinion, it is an absolute necessity in future wars that the medical transport should be in our own hands and should not be diverted from the purposes it is intended for. I hear to-day that there is a possibility of demands being made on our already impoverished ranks for duty at the Gold Coast and that volunteers for that work are likely to be called for. It is to be fervently hoped that the business will be of short duration, as the climate of West Africa can hardly be called salubrious, and the casualties are likely to be numerous at this season of the year.

Bloemfontein, June 23rd.

THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

The Four Medical Congresses: Press Arrangements and Festivities.

HENCEFORTH the medical press will not be able to complain of indifference on the part of the powers that be. Even the newly elected Municipal Council of Paris, which has shown a disposition to slight and to neglect what its predecessors had organised, is making an exception in favour of the International Congress of the Medical Press and has expressed the desire to give this congress an official reception at the Town Hall on Thursday, July 26th. As with the Guildhall or the Mansion House in London, so with the Hotel de Ville in Paris, foreigners are generally pleased to have an opportunity of visiting this historic municipal palace. But whatever lukewarmness the Nationalist majority of the Paris municipality may show, the Government is leaving no stone unturned to render the Exhibition and all the congresses connected therewith successful. Thus M. Millerand, Minister of Commerce, has promised to assist at the opening ceremony of the Medical Press Congress. This will take place at the Press Pavilion in the Exhibition grounds on Thursday afternoon, July 26th. On the following Saturday evening there is to be a banquet and entertainment in the picturesque reproduction of Old Paris which is one of the attractions of the Exhibition and it is anticipated that M. Waldeck Rousseau, the Prime Minister, will be present. On Friday evening, the 27th, there will be private receptions, and on Sunday, the 29th, excursions to Chantilly and Versailles will be organised. On Monday, the 30th, the Minister of the Interior will give a reception to the members of congresses present in Paris, and on Sunday, August 5th, the President of the Republic will give a garden party to the members of the Medical Press Congress and of the International Medical Congress which will then have assembled in Paris. Indeed, from July 23rd up to August 17th, may be qualified as devoted to medical men. It is unfortunate that the Medical Press Congress should meet during the last three days of the International Congress on Medical Ethics. With the exception of the opening ceremonies both congresses meet close together at the Faculty of Medicine and it is thought that the members of the medical press who are attending both congresses will be able to flit from one to the other according to the interest of the proceedings. This, in my opinion, is a serious mistake. It is the duty of the representatives of the medical press not to neglect questions affecting medical ethics, yet they are expected to meet at a congress of their own while the Congress on Medical Ethics is proceeding. But it is said that during the four days between July 28th when the Congress on Medical Ethics concludes and August 2nd when the General Medical Congress begins the members of the medical press will be usefully employed in organising the reporting of the Medical Congress. In view of such organisation a meeting of all the members of the medical press has been convoked at the Press Bureau of the Faculty of Medicine for Wednesday August 1st. But there has already been some organisation in this respect. For instance, all members who intend to read papers at the Medical Congress are requested to write in their own language a summary of 50 lines in length and to bring with them 200 printed copies of the same. The Press Bureau of the Faculty of Medicine, will then see that these slips are properly distributed and thus the authors of the papers, &c., will be relieved from all further trouble. Those members, however, who have neglected to do this will find at the Press Bureau an agency ready to have the 200 copies printed for them, and the cost will only amount to eight francs. This having been done, and as the press representatives are not convoked before the Wednesday, I cannot understand why the Medical Press Congress does not meet on the Monday and Tuesday instead of meeting at the end of the previous week when the Congress on Medical Ethics will also be holding its sittings.

Presidents of the Medical Press Congress.—Where to Put Up.

It is not necessary to describe anew the origin, object, and organisation of the International Congress of the Medical Press. The details will be found in my letter published in THE LANCET on May 5th (p. 1324). But I

should now add that Professor Virchow has taken the greatest interest in this congress, has promised to attend, and will preside over the sitting held on July 28th. Professor Baccelli of Genoa will preside on Friday afternoon and Professor Cornil will act as president for the French language Even at this, the eleventh hour, any member of the medical press will be welcome on payment of his entrance fee of £1 to the general secretary of the Congress, Dr. R. Blondel, 8, rue de Castellane, Paris. The temporary receipt given should be exchanged at any time on or after July 20th, at the offices of the French Association of the Medical Press, 93, Boulevard Saint Germain. These offices are not far from the Faculty of Medicine, and, indeed, it must be borne in mind that the Latin Quarter is the centre for all the four medical congresses. The sections will meet in the lecture halls of the Faculty of Medicine, of the Sorbonne, and of the great schools that have given to this quarter its name. Therefore, not only is there no necessity for the members of these congresses to put up in the expensive West-end of Paris or anywhere near to the Exhibition, but it would be inconvenient to do so. Rooms had better be sought on the south side of the river and as near to the lower part of the Boulevard St. Michel as possible. Excepting to attend one or two of the opening ceremonies or a banquet the members of the four medical congresses will have no occasion to go anywhere near the Exhibition, or the exclusive cosmopolitan part of Paris which has the Madeleine for its centre. Their work will be done in the University building, and therefore it will be more convenient, and many will find it more pleasant, to live in the University quarter.

The Opening Papers of the Medical Press Congress.

The two principal questions to be discussed at the International Congress of the Medical Press are the proposal to form an international association of the medical press, and, secondly, all that relates to the copyright of medical literary work. On the first of these questions Professor Posner of Berlin, Dr. Laborde of Paris, and Dr. Rubino of Naples have prepared reports. These papers are now in the press and will be printed in time for the opening of the Congress; but as I shall then have so much to say about the Congress on medical ethics, which will have held the greater part of its sittings, I had better profit by the present opportunity to give some account of these papers. Professor Posner commences by lamenting the present recrudescence of nationalism and individualism, each nation and each person seeking their own advancement and fiercely competing against their neighbours. But he claims that the ancient principle of professional confraternity has nevertheless survived among medical men, and he trusts that it may in time replace entirely the spirit of rivalry and competition. Yet there is no denying that the profession is in danger of being absorbed in the general current. It is to be hoped that the congress will inspire its members with a higher ideal than that of each striving solely for his individual advancement. As to-day the printed word is the greatest power extant for good or for evil, the medical press should strive not merely to spread scientific knowledge, but to study and defend the higher ethical interests of the profession. The learned professor then goes on to say:—"The conviction that this task can be more easily accomplished by the coöperation of all the forces than by mere individual efforts was first realised in France. The association of the medical press, founded in France, has become a prototype for analogous tendencies in other countries. The medical press of Germany and of Austria, which I have here the honour to represent, have followed the French example. If we examine the work of the medical press associations of Germany and Austria we can already congratulate these two bodies upon having succeeded in solving many problems submitted to them, though many of the ideal dreams on which these associations were based are not yet realised." To begin with the mere existence of such organisation has revealed a community of intellectual interests and a spirit of solidarity that had not been understood before. Friendships have been created, disputes avoided, and the better spirit engendered has been reflected in the columns of the medical journals much to the advantage of their readers. But practical advantages have ensued notably in regard to the reporting of medical congresses, though much remains to be done in this respect. Also by mutual understanding and common action the medical press could usefully influence legislation on all that relates to the public health. In this latter respect the German and Austrian associations of the medical press of those countries have barely realised the power they possess. The national organisations being thus so young and inexperienced it may well be questioned whether they are as yet strong enough to go a step further and to seek to establish an international organisation. Proceeding, Professor Posner says: "The extraordinary difficulties which the organisers of the Eleventh International Medical Congress held at Rome had to combat, and more especially those that were related to the organisation of the medical press, led my friend Marcel Baudouin and myself to elaborate a plan born out of our conversations. This plan was discussed at the banquet organised by the French medical journalists assembled at Rome." The plan was approved in spite of its difficulties and it will be the task of the present congress to elaborate the scheme. If the journalists would group themselves according to their language and then exchange their notes with those taken in other languages a much more accurate and complete review of the proceedings of international congresses could be obtained, also the work done in this collective manner would cost much less. Professor Posner then points out that as congresses depend for their success on the press, representatives of the press should have a voice in the organisation of such congresses. Such coöperation sometimes occurs, but it is not recognised as a principle and systematically regulated. Apart from the reporting of congresses there is need of an understanding as to what should be considered a legitimate quotation, the exchange of drawings or other illustrations, and the universal adoption of the same technical terms. Then something should be done to regulate the right of reply when controversies arise. But if it is necessary to go further than the mere expression of a pious wish, should there not be a representative executive power or committee the business of which it shall be to see that the rules accepted are uniformly applied? But no committee could exercise this power if it were not the representative of solid and durable organisations. Then there is the question of the relations to be established between the journalists of various nations. Professor Posner concludes by proposing that an International Association of the Medical Press shall be established having for its purpose to promote fraternal relations between the medical press of different nations, to represent and defend all common interests, to regulate the exchange of reports, newspapers, and news, and that an executive committee be elected to prepare a scheme on these lines.

The next report on this subject is by Dr. J. V. Laborde, President of the French Association of the Medical Press and editor of the *Tribune Médicale*. He commences by explaining that the whole trend of modern progress shows the necessity of bringing civilised nations closer together. Such "mutual penetration" is best assured by the press which conveys knowledge to each nation of what its neighbours have accomplished. When we consider how much the world has to benefit from the growth of biological and medical sciences, we need not insist on the necessity of facilitating the work of the medical press by which this knowledge is propagated. But, as science does not recognise political frontiers, its mouthpiece, the scientific press, should be internationally organised. This conception found public utterance at the Congress of Rome in 1894, and was eloquently expounded by Professor Posner of Berlin and Dr. Marcel Baudouin of Paris. Dr. Dobrozycki of Warsaw wanted to create, under the presidency of Dr. Laborde, a special section of the medical press at the International Medical Congresses. An international provisional committee was appointed. It met and drew up some proposals. Medical press associations were formed in Germany and Austria, but unfortunately no practical results were obtained when the International Medical Congress subsequently met at Moscow. Since then the German Association, and notably Professor Posner, has taken an active initiative, and this support has rendered the present Paris Congress possible. In this a great leader of modern science as well as of medical journalism, Professor Virchow, also lent efficient aid. Then came Dr. Selous of Philadelphia and Professor Alfredo of Naples. Dr. Laborde proceeded to give very elaborate rules for the future International Association of the Medical Press. These rules have a tendency, however, to put the cart before the horse; for instance, the members are to accept the regulations for the protection of medical literary property, other rules for the exchange of medical

journals, and the idea of publishing an international bulletin. This is going perhaps a little fast. But one proposal is very useful and practical—namely, that every medical journalist belonging to the International Association should have a card which will serve as an introduction in all countries. If the medical press organisations of each country would further take care that this card was recognised by their police, university, and hospital authorities, then a very great service would be rendered. It would take far too much space to analyse the numerous rules proposed and if they are to be adopted with any real knowledge of what is intended many days of very arduous discussion will be necessary. At the very onset a huge stumbling-block presents itself when the question is raised as to who shall be admitted as members of the association. Dr. Laborde says directors, editors, and general delegated secretaries. Are the special correspondents, the regular contributors, the writers on the staffs of the medical papers to be excluded, or are they considered as delegated secretaries, and if so, by whom delegated? Then, what is meant by directors? Are these the business and advertisement managers of papers or the proprietors of the papers? There are some so-called medical journals owned by wholesale druggists and published solely for the purpose of selling certain drugs. The motive of the association, we are told, will be the "moralisation of the profession"—a very good motive; but, in the same sentence we are informed that this end is to be obtained by protecting literary property. It is difficult to see the connexion. Is the druggist's property of an ingenious literary puff of a patent remedy to be protected by the united strength of an international association of medical journalists? No one could be more scandalised at such a suggestion than Dr. Laborde himself. Yet to avoid such contingencies the first step would be to define what constituted a medical journal and a medical journalist worthy of the name. At present and in different countries there are a good many sheets published that bear medical titles, deal with medical subjects, and yet are issued solely for the purpose of advertising the business of their proprietors. As the practice of medicine is a profession and not a trade such commercialism should be rigorously excluded. It would seem, however, as if the organisers of the Congress have failed to draw a sharp line between business and professional pursuits. In any case one of the papers which is to form a basis of discussion has for its author Monsieur F. Alcan, the Paris publisher, and surely publishing is a business and not a profession. Monsieur Alcan has written an interesting and appropriate paper. He is doubtless animated with the very best intentions, but he is neither a medical man nor a professional journalist. His paper deals with the reproduction of illustrations which, with existing photographic processes, is done on a very large scale and without the authors and owners of such illustrations being even aware that they have been reproduced. Then M. Alcan immediately speaks as a publisher might be expected to speak. He says that if the author of a medical treatise asks his publisher to send an artist or a photographer to his hospital or laboratory the drawing or photograph then made belongs undoubtedly to the publisher. But if the author supplies to the publisher a drawing or photograph the publisher is only the proprietor of the reproduction of the same. The author can give the same designs to some one else who may in his turn reproduce them. In both cases it should be the rule, says M. Alcan, to apply to the original publisher who should be willing to sell reproductions of the blocks for about half the original cost. The publisher would make a small profit and yet the purchaser would have to pay less than if he resorted to a photographic process. Then there is the question whether a publisher has the right to employ a design for other than the publication for which it was originally destined. Here M. Alcan speaks as a publisher and claims the right to do what he chooses with such blocks; but what would be the position of some eminent medical professor if some of the reproductions of his anatomical or other drawings fell into evil hands and were utilised to illustrate some quack or pornographic publication? It is most desirable that publishers should meet authors and discuss amicably their mutual interests, but to jumble both up together in one single congress can only lead to confusion. Each side must separately formulate their desiderata, then and then only may they meet to effect a common understanding or compromise. M. Alcan goes on to explain that in France it is not yet settled whether photographs come under the laws affecting literary and artistic property or those governing industrial property. With regard to portraits the photographer may give the publisher the right of reproducing the portrait if the person photographed consents. The publisher may have to pay for this permission. On the other hand, the person photographed may give his photograph to anyone else and authorise the latter to reproduce it. Thus the publisher's copyright becomes valueless. Doubtless this is important from the publisher's point of view, but it is less certain that eminent medical celebrities when giving their photographs to some friend or relative will take care first to obtain a pledge that the portrait shall never in any way be reproduced.

On this question of copyright there is another and lengthy report by M. de Maurans, editor of the *Semaine Médicale* and by two eminent barristers well known for their special knowledge of the subject—namely, M. M. Pouillet and M. G. Rocher. The author of a medical book has the same rights, they remark, as the author of a novel or any other book; but what is the position of the author of an idea or a discovery and of a clinical or other lecture delivered concerning the same? They continue: "The professor must give all his science to his pupils. The latter may take notes, even shorthand notes, learn what they have heard off by heart, and deduce from it the utmost possible personal instruction; but their rights go no farther than this. They cannot repeat the lecture or publish it. The professor's lecture is like an open book: the pupils may learn from it but must not attempt to make a pecuniary profit out of it." This principle was established by a verdict rendered in a Paris court on August 27th, 1828, and confirmed by another verdict on March 2nd, 1841. For the defence it was urged that as the State paid the professors their lectures became public property. The answer was that the State paid the professors to teach and not to provide the material for a book. In conformity with this judgment the reporters maintain that medical journals have not the right to reproduce clinical, university, or hospital lectures unless authorised to do so by the lecturer. Further, in giving such authorisation the lecturer should have the right to impose any conditions he may choose. This condition of affairs, I should imagine, will not be unanimously approved. The natural eagerness to create and to protect property should not efface from sight the fact that what is done publicly should be liable to public criticism; and how can lectures be criticised if they cannot be quoted. But it might with justice be urged that lecturers should be offered an opportunity of correcting the proofs of the reports of what they had said, and that as a matter of courtesy a copy of the paper in which they are mentioned might be presented to them. The reporters conclude by a humorous warning to medical authors and lecturers to be careful not so to describe their cases as to enable the personality of their patients to be recognised. The novelist Charette, to avoid trouble of this description, declared that he had selected for his heroes the names of bankrupts or of criminals who had been guillotined. But the dead leave relations who are apt to take offence. Thus a few years ago the author of a medical work on degeneration and criminality was prosecuted because some of his cases were recognised and one of them was precisely that of a man who had been guillotined. A descendant of this culprit went to law on the subject, and the tribunal ordered that the incriminating passage should be expunged from the book.

Dr. Marcel Baudouin has a paper on the Property of the Idea and the Form of the Idea in Scientific Journalism. Dr. Baudouin is Director of the International Institute of Scientific Bibliography and member of the Superior Commission of the Press at the Exhibition of 1900. He argues that an idea is a property and should be protected as such. But as yet the law has only attempted to protect the materialisation of ideas. For this it would be necessary to have some method of registering, nationally and internationally, scientific ideas. The International Institute of Bibliography, which registers day by day the intellectual productions of the entire world, might serve as a basis for such an organisation. Even now we are able to say who was the first person to give a written or drawn expression of an idea and to find this out promptly by the system of registering now adopted—*Répertoires idéologiques chiffrés*. By these methods of registering it would not be so difficult to ascertain what really does constitute a new idea. Dealing at great length with the existing copyright laws, Dr. Baudouin does not agree completely with the papers of

M. Pouillet, M. Rochet, and M. Alcan. He is not in favour of severe checks to prevent the reproduction of lectures, newspaper articles, speeches, &c., but he is anxious to protect a genuinely new idea. To check the reproduction of scientific drawings is to check the spread of education, excepting when such check is necessary so as to prevent disloyal competition. What needs special protection is not so much the literary construction of phrases to explain an idea or an artistic illustration, but the idea itself, however roughly expressed.

Several papers will be read on the constitution of the medical press in different countries. M. Lévy, editor of the *Revue Illustrée de Polytechnique Médicale*, will read a paper on the use of a pseudonym preceded by the term "Dr." in the writing of "puffs." M. de Maurcous has a paper on the affiliation of associations of the general or political press. There are to be papers on medical journals that are gratuitously distributed and have no *bonâ-fide* sale and on gratuitous publicity and its dangers. Dr. Blondel has a paper on the reports published of meetings of learned societies and the effects of such publicity on special reviews or magazines. M. Jayle, sub-editor of the *Presse Médicale*, will deal with personal controversies and the right of reply. Professor Bossi of Genoa will speak on the relation between medical journals that deal with sanitary questions and the general press. Professor Richet, editor of the *Revue Scientifique*, will treat the question of agreeing to employ an international decimal dictionary for the translation of figures, measures, &c., and another paper suggests a common agreement as to the spelling to be adopted in translating Slav names into the Latin alphabet; then there are some technical papers on the binding of journals or the wrapper problem, the reproduction of coloured illustrations, and the use of the phonograph and the kinematograph in reporting.

So far, therefore, as technicalities are concerned there is enough and more than enough to talk about, but it is in respect to organisation, the principle and basis of organisation, that the programme seems weak. However, this is but a first attempt. A great step forward will have been accomplished if a sort of professional feeling is engendered between medical journalists leading to the ultimate adoption of one ethical code for their moral guidance.

Paris, July 16th.

BRITISH MEDICAL GUILDS AND THE INTERNATIONAL CONGRESS ON MEDICAL ETHICS.

ON Monday, July 23rd, the First International Congress on Medical Ethics or Deontology will hold its first sitting at the Press Pavilion on the Exhibition grounds and will meet for the rest of the week at the Paris Faculty of Medicine. We regret to hear that the British medical unions, guilds, and kindred organisations have not responded as fully to the widely distributed invitation as we had every reason to expect. The object and utility of an international congress dealing with the economic interests and position of the medical profession seem to have been better appreciated on the continent. Of course, the French members will be the most numerous as the Congress meets in Paris. The nation which so far and after France sends the greatest number of members is Italy. Then come Switzerland, Germany, the United States of America, Belgium, Spain, Russia, Denmark, and Great Britain is only ninth on the list, followed closely by Austria, Roumania, and Holland. The nations sending but three or four delegates are Portugal, Egypt, Turkey, Greece, Brazil, Venezuela, Sweden, Norway, and Canada, while Uruguay, Peru, Cuba, Japan, and Mexico have each one delegate only. Counting Canada this makes 27 different countries that will be represented and the list is not yet complete. Considering the importance of Great Britain as a nation, the political freedom to form organisations which we have long enjoyed, and our experience in the art of self-government, the representatives from Great Britain should have been more numerous and have taken a more active part in the preparation of papers or reports. Some English papers, as our readers are aware, have been announced, but these are not as numerous as might reasonably have been expected. Still, there is yet time to augment our list of members, and in any case a greater show of sympathy might be made. Of course, we can well understand that the medical unions that exist are of but recent creation and do not in most cases dispose of sufficient funds to pay the expenses of sending special representatives to Paris. But there are many members of these medical organisations who propose to visit the Paris Exhibition at their own expense, and they might have arranged to do so at the time when the Congress was being held so as to put in an appearance on behalf of their societies. Those practitioners who do not belong to any such organisations will also be welcome if they sympathise with the object of the Congress, and we hold at their disposal circulars of invitation if they will apply to us for them. The movement—namely, the forming of medical unions for the defence of the economical and ethical interests of the medical profession—is now so widespread that a proposal to establish an international federation of such unions has already been forwarded to the organisers of the Congress from several different quarters. It is also proposed that these congresses should be held at regular intervals and invitations for the next Congress on Medical Ethics have already been received from Brussels, Liège, Rome, Vienna, and St. Petersburg. Further, and so that the work of the Congress should be widely known, the General Association of the French Medical Press has made arrangements to act as secretary or agent of all the members of the Congress. The Press Bureau of this association will undertake to have 150 copies made of summaries of speeches, to pay the postage, and forward these to 150 different papers for 8*s*. if they do not exceed 15 lines and 15*s*. if they amount to 50 or more lines. The charge made, it will be seen, barely covers postage and stationery; it is a work of propaganda, not a commercial undertaking.

Finally, we would urge that those medical unions, guilds, &c., which are absolutely unable to secure the presence of representatives might, nevertheless, authorise their president or secretary to enrol himself as a member of the Congress. This implies the filling up of the form of application attached to the circulars of invitation and the forwarding of the subscription of 12*s*. to M. Masson, treasurer, 120, Boulevard St. Germain. This might be followed by a letter of apology for non-attendance, an expression of approval, and any statement which it might be thought useful to make. The name of the society would then appear in all the documents and in due course the society would receive the report of the proceedings, which will be a volume containing much useful information. For the modest outlay of 12*s*. the various societies that are not sending delegates would thus, nevertheless, contribute materially and morally to ensure the success of their colleagues of all nations who are struggling to promote the same cause that they are defending in England.

The programme and printed reports are now ready, and these, together with the card of membership which gives the right of free admittance to the Exhibition and to the sittings of the Congress, can be obtained on applying at the Masson Library, 120, Boulevard St. Germain. We are also asked to notify that the General Secretary of the Congress has changed his address and communications for him should now be addressed to Dr. Jules Glover, 23, rue de la Bienfaisance, Paris.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

QUARTERLY MEETING.

A QUARTERLY meeting of the Council was held on July 12th, the President, Sir William Mac Cormac, Bart., K.C.V.O., being in the chair.

The PRESIDENT reported the re-election as members of the Council of Mr. John Tweedy and Mr. Alfred Cooper and the election of Mr. Ward Cousins and Mr. Alfred Pearce Gould.

Mr. Tweedy, Mr. Cooper, Mr. Ward Cousins, and Mr. Pearce Gould were introduced, made declarations in the terms of the oath as prescribed by the Charter of 1800, and took their seats as Members of the Council.

It was resolved that the salary of the conservator of the museum should be increased.

It was resolved to print 250 additional copies of the first

volume of the second edition of the "Physiological Catalogue."

It was resolved that the deputation to H.R.H. the Prince of Wales should consist of the President, the Vice-President, Mr. Bryant, as senior member of the Council, the Secretary, and the Assistant Secretary.

The Council then proceeded to the election of the Most Hon. the Marquess of Salisbury, K.G., and the Right Hon. the Earl of Rosebery, K.G., K.T., as Honorary Fellows of the College.

The alterations in the by-laws relating to the Fellowship were signed by the members of the Council who were present and they were sent to the Secretary of State for Home Affairs for approval.

The PRESIDENT reported that on the day appointed for a meeting of Fellows under Section XXIII. of the regulations of the Council the required quorum was not obtained, 20 Fellows only, including three members of Council, having attended, and accordingly no meeting had been held.

A letter was read from Mr. THOMAS BRYANT, reporting the proceedings of the General Medical Council at their late session, and the thanks of the Council were given to Mr. Bryant for his services as the representative of the College on the General Medical Council.

A report was read from Mr. MORTON SMALE, member of the Board of Examiners in Dental Surgery, upon Dental Education in the United States of America. Mr. Morton Smale was thanked for his report, which was referred to the Dental Board.

ELECTION OF PRESIDENT AND OFFICERS.

Sir William Mac Cormac was unanimously re-elected President for the fifth time, and Mr. J. Langton and Mr. Henry Morris were appointed Vice-Presidents. Mr. Charles Stewart, Mr. Percy Furnivall, and Professor Christopher Addison were elected Hunterian Professors for the ensuing year. Dr. T. Grigor Brodie was elected Arris and Gale Lecturer and Mr. Walter Edmunds was elected Erasmus Wilson Lecturer. Mr. F. Canton was re-elected, and Mr. Storer Bennett was elected, a member of the Board of Examiners in Dental Surgery.

THE HONORARY FELLOWS.

The following three distinguished Honorary Fellows have already been made:—

H.R.H. The PRINCE OF WALES, K.G., Elected June 14th, 1900.
The Most Hon. the MARQUIS OF SALISBURY, K.G. } Elected July 12th,
The Right Hon. the EARL OF ROSEBERY, K.G., K.T. } 1900.

The following is the list of Honorary Fellows of the Royal College of Surgeons of England who will be elected on Thursday next subject to their being present to receive the diploma:—

Albert, Eduard Professor of Clinical Surgery, University of Vienna.
Ball, Charles Bent, M.D., M.Ch., Regius Professor of Surgery, University of Dublin.
Bassini, Edoardo, Professor of Clinical Surgery, Royal University of Padua.
Bennett, Edward Hallaran, M.D., M.Ch., Professor of Surgery, Trinity College, Dublin.
Berg, John Wilhelm, Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm.
Von Bergmann, S. Exc. Professor Dr. Ernst, Geh. Med. Rath, Berlin.
Bloch, Oscar, Professor of Surgery, University of Copenhagen.
Bottini, Enrico, Professor of Clinical Surgery, Royal University of Pavia.
Cameron, I. H., Professor of Clinical Surgery, University of Toronto.
Cardenal Fernandez, Dr. Salvador, Vice-President Royal Academy of Medicine and Surgery, Barcelona.
D'Antona, Antonino, Professor of Surgery, Royal University of Naples.
Durante, Francesco, Professor of Clinical Surgery, Royal University of Rome.
Von Esmarch, S. Exc. Professor Dr. Friedrich, Wirkl. Geh. Rath, Kiel.
Halsted, William Stewart, M.D., Professor of Surgery, Johns Hopkins University, Baltimore.
Hingston, Hon. Sir William Hales, M.D., LL.D., D.C.L., Professor of Clinical Surgery, University of Laval.
Jameson, Surgeon-General James, C.B., M.D., LL.D., Director-General Army Medical Service.
Keen, William Williams, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia.
Kocher, Theodor, Professor of Surgery, University of Bern.
König, Professor Dr. Franz, Geh. Med. Rath, Berlin.
Küster, Professor Dr. Ernst Georg Ferdinand, Geh. Med. Rath, Marburg.
Lambotte, Elie, Brussels.
Lannelongue, Odilon Marc, Professor of Surgical Pathology, Faculty of Medicine of Paris.
Lennander, Karl Gustaf, M.D., Professor of Surgery and Obstetrics, University of Upsala.
Macewen, William, M.D., LL.D., F.R.S., Regius Professor of Surgery, University of Glasgow.
MacLeod, Colonel Kenneth, M.D., LL.D., I.M.S., Professor of Clinical and Military Medicine, Army Medical School, Netley.
Nicolaysen, Julius, Professor of Surgery, Royal University of Christiania.
Norbury, Sir Henry Frederick, K.C.B., Director-General, Medical Department of the Royal Navy.
Ollier, Leopold, Professor of Clinical Surgery, University of Lyons.
Pachoutine, Victor, President, Imperial Military Academy of Medicine, St. Petersburg.
Pozzi, Samuel, Professor, Faculty of Medicine of Paris.
Raye, Colonel Daniel Charles O'Connell, M.D., Indian Medical Service.
Roddick, Thomas G., M.D., C.M., Professor of Surgery, McGill University, Montreal.
Rubio y Gali, Federico, Member of the Royal Academy of Medicine of Madrid.
Sklifossovsky, Nicolas Wassilievitch, Director and Emeritus Professor, Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, St. Petersburg.
Tillaux, Paul, Professor of Clinical Surgery, Faculty of Medicine of Paris.
Veliaminoff, Nicolas, Professor of Surgery, Imperial Military Academy of Medicine, St. Petersburg.
Warren, John Collins, M.D., Professor of Surgery, Harvard University.
Weir, Robert Fulton, M.D., Professor of Clinical Surgery, Columbia University, New York.

A deputation will attend at Marlborough House on July 24th to present the Diploma of Honorary Fellowship to H.R.H. the Prince of Wales.

The Marquis of Salisbury and the Earl of Rosebery and all the other Honorary Fellows have expressed their intention of attending the meeting to be held on July 26th, at 3 P.M., in the theatre of the University of London, Burlington-gardens, to receive their diplomas.

COMMEMORATION DINNER OF THE EPIDEMIOLOGICAL SOCIETY.

A HIGHLY successful dinner of this society was held at the Grand Hotel, Trafalgar-square, on Friday, July 13th, to commemorate the fiftieth anniversary of the foundation of the society. The President, Dr. FRANKLIN PARSONS, occupied the chair, and among the guests who accepted the hospitality of the society were Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S., honorary member of the society, Sir William Broadbent, Bart., F.R.S., Sir Douglas Powell, Bart., Sir Henry Norbury, K.C.B. (Director-General of the Royal Navy Medical Department), Sir Archibald Geikie, F.R.S. (Director-General of the Geological Survey), the President of the Royal College of Physicians (Dr. W. S. Church), the Parliamentary Secretary of the Local Government Board (Mr. T. W. Russell, M.P.), the Director-General of the Army Medical Department (Surgeon-General Jameson, C.B.), the Permanent Secretary of the Local Government Board (Mr. S. B. Provis, C.B.), the Legal Adviser to the Post Office (Sir Robert Hunter), the President of the Medical Society of London (Dr. Frederick Roberts), Dr. Farquharson, M.P., Mr. Harry Farnall, C.M.G. (of the Foreign Office), Professor Macfadyen (Director of the Jenner Institute), Professor Sims Woodhead, Sir James Crichton Browne, K.C.B., F.R.S., Professor Haldane, F.R.S., Dr. Dawson Williams, Mr. Fryer (of the Board of Trade), Dr. Hector Mackenzie, Mr. W. F. Blake, L.C.C., Dr. F. J. Allan, and many others, while among the members of the society present were Dr. W. A. Bond, Mr. R. M. Bruce, Dr. G. S. Buchanan, Dr. Bulstrode (honorary secretary), Dr. F. F. Caiger, Dr. Childs, Professor Corfield, Dr. J. W. H. Eyre, Dr. Wilfred Fletcher, Dr. E. W. Goodall, Dr. Russell Harris, Dr. Bruce Low, Dr. Spencer Low, Dr. J. MacCombie, Dr. Patrick Manson, C.M.G., F.R.S., Mr. Shirley Murphy, Dr. Newsholme, Colonel Lane Notter, R.A.M.C., Mr. W. C. C. Pakes, Dr. J. Frank Payne, Dr. R. Reece, Dr. J. Robertson, Mr. W. N. Shaw, F.R.S. (Secretary of the Meteorological Council), Dr. Steegmann, Mr. Hugh Stott, Dr. R. D. R. Sweeting (treasurer of the society), Dr. J. F. J. Sykes, Dr. Theodore Thomson, and Dr. B. A. Whitelegge. Each guest was presented with a little commemoration volume giving a short history of the foundation of the society and a list of its founders, presidents, treasurers, and honorary secretaries since the foundation.

The toast of "The Queen" having been proposed by the CHAIRMAN and duly honoured by the singing of the National Anthem by an admirable quartette, Sir ARCHIBALD GEIKIE proposed "The Navy and Army

and Auxiliary Forces" which was responded to by Sir HENRY NORBURY, K.C.B., and Surgeon-General JAMESON, C.B. The latter in the course of a very vigorous speech, which was listened to with great attention, discussed somewhat in detail the allegations directed against the hospital and ambulance arrangements in South Africa. The Royal Army Medical Corps have in the past not been without honour and appreciation, but now a change seemed to have come over the spirit of their dreams and criticism was in certain quarters rife. The service had still, however, its friends; and the support of such men as Sir William Mac Cormac, Mr. Treves, and Sir Redvers Buller, none of whom would give praise where it was undeserved, would have to be reckoned with. Lord Roberts, too, whose sympathy with the soldiers was a household word, would not have expressed his satisfaction at the arrangements had they been, as is alleged by some, insufficient in character and extent. There was also one other opinion that he (Dr. Jameson) valued most highly, and it was that of the German military medical attachés. They were with the British medical staff and had afforded them valuable assistance on many occasions. When the Germans returned to England he asked them if they had any improvements to suggest and they answered, "We have nothing to suggest." On the other hand, what were the qualifications of the men who criticised them? He (Dr. Jameson) had read the criticisms in question when he was on his way to Ireland; he thought they were much exaggerated and he determined, like Mr. Rhodes, to come back to London and "face the music." As he drove back through the streets of London the placards referring to "hospital scandals" and "atrocities" raised a question in his mind whether they were not working up to a prominent position in Madame Tussaud's collection. His duty was to provide beds for 10 per cent. of the troops and this had been done, and a *personnel* of over 8000 men and women had been provided for these beds. So liberal, indeed, had been the allowances that on several occasions he had been asked to furnish no further equipment, and on Thursday last he received a telegram from South Africa in these words: "Please do not send any more base hospitals." It was well known to the medical officers that exigencies might arise with which no service in the world could deal, and had the outbreak of enteric fever which was here the subject of consideration occurred in London itself the hospitals of the metropolis would not have been able to cope with the situation. The commission which had been appointed would bring out the truth, and the Army Medical Department asked for nothing other than this.

Sir JOSEPH FAYRER proposed the toast of "The Founders of the Epidemiological Society," and in a most interesting speech traced the history of the society's foundation. He referred to the circumstances which obtained in England just prior to 1850 and to the fact that the society, arriving, as it were, at the psychological moment, carried all before it. Amongst its founders were numbered the leaders of science and medicine of the day and the work which the society did was so much appreciated in Europe that Hirsch in 1860 dedicated the first edition of his now classical "Historical and Geographical Pathology" to it. Sir Joseph Fayrer referred to the valuable work performed by the several committees of the society and to the influence which the society had had in directing the Legislature with regard to the control of small-pox by means of vaccination. A reference to the list of presidents would at once convince the reader that in this particular the society, which might justly be termed "the father of preventive medicine societies," had been exceptionally fortunate. As regards the jubilee it had been determined that the event might be well and usefully marked by publishing an Index of the valuable papers which have appeared in the Transactions. Sir Joseph Fayrer paid a fitting tribute to the valuable contributions which had been made to the science of epidemiology by the writings of the outgoing President, Dr. Franklin Parsons, and he predicted that under the guidance of the President-elect, Dr. Patrick Manson, whose work in tropical diseases had been recently appreciated by the Royal Society, the society would enter upon the second 50 years' work with unabated vigour and utility. Of the names which appeared upon the historic roll of the founders there were but two survivors, Sir John Simon, K.C.B., and Sir Edward Sieveking, and age alone prevented their attendance at the feast. He proposed, however, that the names of these gentlemen should be coupled with the toast and that a telegram be despatched to each of them conveying to them a hearty greeting, a suggestion which was most cordially accepted and acted upon.

The toast of "The Public Health Service" was proposed by Dr. FARQUHARSON, M.P., and responded to by Mr. T. W. RUSSELL, M.P.

Dr. PATRICK MANSON proposed the toast of "The Visitors," and coupled with it the names of the President of the Royal College of Physicians and Sir James Crichton Browne.

Dr. CHURCH, who met with a very cordial reception, was unable to pass over in silence the fact that he had consented to take a place in the commission which was to proceed to South Africa to investigate the provisions made for the sick and wounded. He felt when Lord Lansdowne sent for him that unless he (Dr. Church) did what an Englishman never did—i.e., shirked his duty—he could not refuse to take part in the commission in question. He trusted, however, that all who knew him felt that he would enter upon the arduous and responsible duty which had devolved upon him with perfect impartiality. He could not but have a high regard for the Army Medical Service, but he trusted that this fact would in no sense preclude him from approaching the inquiry with a mind entirely free from bias. Dr. Church referred in a highly appreciative manner to the admirable work performed by the Epidemiological Society in elucidating the causes of epidemic diseases, and expressed regret that he had not himself been actively engaged in the work of the society. He trusted, however, that in spite of his having no special knowledge in this sense he was not without a certain amount of that commodity which the House of Commons were unwilling to allow that the medical profession possessed—i.e., common sense—and he hoped that by making use of that faculty he might be able to be of some use to his country.

Sir WILLIAM BROADBENT proposed the toast of "The President and Officers of the Society," which was responded to by Dr. PARSONS and Dr. BULSTRODE. The society had, Dr. Parsons stated, received many letters of regret and appreciation from different parts of the world and one which had just arrived from Russia ran as follows: "The young Russian Society of Preventive Medicine greets the venerable Epidemiological Society and heartily wishes it further flourishment.—President, Prince Petr of Oldenburg; Member of Council, Dr. Leo Berthenson; Secretary, Dr. Vonitch." Dr. Parsons referred in appreciative terms to the manner in which his work as President had been supported by the efforts of the treasurer and honorary secretaries, one of whom, Dr. Washbourn, was at that moment serving his country in South Africa. The Index to which Sir Joseph Fayrer had referred was, he added, compiled by Mrs. H. T. Bulstrode.

ASYLUM REPORTS.

The Nottingham City Asylum, Mapperley Hill (Annual Report for 1899).—The average number of patients resident during the year was 659 and comprised 311 males and 348 females. There were 22 private patients in residence during the year, eight of them being males and 14 females. 152 patients were admitted during the year, 74 being males and 78 females. The admission rate was the lowest since 1891 and was 16 below the average for the past five years. Among the admissions there was an unusual number of senile cases, and many of the patients were in a weak and emaciated physical condition. Mr. Evan Powell, the medical superintendent, states in his report that the cases admitted were on the whole of an unfavourable character as regards hope of recovery. As to causes there was nothing unusual noticed; drink and hereditary influences headed the list. There were 62 patients discharged as recovered during the year, 32 being males and 30 being females, a total of 9·4 per cent. of the average number resident. Four female chronic patients were removed to the workhouse to make room for acute cases. The number of deaths during the year numbered 59, as against 53 in the previous year, or 9 per cent. of the average number resident. Of the deaths three were due to cardiac valvular disease, three to senile decay, three to epilepsy, four to bronchitis, four to cerebral atrophy, seven to phthisis, and 19 to general paralysis of the insane. "There is still much overcrowding in the female division, and as a consequence of this erysipelas has made its appearance on more than one occasion.

Besides the danger to the health of the patients the congested state of the wards renders it very difficult to treat the cases properly." The report states that the new female wing of the asylum will probably be ready for occupation in midsummer, 1900, when the overcrowding will be relieved temporarily, but the further steps to be taken for providing additional accommodation will be a matter for very serious consideration. Two of the sanitary blocks on the female side have been enlarged in a satisfactory manner. A female patient who was admitted in February gave birth to a full-term male child in August. The child was removed by the father, but the mother is still a patient in the asylum and is not likely to recover. The only casualty of a serious nature occurred in the female side, where a patient who was accidentally pushed down by another sustained a fracture of the neck of the femur. Four male and three female patients made their escape, but all were retaken after short periods of absence except two of the men, who succeeded in remaining away for the statutory 14 days when they were considered as discharged. The Lunacy Commissioners in their report state that a small isolation block should be provided for infec tious cases. "Had it not been that a patient recently attacked by scarlet fever was a small idiot child and could therefore be treated in the public fever hospital the present isolation hospital would have had to be emptied of the patients now residing there and much inconvenience and discomfort would have arisen." The Commissioners have had one grievance brought to their notice which they think is a substantial one, and that is "that the patients are taken to the Guildhall to be seen by the justices before they are sent to the asylum, as if they were criminals, and not visited in their own homes as sick persons would expect to be." The Commissioners advert to the insufficiency of the staff in No. 8 ward, where there were 45 patients, of whom 11 were in bed and eight were actively suicidal, in charge of four nurses. Post-mortem examinations were made in 88 per cent. of the deaths, and bed-sores were found to be present in 7 per cent. The case-books and other medical records are carefully kept and some pathological work is done, the committee having made the necessary additions to the appliances for the latter purpose.

Leicester Borough Asylum, West Humberstone (Annual Report for 1899).—The average population of the asylum was 561 patients—viz., 262 males and 299 females. The admissions during the year were 118, and comprised 49 males and 69 females. Dr. J. E. Montague Finch, the medical superintendent, states in his report that of the 118 admissions 27 had previously been patients in the asylum. "Many of the cases were in extremely feeble health when admitted. Two died on the day of admission and one on the third day. Many were bedridden and two were over 80 years." The chief cause of insanity among the patients admitted was hereditary tendency, which was a factor in 42 cases. Among the other causes were the following: intemperance in drink nine causes, mental worry and domestic trouble 10 cases, and senile brain decay five cases. The cases discharged as cured during the year amounted to 57—viz., 25 males and 32 females—a total of 10·1 per cent of the average number resident. The number of deaths during the year amounted to 30—viz., 19 males and 11 females, or 5 3 per cent. of the average number resident. Of the deaths two were due to cancer, two to phthisis, three to renal diseases, three to senile decay, five to cardiac disease, and nine to general paralysis of the insane. One death—viz., that of an elderly male patient—was due to suicide by cutting the throat. "Three inquests were held upon patients who died during the year. In two of these cases the patients were in a moribund condition when admitted." One of them died within an hour of admission from pulmonary apoplexy, and the other died within 12 hours of admission in an advanced stage of phthisis. The third inquest was on a case of suicide which occurred while the patient was out upon trial in charge of his friends after an absence from the asylum of some weeks. The general health of the asylum has been fairly good, and no disease of an epidemic character has occurred with the exception of a few sporadic cases of influenza. The only accident of a serious character was a fracture of the radius sustained by a patient during a struggle with another. A male patient escaped while at work on the farm and was not recaptured. On July 20th the memorial stone of the asylum extension was laid by Mr. George Clifton, the chairman of the committee, who at the time was also Mayor of Leicester. The main structure is now approaching completion, but there still remains a large amount of woodwork and other fittings to be done. "In the meantime it becomes more and more difficult to find accommodation for the increasing number of patients. ..... As at present determined, the contemplated additional blocks for 100 male patients and 30 female patients are not to be proceeded with, but it is more than probable that these will be required before many years have elapsed." The changes in the staff of attendants have been numerous, more especially towards the end of the year, when several reservists had to join the army. In these cases it was arranged by the committee that the dependent relatives should have an amount equal to half-pay during the absence of the attendant, and that he should be reinstated upon his return to civil life. The Lunacy Commissioners in their report state that they hope the committee will consider the propriety of erecting a new and detached building in preference to enlarging the present building for patients. An adequate staff continues to be maintained, giving one attendant for every 11 male patients and a nurse for every 10 female patients. The case books and medical records are stated to be well kept.

East Sussex County Asylum, Haywards Heath (Annua Report for 1899).—The average number of patients resident during the year was 921, and comprised 388 males and 533 females. The number of admissions during the year amounted to 271, including 119 males and 152 females. Of these 44—viz., 19 males and 25 females—were re-admissions. Dr. C. E. Saunders, the medical superintendent, states in his report that the admissions show an actual increase of four males and 24 females on those of the previous year. As regards the expectancy of recovery 51 out of 109 males and 68 out of 150 females are tabulated as bad or hopeless. Of the male patients admitted 35 are regarded as actively suicidal and of the females 54 are so included. The patients discharged as recovered during the year amounted to 85 and comprised 38 males and 47 females, a total of 9·2 per cent. of the average number resident. The deaths during the year amounted to 90—viz., 44 males and 46 females—a total of 9·7 per cent. as calculated on the same basis. Of the deaths three were due to renal disease, four to pneumonia, two to broncho-pneumonia, three to bronchitis, five to phthisis, six to senile decay, seven to cardiac disease, 18 to organic brain disease (cerebral softening, atrophy, or tumour), and 18 to general paralysis of the insane. In one instance only was a coroner's inquest held, viz., in a case of death due to peritonitis caused by the perforation of a gall-stone. Accidents and casualties have been for the most part of an unimportant character and in no instance fatal. "This is a matter for congratulation, because the number of suicidal cases have been very numerous, and at one time there were no less than four patients admitted with cut throats within a few weeks of one another." Temporary buildings to accommodate 50 males and 50 females in two blocks were commenced in October, 1898, and will be shortly occupied. In June there was an outbreak of scarlet fever on the male side, and 16 persons were attacked, but all the cases had a non-fatal termination. The origin of the outbreak could not be traced, but there was a considerable epidemic in the neighbourhood at the time. Lectures were given to nurses and attendants during the winter to qualify for the certificate of the Medico-Psychological Association, and no less than eight nurses and 13 attendants were successful in obtaining certificates. The Lunacy Commissioners in their report draw attention to the fact that post-mortem examinations were made in only 34 per cent. of the fatal cases, and they "regret that so few post-mortems should be made here in comparison with most other asylums," for much importance is attached by them to the practice. Influenza appeared during the year and attacked 19 patients and 12 members of the staff. The number of patients deemed to be actually suicidal is returned as 75, or 8 per cent. of the total number resident, and the Lunacy Commissioners point out that "a staff of the strength which exists here must find it impossible to obey strictly the injunction of the cautionary parchment issued for these patients that they should never be left alone. It may be a question whether the feeling by attendants that this is so may not lead to a perfunctory discharge of the duty." The sanatorium is badly furnished with exits in case of fire, there being but one central staircase, and the Commissioners urge "that the defect should be somehow remedied. The medical records are duly kept. We must

express the opinion that with the addition of 100 patients to be housed in the iron buildings the services of a third assistant medical officer will be necessary." A third assistant medical officer has since been appointed.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Extent of the Famine.—The Prospects of the Plague Epidemic.—A New Policy in Calcutta.

THE gifts of grain and money which are being sent from all parts of the world to relieve the starving natives of India show very imperfectly the real state of affairs. The accompanying table, which gives the number of persons in receipt of relief during the two weeks ending June 23rd in each province, pictures the enormous numbers affected as well as the widespread character of the distress:—

Name of Province.	Week ending June 16th.			Week ending June 23rd.			Increase or decrease.
	Relief works.	Gratuitous relief.	Total.	Relief works.	Gratuitous relief.	Total.	
BRITISH PROVINCES.							
Madras	12,701	3,150	15,851	13,704	3,140	16,844	+998
Bombay and Sindh	1,104,086	204,509	1,308,595	1,149,633	228,667	1,378,300*	+69,705
Bengal	7,417	160	7,577	5,100	1,892	6,992	-585
North-West Provinces and Oudh	1,048	727	2,135	1,974	781	2,755	+620
Punjab	134,772	31,147	165,919	128,297	32,143	160,440†	-5,479
Central Provinces	1,237,632	733,899	1,971,531	1,123,640	817,743	1,941,383	-30,148
Berar	361,857	103,610	465,467	359,802	120,101	479,903	+14,436
Ajmere-Merwara	106,356	28,729	135,085	113,229	30,050	143,279	+8,194
Total British Provinces	2,966,229	1,105,931	4,072,160	2,895,379	1,234,517	4,129,896	+57,736
NATIVE STATES.							
Rajputana States	364,494	123,879	488,373	350,426	142,069	492,495‡	+4,122
Central India States	178,868	38,095	216,963	117,987	31,681	149,668	-67,295
Hyderabad	419,528	65,941	485,469	410,126	82,919	493,045	+7,576
Baroda	56,672	35,141	91,813	64,884	34,153	89,037	-2,776
Bombay Native States	492,819	62,458	495,277	414,201	53,241	467,442	-27,835
Punjab Native States	27,308	22,498	49,006	24,056	12,285	35,341	-13,465
Central Provinces Feudatory States	40,306	27,593	67,899	33,922	30,178	64,100	-3,799
Kashmir (Jammu)	—	—	—	1,062	—	1,062	+1,062
Total Native States	1,519,995	375,605	1,895,600	1,406,664	386,526	1,793,190	-102,410
Grand Total	4,486,224	1,481,536	5,967,760	4,302,043	1,621,043	5,923,086	-44,674

* Figures incomplete. † Return for the Umbala district wanting; the previous week's figures have been included.
‡ Returns for the States of Kherwara, Dungapur, Kotra, and Kushalgarh in Rajputana, and for the States of Dewas (Senior and Junior Branches), Bagli, Pathari, and Karaudia in Central India, are wanting; the previous week's figures for these States have been included.

The Bengal Government have just issued a letter concerning the prevalence of cases of plague in certain areas of Calcutta and directing that those areas should be more extensively disinfected. It is suggested by Government that disinfection of the entire tenement in which a case of plague has occurred should be carried out, the principle underlying the memorandum being that wider measures of disinfection should be practised. This seems at first sight a very reasonable policy; but it is by no means novel. The extraordinary part of this plague measure is that it is not accompanied by the conferring of any further powers on the plague authorities. The person who enters a tenement where a case of plague does not exist or has not existed is a trespasser and the authorities have no legal powers. The only way to carry out this extra disinfection is by an assumption of legal power which the officers do not possess. It would be much more straightforward to say outright that wholesale disinfection has got to be done, and that the officers concerned will have the full legal powers to perform it. At the present time it is not uncommon, I am informed, for offers of disinfection to be rejected. Considering that this measure of disinfection is now the sum and substance of all plague policy it seems extraordinary that it should be left to the will of the people. The consequence is that a very large number of houses which ought to be disinfected escape being treated.

June 28th.

I have to record a still further diminution in the number of deaths from plague throughout India. Last week there were only 282 deaths officially returned as due to plague. Of these, 106 occurred in Bombay and 108 in Calcutta. The North-West Provinces, the Punjab, the Central Provinces, Rajputana, and Aden were clear. Bombay city still returns a high general mortality—viz., 1048 for last week—a rate of over 66 per 1000 per annum. There were only 89 deaths from cholera returned and no other epidemic disease exists to explain the excess. It is pretty obvious that plague continues and is unrecognised to a much larger extent than is supposed. This rapid diminution in the mortality from plague in all parts of India must not be allowed to lull us into false hopes of a final disappearance of the disease from the country. The chances seem to be that while certain places hitherto severely attacked may not suffer so markedly in the future there are numerous areas only recently infected which will go through a series of recurrences.

THE SWANSEA GENERAL HOSPITAL.—The annual general meeting of this institution was recently held under the presidency of Colonel Morgan. The report stated that 892 in-patients had been admitted during 1899, the daily average number of occupied beds being 90·1, against 84 in 1898. The out-patients numbered 4392. The financial statement showed that during the year the adverse balance was reduced from £1391 to £845. The annual income was greater by £244. The workpeople's contributions showed an increase of £359, Baroness Patti-Cederstrom's concert realised £360 for the charity, and the house-to-house collections reached £418. During the year several much-needed improvements had been carried out in the building.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Enteric Fever in the City of Chichester,[1] by Dr. THEODORE THOMSON and Colonel J. T. MARSH, R.E.—This inquiry was ordered by the Local Government Board in response to local appeal from Chichester for help to ascertain the reason of the excessive typhoid fever prevalence in that city in recent years and particularly in 1898. The liability of this town to repeated recurrence of enteric fever in serious amount was well known and investigations had already been made by the Local Government Board in previous years.

The present area of Chichester is 1595 acres and its population is estimated at about 11,500. In general it may be said to stand on a gravel flat overlying clay of the London and Reading beds. Its water is derived partly from private wells sunk in the gravel but principally from a public supply obtained from deep wells in the chalk. Excrement disposal is effected either by water-closets or by cesspit privies; water-closets drain either to the sewers or to cesspools. An extensive and apparently well designed sewerage system was carried out in 1893-95, and nearly three-fourths of the houses now drain to the sewers. The principal difficulty with Chichester sewers has been to exclude subsoil water. Notwithstanding many alterations since the sewers were laid down subsoil water is still admitted in very large quantities; correspondingly, no doubt, sewage escapes into the subsoil water. Enteric fever prevalence in Chichester may be illustrated by the following table given by the inspectors:—

Period.	City of Chichester.			England and Wales: enteric fever death-rate per 1000 living.
	Estimated population.	Enteric fever deaths.	Enteric fever death-rate per 1000 living.	
1871-75	7,890	11	0·28	0·37
1876-80	8,020	26	0·65	0·28
1881-85	8,040	17	0·42	0 22
1886-90	7,920	12	0·23	0·18
1891-95	7,760	3	0·08	0·17
1896-98	11,000	21	0 64	0·17

It will be noticed that typhoid fever mortality in Chichester, having been in excess of that of England and Wales throughout the 15 years 1876-90, fell below it in 1891-95, but again rose to a very high level in the three years 1896-98. As regards notified cases of the disease, in 1896 there were 116, in 1897 there were 129, in 1898 there were 100, and in 1899, according to a postscript to the report, 76 cases had occurred up to the end of September. Dr. Thomson gives an account of a comprehensive study of the incidence of enteric fever on locality in Chichester, illustrated by two series of maps. One set shows the position of invaded dwellings in each of the years 1896, 1897, and 1898—the dates on the maps themselves have evidently been misprinted—another shows the distribution of deaths referred to enteric fever and continued fever during (*a*) the period 1870-84 and (*b*) the period 1885-98. This last set is instructive. No safe conclusions as to distribution of enteric fever on locality could be drawn from the comparatively small number of deaths in any given year, but in the combinations of 15 and 14 years, notwithstanding obvious possibilities of error, there is a much greater chance of obtaining an approximation to the facts. Similar maps might be constructed with advantage for other places than Chichester.

Study of the maps shows that in the three years 1896-98 enteric fever has shown a distinct preference for particular quarters of Chichester, especially certain parts which lie outside the line of the old city walls. During the remaining 25 years under consideration, however, the distribution does not always appear to have been the same. Thus in the earlier years the area within the line of the city walls seems to have had no such comparative immunity from typhoid fever as has latterly been the case.

Space does not allow us to follow Dr. Thomson in his discussion of the sundry causes of enteric fever in their possible application to the phenomena of its endemic prevalence in Chichester. After exhaustive consideration he is able to eliminate from any important share in the maintenance of the disease the consumption of infected milk and shellfish—no reference is made to other foods which occasionally have been known to convey typhoid infection—the use of infected drinking-water, infection by way of sewers, changes in rainfall, and variations in level of the subsoil water. Accusations which some of the inhabitants of Chichester appear to have brought against their recent works of sewerage that these works had directly or indirectly brought upon the town the recrudesence of its enteric fever the inspectors show good grounds for disbelieving. There was not, as a whole, a disproportionately heavy incidence of fever on the sewered population, there was no parallelism between the behaviour of the fever in the several subdivisions of the town and the sewerage conditions of those subdivisions, nor were there any facts indicating that infective sewer air could have explained the local incidence. By a process of exclusion of the above factors the question of soil is arrived at. The localities specially affected during 1896-98 are considered in their relation to soil and to opportunities of soil pollution. One point is particularly worthy of attention—that the poorer neighbourhoods where the fouling of the soil is likely to be greater than elsewhere have during the three years 1896-98 suffered most heavily. Nevertheless this does not seem to have held good during the earlier period 1870-84, when no special preference for the poorest neighbourhoods seems to have been shown. Again, although in some instances there seems to have been a greater proportionate incidence of fever upon neighbourhoods where cesspit privies preponderate over cesspools, when the whole period is reviewed cesspool and cesspit privy neighbourhoods seem to have suffered in much the same degree. From these and many other considerations the inspectors conclude that the mere fact of there being abundant opportunities of soil pollution in Chichester does not suffice as an explanation of the long-continued prevalence of enteric fever in serious amount there. Nevertheless as a result of a careful investigation of local circumstances they are disposed to see a possible explanation in the existence of certain soil conditions peculiar to Chichester or which Chichester may share with other towns in which enteric fever is endemic. "Hypothesis of the existence in Chichester of soil conditions especially favourable to the viability and growth of the infective material of enteric fever is not inconsistent with the facts ascertained by us and set out in this report. But, on the other hand, such hypothesis, while not inconsistent with these facts, does not at present afford an adequate explanation of features that have characterised the fever in its distribution in time and place in Chichester. Fuller knowledge of soil conditions in their relations with fever prevalence may account for these features; without that knowledge it is not possible to arrive at definite conclusions." Few will question the desirability of further research into the subject. Not the least valuable part of this report is that containing suggestions as to the lines upon which an inquiry should be conducted, which is "urgently called for in the interests not only of Chichester but also of not a few other localities in this country where enteric fever is endemically prevalent in such amount as to take year after year a toll of deaths greatly in excess of the proportion claimed by this disease in England and Wales as a whole."

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 4s. 6d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6470 births and 3476 deaths were registered during the week ending July 14th. The annual rate of mortality in these towns, which had been 15·1 and 14·5 per 1000 in the two preceding weeks, rose again to 15·6 last week. In London the rate was 14·2 per 1000, while it averaged 16·5 in the 32 provincial towns. The lowest death-rates in these towns were 9·6 in Portsmouth, 11·1 in West Ham, 11·3 in Brighton, and 11·5 in Croydon; the highest rates were 19·7 in Oldham, 19·8 in Newcastle, 20·0 in Manchester and in Gateshead, and 20·9 in Liverpool. The 3476 deaths in

these towns included 427 which were referred to the principal zymotic diseases, against 419 and 344 in the two preceding weeks; of these 104 resulted from measles, 102 from diarrhœa, 96 from whooping-cough, 72 from diphtheria, 27 from "fever" (principally enteric), 24 from scarlet fever, and two from small-pox. No fatal case of any of these diseases occurred last week in Norwich; in the other towns they caused the lowest death-rates in Portsmouth, Bolton, Preston, Bradford, and Leeds, and the highest rates in Cardiff, Derby, Sheffield, and Gateshead. The greatest mortality from measles occurred in Derby, Oldham, Sunderland, and Newcastle; from whooping-cough in Derby, Burnley, Sheffield, and Gateshead; from "fever" in Huddersfield and Wolverhampton; and from diarrhœa in Blackburn, Sheffield, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 26 in London, nine in Leicester, five in Cardiff, five in Salford, and five in Sheffield. One fatal case of small-pox was registered last week in Liverpool and one in Oldham, but not one in any other of the 33 large towns. There were 17 cases of small-pox in the Metropolitan Asylums Hospitals on Saturday last, July 14th, against 16 and 17 at the end of the two preceding weeks; four new cases were admitted during the week, against eight and four in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1861, against numbers increasing from 1754 to 1843 in the five preceding Saturdays; 208 new cases were admitted during the week, against 219, 210, and 229 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 268 to 140 in the five preceding weeks, rose again to 160 last week, but were 26 below the corrected average. The causes of 34, or 1·0 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Hull, and Newcastle; the largest proportions of uncertified deaths were registered in Brighton, Birmingham, and Liverpool.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·9 and 17·7 per 1000 in the two preceding weeks, further declined to 17·2 per 1000 during the week ending July 14th, but was 1·6 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 10·6 in Leith and 15·1 in Aberdeen to 18·1 in Edinburgh and 20·5 in Dundee. The 533 deaths in these towns included 23 which were referred to diarrhœa, 21 to whooping-cough, 17 to measles, seven to scarlet fever, four to diphtheria, one to small-pox, and not one to "fever." In all 73 deaths resulted from these principal zymotic diseases, against 83 and 85 in the two preceding weeks. These 73 deaths were equal to an annual rate of 2·4 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had increased from 19 to 32 in the three preceding weeks, declined again last week to 23, of which nine occurred in Glasgow, five in Greenock, two in Edinburgh, two in Dundee, two in Aberdeen, and two in Paisley. The deaths from whooping-cough, which had been 26 and 22 in the two preceding weeks, further declined to 21 last week, and included 12 in Glasgow, two in Dundee, and two in Paisley. The fatal cases of measles, which had risen from 14 to 20 in the three preceding weeks, declined again last week to 17, of which nine were registered in Glasgow, six in Edinburgh, and two in Paisley. The deaths from scarlet fever, which had been seven and four in the two preceding weeks, rose again to seven last week and included five in Glasgow. The fatal cases of diphtheria, which had been two in each of the two preceding weeks, rose last week to four, of which three occurred in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 97 and 72 in the two preceding weeks, further declined last week to 71, but exceeded by 18 the number recorded in the corresponding period of last year. The causes of 35, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·0 and 17·8 per 1000 in the two preceding weeks, rose again to 18·2 during the week ending July 14th. During the past four weeks the death-rate in the city has averaged 18·5 per 1000, the rate during the same period being 13·9 in London and 17·1 in Edinburgh. The 122 deaths belonging to Dublin registered during the week under notice were three in excess of the number in the preceding week, and included eight which were referred to the principal zymotic diseases, against three and six in the two preceding weeks; of these, four resulted from whooping-cough, three from "fever," and one from diarrhœa. These eight deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·9 in Edinburgh. The fatal cases of whooping-cough, which had been one, two, and three in the three preceding weeks, further rose to four last week. The deaths referred to "fever," which had been two, nil, and one in the three preceding weeks, rose last week to three. The 122 deaths in Dublin last week included 16 of infants under one year of age and 28 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number recorded in the preceding week. Eight inquest cases and five deaths from violence were registered; and 60, or nearly one-half, of the deaths occurred in public institutions. The causes of two, or 1·7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy-Inspector-General H. T. Cox is appointed to Plymouth Hospital.

ROYAL ARMY MEDICAL CORPS.

During the absence on leave of the Principal Medical Officer in Ireland till August 4th his duties will be performed by Lieutenant-Colonel F. G. Adye-Curran. Surgeon (on probation) A. D. Jameson has arrived in London for temporary duty. Major F. M. Baker, from half-pay, to be Major, with precedence next below Major S. C. B. Robinson, vice J. Minniece, deceased. Lieutenant-Colonel Samuel James Flood retires on retired pay on account of ill-health. Temporary Lieutenant George Black. Surgeon-Lieutenant 2nd Volunteer Battalion the Royal Sussex Regiment, is granted the temporary rank of Captain whilst employed in South Africa.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the promotion of Lieutenant-Colonel John Thomas Brownrigg Bookey, Bengal Establishment, to Colonel. Her Majesty has also approved of the retirement from the service of the undermentioned officers:—*Bengal Establishment:* Lieutenant-Colonel Charles Joseph McCartie, Lieutenant-Colonel Dennis Wood Deane Comins, and Lieutenant-Colonel John Francis Tuohy.

VOLUNTEER CORPS.

Submarine Miners: The Severn Division: John David Williams to be Surgeon-Lieutenant. *Rifle:* 1st Volunteer Battalion the King's Own (Royal Lancaster Regiment): Captain Richard John Morris resigns his commission and is appointed Surgeon-Lieutenant. 2nd Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant W. Roxburgh to be Surgeon-Captain. 1st Volunteer Battalion the Northamptonshire Regiment: Surgeon-Captain E. P. Dickin resigns his commission. 1st Volunteer Battalion the Gordon Highlanders: John Farquhar Christie to be Surgeon-Lieutenant. 24th Middlesex: Surgeon-Captain J. D. Grant to be Surgeon-Major.

TRANSVAAL WAR NOTES.

Lieutenant-Colonel Kenny, R.A.M.C., Major Tuke, R.A.M.C., Major Blenkinsop, R.A.M.C., and Major Hathaway, R.A.M.C., left Cape Town invalided in the *Aurania* on July 7th for England.

We understand that the Sick and Wounded Officers' Surgical and Medical Aid Committee, originally formed to provide medical and surgical aid for those who have suffered in South Africa, are equally prepared to render assistance to

officers returning home from other theatres of war. Applications should be addressed to the Hon. Arthur Brodrick at Hampden House.

The *Times* announces that in connexion with Princess Christian's Homes of Rest for Discharged Soldiers and Sailors now in course of erection at Bisley, Her Majesty the Queen has been graciously pleased to endow two beds, their Royal Highnesses the Duke and Duchess of York endow one bed for a soldier or sailor, her Royal Highness Princess Christian of Schleswig-Holstein one bed for the King's Royal Rifles, and their Highnesses Princess Victoria of Schleswig-Holstein and Princess Aribert of Anhalt a bed for a "Greenjacket."

The following steamships have arrived at Southampton carrying invalids and wounded men from South Africa. The *Kildonan Castle* arrived on July 11th and the *Dunera* on July 12th. From the former 100 patients were admitted at the Royal Victoria Hospital, Netley, and from the latter 11 cases. Only the severe cases were sent to Netley, the remainder being sent on to other stations. At Netley eight wards are now full of patients suffering from enteric fever.

Major A. S. Rose is in medical charge of the hospital ship *Avoca* which left Southampton for South Africa on July 18th.

Lieutenant Morris, R.A.M.C., has left England for duty in South Africa.

THE SOUTH AFRICAN COMMISSION.

This matter has now been definitely settled and the commission has been increased from three to five by the addition of two lay members with undeniable business qualifications. An objection was raised from the first to one of the three eminent names submitted by the Government. It is absurd to suppose that a man of the high personal character and integrity of Professor Cunningham will not bring to the work a perfectly unbiased judgment; it would be an insult to him to suppose otherwise. It is rather on the score of his scientific attainments in a special direction that we ventured to think that a man of far less scientific reputation might have proved better adapted and more useful for conducting such an investigation. We think, too, that the commission will, in the first instance, have to learn its business from the evidence that will be brought before it, and that for various practical reasons it would have been well if it had someone at hand well versed in military systems. There was no reason why such an individual should have taken part in the deliberations of the commission or signed its report. But it has been ruled otherwise. We may call our readers' attention to an article in the *Standard* of July 18th on the subject of this commission.

DEATHS IN THE SERVICES.

Surgeon-Lieutenant-Colonel William Wellington Lake, M.M.S.C., Volunteer Company Royal Army Medical Corps, at Bloemfontein of Bright's disease, on July 13th. Educated at St. Thomas's Hospital, he was admitted a Licentiate of the Royal College of Apothecaries in 1876, and a Member of the Royal College of Surgeons of England in 1877. In 1898 he was appointed surgeon-major of the Militia Medical Staff Corps and volunteered for service and went to South Africa with the Volunteer Company of the Royal Army Medical Corps in the early part of this year. For active service in the field as a surgeon in the Ottoman army he received the medal and the fourth class of the Medjidieh for his services during the Russo-Turkish war of 1877-8. Mr. Wellington Lake held many public appointments, among them being those of deputy coroner for West Surrey and medical officer of health for the Guildford and Woking districts of the same county.

THE ASHANTI CAMPAIGN.

With so many other and bigger matters on hand in China and South Africa it is not surprising that recent events in Ashanti and the little campaign for the relief of Kumasi have been comparatively lost sight of. But there has been a fine exhibition of British courage, endurance, and skilful management of late in this very unhealthy and malarious part of the world. What with the fighting with savages and fever, short rations, flooded districts, and trying marches there must have been a good number of wounded and a great deal of sickness, and the wonder is whether medical aid, quinine, and suitable or even sufficient food for the sick were obtainable. It seems to be nearly certain, however, that Colonel Willcocks has succeeded in relieving the hard-pressed garrison at Kumasi.

LEAN'S ROYAL NAVY LIST.

Lean's Royal Navy List, published by Messrs. Witherby and Co., 326, High Holborn, and 4, Newman's-court, Cornhill, price 7*s.* 6*d.*, is so well known and is of such practical utility that scarcely anything is required but a reminder to our readers that a new issue is ready. We note, however, that the July issue of this quarterly "complete encyclopædia of our first line of defence," which is now ready, includes the war and meritorious services in South Africa of naval officers connected with that campaign.

THE ORDER OF THE MEDJIDIEH.

The Queen has given her Royal authority that Major Richard Hugh Penton, D.S.O., R.A.M.C., may accept and wear the insignia of the Imperial Ottoman Order of the Medjidieh (third class) conferred by His Highness the Khedive of Egypt, authorised by His Imperial Majesty the Sultan of Turkey in recognition of service in the Soudan during the year 1899.

MILITARY HOSPITAL, DEVONPORT.

280 invalid soldiers arrived at the Military Hospital, Devonport, on July 14th, and 350 were disembarked at Plymouth subsequently.

Correspondence.

"Audi alteram partem."

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

To the Editors of THE LANCET.

SIRS,—We again beg for the powerful aid of the press on behalf of the Factory Girls' Country Holiday Fund. Owing to the liberal help of the public we were able last year to give a country holiday of a week or more to 2200 working girls and women employed in all parts of London in factories and workshops. So many are again waiting to go that we are compelled to make a very urgent appeal for funds. Many of these toilers know nothing of the delights of country life and surroundings. Those who have been away appreciate the change and rest more every year and for months save a few pence weekly out of their scanty earnings towards their expenses; £515 were contributed by them in this way last year. They are sent to the seaside and to country villages, and the greatest care is taken in making all arrangements for their holiday. The cottagers with whom they are boarded and the ladies, clergy, and others who look after them during their stay do their utmost to give them a happy holiday; the cottagers in many cases beg to have the same visitors year after year. When it is remembered that many of the girls are little more than children of 14 years of age and upwards, spending the best part of their lives in hot crowded factories, and that in many cases they are in large measure the bread-winners of the family, we feel sure that their claim for a short holiday in fresh air and country surroundings with freedom from daily toil and worry will not be disregarded.

We are, Sirs, yours obediently,

(Signed) M. LONDIN,
EDW. ROFFEN,
BEATRICE B. TEMPLE,
G. F. BRISTOL,
E. GARRETT ANDERSON, M.D. Paris,
FRANK LLOYD,
H. ADLER, Chief Rabbi,
EDWARD CANNEY,
Chairman of the Executive Committee.
MARGARET A. WYATT,
Honorary Treasurer.

S. Peter's Rectory, Saffron Hill, London, E.C., July 12th, 1900.

THE NEED FOR REFORM IN DEATH REGISTRATION.

To the Editors of THE LANCET.

SIRS,—A few weeks ago the vestry of Plumstead addressed a letter to the Westminster vestry informing them that in the Plumstead registration district almost 3·5 per cent. of the deaths were uncertified either by a medical practitioner or by a coroner. As this seemed a large percentage of uncertified deaths in one district alone I took some trouble in finding out how the law stands at present and how its provisions are carried out. At the outset I was appalled to discover that it is apparently

not necessary for the cause of death to be certified by a medical practitioner or by a coroner. In fact, it seems fairly clear that all the law demands is *registration* and not *certification*, and that the act of registration without certification is made easy in some districts and difficult in others. The act of registration is performed by the registrar, who need not necessarily have information either from a medical practitioner or a coroner, but can register a death on the information of a layman present at the death—"a qualified informant"—if he has no reason to suppose that the death was due to violence or accident or occurred under suspicious circumstances. These last must be referred to the coroner.

A Committee of the House of Commons was in 1893 appointed to consider the question and amongst other recommendations the following is particularly noticeable: "Your Committee ..... have come to the conclusion that uncertified deaths should as a class cease to exist and that means should be devised whereby a medical certificate should be obtained in every case not certified by a registered medical practitioner in attendance." The reason given for this is that there is no uniformity of practice amongst registrars and that in some districts cases are registered which in others would be referred to the coroner. Most uncertified deaths occur amongst infants and especially amongst illegitimate children, and it is not difficult to see how, in the case of infants, registration without certification makes murder easy. From the report of the Committee it is evident that uncertified deaths are on the whole diminishing steadily, but further examination of the figures shows that in some districts the percentage is still very large, and that it is extremely probable that under the existing law there will always be an irreducible minimum. To get rid of this quantity an alteration of the law is urgently necessary. The Committee recommended that a medical certifier should be appointed to make a personal inquiry into all uncertified deaths. They further recommended that he should be the medical officer of health, and probably their recommendation is the best one, though there are several reasons against it. The only other medical man likely to be appointed would be the police surgeon, but there would be in the public idea great sentimental opposition to a police surgeon inquiring into a cause of death. It would immediately create objection as implying suspicion of foul play. But whoever the certifier may be I am sure that he should not be allowed to perform a post-mortem examination without a coroner's order and that he should always send his report to the coroner, and that the latter should be, as now, the authority for determining whether an inquest should be held or not. That an alteration of the law is necessary has been asserted by a Committee of the House of Commons, whose recommendation has been approved by the London County Council, by the Society of Medical Officers of Health, and by the Coroners' Society.

I am, Sirs, yours faithfully,

Buckingham Gate, S.W., July 16th, 1900. H. A. DES VŒUX.

"THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS."

To the Editors of THE LANCET.

SIRS,—I have read Mr. A. H. Burgess's article under the above heading in THE LANCET of June 23rd (p. 1797) with much interest and no little surprise. The results set forth in the article are of such an extraordinary nature and so altogether opposed to those obtained by myself when working with many of the same disinfectants that I feel constrained to express considerable doubt in the efficiency of the *thread method* as employed by Mr. Burgess. This method was condemned as long ago as 1890 by Dr. V. von Gerlach. Commenting on the results obtained by Rémouchamps and Sugg when estimating the comparative value of certain preparations of phenol and cresols—in *solution* and *emulsion*—Von Gerlach states that he suspended threads in solutions and emulsions of phenoloids for an hour, after which he hung them for another hour in about 400 cubic centimetres of water, at the expiration of which time the threads which had been suspended in the emulsions "smelt plainly of the disinfectant," and that he "had to ascribe absence of growth in the gelatin to insufficient washing of the threads, *as subsequent inoculation with vigorous cultures proved*." From which it will be seen that when working with emulsions there must ever be a certain amount of doubt attaching to investigations carried out with this method, as an alternative to which I should like to recommend one I have employed in several thousands of experiments with most regular and consistent results. This method has the further advantage of being extremely simple. Briefly stated it is as follows. To a known volume of an active culture of the organism add an equal volume of the dilute disinfectant; shake and take sub-cultures in suitable media at definite intervals. Incubate for at least two days at 37° C. In practice I prefer to take five cubic centimetres of a 24-hours' blood-heat culture of the organism to five cubic centimetres of, say, 0·2 per cent. disinfectant. This reduces the percentage of the latter to 0·1. (I may add the disinfectants are allowed to act at a room temperature of about 15° C.) Sub-cultures are then taken every two and a half minutes up to 15 in tubes containing about 10 cubic centimetres of bouillon. No exception can be taken to this method as regards the introduction of disinfectant during inoculation. I have made careful weighings and find that any disinfectant in the bouillon tubes introduced with the "loopful" employed in inoculation is present in such an extreme state of dilution (1 in 6,000,000) as to be quite innocuous.

I am, Sirs, yours faithfully,

Clapham, S.W., July 14th. J. T. A. WALKER.

PADDLING IN THE SEA.

To the Editors of THE LANCET.

SIRS,—My object in writing is to try to do a good turn to the thousands of children who are now going to the seaside. For some reason or other paddling is very generally condemned by the medical profession. My own experience, extending over some 30 years, is that the practice is most beneficial. The children love it and a child who has once paddled, when at the seaside always craves to do it again. I have no idea on what grounds the medical objection is based, but for some reason or other the prohibition is strongly impressed on the parents. The parents think the cold water to the feet sends the blood to the head, and believe that the hot sun on the head and the cold water to the feet are injurious. No doubt the same blood which is cooled in the legs is circulating through the brain and certainly the children's legs are red after paddling, so I suppose if it does anything it what people call "draws blood" to the legs and tends to prevent congestion elsewhere. A child on a very hot day is fretting and sweating, but a child paddling on such a day is perfectly happy and does not feel the heat. There is certainly no undue fatigue in standing, walking, or trotting about in the shallow water. Paddling seems a trivial subject for a letter in THE LANCET, but I am so convinced that it does the children good that I trust this may get inserted.

I am, Sirs, yours faithfully,

WM. KNIGHT TREVES, F.R.C.S. Eng.

Margate, July 12th, 1900.

THE JOINT COMMITTEE TO OPPOSE MIDWIVES REGISTRATION: AN APPEAL FOR FUNDS.

To the Editors of THE LANCET.

SIRS,—I have been directed to request the favour of space and permission to appeal to the readers of THE LANCET for donations to the voluntary fund to carry on the work of this committee. Its operations thus far have, on very limited resources, been most successful, being based on the broad principle of maintaining the rights of the profession as essential to the public welfare. Memorials to Members of Parliament have been well signed in large and important centres, and signatories have besides given letters introducing the representative of my committee, who has thus obtained personal interviews with about 20 and correspondence with over 30 Members of Parliament on the influential introduction of electors. Of these the most successful were the memorials and introductions of Mr. Griffith-Boscawen's medical constituents, securing his valued support, serviceable motion to consider the Bill "upon this day three months," and admirable speech imparting a new and improved tone to the debate.

Although the Bill is probably dead for this session very vigorous action is necessary in the constituencies to rouse

medical electors to bring home to Members of Parliament the real nature and grave danger of the proposed recognition of midwives by law to render *medical services* in labour. The registration of midwifery or monthly nurses is not opposed. The distinction taken is that diagnosis of presentation and conditions in labour is a difficult and highly responsible medical service which can be safely entrusted only to medical skill and knowledge. This my committee finds Members of Parliament readily grasp A medical Parliamentary division has been formed at Lewisham for local medico-political work. For the extension and organisation of our work in Parliamentary divisions funds are urgently required. About £30 have been expended, but to carry out our procedure throughout England and Wales at least £200 are needed.

Donations may be sent to the honorary treasurer, Dr. F. Lorimer Hart, Kirkdale, Sydenham, S.E., and further information may be obtained from the honorary secretaries, Mr. R. B. Anderson, and Mr. S. R. Russell Matthews, at the secretarial address, 32, Montague-place, London, W.C.

I am, Sirs, yours faithfully,

July 18th, 1900. F. S. TOOGOOD, M.D. Lond., Chairman.

"THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

To the Editors of THE LANCET.

SIRS,—The controversy in THE LANCET on the above subject will, I feel sure, have convinced your readers not only that Irish university education is a difficult and thorny question, but that it is futile to put forward "the nationalisation of Trinity College, Dublin," as a settlement of it until there is some agreement as to what this phrase really means.

Your correspondent "A.M., M.D. Dub. University," says that what he understands as "The Nationalisation of Trinity College, Dublin," is its "desectarianising" *plus* the removal and endowment of its divinity school. On the other hand, I hold that the "complete desectarianising" of Trinity College will not make it a "national" university or college. To "nationalise" a university or college you must have among its governing body—professors, Fellows, and officials—representatives of all classes and creeds. Irish Roman Catholics and Presbyterians must have a fair share in its government and administration; the other existing colleges in Ireland must have their claims duly recognised; and, finally, the degrees of a "nationalised" university must be thrown open freely to the members of both sexes.

Now, Sirs, suppose—to look at the question from a practical point of view—a statesman of either of the great political parties adopts as the solution of the Irish University question, "the nationalisation of Trinity College, Dublin," in the narrow sense recommended by your correspondent, and brings forward such a measure in Parliament. He will soon find that he will be opposed, as indeed "A.M., M.D. Dub. University" freely admits, by the authorities of Dublin University; the Presbyterians of Ireland (who number 446,687) would not accept such a solution of the question because they would have no adequate representation on the governing body; the other colleges in Ireland would be up in arms against such a scheme, fearing their extinction; the Irish Roman Catholics would also decline to accept such a settlement; and women of all political parties would protest against the establishment of any new, or the rearrangement of any old, university unless all its degrees were open to their sex. No statesman, not even "a Government endowed with a backbone" (to quote your correspondent) could overcome such opposition. If, on the other hand, the statesman would propose as his measure the more thorough nationalisation of Trinity College, Dublin, such a scheme as I have foreshadowed, it would be opposed even more fiercely by the authorities of Trinity College, and I am sure it would not satisfy the demands of the Roman Catholic hierarchy in Ireland, and so the statesman after such unfortunate experiences would be compelled to agree with your original view—"the proposal to nationalise Trinity College is therefore as useless as it is impracticable"—while, I may be allowed to add in conclusion, adopting the classical diction of "A.M., M.D., Dub. University," no one "outside the walls of a lunatic asylum" would put forward as the settlement of Irish University education any form of "nationalisation of Trinity College, Dublin."

I am, Sirs, yours faithfully,

July 17th. IRISH GRADUATE.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool School of Tropical Medicine: Official Recognition by the Government.

THE Liverpool School of Tropical Medicine, which had only received partial recognition, has now been fully recognised by the Government as a training school for medical men proceeding to the colonies to take up Government appointments. Mr. Chamberlain, in a complimentary letter recently addressed to Mr. Alfred L. Jones, the chairman of the school, expressed his appreciation of the admirable work which is being done by the school, together with his cordial good wishes for the success of the new expedition in connexion with the school which had recently sailed for the region of the Amazon. Mr. Chamberlain concluded a flattering letter by intimating that the steps necessary to give effect to his decision will be taken at an early date. Lord Salisbury has also informed Mr. Alfred Jones that all medical officers proceeding to the African protectorates under the administration of the Foreign Office will be required to undergo a course of instruction for two months, either at the London or the Liverpool school of tropical medicine. The enterprise and public spirit shown by the Liverpool School of Tropical Medicine in the despatch within 12 months of three expeditions to the tropics for the elucidation of the causes of malaria, dysentery, and yellow fever, fully entitled it to official recognition by Government (in conjunction with the London School of Tropical Medicine) as a training school for colonial medical officers. Liverpool is to be congratulated on the position which its school of tropical medicine will now take in the world, and there can be no doubt that, with such an auspicious beginning, it will go on and prosper.

Liverpool Stanley Hospital.

The vacancy on the staff of physicians at the Stanley Hospital, through the resignation of Dr. C. J. Macalister, has been filled by the appointment of Dr. R. J. Buchanan, assistant physician. Dr. Buchanan had a successful career at the medical school of University College, Liverpool, and his promotion to the higher post at the Stanley Hospital is fully endorsed by his professional brethren. The method of election in the matter of proxies was taken exception to by the other candidates, and there can be no doubt that the system ought to be abolished. The electorate at this hospital is cumbersome, consisting of some hundreds of subscribers of one guinea and upwards, so that here also there is room for an improved method of election to the higher medical posts.

The Joint Parochial Hospital for Tuberculosis.

The joint committee of the unions of Liverpool, West Derby, and Toxteth Park have decided to purchase land at Heswall for the erection of the joint parochial hospital for tuberculosis at a cost of about £4200. The site of the new hospital is a pleasant plot of land on the slope of the hill overlooking the river Dee and the distant Welsh mountains. Mr. C. H. Lancaster has been appointed the architect and he is now engaged on the plans of the proposed building.

Low Death-rate in Liverpool.

The medical officer of health reports the interesting fact that there were 64 deaths less during the week ending July 7th than in the corresponding week of last year, the rate of mortality being 18·2 per 1000 of the inhabitants as compared with 23·2 per 1000 at the same period of last year, when there were 299 deaths.

Liverpool Country Hospital for the Chronic Diseases of Children.

The garden fête which was held last week at Woolton Wood, the residence of Mr. Holbrook Gaskell, in aid of the funds for the proposed Country Hospital for the Chronic Diseases of Children realised £528 2*s.* 6*d.* The institution, which commenced work in November, 1899, has a temporary home in the Children's Convalescent Institution at West Kirby, in which 20 beds were placed at the disposal of the committee at an annual rental. Mr. Holbrook Gaskell announced his intention of giving a second donation of £1000, whilst Mr. Andrew Gibson promised £500 towards the purchase of the new site. These donations are in addition to those already announced in THE LANCET.

The Heath Essay of the University of Durham.

The Heath Scholarship of the value of £200 has been

awarded to Dr. Nathan Raw, medical superintendent of the Mill-road Infirmary, Liverpool, and Major J. R. Dodd, R.A.M.C. The Heath Essay, which was founded by the late Professor Heath, is awarded every two years to graduates of the University of Durham. The subject of the essay for this year was "The Urinary Tract, its Injuries and Surgical Diseases, their Pathology, Diagnosis, and Treatment." Dr. Raw has also recently been elected a Fellow of the Royal Society of Edinburgh for his valuable contributions on the subject of tuberculosis with which his name has become identified in Liverpool. It is an interesting fact that the Heath Scholarship was awarded four years ago to Mr. G. P. Newbolt of Liverpool.

Death of Mr. Nicholas Smith Glazebrook.

Mr. N. S. Glazebrook, M.R.C.S., L.S.A., died at his residence, Hayman's-green, West Derby, on July 14th, in his eighty-eighth year. The deceased was at one time one of the best-known practitioners in the suburbs of Liverpool. He was closely associated with the public life of Liverpool in many of its phases, and for many years was a member of the West Derby Local Board. The deceased's eldest son is the Director of the National Physical Laboratories and was for some time the principal of University College, Liverpool—Mr. Richard Tetley Glazebrook, M.A., F.R.S. The interment took place on July 17th, at the parish church, Knotty Ash, amidst universal demonstrations of public respect.

July 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University Court.

AT a meeting of the Edinburgh University Court held on July 16th it was intimated that the Court's Ordinance No. 1 (Separation of the Teaching of Medical Jurisprudence or Forensic Medicine and Public Health in the University of Edinburgh) had been approved by Her Majesty in Council and that therefore the ordinance would come into force as from Oct. 1st next. Various grants were made from the Earl of Moray's endowment for purposes of original research, the recipients being Professor E. A. Schäfer, Dr. Alfred C. Sandstein, Dr. H. E. Gibbs, Dr. John S. Flett, Dr. J. Wilson Dougal, Dr. Evan H. Fraser, and Dr. Sutherland Simpson. Recognition was again granted to the Edinburgh Medical College for Women for the ensuing year.

Farewell Banquet to Sir William T. Gairdner.

On the occasion of Sir William T. Gairdner leaving Glasgow to reside in Edinburgh a considerable number of his medical and other friends entertained him to a banquet in the Windsor Hotel. In replying to the toast of the "Guest of the evening" in a pleasing and excellent speech Sir William Gairdner remarked that he had lived for 38 years before he was professor and 38 years after he had been appointed to a chair in Glasgow University, and that the two things he had ever asked for in life were his wife and his professorship. All the rest had come to him in spite of himself.

Health of Aberdeen.

Last week there were 38 cases of whooping-cough and 33 of measles reported to the medical officer of health, there being an increase in the number of cases of measles.

Thomson Medical Bursaries, Aberdeen University.

In consequence of the fall in the rate of interest the Senatus has been compelled to resolve that in future there shall under this foundation be three bursaries of £22 each, three of £20 each, and three of £18 each instead of six of £24 10*s.* each and three of £20 each, as hitherto.

July 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Belfast Workhouse.

THE Belfast Board of Guardians have in committee drawn up a report in reply to the scathing letter of the Local Government Board, which is a piece of ingenious special pleading. They admit that there has been a technical breach of the regulations, but they say that the irregular expenditure was upon necessary works; they are convinced that the best value was obtained for every penny, and that a large proportion of the outlay was incurred in connexion with the infirmary in carrying out repairs recommended by the Local Government Board, and of such a nature that they had to be carried out piecemeal and were unsuitable for contract. To break rules and then offer as an excuse that such irregularities are "technical" will not satisfy the Local Government Board. The guardians, had they been alive to their duties, ought surely to have been aware of such irregularities and in future the Belfast public will hold them responsible if they do not exercise a proper supervision over the official management of the institution. A discussion which took place on June 26th in reference to the salary of the new master does not tend to secure the confidence of the public. It was recommended in a report that this should be £250 per annum, and an amendment to make the sum £200 was only lost by the casting vote of the chairman. The proposed salary is much too low. Where can a man thoroughly versed in local government acts and in Poor-law procedure and who will manage the largest workhouse in the three kingdoms with over 3000 inmates be procured at this sum? A master of such an institution—a small town, in fact—whom every official and inmate would respect cannot be secured at such a paltry salary. This "penny-wise-and-pound-foolish" policy will only tend to incompetency and further mismanagement.

The Royal Victoria Hospital, Belfast.

From a report of the Working-men's Committee read at their annual visit to the Throne Convalescent Hospital on June 30th it appears that for the 16 months ending Dec. 31st, 1899, the sum of £3429 8*s.* 8*d.* was subscribed by the working-classes, this being the largest amount received from this source since the Working-men's Committee was formed 13 years ago. During the past 16 months 34,320 extern and 3255 intern patients have been treated at the Royal Victoria Hospital. The report concluded with the special thanks of the working-classes of the city to the medical and surgical staff of the hospital (as well as to the nurses) for the very efficient and gratuitous services rendered to the patients under their care.

Bangor District Nursing Society.

The annual meeting of this society was held under the chairmanship of the Marquis of Dufferin and Ava on June 26th. The report stated that the district nurse had attended 450 cases and had paid over 11,000 visits. There was a balance in the hands of the treasurer of £10 4*s.* 1*d.* An interesting speech was delivered by Lord Dufferin, to whom, as well as Lady Dufferin, the success of the society is largely due.

The Epidemic of Typhoid Fever in Belfast.

At a meeting of the Belfast City Council on July 2nd an animated discussion took place in reference to the outbreak of typhoid fever. Dr. H. Whitaker, medical officer of health of the city, reported that between May 20th and June 16th, 1900, 227 cases of typhoid had been notified and there had been 37 deaths. In the corresponding period of last year 152 cases of typhoid were reported with only 18 deaths. The discussion resolved itself far too much into a question as to whether it was the water or the sewage which was at fault in the outbreak, and as to the relative responsibilities of the city council and of the water commissioners. Very strong statements were made by some of the members of the city council as to the insanitary state of the streets, while equally incriminating remarks were made as to the water. By this line of discussion, however, no progress is made, and the Lord Mayor, who is a very practical man of business, said that if the water was bad the city council could bring the matter under the notice of the Local Government Board which could order an inquiry, and, he added, the Stoneyford water "had been subjected to the examination of the best analysts, and while they had not declared that it was a first-class water they found that it was a safe, healthy, and sound water." Finally, at the suggestion of the Lord Mayor, it was arranged that the Improvement and Public Health Committee should be instructed to consider the question of the health of the city, with the view of seeing what better provision could be made to improve it, and to report at an early date. The city surveyor has prepared an elaborate scheme for the bacterial treatment of the main drainage sewage which is at present emptied into the

Belfast Lough and which causes so much annoyance to the inhabitants living on each side of that estuary. To carry this plan out the Local Government Board will have to approve the works and to sanction the borrowing of £80,000 for their execution. It was decided, after a long discussion, to refer the matter to the council in committee and to employ a specialist to report on it.

A joint committee, formed of members of the Public Health Committee and Improvement Committee of Belfast who were appointed to consider the question of the health of the city and how it could be improved, with special reference to typhoid fever, has instructed the executive sanitary officer and the city surveyor to prepare reports on this important matter. The former recommends (1) that the sewers and drains be more efficiently cleansed, ventilated, and flushed; (2) that old courts, alleys, and back passages, and drains connected therewith, be flushed out; (3) that sewer atmosphere generated in the main drains be prevented from rising to the main levels of the city; (4) that the milk-supply of the city be more effectively controlled; (5) that the sale of shell-fish from Belfast Lough be prohibited within the city; (6) that a sufficient number of officers be provided for drain-testing (it is impossible for two officers, as at present, to do this duty for 71,000 houses); (7) that the domestic scavenging of Belfast be improved; and (8) that pollution of streams in the city be prevented, as was recommended in a report on Nov. 9th. These precautions, it is thought, will keep down the normal rate of typhoid fever (the endemic disease), but the executive sanitary officer reports that there will be no protection against epidemics of the disease until the Water Commissioners carry out the powers which they obtained from Parliament last year, when, in referring to their catchment, the chief engineer of that trust stated that "a condition of things like that on the catchment is a standing menace to the health and life of the people in the town where the water is consumed." The city surveyor agrees with these recommendations of the executive sanitary officer and adds suggestions as to structural improvements in the present sewage system of the city of Belfast. He advises more ventilation in many of the sewers and that arrangements be made that some of the higher parts of the city should not have more than their due share of discharge of sewer-gas as at present. He advises improved modern sewers for the old, leaky, and defective ones, more facilities for flushing sewers and house-drains, the use of the water-pressure test for the drains of all houses built on "filled-in" ground, and that "concreting" and "asphalting" should be required on all doubtful or "filled-in" sites.

The Illuminating Gas-supply of Dublin.

The alarm caused many months ago by the letter from Professor J. Emerson Reynolds warning gas consumers of the fact that the amount of the poisonous ingredient carbonic oxide had been much increased in the town gas has not been allayed by any definite statement from the Alliance Company. At the last meeting of the Dublin Sanitary Association an important discussion took place on the subject, and it was alleged that the ordinary coal-gas in use in Dublin up to February last, containing about 6 per cent. of carbon monoxide (such as seems to be unavoidable), was now replaced by a mixture of coal and water-gas containing as much as 17·9 per cent., indicating a mixture of about 40 per cent. of water-gas. The Alliance and Dublin Gas Consumers Company has long held a complete monopoly of our gas-lighting as an independent company outside the control of the municipal authorities or corporation. Their delay in affording any definite information available to the public as to the quality of the illuminant which they supply has naturally given much dissatisfaction, for it is alleged that many of their iron conduits for gas are old and so corroded as to allow of considerable leakage. The electric light cannot be widely used owing to the comparative failure of the corporation installation, and but very few private houses in Dublin are now supplied with it. There seems, moreover, but a poor prospect of their obtaining it for a long period, the corporation having quite recently succeeded in having the Bill of a private electric light company who proposed to supply it thrown out in the House of Commons. The citizens have much to complain of in this regard. They practically cannot get the modern and clean electric illuminant and they are forced to depend upon a gas mixture the precise nature of which is concealed. The price of this gas has recently been lowered to 3*s*. 4*d*. per 1000 feet, but even this figure does not compare favourably with the expense of gas in other towns.

Coroner for Ballymoney District.

At a meeting of the Antrim County Council held on July 10th Mr. J. C. Woodside of Ballycastle was appointed coroner for the Ballymoney district in the room of the late Dr. Carnac.

The Water-supply of Belfast.

For some time a good deal of discussion has been raised in Belfast in reference to our water-supply, especially as some people believe the present catchment areas may be in part, owing to their contamination, the cause of the present outbreak of typhoid fever, and this has been brought home still more to the public by the fact that the officer of health of the city has publicly advised that all water used for domestic purposes should be boiled. We are promised a new supply from the Mourne mountains, but even in reference to it some curious statements have been made; and hence, to clear up all doubts, an interviewer of one of the city papers has put the whole matter before the chairman of the Works Committee of the Water Board, and as a result a great deal of authentic information has been placed in the hands of the people of Belfast. The reason why the Water Commissioners have built the conduit first and have left the storage reservoirs to be constructed afterwards is that by taking them separately they will save expense, and also because by taking the water direct from the Kilkeel river and the Annalong river, through the help of weirs, a supply of water can be obtained in a short time. The present catchment areas—Woodburn and Stoneyford, which have cost £700,000—give 11,500,000 gallons per diem all the year round, and just now 13,000,000 gallons are the daily consumption. The present wet summer saved matters this year, but another summer cannot be faced without an additional supply, and if the city of Belfast increases as it has done since 1894 in seven years hence 16,000,000 or 17,000,000 gallons per diem will be needed. It is hoped that between April and July from 2,000,000 to 3,000,000 gallons per day may be obtained from these rivers at Kilkeel, and during the other eight months 10,000,000 gallons per diem. Whether there will be such a supply or whether the water will be quite clear of sediment or peat remains to be seen. It is hoped that before the end of this year this supply may be ready for use and for the present this water will be given to residents on the County Down side of the river Lagan which divides Belfast. By this means the strain on the Stoneyford and Woodburn supplies will be relieved, and then when the bridge is built to carry the mains across the river Lagan those living on the County Antrim side will also be supplied. The commissioners also propose to build simultaneously the new reservoirs in the Silent Valley at Kilkeel and the iron bridge across the river Lagan in Belfast; but in the meantime, by means of the conduit and the tapping of the Kilkeel and Annalong rivers, the city will be kept safe as far as a necessary supply of water is concerned. The reservoir dam at Kilkeel will cost a large sum—it may be a quarter of a million—as there is a deposit of sand and drift of unknown depth which will have to be cleared out. When this dam is finished 10,000,000 gallons per diem will come from Kilkeel and it is intended by this supply to add to, but not to supersede, the existing supplies from Woodburn and Stoneyford. When the whole new scheme is finished it will cost about £1,000,000, or about £100,000 per 1,000,000 gallons per day for 10,000,000 gallons of water.

New Medical Magistrate.

Dr. Henry O'Neill, surgeon to the Royal Hospital, Belfast, and a city councillor, has been made J.P. of the county of the city of Belfast.

July 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cerebellar Abscess.

THIS condition, which is by no means common, was the subject of an important communication made to the Academy of Medicine by Professor Dieulafoy at a recent meeting. In his opinion cerebellar abscess is always consequent upon an otitis. Whether the otitis be acute or chronic and whether there be discharge or not matters little; once the cavity of the tympanum is infected the

organisms can exalt their virulence under most favourable conditions in the closed cavities of the antrum and the mastoid cells. From there they propagate themselves in different directions. The intra-cranial lesions consecutive to the various forms of otitis are many in number, such as cerebro-spinal meningitis, pachy-meningitis, phlebitis and thrombosis of the sinuses, cerebral and cerebellar abscesses. As a rule cerebellar abscess gives rise to the cerebellar group of symptoms, namely, occipital headache, ictus, loss of equilibrium, vertigo, staggering, vomiting, nystagmus, cervical contraction, optic neuritis, muscular asthenia, and a torpid condition bordering upon coma. These symptoms make up the cerebellar *syndrome* in its purity and are found whether the lesion be in the right lobe, in the left lobe, or in the vermiform process. If two other symptoms—namely, facial paralysis and paralysis of the external ocular motor nerve—are present the lesion can be assigned to one in either lobe. This was the case in a patient under the care of Professor Dieulafoy. The cerebellar *syndrome* closely resembles the auricular or labyrinthine *syndrome*. The following are points of difference for the purposes of diagnosis. Labyrinthine headache is not so severe or so persistent nor is it in the same place as that due to cerebellar mischief, while the drowsiness and torpor which increase from day to day in cerebellar mischief do not appear in labyrinthine disease. Abscess of the cerebellum has to be distinguished from abscess of the cerebrum situated in the temporo-sphenoidal or occipital lobes. In a cerebral abscess the motor disturbances, whether paralysis, contraction, or spasm, are situated on the opposite side to the lesion or the otitis, and disturbances of speech and hemianopsia are two important symptoms. Tumours of the cerebellum, such as glioma, gliosarcoma, tubercle, and parasitic tumours, also give rise to the cerebellar *syndrome*, but it is not so well marked in the case of a tumour, owing to the e giving rise to other symptoms attributable to their growth. Cerebellar syphilis stands upon a different plane both as regards diagnosis and treatment. Surgical intervention at the right time is the only treatment for cerebellar abscess. At the same meeting M. Laborde showed various animals, such as cats and guinea-pigs, in which different intra-cerebellar lesions had been brought about. In these the cerebellar group of symptoms was complete—cervical contraction, muscular weakness, and rotation in the long axis towards the same side as the lesion. Experimental reproduction of pathological lesions was thus complete.

Medical Tours to French Mineral Springs.

Last year Dr. Carron of La Carrière organised under the patronage of M. Brouardel, M. Landouzy, M. Cornil, M. Fournier, and M. Huchard a system of tours intended to combine instruction and pleasure and the object of which was to enable medical men and medical students, both French and foreign, to make themselves practically acquainted with the French health resorts. Last year the tour consisted of visits to the places in the central districts and Auvergne. This year the tour will be to the Pyrenees and the south-west districts. Luchon is the starting-place and thence the party will visit Capverne, Bagnères de Bigorre, Argelès, Barèges, Saint Sauveur, Cauterets, Pau, Saint Christau, Eaux Bonnes, Eaux Chaudes, Salies de Béarn, Biarritz, Cambo, the Sanatorium at Hendaye, and Dax and Arcachon. As was the case last year Professor Landouzy, the scientific head of the expedition, will deliver lectures upon the properties of, and the therapeutic indications for, the use of the different places.

Completion of the Faculty of Medicine.

In view of the forthcoming International Congress of Medicine and also the Congress of the Medical Press most of the medical institutions in Paris are getting ready for the reception of visitors. I have already described the hospital alongside of the Pasteur Institute. The new Academy of Medicine will, unfortunately, not be ready in time but the Faculty of Medicine is quite ready. The works have been going on for 23 years and were at a standstill for a space of six years. Work was recommenced in 1898 with the large wing in the Rue Hautefeuille. This is now just open and includes a magnificent vestibule opening upon the interior quadrangle of the faculty and ending at the great staircase of the library. On the first floor are large examination rooms, waiting rooms, and a spacious common room for the different professors. This is ornamented with busts of distinguished physicians and surgeons, while the walls are hung with the magnificent Gobelins tapestry which was presented to the old school of surgery, which occupied the present site of the Faculty of Medicine, by Louis XV. While the works were in progress the architect came across the foundation-stone of the old school of surgery, still bearing its bronze plate upon which were inscribed the details of the former ceremony of inauguration. Only recently, too, a subsidence in the courtyard revealed the cellars of the old Franciscan convent which formerly existed on this site, and the chapel of which, used as an examination room, was only pulled down during the progress of the present works.

Sanitary Instructions for the Troops going to China.

The Minister of Marine has issued an excellent circular for the troops who, in increasing numbers, are daily starting for China. The circular deals with the climatology of Northern China and gives details as to water, food, and other points of vital importance for the well-being of the troops. Next week I shall lay some further details before your readers.

The Culture of Gonococci in Gelatinised Blood.

Everybody knows the difficulties which are experienced in cultivating gonococci in the usual culture mediums employed in the laboratory. A great step in advance has been taken and was described in a report which M. F. Bezançon and M. F. Griffon recently laid before the Society of Biology. These observers found that blood mixed with gelose made an admirable medium for the culture of gonococci. Tubes of this material infected with gonorrheal pus showed at the end of about 24 hours in a temperature of 37° C. numerous round flat transparent colonies of variable dimensions. If these colonies were examined at the end of the first 24 hours the microbes appeared under their characteristic forms and not as misshapen granules as is the case with other methods of culture. The cocci survive for a considerable time and in one tube the observers were able to preserve the organisms alive for a period of six months. This peculiarity, together with the advantages resulting from the early growths of the colonies and the marked morphological characteristics of the microbes which appear by this method, make it an eminently practical one for the culture of this organism.

July 17th.

Obituary.

BENJAMIN HOWARD, M.A., M.D. NEW YORK, M.R.C.S. ENG., F.R.C.S. EDIN.

THE death is announced, in his sixty-fourth year, of Dr. Benjamin Howard of New York. He had been ill for some months, suffering from nephritis. He died at the country house of his old friend, Dr. Andrew H. Smith of Elberon, New Jersey, where he spent the last few weeks of his life. Dr. Howard was born in 1836 and studied medicine in Paris, Vienna, and Berlin, as well as in New York. In 1858 he graduated as M.D. of the University of New York, serving through the Civil War as an assistant surgeon. He afterwards held the posts of professor of surgery and surgeon to Long Island College Hospital, New York State, and of lecturer upon operative surgery in the Medical Department of the University of New York. He was also professor of surgery in the University of Vermont. A frequent visitor to this country, he became a Member of the Royal College of Surgeons of England in 1877 and a year or two later a Fellow of the Royal College of Surgeons of Edinburgh. He was deeply interested in the study of methods for artificial respiration, and having come to the conclusion that there were faults both of omission and commission in the respective methods of Marshall Hall and Silvester he devised a method of his own called the "direct" method, which he demonstrated at a clinical lecture at King's College Hospital on July 7th, 1877.[1]

A supplement to this lecture, giving the method in more detail, was published by Dr. Howard in THE LANCET of May 25th, 1878, p. 748. The outcome of these demonstrations was that a committee of the Royal Medical and Chirurgical Society was appointed to report upon the methods adopted by the Royal Humane Society (which, to put it shortly, combined Marshall Hall's method of removing fluid with Silvester's method of respiration) and that recommended by Dr. Howard. The result of the preliminary report was to show that no one method could be said to be the best, but that a combination of the three would probably be superior to

[1] THE LANCET, August 11th, 1877, p. 194.

any one.[2] Another subject in which Dr. Howard took an abiding interest was that of ambulances for large towns. His attention had been first drawn to the matter when on the battlefield of Antietam he had suddenly become responsible for the ambulance service there. London, as he said in his paper upon the subject read before the Medical Society of London, is a *quasi*-battlefield[3] and needs an efficient ambulance service. 18 years have elapsed and we are but little better off than before in the way of horse ambulances, although owing to Dr. Howard's efforts a meeting was held to consider the matter, when the general hospitals were represented and the Duke of Cambridge was in the chair. Still, at page 119 of our issue of July 14th will be found an annotation stating that a scheme formulated by Mr. S. Osborn, F.R.C.S., for the establishment of an ambulance system for London is before the London County Council. Therefore it seems probable that coincidently with Dr. Howard's death steps are at length being taken to bring about the fulfilment of the object he so ardently desired.

GEORGE SAMUEL GREGORY, M.R.C.S., L.S.A.

MR. BRUDENELL CARTER writes: "The death, on July 9th, in his eighty-eighth year, of Mr. George Samuel Gregory removes from the ranks of the medical profession not only one of its oldest, but also one of its most accomplished members. Mr. Gregory obtained his qualifications in 1835, and, after a period of practice in London, and some time spent in travelling, much of it in Spain during the Carlist war, settled at Pewsey, in Wiltshire, but removed in 1848 to Stroud in Gloucestershire, where he conducted an extensive practice for 35 years and was also certifying surgeon under the Factories Act for the district. He retired in October, 1883, and resided first in Bloomsbury and for the last three years in Kensington, able until the 13th of June to take almost daily walking exercise, and to enjoy the society of his friends. On the 14th of June he suffered from a cerebral hæmorrhage, producing left-sided paralysis, and he passed quietly away on the 9th of July. Mr. Gregory was not only a remarkably skilful and successful practitioner, but was also a man of very unusual attainments in various ways. A fair mathematician, a clever mechanic, a good scholar, and an accomplished linguist, he was deeply read in many directions, especially in dogmatic theology and in the mental philosophy of the earlier portion of the century. He was a learned art critic, an amateur architect of no mean ability, had designed most of the furniture of his pretty house at Stroud, and was a most successful gardener, especially in the cultivation of the cyclamen. A keen observer of men and manners, with a retentive memory and a great command of picturesque and telling language, he was an animated and brilliant talker, and was frequently visited at Stroud by men who had attained celebrity in different walks of life. Wilkie Collins wrote much of "The Woman in White" while staying with Mr. Gregory, and gathered the names of some of the characters from tombstones in neighbouring churchyards. Another of his intimate friends was the late Mr. St. John Mivart, F.R.S., and another was Mr. Frank Dicksee, R.A., some of whose early work still adorns the house at Stroud. Although a bachelor, and not altogether free from a tendency to criticise the foibles of the opposite sex, he was conspicuous for his old-fashioned and graceful courtesy to women, and was a very general favourite with them. There could perhaps be no better evidence of his sterling and loveable character than the fact that among those who stood around his grave there were three men of different callings who were united to him by ties of close and uninterrupted friendship which had existed, in the case of the writer for 38, in another for 48, and in the third for 60 years."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. James T. Whittaker, Professor of Medicine in the Ohio Medical College, Cincinnati.—Dr. A. Schetelig of Nervi, whose researches on archæological subjects are well known. He was in early life assistant to Professor Esmarch of Kiel and during the Franco-German war was in charge of the Hamburg Red Cross Ambulance at Metz.

[2] THE LANCET, Nov. 1st, 1879, p. 659.
[3] THE LANCET, Feb. 4th, 1882, p. 172.

Medical News.

UNIVERSITY OF OXFORD.—The following candidates at examinations for the degree of Bachelor of Medicine, Trinity Term, were successful in the subjects indicated:—

FIRST EXAMINATION.

1. *Organic Chemistry.*—George Basil Doyne Adams, Christ Church; Owen Alfred Rowland Berkeley-Hill, Trinity College; George Henry Crosfield and Turner Henderson, University College; Reginald Jamison, Trinity College; William Herbert Lee, Balliol College; Cuthbert Taunton Raikes, Trinity College; and Charles Joseph Singer, Magdalen College.
2. *Materia Medica and Pharmacy.*—Launcelot Toke Burra, University College; Edward Burstal, Trinity College; Henry Roy Dean, New College; Gerald Edward Friend, Keble College; Reginald Charles Jewesbury, Christ Church; James Edmund Rutherfurd, Corpus Christi College; Arnold Shelley, Keble College; Charles Joseph Singer, Magdalen College; and Cyril Aubrey Smallhorn, Wadham College.
3. *Human Anatomy and Human Physiology.*—Philip Edward Homer Adams, Exeter College; Edward Frederic Beaumont,* Wadham College; John Martin Bickerton, Merton College; Walter Brinsmead Billinghurst, St. John's College; William Edward Blackall,* non-collegiate; William Leigh Maule Day, Exeter College; Harold Frankish, Worcester College; Arthur Frederick Hertz, Magdalen College; Dudley William Carmalt Jones, Corpus Christi College; Henry Wynyard Kaye, Magdalen College; Harold Lionel Laws, Wadham College; Richard Ernest Howell Leach, Merton College; Douglas Reginald Pike,* Jesus College; James Edmund Rutherfurd, Corpus Christi College; and Richard Harvey Sankey, Christ Church.

* Offer Human Anatomy only, being exempt from examination in Human Physiology.

SECOND EXAMINATION.

1. *Pathology.*—Arthur Edwin Boycott, B.A., Oriel College; Lawrence Henry Carr-Birkbeck, B.A., Trinity College; William Morris Gladstone Glanville, B.A., Christ Church; Edmund Henderson Hunt, B.A., Balliol College; Alfred Edward Arthur Loosely, B.A., Pembroke College; Reginald Cuthbert Mullins, B.A., Keble College; Lionel James Picton, B.A., Merton College; and Charles Ernest West, B.A., Balliol College.
2. *Remaining Subjects.*—Edmund Delafosse Bond, B.A., and Reginald Cuthbert Mullins, B.A., Keble College; John Davy Rolleston, B.A., Brasenose College; Albert Edward Thomas, B.A., Merton College; and Richard Warren, B.A., New College.

UNIVERSITY OF GLASGOW.—The following candidates have passed the final examinations for the following degrees:—

M.B., C.M.—John Lunn, Alexander M'Donald Nevin, John James Robertson, James Wallace Shane (old regulations), and Archibald Stevenson.

M.B., Ch.B.—Matthew Aikman, M.A., George Arthur, Gavin Barbour, Thomas Thomson Bathgate, James Freeborn Bennett,‡ Alexander Binning, Alexander Birch, Harry Egerton Brown, John Douglas Brownlie, Thomas Carruthers, M.A., Alexander Henderson Cassells, Edward Provan Cathcart,‡ Daisy Annabella Murdoch Clark, B.Sc., John Thomson Clark,‡ Robert Clark, Charles Campbell, Cuthbert, M.A.,† Archibald William Wallace Davidson,‡ Frank Lindsay Dickson, David Curr Douglas, John Pinkerton Duncan, B.Sc.,† Leonard Findlay,*† Alexander Fraser, M.A., Lizzie Thomson Fraser, Gilbert Garrey, David George Somerville Gartshore, William Gibson, Edward Gillespie, William Girvan, Helen Mary Gordon, Charles Aikman Gourlay, M.A.,‡ John Gracie, Charles Herbert Gunson, Archibald Wilson Harrington,‡ Isaac Mackay Huey, Thomas Inglis, Pierce Jones, William Bryce Kerr, James Dickson Laidlaw,* John Francis Lambie. Norman Maclean Leys,‡ James Dunlop Lickley,‡ Mary Forbes Liston, John Lockhart, Alexander Logan, David Longwill, Anderson Gray M'Kendrick,‡ James Mackinnon,‡ George Todd Maclean, M.A., Alfred Robert Maclurkin,‡ Burgess M'Phee,‡ Andrew Mair, Robert MacNab Marshall,‡ Allan Martin, M.A., B.Sc.,‡ James Millar, M.A., Ernest Wardlaw Milne, Alexander Robert Moir, Alexander Munro, William Barr Inglis Pollock, Robert Rennie, John Duncan Richmond, Margaret Mitchell Ritchie, David Russell, James Scott, M.A., Edgar William Sharp, James Shearer, David Ap Simon, Christian Cleland Wood Smith, James Johnston Smith, John Steele Smith, Andrew Stewart, Gertrude Florence Fleetwood Taylor, Robert Taylor, Thomas Bird Tierney, James Cameron Turnbull,† William Dinning Walker, George White, Morgan Watkin Williams, Alexander Wilson,*‡ Thomas Watson Wilson, and Hugh Patrick Wright.‡

* Surgery and Clinical Surgery.
† Practice of Medicine and Clinical Medicine. ‡ Midwifery.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore:* Dr. F. S. Cullen and Dr. W. W. Russell have been appointed Professors of Gynæcology in the Johns Hopkins University.—*Jena:* Dr. Friedrich Schultz has been promoted to an Extraordinary Professorship of Physiological Chemistry.—*Marburg:* Dr. Axenfeld of Rostock has been offered the chair of Ophthalmology.—*Montpellier:* Dr. Bosc has been appointed to the chair of Pathological Anatomy.—*St. Petersburg* (*Military Medical Academy*): Dr. A. Gerwer has been recognised as *privat-docent* of Neurology and Psychiatry.—*Strasburg:* Dr. Edwin Faust has been recognised as *privat-docent* of Pharmacology.—*Vienna:* Dr. Gustav Braun von Fernwald, Director of the Third Midwifery

and Gynæcological Clinic, a brother of the well-known gynæcologist, Professor Karl Braun, is about to retire, having reached his seventy-first year.

WATER CARRIAGE.—It is not often that attempts are made to go back to the old methods of dealing with excreta, but at a recent meeting of the Manchester City Council an alderman proposed the following motion:—"That in considering the plans of new buildings the Improvement and Buildings Committee be instructed not to insist upon the provision of water-closet accommodation, unless special circumstances render it desirable." His idea was that water should be carefully used until the laying of the second pipe from Thirlmere is completed, which will take three years. It was stated, however, that the effect of the present water-closet system on the water-supply was not appreciable. The motion was rejected.

THE HEATH SCHOLARSHIP.—The Heath Scholarship, value £200, which is awarded every two years by the University of Durham, has this year been awarded to Dr. Nathan Raw of Liverpool, and Major J. R. Dodd, R.A.M.C. The subject of the essay was, "The Urinary Tract, its Injuries and Surgical Diseases, their Pathology, Diagnosis, and Treatment."

THE ROYAL VETERINARY COLLEGE.—The Duke of Cambridge presided at the annual meeting of the Royal Veterinary College, of which he is president, on July 11th. The twenty-fifth annual report showed that during the financial year 1899-1900 59 students had entered the college, as compared with 66 last year. At the examinations held by the Royal College of Veterinary Surgeons in July last 73 per cent. of the students presenting themselves proved successful, while at the December examinations 66 per cent. passed. 70 per cent. of the 226 students of the college who presented themselves for examination during the year passed, while 66 per cent. of the 244 students who presented themselves for the same examination from the other veterinary colleges were successful. During the year 43 students obtained the diploma of the Royal College of Veterinary Surgeons, 32 students succeeded in passing the first professional examination, 43 the second, and 40 the third. In the research department complete or partial post-mortem examinations in 355 cases of disease had been made for members of the Royal Agricultural Society and for veterinary surgeons. The gratuitous supply of mallein to veterinary surgeons in private practice had been continued and the manufacture of tuberculin was begun in the early part of last year with a view of supplying the requirements of qualified members of the veterinary profession. The chairman of the governors, Sir Nigel Kingscote, stated that two investigations were being made at the college, one with regard to the reliability of tuberculin as a test for tuberculosis, towards which the Royal Agricultural Society had made a grant of £400, and the other into the cause of African "horse-sickness," towards which the War Office had given £200. Lord Egerton of Tatton was elected a vice-president in place of the late Duke of Westminster, and Lord Moreton and the Hon. W. F. D. Smith, M.P., were appointed governors.

ST. MARY'S HOSPITAL.—PRIZE AWARDS.—On July 13th Dr. T. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, distributed the prizes won by the students of St. Mary's Hospital. Dr. W. B. Cheadle presided.—Dr. H. A. Caley (the Dean), who read the report, which referred to the reconstitution of the University of London, said that the medical school had become one of the first schools of the London University. The medical school had upwards of 50 representatives with the Imperial forces in South Africa, and they had to deplore the deaths of Captain R. H. E. G. Holt, R.A.M.C., from wounds, and of Lieutenant G. W. G. Jones, R.A.M.C., from enteric fever, in Ladysmith, as well as of Lieutenant-Colonel A. Baird Douglas, a former student of the school, who was killed while in command of the 4th Battalion Sherwood Foresters at Roodeval. The record of academic distinctions for the year was high, notably at the University of Cambridge. In athletics the students had been remarkably successful. Important advances in the pathological department had been made during the year.—Professor Allbutt in distributing the prizes said that though Ruskin had said that the great achievement of modern education had been to teach people to think wrongly on every conceivable occasion he did not think that this applied to the education of the end of the nineteenth century. Nowadays students were taken through natural phenomena and taught to observe and to think, and the result was seen in the excellent work brought forward at examinations. There had been an extraordinary improvement in teaching and in the accessibility of knowledge, the tendency being to take the student away from the lecture-room into wards and laboratories. The process of verification thus instituted was most useful and was happily gaining ground.—On the motion of Sir W. Broadbent a vote of thanks was accorded to Professor Allbutt, and the usual courtesies to the chairman terminated the proceedings.

THE Victorian Convalescent Home for Surrey Women and the Duchess of Teck Memorial Home of Rest for Working Women were opened by the Duchess of York at Bognor on Monday, July 9th. The buildings are in the Renaissance style of architecture and fitted up according to the most modern improvements of sanitary science. The Victorian Convalescent Home is Surrey's memorial of Her Majesty's long and glorious reign, while the Duchess of Teck Memorial Home of Rest for Working Women is the nation's memorial to the late Princess Mary.

Parliamentary Intelligence.

HOUSE OF LORDS.

TUESDAY, JULY 17TH.

The Question of Death Certification.

LORD MONKSWELL called the attention of the Government to the report of the Select Committee of the House of Commons on Death Certification and asked whether they proposed to introduce legislation on the lines of the recommendations of the committee.—Lord HARRIS, replying for the Government, said that for some time the subject had engaged the attention of the President of the Local Government Board with a view to legislation. There were, however, a good many difficulties connected with it and Mr. Chaplin was at present having inquiry made by the officers of the department in the hope of overcoming these difficulties. Mr. Chaplin was in hopes that at no distant date he would be able to introduce a Bill on the subject.

HOUSE OF COMMONS.

THURSDAY, JULY 12TH.

Anti-typhoid Inoculation.

MR. BARTLEY asked the Under Secretary of State for War whether his attention had been called to a report from Dr. Conan Doyle on the Langman Hospital, South African Field Force, Bloemfontein, in which he stated that there had been no death from enteric fever up to June 5th from among the inoculated; whether the War Office had yet any official statistics on the results of inoculation; and whether any further efforts were being made to increase the number inoculated in men now going out to South Africa and China.—Mr. WYNDHAM replied: As I have already explained to the House the statistics at present available are not sufficient to enable me to give a reply to the first and second paragraphs of the question. Inoculation is offered to all men embarking from home for a country such as South Africa or China where enteric fever is prevalent, but such inoculation is purely voluntary.

FRIDAY, JULY 13TH.

Medical Acts Amendment Bill.

The Bill to strengthen the disciplinary powers of the General Medical Council to give universities and medical corporations power to withdraw their diplomas from practitioners whose names have been removed from the Medical Register because of misconduct, and to provide that fines and penalties recovered under the Medical Acts shall be paid to the treasurer of the General Medical Council, was introduced at this sitting by Sir Richard Jebb and formally read a first time, the order for the second reading being put down for Thursday, July 19th. The Bill is backed by Sir Richard Jebb, Sir William Anson, Mr. J. A. Campbell, Sir Michael Foster, Mr. Lecky, Mr. Talbot, and Sir John Batty Tuke, all of whom are university representatives.

Oil in Manufactured Tobacco.

The Chancellor of the Exchequer introduced a Bill to restrict the amount of oil in manufactured tobacco.

The Employment of Retired Army Medical Officers.

Mr. MACNEILL asked the Under Secretary of State for War if he could state what was the number of the retired army medical officers who were liable to be recalled to service, and of these gentlemen how many had been recalled to service since the outbreak of hostilities in the Transvaal, and how many were now with the field forces in South Africa or in hospitals at the bases.—Mr. WYNDHAM replied: There are 98 retired army medical officers liable to recall; of these 18 are holding permanent appointments reserved for officers on retired pay. The services of 25 others who volunteered to return to the service have been accepted and they have been employed at home and abroad. None have been recalled by compulsion. Four officers are employed in South Africa and on hospital ships.—Mr. MACNEILL asked: Then out of 98 officers on the retired list only four are employed in South Africa?—Mr. WYNDHAM replied: Yes. The 18 who are holding permanent appointments are officers of high rank and it is thought better to employ in South Africa young civilian doctors who have more recent experience of hospital work.

Lead and Phosphorus Poisoning.

These subjects were discussed at this sitting in Committee of Supply on the vote for the Home Office. Sir MATTHEW WHITE RIDLEY, in the course of his reply, said that with regard to lead poisoning in the earthenware manufactories in the Potteries although the improvement had been steady and substantial it had not been all that they could wish. Whether the figures were good or bad the fact remained that lead poisoning in the Potteries was a fearful thing and far more serious than phosphorus poisoning. He was, therefore, prepared to admit, on the part of the Home Office, that the case demanded the most urgent attention, and on their part they should do everything that they possibly could to secure that the industry should be carried on in a manner as little harmful as possible to those engaged in it. They had not been altogether idle in this matter. He admitted to the full that the existing code of rules was not sufficient, but it had done a considerable amount of good. They had been engaged on a new code of rules which would shortly be published and which he hoped would carry out substantially everything recommended by Dr. Oliver and Dr. Thorpe, with the exception that there was no absolute prohibition of the use of raw lead in every case. He had every hope that the rules would be accepted and he was almost confident that they would get them without arbitration, but he should go to arbitration rather than that the present state of things should continue. With reference to the case of the phosphorus special rules, which had already been debated this session, he was very much astonished to find that so many members took the view that the rules had really not been strengthened. There were one or two points in which the rules were weakened contrary to their desire, but he claimed for them in the first instance that they were drawn up in the main to carry out the recommendations of their experts. They were to a certain extent altered, but if those alterations were minutely examined it would be found that they were not really of that importance which some members attached to them. He did not know if he needed to go into them in detail, but to take, for instance, the distinction between the wet and the dry process. He could not say they were in a position to decide that they had the same positive evidence in regard to the injury in the one case as they had in the other. He was not prepared to admit that the rules regarding the matchmaking industry were weak or that they were not a considerable improvement upon the rules passed some years ago. There again he did not see how it was possible to prohibit absolutely the use of this particular kind of phosphorus. As the result of what had been done there had only been one case of necrosis reported in the past six months and the department had, to a large extent, got hold of the disease. The effect of the attention paid by manufacturers to the new process was that one large firm had abandoned altogether the use of dangerous phosphorus; and if it was possible to supply strike-anywhere matches as cheaply without the use of this dangerous stuff the public could do a great deal in encouraging its disuse. With regard to an international arrangement to do away with the use of white and yellow phosphorus, he feared that there was not much hope of it. As to the phosphorus trade, he hoped that those who had criticised the rules would test them by experience. If there were a loophole in them further action could be taken.

MONDAY, JULY 16TH.

Civil Surgeons in South Africa.

Mr. MACNEILL asked the Under Secretary of State for War if he could state the number of civil surgeons whose services had been accepted since the outbreak of hostilities in South Africa for the field hospitals and base hospitals, and the number of civil surgeons who were at present employed in these hospitals, and how many army medical officers within two years from their entrance into the Army Medical Service had been sent to the war in South Africa; whether his attention had been drawn to the fact that of 98 army medical officers who were liable to be recalled to service four only were employed in South Africa or in hospital ships, and that although many of them have requested to be sent to the seat of war their offers were refused; whether the authorities at the War Office were aware that the sending of army medical officers without previous experience in campaigns, and the recognition of the services of civil surgeons while the services of retired army medical officers had been rejected, had led to discontent and a feeling that the medical treatment of the troops would be wholly subordinate to purely military considerations; and would he cause inquiries to be made in the matter.—Mr. WYNDHAM replied: The services of 385 civil surgeons have been accepted principally for base hospitals and general duty; of these 363 are now in South Africa. This does not include those locally employed or attached to private hospitals or to the Yeomanry or the Rhodesian Field Force. 117 Royal Army Medical Corps officers under two years' service have been sent out. Of the 98 officers liable to recall, as has been already stated, 18 hold permanent military appointments at home, and very few volunteered for service in South Africa Nothing is known of any general discontent to which the honourable gentleman refers in his question.

A Vaccination Case.

Mr. SINCLAIR asked the Home Secretary whether he was aware that Mr. F. J. Chatting was imprisoned for not paying a fine for non-compliance to an order for vaccination; that the warrant for his arrest was for Pentonville, but that he was taken to West Ham Police-station, then taken to Stratford Police-court, and kept without food from 8 A.M. to 8 P.M. on July 7th; and that on his arrival at Pentonville, instead of being treated as a first-class misdemeanant, his clothes were taken from him, and that he was forced to wear a prison suit, and that he was subjected to other treatment which the Act did not permit; and whether he would take such steps as would prevent a recurrence of such proceedings.—Sir MATTHEW WHITE RIDLEY replied: Chatting was not arrested till about 8.40 P.M. on the 6th. It was then too late to take him to Pentonville, so he was taken to West Ham Police-station and thence on the next morning to the police-court in accordance with the usual practice in order that he might go on to Pentonville by the afternoon van. He had breakfast at the station and might have had lunch at the police-court, but on being twice asked whether he wanted anything replied in the negative. At Pentonville the reception officer made a mistake and treated him like an ordinary prisoner. For this mistake he will be duly dealt with by the Prison Commissioners and it is not one which is likely to recur.—Mr. SINCLAIR: As I understand that no compensation will be paid to Mr. Chatting will some apology be offered to him?—Sir MATTHEW WHITE RIDLEY replied: I have not considered any question of compensation.

Hospital Provision in Scotland.

Mr. WEIR asked the Lord Advocate whether the Secretary for Scotland was aware that the medical officer of health for Ross and Cromarty in his report for last year stated that, in a township in the island of Lewis there were 41 cases of typhoid fever in a population of 300 within a period of six months and pointed out that, although an isolation hospital was urgently necessary the local authorities were powerless to provide one owing to the rates for the various parishes throughout the island being already so high; and in view of the insanitary condition of many of the parishes in the island would he consider the expediency of either urging the Treasury to provide the requisite funds for the erection of an isolation hospital or introduce legislation at an early date such as will admit of the Congested Districts Board applying a portion of the funds at its disposal for the erection and maintenance of isolation hospitals where urgently needed in the congested area.—Mr. WEIR further asked the Lord Advocate whether he was aware that the report of the medical officer showed that if the sanitary clauses in the Public Health (Scotland) Act were strictly enforced in the island of Lewis a large number of the inhabitants would be homeless; and could he state what steps he proposed to take in order to place the island on a satisfactory sanitary basis.—The LORD ADVOCATE replied: As to the sanitary condition of the island of Lewis, I must point out that the enforcement of the new provisions of the recent Public Health Act can be undertaken only gradually and with caution, both for the reason adduced by the hon. Member himself and because of the reluctance which he must know exists in the Highlands to removal and to isolated treatment of infectious cases. The Local Government Board are not inactive and I know from official and other channels that progress is being made, and that in some districts the present conditions compare very favourably with those observed not many years ago. I am informed by the Local Government Board that they are at the present moment in communication with more than one local authority in the island districts regarding new hospital accommodation, and plans are in hand for an hospital in the Carloway district. The Secretary for Scotland is not prepared at present to undertake legislation in connexion with the matter.

The Lunacy Bill Withdrawn.

The Bill of the Government for the reform of the Lunacy Laws, which had passed through all its stages in the House of Lords, was at this sitting of the House of Commons withdrawn.

TUESDAY, JULY 17TH.

The South African Commission.

Mr. BALFOUR announced that Mr. Harrison, general manager of the London and North-Western Railway Company, and Sir David Richmond, ex-Lord Provost of Glasgow, have agreed to serve on this commission in addition to Lord Justice Romer, Dr. Church, and Professor Cunningham.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BERTHON, ELLEN M. T., M.B. Lond., has been appointed a Locum Tenent by the St. Pancras Board of Guardians.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.Ch. Dubl., has been re-appointed Medical Officer of the Pewsham District by the Chippenham Board of Guardians.

BUCHANAN, R. J. M., M.D. Vict., M.R.C.P. Lond., has been appointed Honorary Physician to the Liverpool Stanley Hospital, vice C. J. Macalister, retired.

EMANUEL, J. G. M.B., B.S., B.Sc. Lond., has been appointed Pathologist to the General Hospital, Birmingham.

GRIFFITHS, CORNELIUS A., F.R.C.S., has been appointed Honorary Assistant Surgeon to the Cardiff Infirmary, vice W. Sheen.

HAWTHORNE, C. O., M.D., M.R.C.P., has been appointed Physician to the Central London Ophthalmic Hospital, Gray's Inn-road, W,C.

MEACHEN, G. NORMAN, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the Tottenham Hospital, N.

NEWINGTON, C. W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Sixth Sanitary District of the Sevenoaks Union, vice C. F. Gregory.

PECK, HERBERT, M.D., D.P.H., has been appointed Medical Officer of Health to the Borough of Chesterfield, vice H. Meredith Richards.

PRANCE, C. H. G., L.R.C.P. Lond, M.R.C.S., has been appointed Medical Officer to the Workhouse and No. 1 Sanitary District, Plympton, and Public Vaccinator.

TROTTER, ALEX., M.D. St. And., L.F.P.S. Glasg., has been appointed House Surgeon to the Perth City and County Royal Infirmary.

WARDALE, J. D., M.B., B.S. Durh., has been appointed Honorary Ophthalmic Surgeon to the Royal Infirmary, Newcastle-upon-Tyne, vice G. E. Williamson, F.R.C.S.

WATTS, ELIZA T., M.B. Lond., has been appointed a Locum Tenent by the St. Pancras Board of Guardians.

WHITE, ANTHONY A. T., M.R.C.S., L.R.C.P., has been appointed by the Egyptian Government Medical Officer to the Directeur Générale des Reservoirs, Assouan District.

WILSON, H. C., L.R.C.P. Irel., L.F.P.S. Glasg., has been appointed Medical Officer for the South Sanitary District of the Poplar Union, vice W. M. Leslie, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL, Bedford.—House Physician for six months. Salary £25 for that period, with board, lodging, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cab-hire, with furnished rooms, fire, lights, and attendance.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, increasing by three equal increments up to £150, with board, lodging, and washing.

BRADFORD ROYAL INFIRMARY.—House Physician for 12 months, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £75 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY (not provident).—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., and rising £10 per annum up to £150.

CITY OF LEEDS, BECKETT-STREET FEVER HOSPITAL.—Resident Medical Officer. Salary £130 a year, increasing £10 annually to £150, with board, lodging, and washing. Applications to the Medical Superintendent, Manston Hospital, Seacroft, near Leeds.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

GENERAL LYING-IN HOSPITAL, York-road, Lambeth.—House Physician for four months. Salary at the rate of £50 per annum, with board and residence.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

ITALIAN HOSPITAL, Queen-square, Bloomsbury, London, W.C.—House Surgeon. Salary £60 per annum, with board and residence.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea-gardens, London.—Assistant Bacteriologist to the Antitoxin Department at Sudbury, Harrow. Salary £200 per annum, with rooms.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Four Assistant Surgeons, unmarried. Salary £100 per annum, with board and apartments.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Infirmary.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer to the Out-patient Department, Hardman-street, Manchester. Honorarium £40 per annum.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Surgeon. Salary £120 per annum, increasing, conditionally, by £10 a year, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL NATIONAL HOSPITAL AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence. Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL SOUTHERN HOSPITAL, Liverpool.—Resident Locum House Surgeon for one month. Terms 3 guineas weekly.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STATE OF SARAWAK, BORNEO.—Medical Officer for this Government, unmarried. Will be required to sign an agreement for three years. Salary $3600 (about £360) per annum, with free unfurnished quarters. Applications to Messrs. the Borneo Company, Sarawak Government Agents, 28, Fenchurch-street, London, E.C.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1897, for the Leith District of the Sheriffdom of the Lothians and Peebles.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. An honorarium at the rate of £20 per annum given, with board, residence, and laundry.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

UNIVERSITY OF GLASGOW.—Chair of Clinical Medicine.

WANDSWORTH AND CLAPHAM UNION.—District Medical Officer for the No. 2 District of the Parish of Battersea. Salary £100 per annum, with certain fees. The successful candidate will be appointed Public Vaccinator for the same District. Applications to the clerk, Union Offices, St. John's-hill, S.W.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year to £160, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

GILLETT.—On June 30th, at Brooke, Norfolk, the wife of George Edward Gillett, M.R.C.S., L.R.C.P., of a daughter.

MACKAY.—On July 17th, at Castlegate, Berwick-upon-Tweed, the wife of William Bertie Mackay, M.D., M.R.C.S., of a daughter.

MATHESON.—On July 12th, at 72, Trafalgar-road, Greenwich, the wife of John Matheson, M.A., M.B., C.M., of a daughter.

PRAKE.—On July 14th, at The Limes, Marden, Kent, the wife of W. Harland Peake, M.D., B.S., of a daughter.

QUINBY.—On July 13th, at West View, Formby, Lancs., the wife of Edward M. Quinby, M.R.C.S., L.R.C.P. Lond., of a daughter.

SALISBURY.—On July 11th, at Evering-road, Stoke Newington, the wife of C. R. Salisbury, L.R.C.P, M.R.C.S. of a daughter.

SHAW.—On July 11th, at New Cavendish-street, Cavendish-square, W., the wife of John Shaw, M.D. Lond., M.R.C.P. Lond., of a son.

SINCLAIR.—On July 9th, at Cranbourne, Westerfield-road, Ipswich, the wife of Walter W. Sinclair, M.B., of a daughter.

SMITH.—On July 17th, at 229, High-street, Watford, the wife of G. Francis Smith, M.R.C.S., L.R.C.P. Lond., of a son.

STEAD.—On July 3rd, at Moor Lodge, Hawkhurst, the wife of C. C. Stead, M.B. Camb., L.R.C.P. Lond., of a daughter.

SWAIN.—On July 11th, at Victoria-square, Clifton, Bristol, the wife of James Swain, M.S., M.D. Lond., F.R.C.S., of a son.

MARRIAGES.

EDEN—BAIN.—On July 18th, at St. Mary Abbots', Kensington, by the vicar, the Rev. Canon Pennefather, assisted by the Rev. G. T. Harvey of Navenby, Thomas Watts Eden, M.D., M.R.C.P., to May, only daughter of Mrs. Bain, and granddaughter of the late Sir James Bath of Glasgow.

GOUGH—LONGSTAFFE.—On July 17th, at SS. Mary and John Church, Oxford, by the vicar, Rev. W. Scott, assisted by the Rev. W. D. Macray, rector of Ducklington, Bernard Bradly, son of Henry Gough, barrister-at-law, of Redhill, to Annie S., second daughter of Mrs. Longstaffe, of Oxford.

HENTSCH—PETERKIN.—On Thursday, the 12th inst., at St. Stephen's, Paddington, by the Rev. W. E. Burkitt, B.A., rector of Buttermere, Wilts, George Frederick Hentsch, L.R.C.P. Lond, M.R.C.S., younger son of the late George Hentsch of Chancery-lane and Barnsbury, to Beatrice M., youngest daughter of William Peterkin of Clitheroe, Lancashire.

WALDO—EXTON.—On the 14th July, at the parish church, Hampstead, by the father of the bride, Frederick Joseph Waldo, M.D., barrister-at-law, to Marion, elder daughter of the Rev. R. B. L. Exton, formerly vicar of Strood, Kent.

DEATHS.

GLAZEBROOK.—On July 14th, at Haymans-green, West Derby, Liverpool, Nicholas Smith Glazebrook, M.R.C.S., in his 87th year.

HEYCOCK.—On the 9th instant, at Hounslow, Francis Raworth Heycock, M.D., F.R.C.S., second son of the late Rev. C. Heycock, J.P. of Pytchley House, Kettering, aged 58 years.

LAKE.—On July 18th, at Bloemfontein, W. Wellington Lake, Militia Medical Staff, of Topcroft, Guildford, aged 46 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"SAD DEATH AT MARHAMCHURCH."

UNDER the above title the *Western Morning News* of July 14th prints the following story:—

> Mr. D. Thompson, county coroner, held an inquest at Marhamchurch on Thursday on Selina Matthews, wife of a farm labourer, who died on Wednesday morning. James Matthews said his wife, 30 years of age, was confined of her fifth child on Monday night. She was attended by an "occasional" nurse, and had no doctor. After her confinement she complained of her head, and he went to Mr. Braund on Tuesday afternoon and got some medicine, but did not ask him to visit her. She took some medicine and afterwards for a while was cheerful, but then became drowsy and never rallied, dying on Wednesday morning. She was very sick. Her sister was with her on Tuesday and the neighbours looked in.—The Foreman (Mr. Greenaway): Is it usual for a medical man to supply medicine to patients without seeing them?—The Coroner: It is not unusual. If medicine only is applied for he would do the best he could without a visit. Of course, if asked to see a patient he would not supply medicine until he had first seen the patient.—Mr. Greenaway thought it unusual and would have liked to have heard whether the effects of the medicine given were such as were expected.—The Coroner offered to adjourn the inquest to procure medical evidence, but the jury thought it not necessary.—Mary Ann Cowling, the occasional nurse, said all went satisfactorily. When deceased complained of her head witness recommended sending for a doctor. She was slightly convulsed just before her death.—Emily Jones, a neighbour, said she saw the deceased daily and did not anticipate any danger. She seemed pretty well on Tuesday night, but still complained of her head. On Wednesday morning she was heavy and drowsy and did not speak. She then considered her condition alarming and asked that a doctor be sent for. One was sent for, but death took place before his arrival.—The jury returned a verdict of "Death from natural causes—failure of the heart's action after convulsions."

We cannot agree with the jury that it was unnecessary to hear medical evidence in this case. In the interests of the medical man the jury should certainly have ascertained (1) what the husband told Mr. Braund that his wife was suffering from and (2) what Mr. Braund felt himself able to prescribe under the circumstances. We agree with the foreman that to give medicine to a patient who is not visited is unusual and we may add that as a rule it is very inadvisable; but we do not say that it was inadvisable in this case because we have no notion what the husband said. The "occasional" nurse who said that "all went satisfactorily," might also have been asked what significance she attached to the word "satisfactorily" and under what circumstances she was in the habit when occasionally nursing of sending for medical assistance.

"THE EVER-READY ELECTRIC LIGHT."

To the Editors of THE LANCET.

SIRS,—We notice in THE LANCET of July 14th (p. 111) a description of the "Ever-Ready" Electric Light which Mr. Dale states is made by him. We should very much like to know if he is the manufacturer as we can supply the identical article which is made in America. We beg to hand you a drawing which you will see is the same in every way.

We are, Sirs, yours faithfully,

London, July 17th, 1900. ARNOLD AND SONS.

*** The drawing sent to us by Messrs. Arnold and Sons is undoubtedly identical with that which we published last week. Mr. Dale will, perhaps, state whether he is the inventor or maker. We certainly supposed one or other to be his position.—ED. L.

A QUESTION OF LIABILITY.

AN interesting point was raised in a case which came before Judge Stonor on July 10th at Brompton. A surgeon dentist had rendered professional services to one of the students at the hospital to which he was attached. The latter was under age at the time, and had since joined the troops in South Africa, leaving his dentist's account unpaid. The action in question was for the recovery of 16 guineas from the young student's father, who is a medical man. The plaintiff said that had he charged his usual fees the account would have amounted to £36, and that he made the reduction because the young fellow had studied under him at the hospital. The student, it was stated, always said that his father would pay the dentist's fees, and about a year later the account was accordingly sent in to the father. The latter returned the account repudiating liability; and, in the course of correspondence, said that his son appeared to have been under the impression that a surgeon, medical man, or dentist would not as a rule make any charge when attending a medical student, especially when both, as in the present instance, were connected with the same hospital. The father went on to remark that the fees seemed to be rather high, and asked to be favoured with the views of the dentist as to payment by students in such cases. In another letter the father stated that he had consulted certain hospital authorities, and that they had advised him not to pay the account. The plaintiff, in his evidence, stated that he distinctly told the young fellow that he could not afford to attend the students at the hospital free of charge. His Honour said it was evident that the student had pledged his father's credit, but there was some doubt as to the father's liability. Counsel for the plaintiff maintained that the attendance in question was necessary to the young fellow's health, and that the father was therefore liable. Counsel for the defence contended, on the other hand, that if the son had been living with his father at the time that the services were rendered, there might have been something in the submission of the plaintiff's counsel, but as a matter of fact the son was in lodgings at the time. The learned counsel went on to contend that as the plaintiff had not the defendant's authority to render the services, the latter was not liable. His honour said he was not convinced that the attendances in question came under the heading of necessities within the meaning of the Acts relating to the point. There was evidence that the student pledged his father's credit, but there was no evidence that the father gave him authority to do so. This being so, his Honour found that the defendant was not liable. The case was struck out, no costs being allowed.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Could any of your readers inform me of a medical man residing in a small seaside place or in the country about North Wales or in the north of England or some quiet place over 100 miles from London, who would be willing to receive into his house a lady subject to periodical fits of depression and who at these times is inclined to excessive indulgence in stimulants. The lady is between 50 and 60 years of age, is troubled six or seven times a year, and is willing to be advised and guided to overcome her weakness. She would pay £1 15s. per week for her board, &c., as a paying guest, and the undersigned can testify that the lady is an intelligent and pleasant person.

I am, Sirs, yours faithfully,

Earl's Court-road, W., July 16th, 1900. J. ROSS MACMAHON.

SANITARY PROPAGANDA.

To the Editors of THE LANCET.

SIRS,—In many rural districts the sanitary authorities issue printed leaflets for distribution amongst cottagers. These leaflets contain instructions how to act when notification diseases appear. Can you kindly inform me where such can be obtained and which is the best form for scarlet fever and diphtheria?—I am, Sirs, yours faithfully,

July 16th, 1900. HEMERA.

*** The medical officer of health composes his own propaganda to the people under his sanitary charge. (See the paragraph entitled "Precautions against Diarrhœa.") If any medical officer of health has designed a leaflet that he thinks would be useful to our correspondent and will send it to us we will forward it to its destination and say at the same time who is its author.—ED. L.

PRECAUTIONS AGAINST DIARRHŒA.

DR. E. M. SMITH, medical officer of health of York, has issued a leaflet for distribution which contains valuable advice to the community under his charge. He is dealing with the prevention of summer diarrhœa, and the burden of his words is that cleanliness, and cleanliness alone, will prevent this disease that is so often fatal in epidemic form to children. "Keep your house clean in every part,' he says. "Keep yourselves and your children and their clothing clean. Keep your sinks, gulleys, and closets clean with brush or mop and hot water and soda. Flush them frequently with cold water. Keep the windows of your living rooms and bedrooms open by day and your bedroom windows open by night. Don't block up your bedroom chimneys and fire-places. Keep all feeding utensils constantly clean and sweet with boiling water. Don't let dust, or manure, or kitchen refuse (vegetable refuse, potato parings, tea leaves, bits of meat or fish, &c.) collect in the house or yard. Burn the kitchen refuse on the fire. Never allow choked drains, or choked closets, or offensive accumulations near your house to remain unattended to. Report them and also report badly-paved yards. Don't keep poultry in your yard. Use disinfectants such as chloride of lime freely to drains, gulleys, closets, and privies. Ask for some at the sanitary office. Don't allow your house to be damp without reporting it to the sanitary office." We trust the people of York will take this excellent advice.

"WHO IS MR. W. HARTLEY AUSTIN"?

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 14th, p. 147, you are good enough to refer to a circular issued by myself to medical men on the subject of investments at compound interest and simple interest. You evidently desire to know the *bona fides* of the investment referred to, and as it is a subject which has created much interest amongst medical men (many of them investing largely) I have pleasure in replying to your queries. I do not wish to obtain a gratuitous advertisement, but I trust you will give my reply the same prominence that you have given your criticism. The company referred to as guaranteeing the investment is the Sun Life Insurance Company of Canada. The assets of this office (invested under stringent supervision of the Canadian Government) at the

present moment exceed £2,000,000 sterling. It reports annually to the Board of Trade in this country and it has appointed three trustees to look after the interests of policy-holders and investors here—viz., the Marquis of Dufferin and Ava, the Earl of Albemarle, and Sir Charles Dalrymple, Bart., M.P., who holds £100,000 in trust as special security. The company has been established since 1865 and its bankers are the Bank of Scotland. Regarding the investment itself, as stated in my circular the principal attraction is that under it any healthy man can set aside a moderate sum each year (just so much as he can afford to save against retirement later on in life, with the drop in income which retirement always entails to a medical man), accumulate same at compound interest, drawing the result either in cash or as a yearly addition to the income. You are, of course, perfectly right when you say that most medical men know that an investment at compound interest increases more rapidly than one at simple interest, but how many men realise the extraordinary difference there is between compound and simple interest. Here is an example (very far-fetched, of course, but it serves to illustrate my meaning) which appeared in one of your contemporaries a short time since. If a penny had been invested in the year 1 at 5 per cent. compound interest it would now amount to no less than 56,535,727 quintillions of pounds sterling. The same penny invested at 5 per cent. simple interest would not amount to eight shillings! I do not suggest that any medical man can set aside a penny and accumulate it for 1900 years, but I do suggest, and that most emphatically, that he cannot do better than set aside £10, £20, £50, £100 a year, or any sum he can spare, and let it accumulate for, say, 20 years under the security I have named. Should the investor unfortunately die, even a day after payment of his first deposit, all further cost immediately ceases, and the company guarantees to hand over either a large sum in cash, or to pay a yearly income to wife, child, or other dependant. Thanking you for the very fair criticism you made on my circular, and holding all further information at your disposal,

I am, Sirs, yours faithfully,
W. HARTLEY AUSTIN.

93, Queen Victoria-street, E.C., July 14th, 1900.

THE WAY TO SPREAD DISEASE.

IN spite of legal enactments, of health lectures, and the advance of general intelligence of which we are so proud, instances of ignorance or recklessness still occur. An inspector of nuisances saw a child playing in the street at Weaste on July 1st "in the peeling stage of scarlet fever." On the next day he went to the house and found the child, instead of being isolated, playing in a living room. On the 5th the child was seen again in the street. A fine of £1 and costs was imposed. The stipendiary spoke seriously to the parents, and we may presume that they were impressed thereby.

REMEDIES FOR SEA-SICKNESS.

To the Editors of THE LANCET.

SIRS,—I have been appointed surgeon to a steamer of one of the Atlantic lines and whilst a good sailor myself I have no doubt I shall find many of my fellow voyagers suffering from sea-sickness. Could any of your sea-faring readers kindly tell me what remedies he has found most effectual in the treatment of this distressing complaint? Any suggestions will be esteemed a favour by

Yours faithfully,
July 13th, 1900. SHIP'S SURGEON.

"A GOOD BICYLE SADDLE."

A CORRESPONDENT, "B," asks a question in THE LANCET of July 7th, page 70, to which, in ignorance of the querist's physique, it is impossible to give a satisfactory answer. A cyclist requires to be measured for his saddle just as much as for the garments he wears when riding. What suits a man with lean thighs will be found extremely uncomfortable by the possessor of rounded limbs, and *vice versâ*. Again, there are riders who cannot bear pressure on the perineum, whereas others—with, for instance, a tendency to procidentia recti—must have support in that region. There are many so-called anatomical saddles in the market, but no particular pattern can be recommended for all and sundry. If "B" were to write to any well-known firm of saddle-makers describing his physical conformation and disabilities (if any) he would no doubt succeed in obtaining what he wants. There are so many firms turning out equally good articles that it would be invidious to make a selection. "B" can, however, find names and addresses in the advertising columns of cycling journals. With regard to position it is unquestionably true that by perching himself upon an inclined plane and bending his body forwards at an acute angle in the ungraceful manner that is adopted by the numerous class of cyclists known as "scorchers" the rider is able to exert a slightly greater amount of propelling force than he can when sitting upright, but there are happily objections to the stooping posture which more than counterbalance this advantage. In the first place persistence in the hunchbacked attitude not only conduces to the production of high shoulders, narrow chests, and rounded backs, but it also, to a great extent, deprives the devotee of speed of the ability to enjoy delightful scenery and objects of interest. His neck curved downwards and his head protruding in tortoise guise, he can see nothing but the space immediately in front of his rapidly revolving wheel. At a rate which cannot but be startling to even experienced pedestrians he silently flashes past, the embodiment of anything except the poetry of motion, and as he momentarily glances upwards the expression in his straining eyes is precisely the same as that which their misfortune has imposed upon the victims of dorsal caries. A dignified cyclist holding his head heavenwards like a man and not earthwards like a beast is a spectacle to admire; but although he may succeed in covering more miles within the hour the grovelling scorcher is nevertheless an execrable object who, for no good or useful purpose is content to sacrifice everything that is æsthetic on the altar of celerity.

RADIOGRAPHIC EQUIPMENT.

MESSRS. ISENTHAL & Co., of 85, Mortimer-street, Cavendish-square, W., have submitted to us their new list of radiographic apparatus. We note that their "x" ray laboratory is connected with both the continuous and alternating current so that the working of every instrument in the list can be shown by those who contemplate studying the subject in its practical aspects. The list contains a description of the "tubes" which according to experience are best for all practical purposes. In addition all the photographic and other accessories which make an equipment complete are given.

Senex.—The purchase value is estimated on the gross annual receipts and a three years' average would be a fair way of estimating it. The purchaser is sure to require an inspection of the books and so will be able to judge how far the last three years' work represents an increase or decrease in the practice. With the introduction that "Senex" proposes to give, it would be usual to ask for the half share a sum equivalent to the gross average annual receipts of the practice. We think our correspondent would be well advised to employ an agent.

W. H.—The notice would certainly seem to be designed to steal a march upon a professional brother. Where is the said notice "put up" and how much publicity has it received? Our correspondent will understand that if we comment on this matter the fact that we obtained our information from him may be obvious whether his name is mentioned or not.

Delta.—We cannot say whether the General Medical Council would, on a complaint being made, construe such an action as infamous in a professional respect, but thus to assist an unqualified person to practise medicine by writing the legal certificates for him is, in our opinion, covering and a very grave breach of professional manners.

Rivers.—We understand that it is the author's intention to treat the subject as a whole and it would be as well to make the illustrations generally illustrative and not to confine them to views of one sanatorium.

Jupiter will find the information he requires in THE LANCET of Sept. 9th, p. 724, and of Sept. 23rd, 1899, p. 851. The lists are no longer exhaustive.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 19th, 1900.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 13	29·79	N.	...	123	86	63	65	69	Hazy
,, 14	29·93	S.W.	...	121	72	61	62	65	Cloudy
,, 15	29·95	S.W.	...	123	84	58	63	70	Fine
,, 16	30·05	S.E.	...	136	95	64	68	72	Overcast
,, 17	30·22	N.	...	123	86	65	65	70	Hazy
,, 18	30·20	S.W.	...	123	89	64	65	70	Fine
,, 19	30·03	S.E.	...	124	92	65	65	70	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (28th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfie'd: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Cathcart: Miscellaneous Cases. (Post graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Bidwell: The Preparation of Patients before and the Treatment after Operation.

TUESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Consultation. (Medical.)

WEDNESDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Hillier: Consultation. (Medical.)

THURSDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (11, Chandos-street, Cavendish-square, W.).—9 A.M. Educational Committee. 9.30 A.M. Parliamentary Committee. 10 A.M. Council Meeting. 11 A.M. Fifty-ninth Annual Meeting. Election of Officers and Committee. 2 P.M. Dr. F. Beach: Presidential Address.—Dr. W. W. Westcott: Inebriety, its Causes, Results, and Treatment.—Dr. E. Daunt will read a paper. 8 P.M. Annual Dinner at the Whitehall Rooms, Hôtel Métropole.

FRIDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Gunn: Consultation. (Eye.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (11, Chandos street, Cavendish-square, W.).—10 A.M. Microscopic Demonstrations, Preparations, Specimens, and Lantern Slides:—Dr. W. F. Robertson, Dr. J. S. Bolton, and Dr. G. A. Watson. Dr. H. H. Newington will exhibit and describe the Plans of the New East Sussex Asylum. Dr. D. Orr and Dr. T. P. Cowen: A Contribution to the Morbid Anatomy of General Paralysis of the Insane (microscopic and lantern demonstration).—Dr. J. O. W. Barratt: Two Cases of Lepto-meningitis (microscopic and lantern demonstration).—Dr. J. Turner: Some Alterations produced by Disease in the Giant Nerve-cells of the Cortex (microscopic and lantern demonstrations).—Dr. L. C. Bruce and Dr. H. de M. Alexander: Observations upon the various Physical Changes in the Acute and Subacute Stages of Melancholia. 2 P.M. Mr. C. F. Beadles: The Insane Jew.—Dr. W. C. Sullivan: Alcoholic Homicide.—Dr. D. Blair: Non-diabetic Glycosuria.—Dr. A. F. Shoyer: An Angeioma of Broca's Convolution in a Lunatic.—Dr. F. W. Edridge-Green: Psycho-physical Perception.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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A Clinical Lecture

ON

PANCREATITIS, WITH ESPECIAL REFERENCE TO CHRONIC PANCREATITIS,

ITS SIMULATION OF CANCER OF THE PANCREAS AND ITS TREATMENT BY OPERATION, WITH ILLUSTRATIVE CASES.

Delivered at the Medical Graduates' College and Polyclinic on July 18th, 1900,

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS; EMERITUS PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE OF THE VICTORIA UNIVERSITY; AND HONORARY PRESIDENT OF THE SURGICAL SECTION OF THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

GENTLEMEN,—To be asked to lecture before an audience of post-graduates must always be considered an honour, but when the request comes from such a distinguished body as the council of the Medical Graduates' College and Polyclinic one can only feel that to the honour is added the pleasure of compliance. Fortunately, too, I had a subject which I wanted an opportunity of bringing forward, and I hope that I may have the benefit of your criticisms and the advantage of help from your experience in a class of cases which has hitherto, scarcely, if at all, been generally recognised, but which I believe to be not very uncommon.

Before proceeding to consider the subject of chronic pancreatitis specially I think that it will tend to the elucidation of my subject if I make a few remarks on pancreatitis generally.

PANCREATITIS.

When it is borne in mind that the pancreas is a racemose gland with its various channels opening into a duct which opens along with the common bile-duct into the second part of the duodenum—a channel usually containing septic organisms, and frequently liable to catarrh and other disorders—it is not surprising that inflammation should frequently occur in it. Just as in the liver we may have acute and chronic catarrh of the ducts, infective and suppurative cholangitis, and inflammation of the inter-lobular tissue ending in cirrhosis, so in inflammation of the pancreas we may have any one or more of those affections, though as yet we have not learnt to recognise acute or chronic catarrh of the pancreatic ducts apart from jaundice, or infective and suppurative inflammation of the ducts apart from abscess of the pancreas itself. As our means of diagnosis become more perfect I venture to predict that these affections will be more frequently recognised and awarded their proper place in medicine.

I have seen cases of discomfort with some swelling at the epigastrium associated with dyspepsia and ague-like attacks but without jaundice, or with only very slight jaundice, which I thought might be explained on the hypothesis of infective inflammation of the pancreatic duct, the cases having cleared up under general treatment. I have also seen the same symptoms associated with more pain, irregular fever, more marked swelling and tenderness over the pancreas and discharge of pus by the bowel from time to time, but without any collection sufficiently large to form a distinct abscess. In a case of this kind seen lately the question of operation was raised, but in the absence of distinct abscess of the pancreas it was not pressed and the patient is recovering. I think that this may have been an affection of the pancreas analogous to suppurative cholangitis.

Causes.—The essential and immediate cause of the various forms of pancreatitis is bacterial infection, this having been positively proved in a number of cases both clinically in the human subject and experimentally in the lower animals, but as in inflammatory affections of the liver and bile-ducts we look for extrinsic causes, so in pancreatic diseases we find biliary and pancreatic lithiasis, injury, gastro-duodenal catarrh, ulcer and cancer of the stomach, pylorus, or duodenum, and zymotic diseases such as typhoid fever and influenza, to be determining factors, though in some cases pancreatitis has come on suddenly in persons in robust health and the determining cause has been beyond recognition. Though the infection may arise from the blood as in pyæmia, or by direct extension from the neighbouring tissues as in ulcer of the stomach, yet the most usual channel is through the duct, as in the cases related below arising from gall-stones in the common duct, and from gastro-duodenal catarrh.

Symptoms.—It seems to me more convenient to consider pancreatitis clinically under the headings of (1) acute, (2) sub-acute, and (3) chronic, which does not interfere with the pathological classification of acute pancreatitis into hæmorrhagic, suppurative, and gangrenous. The symptoms of pancreatitis are very variable and differ in the separate forms. It is a disease without pathognomonic signs and a correct diagnosis is usually only arrived at by a careful study of the history, mode of onset, and combination of symptoms.

1.—ACUTE PANCREATITIS.

This is usually ushered in by a sudden pain in the superior abdominal region, accompanied with faintness or collapse and followed sooner or later by vomiting. It is almost constantly accompanied by constipation, so that it is quite usual for these cases to be mistaken for intestinal obstruction at first. The obstruction, however, is not absolute, flatus passes, and a large enema may secure an evacuation; if the patient survive for several days diarrhœa may supervene. The pain may be so severe as to produce syncope or collapse, and though the pain does not quite pass away it has a tendency to be paroxysmal and to be increased by movement; it is associated with well-marked tenderness just above the umbilicus or between it and the ensiform cartilage. The pain is soon followed by distension in the superior abdominal region which may become general and usually does so in the later stages, and by vomiting, first of food then of bile. The vomiting may be severe and each seizure may aggravate the pain, but at times vomiting may not be a prominent symptom. Slight icterus from associated catarrh of the bile-ducts is usually present and deepens the longer the patient survives. The aspect is anxious and the face is pinched, resembling the facies of peritonitis, which in fact may be present. The pulse, which is rapid and small, is a better guide than the temperature, which may be normal, subnormal, irregular, or high. Delirium comes on in the later stages. The distension, pain, and tenderness prevent an exact examination of the pancreas, which would otherwise be found enlarged. Death usually supervenes from the second to the fifth day from collapse, though in the less acute cases life may be more prolonged. Acute infective pancreatitis thus takes on the form of acute peritonitis starting in the superior abdominal region. If life be prolonged the case comes under the category of sub-acute pancreatitis, and in that case the onset is usually less grave, though often equally sudden.

2.—SUB-ACUTE PANCREATITIS.

This may have a sudden onset with acute pain and vomiting associated with constipation, but the collapse is not so marked and may even be absent; the upper abdominal region does not become so rapidly swollen, and vomiting is less severe and less prolonged. At other times the onset is more gradual, though the symptoms may be similar. Tenderness over the pancreas is well marked and on account of the tympanites being less than in the acute form it may be possible to feel the swollen gland, especially under an anæsthetic. Constipation gives place to diarrhœa, and pus or blood may be noticed in the stools which have a very fœtid odour. The pulse will be less rapid and less thready than in the acute form, and the temperature is more irregular. I have seen the temperature reaching 104° and 105°F., and yet the pulse to vary between 90 and 110. The morning temperature may be normal and the evening temperature high for several days or even weeks. Rigors may occur and may be repeated from time to time. The pain occurs in paroxysms, but there is also a constant dull pain at the epigastrium. The patient may lose the more urgent symptoms and appear to be really improving, but the loss of flesh and feebleness continue and relapses usually occur, leaving the patient each time more and more feeble until death supervenes from asthenia. Albuminuria is pretty constant, but glycosuria is rarely present and lipuria is an uncommon symptom.

If an abscess develop the pus may form a tumour projecting in the superior abdominal region and forming a tender swelling behind the stomach, or perhaps coming to

the surface above or below that viscus; or it may burrow into either loin forming a perirenal abscess, or passing under the diaphragm, it may form a subphrenic abscess. Occasionally the pus may follow the psoas muscle and form a subperitoneal abscess in the iliac region or even passing over the brim of the pelvis it may collect in the left broad ligament. I have seen these several terminations in cases either under my own care or under the care of colleagues and I have operated four times for abscess of the pancreas. Sometimes the abscess bursts into the stomach and is vomited, or into the bowel and is voided per anum, after which diarrhœa may continue and pus may be seen from time to time as any fresh collection forms and bursts. I have seen both of these methods of evacuation of the pus. With the evacuation of the abscess relief occurs for a time and the temperature improves, but relapses usually occur and a mild form of septicæmia persists with a hectic temperature. Death is the usual termination, but recovery may occur after a tedious and prolonged illness, as in the case now related.

CASE 1.—On March 17th, 1900, I was asked by Dr. J. Glen of Middlesbrough, to see a female patient, aged 26 years, when I obtained the following history. The patient was first attended the last week of December, 1899. Her symptoms then indicated a chronic form of dyspepsia with recurrent attacks of diarrhœa, the latter associated with indurated fæces. No relief from treatment resulted. The main symptoms at this time were general tympanitic condition of abdomen with tenderness over the sigmoid flexure, no acceleration of pulse, and no rise of temperature. About the second week in January, 1900, the diarrhœa still persisting, a good deal of fresh blood was present with each evacuation—these giving one the idea of dysentery. Then retching and vomiting set in, but this condition was probably set up by the free exhibition of powder of ipecacuanha. This condition continued more or less for upwards of a fortnight when improvement set in. The tympanites disappeared, the tenderness of the left groin became less, there was less sickness, and a desire for food returned. The diarrhœa abated, there being only one or two evacuations in the 24 hours, the motions being formed. The improvement continued till the second week in February. The patient at this time having gained flesh, was daily gaining strength, and was able to sit up in her dressing-gown for a time each day. A relapse took place, accompanied with much pain in the epigastric region, constant sickness, return of diarrhœa and blood in the stools, and rapid emaciation, and quick pulse and rise of temperature. This condition persisted in spite of all treatment. There had never been blood in the vomited matter except once, when there was a slight streak as if it might have come from the pharynx during the act of severe retching. Since the relapse there has developed a dull area with tenderness over the pancreas, but the degree of tenderness varies from day to day. At one time there was retention of urine, afterwards incontinence; no albumin or sugar was present. Hæmorrhage was very profuse, the blood being gruel-like and mixed with stools which were very offensive. Dr. Glen showed me the report of the Clinical Research Association of an examination of the fæces which contained some blood and pus but no cells suggestive of growth and no tubercle bacilli. When I saw her the patient was looking very ill and emaciated, with feeble, quick pulse; there was tenderness in the superior abdominal region with rigid recti, but not along the course of the colon either on the right or the left side. Examination under an anæsthetic revealed a swelling in the situation of the pancreas, but no fluctuation could be made out. As there was resonance in front of it, it was clearly behind the stomach, and from its position it was above the colon. Before the anæsthetic the patient said there was very great tenderness on pressure over the swelling in the epigastrium. The rectal examination was negative, except that there was ballooning. I made a diagnosis of suppurative pancreatitis, the abscess having discharged into the bowel. I advised five grains of salol, two grains of quinine, and half a grain of opium, to be given thrice daily, the patient to be watched with a view to the testing of her temperature, pulse, &c. Plasmon and somatose dissolved in broth, tea, &c., were ordered as the patient could not take milk. The question of operation was raised and dismissed to be further considered in about a week or 10 days, as she was at the time too feeble to bear even an exploratory incision. From this time improvement steadily occurred and when I saw her again in a fortnight she was picking up distinctly, though there was still well-marked tenderness over the pancreas. In June she had gained nearly a stone and a half in weight, looked much better, and could take her food well; there was however, still a little rigidity of the recti and some tenderness, though no distinct tumour of the pancreas. The diarrhœa had disappeared and there was neither pus nor blood in the motions.

3.—CHRONIC PANCREATITIS.

Chronic pancreatitis, at first hypertrophic but later cirrhotic, is usually considered to be a very rare disease, but experience would lead me to believe it to be a much more common affection than the acute or sub-acute forms, and I think that some cases put down as malignant disease of the head of the pancreas and terminating fatally may be cases of chronic interstitial pancreatitis. My reason for this belief is shown in the cases related below, selected out of 17 cases on which I have operated. My experience has resulted from my having operated on a large number of cases of jaundice depending on obstruction to the common bile-duct; the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall-stones, and the absence of relief by medical treatment having rendered surgical treatment necessary. My first case of this nature was a revelation to me, as the patient was extremely ill before the operation which was, in fact, undertaken too late; and as there was the opportunity of a post-mortem examination the absence of malignant disease or of other cause than the chronic pancreatitis and associated jaundice to account for the death was directly proved.

This form of pancreatitis is quite distinct from the acute or sub-acute form, though I think it is probable that some of the latter cases end in chronic interstitial pancreatitis. It probably usually arises by extension of the inflammation from a chronic catarrh of the pancreatic duct extending from a gastro-duodenal catarrh, though it is frequently associated with biliary or pancreatic lithiasis, or with gastric, pyloric, or duodenal ulcer. Its course varies. The onset may be quite gradual and painless, or may be ushered in by a severe pain at the epigastrium followed by jaundice resembling a gall-stone attack and associated with nausea and vomiting, and perhaps followed by a feeling of chilliness or even a rigor. The pain, however, is not over the gall-bladder and does not pass round the right side to the subscapular region, but is central and passes backwards to the midscapular region or round the left side, thus resembling stomach rather than gall-bladder pain. The tender spot is usually an inch above the umbilicus in the middle line and not over the gall-bladder as in cholelithiasis. When once jaundice has come on it tends to deepen with each attack until it becomes continuous and chronic. The paroxysms of pain may be repeated more or less frequently or there may be no paroxysmal pain, merely a dull ache deeply seated, burning and boring in character. A swelling of the pancreas may sometimes be made out, but as the recti are rigid because of the pain and tenderness in the epigastrium, it can usually only be discovered under anæsthesia.

Loss of flesh and strength are well-marked symptoms in all cases. Vomiting may in some cases be absent, but there are usually a want of appetite and flatulent dyspepsia, and always a sense of fulness and weight at the epigastrium for some time after food. Jaundice is not necessarily present at first, though it is usually present at some stage of the disease and is often well marked, but, as was pointed out some years ago by Dr. Walker of Peterborough, the stools are white even when the pancreatic fluid alone is absent from the intestine. Diarrhœa is often present and the stools are offensive and may be fatty. Albuminuria is common and glycosuria may occur, but the latter is probably only present in cases where the whole gland is affected. Fever may be absent, but in some cases the temperature runs a hectic course, always rising in the evening and falling in the morning. This is especially the case where ague-like paroxysms occur. These varieties probably depend on the character of the infection in the pancreatic and bile-ducts and also on the amount of obstruction present. Where jaundice is present the pulse may be abnormally slow, and even when the temperature is raised the pulse-rate is not much elevated, though the character of the pulse may be poor. In the later stages, especially if the disease be associated with jaundice, hæmorrhages from the nose and the bowel, vomiting of blood and petechiæ in the skin show marked blood degeneration and death ensues from increasing weakness.

In the more chronic cases, especially when there is contraction of the head of the pancreas, there will be found a tumour formed by the distended gall-bladder, just as there is in cancer of the head of the pancreas, for which disease chronic interstitial pancreatitis is then apt to be mistaken and a hopeless prognosis given. In such cases the gall-bladder will be found to be distended with mucus, the bile which first filled it having become gradually absorbed, the backward pressure having prevented fresh bile from entering the ducts. This may occur so gradually as to be painless and then the gall-bladder is free from tenderness, which is seldom the case when the distension is due to gall-stones.

Diagnosis.—The diagnosis of chronic interstitial pancreatitis has to be made from gall-stones in the common duct, cancer of the head of the pancreas, cancer of the liver and bile-ducts, and chronic catarrh of the bile-ducts. From gall-stones the diagnosis is of no great importance, since the two diseases are often associated and the treatment is the same; nevertheless, it may be possible to make a diagnosis of gall-stones by the sequence of long antecedent history of spasms without jaundice, then by a severe attack of pain followed by jaundice, and after a time by recurring pains with increase of the icterus associated with ague-like attacks. The absence of tumour is more common in gall-stones than in chronic pancreatitis, though in the latter the gall-bladder may be found contracted at times. Although in pancreatitis there is usually less pain, at times the paroxysmal attacks may be equally as severe as in gall-stone seizures. The tenderness in the latter case, however, will be over the gall-bladder, and in the former at the middle line where the swollen gland can sometimes be felt, especially if the examination is made under anæsthesia; moreover, the radiating pain in gall-stones is towards the right and in pancreatitis towards the left or to the mid-scapular region. In cancer of the head of the pancreas the onset is usually gradual and painless, and the disease generally occurs later in life, usually after 40 years of age. It is preceded by general failure of health, and when the jaundice supervenes it becomes absolute and unvarying and is nearly always associated with a tumour of the gall-bladder, which generally attains a large size and shows no tenderness on manipulation. The liver enlarges from the biliary stasis, but there are no nodules to be felt. In some cases of cancer of the head of the pancreas a hard nodular tumour may be found on the inner side of the distended gall-bladder. Extremely rapid loss of weight and strength with increasing anæmia, but without ague-like seizures, is very characteristic, and it is common for there to be an absence of fever with a slow feeble pulse and later ascites with œdema of the lower limbs. Cancer of the common bile-duct is rare, but when present may resemble, and is usually associated with, gall-stones. In cancer of the liver, the irregular enlargement, the nodular feel, the rapid deterioration of health, the less intense jaundice, and the absence of fever and paroxysmal pains will usually enable a diagnosis to be made. Chronic catarrh of the bile-ducts is usually associated with an absence of symptoms, except jaundice and some loss of flesh. The entire absence of pain and fever with the relief by treatment usually give rise to little difficulty in establishing a diagnosis. In many cases a diagnosis will only be made by an exploratory operation, then the enlargement of the pancreas can be readily felt, or if the tumour be small the head of the pancreas may be found to be hard and perhaps nodular like scirrhus. If ascites be present the tumour will probably be malignant. The lymphatic glands in the lesser omentum may be enlarged in both cancer and chronic pancreatitis, but in the latter they will be discrete and soft, in the former hard and perhaps infiltrating. Adhesions are usually associated with chronic pancreatitis, but are generally absent in cancer.

Pathological appearances.—Whenever there is obstruction of the common bile-duct by gall-stones, with associated infective cholangitis, the pancreatic duct may be subjected to backward pressure and to the same infective dangers as the liver; hence the association of infective and suppurative inflammation of the pancreatic duct is quite common. If this irritative process is kept up for some time the substance of the pancreas participates in the inflammatory process and an interstitial pancreatitis results. There may be uniform swelling of the gland or only of certain lobules. Effusion into the inter-lobular and into the peri-glandular cellular tissues is associated with proliferation and detachment of the epithelium lining the acini and the tubes, and there is a crowding together of the cells, with an accumulation of inflammatory fluid containing round cells and blood corpuscles in and around the affected parts of the gland, leading to tension. This simple pancreatitis is known by examining the parts of the pancreas less severely affected when death has occurred from abscess or other disease affecting a limited portion of the gland, and I have also seen it in cases of common bile-duct obstruction where the pancreatitis only proved a secondary and not the fatal disease. In the greater number, if not in all cases of obstruction of the common duct where the obstruction is close to the duodenum the pancreatic duct participates in the infective process which usually follows, and when death occurs it will be found that pus can usually be squeezed from the duct of Wirsung; this has been observed independently by Dr. A. R. Ferguson of Glasgow. If resolution takes place complete recovery may occur or the interstitial effusion may organise and lead to irregular contraction of the tissues and possibly to cirrhosis or chronic interstitial pancreatitis that may either end in diabetes if the whole gland be affected or may lead to pressure on, or distortion of, the common bile-duct and so to chronic jaundice, thus simulating cancer of the head of the pancreas. If, on the other hand, the inflammation be too acute for resolution to occur it may pass on to suppuration which may be general or localised. In all cases of chronic pancreatitis on which I have operated I have found numerous and firm adhesions around the duodenum, pylorus, and hepatic flexure of the colon, all of which have been adherent to the liver and gall-bladder, and on several occasions occlusion of the foramen of Winslow has been found. Where there has not been associated cholelithiasis, the gall-bladder will usually be found distended, and if the obstruction of the common duct be complete it may be very large and filled with mucus. The lymphatic glands usually participate in the inflammatory process and may suppurate. If the patient survive there may be abscesses in the liver, pressure on, or thrombosis of, the splenic vein, enlargement of the spleen, pressure on, or thrombosis of, the portal vein with ascites, or even obstruction to the flow of blood through the vena cava and œdema of the legs.

Prognosis.—The disease may last for months or even years, and it is not improbable that some of the cases of jaundice persisting for several years and called chronic catarrh of the bile-ducts may be of this nature. If glycosuria supervene it makes the outlook more grave. Increasing weakness and the supervention of hæmorrhagic tendencies usually show the near approach of a fatal termination. Under surgical treatment the prognosis is very favourable, as out of 17 cases on which I have operated 16 have recovered, and in nearly every case complete restoration of health has occurred.

TREATMENT OF PANCREATITIS.

In acute infective pancreatitis treatment practically resolves itself into that of peritonitis commencing in the superior abdominal region. The pain at the outset is so acute as to necessitate the administration of morphia, and the collapse will probably demand stimulants, which on account of the associated vomiting may have to be given by enema. In the early stages the symptoms are so indefinite that the indications for surgical treatment are not clear enough to warrant operation, and until the collapse has passed off no surgical procedure would be justifiable. The simulation of intestinal obstruction will probably lead to efforts to secure an evacuation of the bowels and relief to the distension. In the only case of this kind that I have seen the distension of the upper part of the abdomen was so great and the patient was so obese that any exploration from the front was out of the question, even when the diagnosis was established. A posterior exploration was discussed and would have been made but for the speedy death of the patient. Just as in a perforative or gangrenous appendicitis an early evacuation of the septic matter is necessary to recovery, so in this equally lethal affection an early exploration in the left costo-vertebral angle is demanded, and as it can be performed with very little difficulty I should certainly perform it early in any case I might see in the future, when I should evacuate the septic material and adopt free drainage.

The sub-acute form of pancreatitis is much more amenable to treatment, as the indications are so much more definite and there is more time for careful consideration, and though it has usually only been attacked when an abscess has formed and is manifestly making its way to the surface, yet there is no reason why in some cases surgical treatment should not be adopted at an earlier stage. As in the acute condition, morphia may be required to relieve the

paroxysmal pain and stimulants and food by the rectum to relieve the collapse and support the strength. The distension, if present, may also demand attention and may have to be relieved by lavage of the stomach and turpentine enemata or by the administration of calomel by the mouth. Calomel is also of benefit by acting as an intestinal antiseptic, for which purpose it may be given in small repeated doses or in doses of five grains, followed by a saline aperient. As soon as the constipation is relieved diarrhœa is apt to supervene, when salol and bismuth with small doses of opium may be given. If surgical treatment is decided on, a median incision above the umbilicus will enable the operator to palpate the pancreas and locate any incipient collection of pus, which if practicable should be evacuated by a posterior incision in the left or right costo-vertebral angle, or failing that possibility the collection of pus may be aspirated and the cavity opened and packed with gauze, which may be brought forward through a large rubber drainage-tube which will in the course of from 24 to 48 hours establish a track isolated from the general peritoneal cavity. In one case I was able to do this, but the operation was undertaken at too late a stage to be successful, and though the patient lived two or three days afterwards the evacuation of the pus seemed to make very little difference to the general septic condition previously existing and death occurred from increasing debility. The method adopted had, however, been successful from the point of view of drainage, and the track of the gauze and tube was isolated from the general peritoneal cavity. If a definite abscess form and approach the surface in front or in either loin the treatment will be that of incision and drainage as in the case of any other abdominal abscess. Of four cases on which I have operated two recovered completely, one recovered from the operation but died a few weeks later from debility. The fourth case is the one just referred to. The strength must be maintained by careful feeding and the judicious administration of stimulants. It will be necessary to keep a sharp look-out for further collections of pus and for subphrenic abscess or empyema which on recognition will need treatment.

The course and treatment of chronic interstitial pancreatitis is exemplified in the cases related below. Doubtless, in some of these cases the manipulation of the indurated tumour has detached calculi impacted in the gut, but in others the relief of tension as the result of draining the bile-ducts by cholecystotomy or cholecyst-enterostomy has indirectly drained the pancreatic duct and thus has led to a subsidence of the pancreatitis, then to an opening of the common duct by the relief of the tension, and so to a cure of the patient. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis would make me hesitate to decline operation in any case of distended gall-bladder where the patient was in a condition to bear it, or even in any case of chronic jaundice without distension of the gall-bladder where the general health was deteriorating, as though it should be recognised that if the disease be really malignant very little good will be done and life may even be shortened or prolonged for a short time, yet if the disease prove to be chronic pancreatitis a real and permanent cure may be brought about. If a calculus be felt imbedded in the head of the pancreas or impacted in the pancreatic duct it may be reached through the second part of the duodenum by laying open the papilla and exploring the duct or by dividing the peritoneum passing between the duodenum and hepatic flexure of the colon and then cutting through the overlying pancreas on the concretion. If the papilla be incised it does not require suture and in the cases in which I have explored the ducts by the duodenal route there has been no hæmorrhage; the anterior duodenal opening requires closing by a mucous and a serous suture. Drainage of the right kidney pouch for from 24 hours to 48 hours is advisable, though not always necessary, and this is best done by a stab wound at the most dependent part.

For attacking the head of the pancreas or the pancreatic duct a vertical incision should be made through the right rectus and not in the middle line. In all cases of deep jaundice I prescribe chloride of calcium in 20-grain doses thrice daily for 24 hours or 48 hours before operation and give it in an enema form for 24 hours afterwards in 60-grain doses thrice daily.

CASE 2. *Chronic pancreatitis; cholecystotomy; cure.*—A man, aged 45 years, was sent to me on Oct. 25th, 1898, by Dr. J. B. Berry of Keighley. The patient was very deeply jaundiced and told me that he had lost a stone in weight since the onset of his illness five weeks before. He gave the history of having had attacks of pain referred to the region of the gall-bladder nine years previously, but they were unaccompanied by jaundice and passed off after prolonged treatment. From that time onward he had been free from attacks of pain up to the onset of the present illness five weeks before, when he was suddenly seized with severe pain at the pit of the stomach and became jaundiced. The pain had recurred daily and had been so severe as to necessitate his taking morphia. Dr. Berry noticed a swelling in the region of the gall-bladder a fortnight after the onset of his illness, and there was all along well-marked tenderness at the epigastrium with gradually increasing enlargement of the liver. The patient's general health rapidly failed and the loss of flesh was well marked. When I saw him he looked pinched and ill, he was very deeply jaundiced, and the urine was loaded with lithates but contained neither albumin nor sugar. There were well-marked tenderness at the epigastrium and a smooth tumour, which was not very tender, in the gall-bladder region; the liver was enlarged and the edge was smooth and could easily be felt an inch below the costal margin. A diagnosis of gall-stones in the common duct was made, and the patient was admitted into the Leeds General Infirmary. The operation was performed on Sept. 27th, 1898. On opening the abdomen numerous adhesions between the gall-bladder and liver and the pylorus, colon, omentum, and duodenum were found. The gall-bladder was slightly distended, but no gall-stones were felt either in it or in the cystic or common duct. There was, however, a hard nodular swelling of the head of the pancreas which at the time was thought to be malignant. In order to give relief the adhesions were detached and the gall-bladder was drained by cholecystotomy. On Oct. 28th I wrote to Dr. Berry telling him that I feared that the disease of the pancreas might be malignant but that there was a possibility of its being a chronic pancreatitis. On Nov. 5th I wrote a letter to this effect: "I am pleased to be able to tell you that your patient has improved very much and the jaundice has nearly disappeared. I hope, therefore, that the tumour of the head of the pancreas may have been inflammatory and not malignant. At the time of operation it occurred to me that it was not quite hard enough for a malignant tumour, but under the circumstances I felt it my duty to give you my suspicions." From that time onwards recovery was uninterrupted and the patient left the hospital with the wound closed within the month. In December, 1899, the patient, at the kind suggestion of Dr. Berry, called to report himself to me. He looked perfectly healthy and had gained over a stone in weight since his return home. He had neither pain nor tenderness and he said that he felt as well as if he had never ailed anything. The scar was firm, the liver was normal, and there was not the slightest tenderness in the epigastrium or in the gall-bladder region.

CASE 3. *Chronic pancreatitis; cholecystotomy; cure.*—The patient was a man, aged 45 years, residing at Pickering. On March 19th, 1898, he was brought to see me by Mr. G. V. Robertson of Pickering, the history being that he had been well up to 12 months before, when he began to have painful attacks at the pit of the stomach ending in vomiting, but not followed by jaundice until an attack on Jan. 1st, 1898, since which time he had been deeply and continuously jaundiced. He had also from that time onwards had ague-like attacks, and two days before seeing me he had had within 24 hours three of these seizures, each accompanied by pain. Within a twelvemonth he had lost 2 st. 8 lb. in weight. On examining him there was some swelling in the gall-bladder region but no tenderness. The liver was a little enlarged but the margins felt smooth. There was decided tenderness in the middle line just above the umbilicus and on deep pressure the pain was considerable and an indefinite fulness could be felt. The diagnosis of gall-stones in the common duct was made, and an operation was advised. The patient was operated on at a surgical home on March 30th when the gall-bladder was found to be slightly distended and surrounded by adhesions to the pylorus, duodenum, colon, and omentum. No gall-stones could be discovered, but there was a well-marked swelling of the head and the first two inches of the pancreas which though nodular and irregular was not very hard. This extended further to the right than normal so as to cover in the lower end of the common bile-duct. Cholecystotomy was performed. Within 24 hours of the

operation nearly four pints of very offensive bile were discharged through the tube. A specimen was examined by the Clinical Research Association and their report was as follows: "The bile contains both staphylococci and streptococci, but no bacillus coli communis could be found either under the microscope or in the culture." Fearing that the disease might be malignant and the patient being so extremely weak and ill I gave a poor prognosis, but in a few days I was able to write: "[The patient] is progressing very satisfactorily, though he is still profoundly weak. Bile has appeared in the motions so that the obstruction is evidently overcome. The bowels have been moved naturally and the patient is less deeply jaundiced and looking better generally." On April 5th I was able to report that he was taking food well and that bile was passing freely in the motions He had had no recurrence of the shivering attacks. The drainage was continued for 14 days. On the 20th the patient returned home The urine was then free from bile and the motions were assuming a natural colour; he was taking food well, gaining flesh, and looking better generally. I still, however, gave a guarded prognosis, though I said that I hoped that the tumour would prove to be inflammatory and not malignant. From that time onward his progress to recovery was extremely rapid. A report I had of his condition from Mr. Robertson a few months later said that he was perfectly well in every respect and that he had fully regained his lost weight. I heard of this patient two years after his operation and he was still in perfectly good health.

CASE 4. *Chronic pancreatitis associated with gall-stones; cholecystotomy; cure.*—On Oct. 20th, 1899, I was asked by Dr. T. C. Squance of Sunderland to see a female patient, aged 51 years, who had been suffering for three years from attacks resembling those of gall-stones, each attack being followed by jaundice. During the past 14 weeks the seizures had been more frequent and severe and jaundice had never quite cleared away before another attack came. She had lost flesh and strength considerably and had vomited from time to time between the attacks. Her digestion was much impaired and there was a want of appetite. She had had no rigors, and had only slight fever at the time of each seizure. The urine contained abundant lithates and a slight trace of albumin, but no sugar. On examination the abdomen showed no manifest enlargement of the liver or gall-bladder, but some tenderness over the gall-bladder and at the epigastrium where there was an indefinite sense of fulness. An operation was performed on the 23rd, when after detaching numerous adhesions 15 gall-stones were removed from the cystic and common ducts, but as a large nodular mass was occupying the head of the pancreas and partly obstructing the common duct it was deemed advisable to perform cholecyst-enterostomy so as to make a permanent opening between the fundus of the gall-bladder and the duodenum. The tumour gave the impression both to myself, to Dr. F. Macrae, and to Dr. Squance that it was malignant. Recovery was, however, uninterrupted, the button was passed on the tenth day, the wound healed by first intention, and the patient immediately began to put on flesh. She returned home within the month and has since been perfectly well in every respect. It is now nine months since the operation, and her health, I am informed, is perfect.

CASE 5. *Chronic pancreatitis; cholecystendysis; cure.*—The notes of the following case have been kindly furnished by my friend Mr. Peter MacGregor of Huddersfield. The patient was a female, aged 51 years, married, and the mother of several healthy children. "Her previous history was unimportant, but for two or three years she had been a dyspeptic and during the past nine months she had been more or less continuously under medical treatment for dyspepsia and recurring attacks of 'cramp in the stomach.' ..... I first saw her on August 19th, 1899, when I got the above history, and a careful physical examination elicited nothing beyond tenderness in the pyloric region. On the 28th, I was telegraphed for to see her and found her suffering from a severe attack of gall-stone colic. She was seen at intervals from August 28th to Oct. 16th. On the latter date I found her emaciated and in more or less constant pain, with frequent attacks of colic and distress after every particle of food and with much straining and vomiting. Every variety of food had been tried, predigested and otherwise, but all with the same result—constant pain and frequent vomiting. Dr. Williams told me that he could feel a tumour in the pyloric region, but the patient was so very ill and examination caused so much distress I did not satisfy myself of the fact. No jaundice on this date, but previous attacks of colic had been followed by jaundice. On Nov. 25th the patient came into a nursing home for operation. She was then in constant pain with frequent retching, deeply jaundiced, and a perfect skeleton. Operation (Nov. 28th).—On examining the patient under chloroform a hard, rounded, irregular tumour was found between the umbilicus and the ribs. On opening the abdomen the stomach, much dilated, was found extensively adherent to the under surface of the liver and on stripping it off, a healthy gall-bladder in the normal position came into view. The right kidney, which had been diagnosed as 'floating,' was examined and the diagnosis verified, but the rounded, hard, irregular mass behind the duodenum appeared to be so undoubtedly a malignant tumour of the pancreas that the abdomen was closed and the friends were informed that the case was malignant and hopeless. After history: The temperature never went above normal; stitches were removed on the ninth day. On the fifth day after operation patient had a chop for dinner. Within a fortnight the jaundice had gone, the appetite rapidly improved, and she went home at the end of three weeks feeling much better, although the four medical men who were present at the operation all felt, and said, she would die within six weeks. On March 15th, 1900, she was plump and fat, ate anything, had had neither pain, retching, nor vomiting since the operation. Her tumour had quite disappeared and her medical man had discharged her as cured many weeks since."

CASE 6. *Chronic pancreatitis; cholecystotomy; cure.*—A woman, aged 35 years, was admitted to the Leeds General Infirmary under the care of Dr. A. G. Barrs on Sept. 11th, 1899, and transferred to me a few days later with the history of having been subject to attacks of spasm in the upper abdominal region for 12 years, the intervals between the seizures having varied from a few days to several months, but of late they had become much more frequent, and during the week before admission she had had four attacks, all severe ones. The seizures began with pain in the epigastrium accompanied by cold sweats and faintness; the pain passed through the mid-scapular and to the right subscapular region, and lasted from two to six hours, having to be relieved at times by morphia. Jaundice followed the seizures, and if the attacks recurred frequently it was intensified with each, but if there was a long interval only an icteric tinge remained. Palpation revealed a point of tenderness in the mid-line one and a half inches above the umbilicus where there was a sense of resistance with an abnormal fulness, but there was no tenderness over the gall-bladder nor could any swelling of the gall-bladder or liver be discovered. On Sept. 21st a vertical incision through the right rectus exposed adherent viscera and on the separation of the adhesions a thickened gall-bladder was exposed, but there were no gall-stones in it or in the ducts. The lower part of the common duct was surrounded and overlaid by a well-marked swelling of the pancreas which was harder than usual, but not sufficiently hard to be mistaken for cancer though it was somewhat nodular. Cholecystotomy was performed and drainage was carried out for a fortnight. Recovery was uninterrupted and the patient returned home within the month and she has remained well since.

CASE 7. *Chronic pancreatitis with gall-stone in the common bile-duct; cholecyst-enterostomy; relief; relapse.*—A man, aged 45 years, from Queensbury, was admitted into the Leeds General Infirmary under my care on Nov. 3rd, 1899, suffering from jaundice with repeated attacks of pain and ague-like seizures. He had been well up to 13 months before his admission when the attacks began and since their onset he had lost 6 st. in weight. Jaundice followed the first seizure and persisted, but after each attack of pain it was more intense. He was so weak and ill that it was feared he could not bear an operation. An enlargement of the right lobe of the liver could be felt and on its inner side in the mid-line just above the umbilicus there was another tumour situated behind the stomach. On Nov. 9th an operation was performed on a heated table with the patient enveloped in wool, an injection of 10 minims of solution of strychnia having been previously given. On opening the abdomen an enlargement of the right lobe of the liver was seen, the gall-bladder was found shrunken under adhesions, a floating gall-stone too hard to crush was felt in the common duct, and a hard nodular tumour of the head of the pancreas was discovered. As the latter was thought to be

malignant and the patient was extremely feeble choledochotomy was not performed, but the gall-bladder was connected to the duodenum by a Murphy's button in order to give temporary relief to the jaundice, fever, and pain. He had a severe rigor on the night of operation but afterwards progressed satisfactorily and recovered from the operation. The button passed on the twelfth day and as he had gained some weight and was taking his food well it was thought that the operation was going to be of real benefit to him. The subsequent history of the case was as follows:—On Dec. 8th (a month and a day after operation) he had a feeling of chilliness, and a temperature of 101° F. followed for two days, his temperature being afterwards normal for 12 days, when he had a rigor and a return of the jaundice; from this time, although he got up every day, he gradually became weaker, and in January, 1900, he developed bronchitis which ushered in the final scene. At the post-mortem examination the peritoneum was found to be free from inflammation and the gall-bladder was found to be connected to the duodenum one and a half inches beyond the pylorus, but the opening had contracted so that it would only admit a fine probe. The common bile-duct was dilated and ulcerated and it contained a gall-stone of the size of a filbert. The liver was considerably enlarged and the right lobe was occupied by an abscess containing thick, slimy mucc-pus. The walls of the abscess cavity were ragged and ill defined and it reached nearly to the surface both in front and behind. It was doubtless the result of the suppurative cholangitis which was present. The pancreas was much indurated about the head, and together with the indurated tissues in the small omentum presented on palpation the sensation of a tumour. On section it presented to the naked eye the appearance of chronic inflammation rather than growth, and on microscopical examination this view was confirmed, there being a great excess of interstitial fibrous tissue, but no sign of cancer.

To add other cases would be tedious to my hearers, but I thought it desirable in bringing forward a subject of this kind to illustrate it by a detailed history of cases that had actually come under my observation. The last case where death occurred from other causes two months after operation is, I think, of importance, as it enabled one to ascertain the after condition of the pancreas which at the time of operation presented the appearance and feel of a considerable tumour. It clearly shows that drainage is capable of relieving the form of pancreatitis which I have described, but that for permanent relief a cholecystotomy is a much safer means than a cholecyst-enterostomy, seeing that the fistula in the latter operation may close before it has completely done its work.

The difference in the results of operations for chronic pancreatitis and cancer of the pancreas is well shown in my own practice. Of 17 patients on whom I have operated and found chronic pancreatitis to be the obvious disease present, 16 have recovered, and except in the one case related the patients have been restored to health; whereas in cancer of the pancreas, of 16 patients only nine recovered from the operation and of these the prolongation of life was so short as to make me reiterate what I said years ago that if we can diagnose cancer of the pancreas with certainty any operative treatment is likely to be useless or harmful. Seeing, however, that sometimes the diagnosis may be doubtful, and that this must often be the case in young and middle-aged subjects, I am of opinion that an exploratory operation should be seriously considered in such cases, as, should the case turn out to be an inflammatory condition of the pancreas and not cancer, I think that I have proved that much may be hoped for by surgical treatment.

WESTERN COUNTIES VETERINARY ASSOCIATION.—The half-yearly meeting of this association was held at Plymouth on July 19th under the presidency of Mr. P. G. Bond. The President, in the course of an interesting address, reviewed the condition of the veterinary art for the past 30 years. Mr. Bond, in referring to the war in South Africa, said that anyone reading of the frightful condition of the horses and their want of proper treatment, as testified to by expert evidence, must be impressed with the urgent need of the veterinary department of the army being put on a proper footing, and he added that until the position of the veterinary surgeon in the army was as fully recognised as that of the medical officer, so long would this lamentable state of affairs continue.

A Clinical Lecture

ON

HAMMER-TOE AND HALLUX VALGUS AND RIGIDUS.

Delivered at St. George's Hospital on Jan. 23rd, 1900,

BY WARRINGTON HAWARD, F.R.C.S. ENG.,
CONSULTING SURGEON TO THE HOSPITAL.

GENTLEMEN,—There were three cases of "hammer-toe" admitted last week under my care; and so with these illustrations available, I think that it may be useful to make this deformity the subject of to-day's lecture. The cases may not seem at first sight to be of much importance or interest, and yet the condition is well worthy of your attention because of its frequent occurrence and the inconvenience which it produces. In its advanced or neglected stages the condition gives rise to painful and disabling lameness, and may thus prevent the sufferer from earning his living; or by interfering with exercise it may lead to serious loss of health.

The deformity to which the name of "hammer-toe" is applied consists of a retraction of the toe towards the metatarsus, with flexion at the first interphalangeal joint. An examination of cases in the early stages shows that the deformity commences by the retraction or hyper-extension of the proximal phalanx. The extensor tendon can be seen and felt on the dorsal surface of the toe, firmly contracted and showing prominently beneath the skin over the metatarsal bone. After a time, and as the retraction becomes more pronounced, the second phalanx becomes flexed so as to bring the last phalanx to the ground. This position throws undue pressure upon the extremity of the ungual phalanx, which is thrust upwards and extended upon the second phalanx, and the skin of the tip of the toe becomes greatly thickened and hardened. When this stage is reached the first interphalangeal knuckle projects prominently above the level of the adjacent toes; and now there is developed over the joint a corn which is the chief cause of the pain and lameness which ensue. Beneath the hard and thickened skin of all corns there is developed a bursa, the inflammation of which gives rise to the lancinating pain so often suffered. The outer wall of this bursa is continuous with the subcutaneous connective tissue, and hence, when the bursa becomes inflamed or suppurates, it very easily becomes the starting-point of a cellulitis which may spread up the limb and reach a serious degree and extension. This is especially the case when suppuration occurs within the bursa; the density of the surrounding tissues makes it difficult for the contained pus to escape, and I have seen many a serious case of cellulitis of the foot and leg having this origin. Short of this severe complication, however, the corn over the hammer-toe is certain to be the seat of frequently recurring inflammation, giving rise to severe pain and completely preventing walking, until at last ulceration occurs and causes persistent lameness and misery. So, you see, may an apparently trivial deformity become of serious and far-reaching importance.

I exhibit to you a number of specimens of hammer-toe which I have added to our museum, and which have been prepared to show the pathological anatomy of the condition. Some have been dissected to display the tendons and ligaments, and others to demonstrate the corn and subjacent bursa; in others sections have been made that the changes of the shape and position of the bones may be seen. I have dissected a great many such toes and have found them all showing essentially the same character. A study of the specimens before you will show the following points of interest besides those which I have already described. 1. That the deformity is not, as has sometimes been stated, dependent upon contraction of the *flexor*. It is not a mere flexion of the phalanx, but something quite different and more complex—viz., a hyperextension of the proximal phalanx, a flexion of the second phalanx, and a thrusting upwards and hyperextension of the ungual phalanx. 2. The extensor tendon is shortened; the flexor is not contracted but follows the plantar retiring angle. 3. The lateral ligaments

are shortened, the plantar ligaments are unaltered. 4. The articular surface of the first and second interphalangeal joints are altered in shape in accordance with the incidence of the pressure caused by their fixation in an abnormal position.

A clinical examination of the cases in the hospital shows in each case a condition of the toe exactly corresponding with the specimens upon the table. In each case it is the second toe which is affected, and all the specimens which I have shown you are second toes. Of the three patients before us Case 1 is that of a boy, aged 12 years, who has been lamed for several months owing to the inflammation of the corn on the hammer-toe. The second toe of the right foot presented the usual characters of the deformity—the first interphalangeal knuckle projected above the first and third toes, the corn over it was swollen, and the surrounding skin was red and tender. He tells us that several of his uncles have a similar condition of the toes, but he cannot furnish precise details of them. The boy is anxious to obtain employment in the public service, and therefore he desired a cure without amputation of the toe After subduing the inflammation of the corn I excised the articular surface of the proximal phalanx together with the corn, dividing at the same time the extensor tension, and at once straightened the toe.

Case 2 is that of a man, aged 23 years, who for the past year has been constantly lamed by the inflammation of the corns over a hammer-toe on each foot. The second toes had been contracted as long as he could remember and had gradually become more troublesome. He wished to have the toes amputated, and this has been done, the toes being removed by the oval method at the metatarso-phalangeal joint. I show you these toes, one of which has been dissected to exhibit the tendons and ligaments. The other has been sawn through longitudinally to display the position of the bones.

Case 3 is that of a domestic servant, aged 19 years, in whom the second toe of the right foot was a well-marked "hammer-toe." The toe has been contracted since early childhood, and lately the frequent recurrence of inflammation of the corn over the interphalangeal joint has been a constant source of lameness. Besides this the great toe was thrust outwards and its last phalanx pressed against the third toe, causing ingrowing of the toe-nail. The corn over the hammer-toe was ulcerated and the ungual phalanx was very bulbous with much thickening of the skin of the end of the toe, and of the nail. At the patient's urgent request I amputated the toe. At the same time I cut away the granulations and a circular flap of skin on the outer side of the nail of the first toe; by the contraction of the resulting cicatrix the skin was drawn away from the edge of the nail and its ingrowth prevented. The patient will wear a wedge of felt between the first and third toes, and must take care to have boots with a straight inner edge.

As to the causes of this deformity I must admit that I have no satisfactory explanation. It is not usually caused, as so many deformities of the foot are, by wearing mis-shapen boots, although it is occasionally attributable to the use of narrow boots, whereby the toes being crowded together the second toe is thrust up above the level of the adjacent toes. I have also seen a few instances in which I thought that it might have been caused by too short boots. In many cases the tendency to hammer-toe is inherited, the deformity often appearing in one side only of the family. In Case 1 several of the boy's uncles were said to possess hammer-toes. In the forty-fourth volume of the Transactions of the Pathological Society of London I have published a case which well illustrates this heredity.

The patient was a boy, aged 15 years, in whom the second toe of the right foot was a hammer-toe. His paternal grandmother (A) had hammer-toe—viz., the second toe of the right foot. A's son (B), the father of the patient, had the same condition of the second toe of the right foot. The following are particulars regarding B's children:—(1) son, hammer-toe, second toe of the right foot; (2) daughter, hammer-toe, second toes of both feet; (3) daughter, no deformity; (4) daughter, no deformity; (5) son, hammer-toe, second toe of the left foot; (6) daughter, no deformity; and (7) son, hammer-toe, second toe of the right foot.

The condition is sometimes congenital and may be seen in various degrees in infants. A somewhat similar condition of the fifth toe also occurs in infants. This is always congenital and does not as a rule attain the same degree of severity as in the second toe.

Then there is another class of cases in which all or nearly all the toes acquire a similar distortion, not usually of very severe degree, but sufficient to cause a very awkward gait and often considerable lameness. These are mostly met with in neurotic girls with bad circulation, whose toes are blue and cold, and in whom the first symptom is aching pain with contraction of the common extensor of the toes. After a time, as retraction of the first phalanx occurs, a proportionate amount of flexion of the toes is seen and corns begin to form over the knuckles. These differ from the ordinary cases of hammer-toe in several respects. In the first place all the toes are affected, as contrasted with the ordinary cases in which only one toe is contracted. Then, secondly, the deformity does not usually attain so severe a degree as in the ordinary form. And thirdly, when the patient is at rest the toes can be to a great extent straightened, though they are drawn into the contracted position immediately when movement is attempted. To which it may be added that this form of the deformity though not confined to women is very much more common in them; whereas the ordinary form is more prevalent among men. These cases seem to be of nervous origin, they prevail chiefly among overgrown, ill-nourished young women of feeble muscular power and constipated habit, who usually exhibit other signs of nerve disturbance.

Coming now to the consideration of the treatment of hammer-toe, I will speak first of the class of cases just described in which all the toes are affected. For these, in the early stages, manipulation of the muscles, friction of the limb and tip-toe exercise should be used; in addition to which attention should be paid to the general condition of the health. These patients should be warmly clothed, should be given plenty of fatty food, and should be treated for any tendency to constipation. Any cause of nervous irritation should be sought for and if possible removed, and every effort should be made to improve the nutrition of the body. If the extensor tendons are persistently contracted they should be divided. Moderate exercise, stopping short of fatigue, is beneficial, and the more varied such exercise the better is its effect. Active games, therefore, such as tennis and hockey, should be encouraged. Of course, properly-shaped boots with straight inner edge, broad soles, and low heels should be insisted upon. In the cases occurring in infants, much may be done by daily stretching and manipulation of the toe, together with, in some cases, division of the extensor tendon and any contracted ligamentous bands.

For the ordinary and pronounced cases of hammer-toe, such as those now in the hospital, there are several methods of successful treatment which may be adopted. The quickest way of ridding the patient of the trouble of a severe degree of hammer-toe is to amputate the affected toe at the metatarso-phalangeal joint by the oval incision, so that there is no scar on the plantar surface. The head of the metatarsal bone should be left, and the patient should be directed to wear a wedge of felt between the first and second toes to keep them apart and to prevent eversion of the great toe. Many hospital patients, naturally anxious for the quickest possible cure, prefer thus to sacrifice the toe rather than to submit to any of the conservative methods of treatment. But it is undesirable and unnecessary as a rule to remove the toe, especially in those persons why are destined for the public services, and the deformity may be easily and successfully remedied by excising the head of the proximal phalanx. This is best done be turning back a semilunar flap from the dorsum of the too and dividing the lateral ligaments; the head of the bone is then thrust out of the wound and cut off by bone forceps. If there is a bad corn over the knuckle it is best to excise it completely by converting the semilunar into an oval incision which surrounds the corn. The toe is then straightened, the skin is united by sutures, and the foot is kept on a splint for three weeks. Fibrous union occurs between the bones and the toe remains straight and gives no further trouble. Patients thus treated are quite fit for active service in the army.

In early cases of less severity, and in which there is no pronounced corn, it may suffice to divide the extensor tendon and the lateral ligaments, together with any bands that prevent complete straightening of the toe, and then to fix the toe for some weeks upon a narrow splint. This operation and the subsequent use of manipulation and stretching of the toe will cure many of the cases met with in children; but severer cases are much more successfully treated by excision of the head

of the first phalanx. Should the patient seek advice, as often happens, on account of acute inflammation of the corn over a hammer-toe, it will of course be wise to subdue this before undertaking any operation for the relief of the deformity. Let me remind you that when there are redness and œdema of the skin round an inflamed corn these symptoms and the accompanying pain depend upon inflammation and distension of the little bursa between the corn and the bone; and that speedy relief may be given by opening the bursa by passing a knife beneath the margin of the corn towards its centre and raising the thickened cuticle so that the fluid contained within the bursa may escape. A hot boric fomentation should then be applied, and when the bursitis and consequent cellulitis have completely subsided the excision of the corn, together with the head of the first phalanx, should be undertaken. Of the many cases in which I have practised this simple operation I have never seen other than a satisfactory result.

Besides these cases of hammer-toe you have recently seen under treatment a case of severe bunion, or "hallux valgus," on which it may be useful to say a few words; for this, again, is a common deformity which often gives rise to great suffering.

A woman, aged 24 years, had suffered from bunion since she was 10 years of age. The feet exhibited in a severe degree the condition characteristic of this deformity. The great toe was thrust outward so that there was a partial dislocation at the metatarso-phalangeal joint, and the head of the metatarsal bone was unduly prominent. It is interesting to notice (as I have shown in other cases) that where joint surfaces are not in contact the loss of functional activity leads to wasting of the articular cartilage. Thus it was seen, when this case came to be operated upon, that the articular cartilage over the inner third of the head of the metatarsal bone was much atrophied, and at the edge had almost disappeared. In older people there is often an irregular outgrowth of bone in this situation giving an additional prominence to its inner border. Over the prominence there was the characteristic circle of thickened and hardened skin between which and the bone there was a well developed bursa. The tendon of the extensor of the toe stood out tensely beneath the skin. This deformity is no doubt produced by wearing boots of which the inner edge slopes towards the middle line of the sole—a foolish fashion provocative of other evils besides bunion; some of the worst cases, however, occur in persons the subjects of osteo-arthritis, a disease which greatly aggravates the deformity. For such a condition as this patient exhibited the most satisfactory treatment is excision of the metatarso-phalangeal joint and of the bursa over it and the division of the tendon of the extensor of the toe. This having been done the toe was easily brought into a line with the inner border of the foot and fibrous ankylosis has taken place in that position. We took care that the patient had a pair of properly-shaped boots and in these she can walk quite comfortably. This operation seems to me to be much more likely to give satisfactory results than excision of a wedge of the metatarsal bone; in some cases, however, it is sufficient to remove the metatarsal head and to leave the base of the phalanx.

In slight and early cases division of the extensor tendon and forcible straightening of the toe may be practised, but this must be followed by the use of a digitated stocking and a wedge of felt between the first and second toes; or a boot may be worn with a separate division for the first toe. A spring splint should also be worn at night. But excepting for these slight cases the splints, springs, and other kinds of apparatus which have been invented for the treatment of bunion are worse than useless.

One other case which I will briefly allude to is that of a boy, aged 15 years, who was admitted to hospital on account of lameness due to the condition known as "hallux rigidus." The patient is employed in the post office and has much standing. There was a slight degree of flat-foot, and the right metatarso-phalangeal joint was rigid, painful, and incapable of voluntary movement. The position of the bones was not altered and there was no pain on moderate inter-articular pressure, but any attempt to walk or to bear any weight on the foot gave severe pain. I treated this boy for some time as an out-patient (as he was anxious not to give up work), supporting the arch of the foot, taking off pressure from the painful joint, &c., but with no benefit. He was therefore taken into the hospital and I excised the head of the metatarsal bone. This relieved him of pain and enabled him to walk with comfort. I could discover no disease of the bone or articular cartilage; the only abnormality seemed to be that the joint surfaces were fixed rigidly in close contact but without any real ankylosis.

Presidential Address

ON

THE PRESENT POSITION OF PHARMACY.

Delivered at the British Pharmaceutical Conference on July 24th, 1900,

BY E. M. HOLMES, F.L.S.,

PRESIDENT OF THE PHARMACEUTICAL SOCIETY.

LADIES AND GENTLEMEN,—At the commencement of the century chemists and druggists had just begun to separate into a distinct body from grocers and general dealers. But it was not until 1842, when they obtained a Royal charter of incorporation, that they began to assume the character of an educated body. As the semi-professional character of the business became recognised, in consequence of the examination and education that chemists were compelled to undergo, the number of young men entering it gradually increased. These were and are still drawn largely from respectable families with small incomes who, misled by the small amount of capital necessary to start a business and the reputed large profits, do not recognise that the returns are usually so small that the grocer and draper can make eight or ten times more money, even on small profits, than a chemist is able to do. Nor is it generally recognised that the business depends far more than in any other trade on the personal integrity of the proprietor and that it takes time to acquire the confidence of the public. The fact that the keen financial instincts of the Jews have never led them to embark in pharmacy might have served to indicate to the general public that the business of the chemist and druggist is not so lucrative as is generally supposed. The wills of pharmacists never present large figures and millionaires are unknown in British pharmacy. Nevertheless, the supply of dispensers of medicine has exceeded the public demand. The principle of free trade has prevented such a limitation of the number of those engaged in pharmacy as is prevalent in some other countries, with the result that, like all other trades and professions in this country, its ranks are overcrowded. At the present time there are about 15,600 registered chemists and druggists, of whom it is estimated that about one-tenth only, whom for convenience we will call pharmacists, actually derive their principal income from the dispensing of prescriptions, a small number from what is known as counter-prescribing, and the remainder from light retail and dispensing business, the dispensing being a comparatively small proportion. In some parts of the country, especially in Scotland, there is a much larger proportion of pharmacists who dispense medicine than in England. Even in different parts of England, in some towns the medical men almost invariably dispense their own medicines, whilst in other towns a few miles distant the dispensing is done almost entirely by pharmacists for the medical men. The cause of these local differences seems worthy of investigation, which might lead to more uniformity of practice. There is little doubt, as was pointed out last autumn by Dr. D. J. Leech (whose premature decease we all deplore), that the practice of pharmacy by medical men is not only an evil to the pharmacist but a disadvantage to the medical men themselves, and that medical men would gain if, wherever possible, they gave up dispensing. It is obviously for the safety of the public that every dispenser of medicine, whether employed by a pharmacist, by coöperative stores, or by a medical practitioner, should have passed a qualifying examination in the art of dispensing medicines, and that every medical man who dispenses his own medicine should have passed the same examination in the subject as the pharmacist whose duties he takes upon himself. But under the modern system the medical student, although he has the opportunity of taking up a course of pharmacy at a hospital or medical school, is often not very conversant with the

subject. The safety of the public is best secured when the dispensing of prescriptions is checked by a second or third qualified dispenser, as is the case in dispensing establishments where several assistants are kept. In respect of poisons especially the public needs protection, inasmuch as it does not know their properties or their antidotes, and the chemist and druggist—as being familiar with both and therefore capable of devising suitable precautions to safeguard their use and to give advice in cases of accidental or other wrongful uses of them—is obviously the fittest person to sell them, whilst it is probably largely due to his lack of energy and want of business enterprise that the poisonous articles used in the arts and for sanitary, insecticidal, or horticultural purposes have not always passed through his hands.

There is another direction in which the safety of the public is likely to be affected. Drugs vary exceedingly in quality. In order to sell cheaply at a working profit it is necessary to buy cheaply. As prices are lowered by coöperative stores the tendency will therefore be to buy inferior qualities to meet the demand for low prices. In the case of drugs used in medicine this may lead to serious results, since when medicine is required to act quickly and effectively, as in croup or in parturition, &c., if the ipecacuanha or ergot be of inferior quality serious danger to life may result through its want of activity. In Russia, Germany, Scandinavia, and Greece this difficulty is met by a legalised tariff for dispensed medicines. In this country it is left to the public themselves to judge by the British Pharmacopœia which upholds a high standard of purity in medicine, and the importance of asking for "B.P." preparations might well be taught to the laity by the wider use of these two letters on ordinary labels.

It has been stated by medical men that what is known as counter-prescribing by pharmacists is one of the causes why dispensing is not entirely handed over to the latter by the medical profession. The subject is no doubt surrounded with practical difficulties, but probably these are not insuperable. There is no law to prevent a man, however ignorant he may be, from prescribing remedies for himself, his friends, or his household, and it has been stated on high medical authority that it would not be objectionable for persons to apply at a pharmacy "for simple remedies for toothache, muscular pain, or trifling dyspeptic ailments, provided the person seeking relief knew what he was about and was not deceived by the assumption of an authority, or of titles, on the part of the chemist, and provided that such relief was merely to be regarded as first aid, or a temporary expedient" for a definite complaint stated by the patient. But this is a very different state of things from what is known as a prescribing business, in which the chemist goes beyond his province in diagnosing disease and supplying remedies for it. In such business the straightforward plan would be for the proprietor to qualify as a medical practitioner or to arrange with a properly qualified man to see his clients. The converse of this is the medical practitioner who keeps open shop like a chemist, and to whom is largely due the difficulty that the uneducated public find in distinguishing between a chemist's and a doctor's shop. It might be possible, perhaps, for representatives of the medical profession and the Pharmaceutical Society to arrange a conference to make mutual provisions for counter-prescribing by chemists to cease on the one hand and the keeping open shop by doctors on the other. This would need disciplinary powers for both bodies to deal with offenders, but the two bodies united could probably, by a good organisation, bring sufficient influence to bear upon the Government to pass an Act authorising such powers.

The real difficulty for the conscientious pharmacist lies in the impossibility of ascertaining whether the case, very often that of an absent person, comes within the limits of first aid or temporary expedients. This difficulty would probably be met most satisfactorily if a small official work were issued by the General Medical Council or by Government authority to the general public indicating on general lines the premonitory symptoms of dangerous or zymotic diseases such as would distinguish, for instance, an ordinary cold from incipient pneumonia or a sore throat from approaching diphtheria or scarlet fever. Such a work in the possession of the heads of families and on the desk of every chemist might serve to indicate both to the public and the pharmacist a dividing line between first aid and the necessity of medical treatment and supervision.

Another difficulty lies in the fact that in small villages where there is no chemist and no carrier it is difficult for the medical man to avoid dispensing. Here, however, is the opportunity of the enterprising chemist in the nearest town to see that the medical man has a portable outfit which he can carry with him on his rounds. The advantage of such portable medicine chests in country villages and for travellers has already been recognised by enterprising London firms which have adopted and enlarged upon the hint given by Brockedon's compressed potassium bicarbonate of 50 years ago. The increase in the rapidity of travelling and the absence of an international Pharmacopœia has caused a demand for portable medicines which has been increased by the opening up of new countries where it is impossible to obtain medicine, so that a new industry in this direction has been developed in which English pharmacists, with characteristic conservatism, have allowed Americans to take the lead. The great advantage in the saving of time by the use of portable medicines to both the medical practitioner and the patient in country districts where there is no chemist within several miles and where the considerable delay in the delivery of medicine, by reason of the distance, is often of serious importance, is almost certain to lead to the permanent adoption of such time- and labour-saving devices. The value to the public of portable medicine for travelling purposes cannot be denied, as well as to the Government, since in military and naval operations the sudden demands made upon medical stores and appliances necessitate the use of drugs and preparations occupying as little space as possible, in a form as concentrated as is compatible with safety and not readily affected by the vicissitudes of climate. This form of medicine has therefore become a feature of the pharmacy of to-day and is likely to develop still further. It has, however, the disadvantage of placing in the hands of the laity powerful remedies which they are apt to use without proper medical advice and without the ability to judge of the nature of the disease for which they employ them.

The vast number of new vegetable, chemical, and animal remedies introduced during recent years, and the impossibility of keeping pace with them, on the part of the medical men and the pharmacist, especially in the provinces, where as a rule new remedies do not come into use until two or three years after introduction into city practice, has led to the comparative disuse of the Pharmacopœia for prescribing purposes and to more dependence being placed by physicians concerning new remedies upon such works as Martindale's "Extra Pharmacopœia" and Squire's "Companion to the British Pharmacopœia," works which enterprising pharmacists have produced to meet the necessities of medicine and pharmacy during the time that elapses between the publication of one Pharmacopœia and another. These works have also the additional advantage that they contain tables of diseases and of all the most modern remedies used for them, as well as the doses and formulæ showing useful combinations of the various preparations. In these rapidly progressive times the pharmacopœias cannot, even if published decennially, be actually up to date; it can only crystallise into a definite shape formulæ that have already been in use for some time. The Pharmacopœia is now really more used by pharmacists as a standard for insuring uniformity in official preparations than by physicians for prescribing purposes. It is only just, therefore, that pharmacists as a body should have an influential voice in its construction, especially as they have shown by publication of numerous formulæ that have been accepted in the previous pharmacopœias that they are quite capable of devising approved formulæ. The medical profession must, of course, necessarily determine what remedies and preparations shall be included in it for their convenience.

THE PHARMACOPŒIA AS A LEGAL STANDARD.

Many vexatious prosecutions of chemists have resulted from the fact that the British Pharmacopœia has been erroneously supposed by many analysts to be a legal standard for the purity of drugs. The statement in the Pharmacopœia that the work is "intended to afford to the members of the medical profession, and those engaged in the preparation of medicines throughout the British Empire, one uniform standard and guide, whereby the nature and composition of substances to be used in medicine may be ascertained and determined," in no way indicates that it is to be used as the legal standard of purity for drugs used in commerce for domestic and technical purposes. To prosecute chemists because, for instance, tincture of myrrh, which is

used as a dentifrice rather than as a medicine, or benzoin, which is used in French polish, or soft soap, or ammonium carbonate, soda water, or other articles in regular household use, do not answer to the tests of purity of the B.P. would constitute an interference with trade that would be as absurd as it would be vexatious. That the standard of purity used in dispensing physicians' prescriptions should be as high as it is possible to make it is an article of faith of the British Pharmaceutical Conference, but there are many cases in which drugs and preparations which are B.P. articles are used for other than medical purposes, and for such the average of normal condition of purity meets all the requirements of the case. There is, therefore, a need for a published standard of normal or average purity of drugs for this purpose until such time as the Government realises its duty to publish a legal standard, by which the provisions of the Sale of Food and Drugs Act can be effectively and justly carried out. In the absence of any definite Government standard for drugs this is the work which analysts, in conjunction with pharmacists, should take up, and one that the conference should support in the interests both of the public and of chemists themselves.

There appear to have been several causes that led to the erroneous supposition that the B.P. is a legal standard for the purity of drugs. One is the misleading use of synonyms in the B.P. The names of commercial products in several cases in which they differ considerably in composition from the official article are given as synonyms, such as "milk of sulphur" for sulphur præcipitatum and "soft soap" for sapo mollis. Such synonyms are misleading and serve no useful purpose, since medical practitioners never use them in their prescriptions, and they might well be omitted. Another cause that leads to unjust prosecution is due apparently to the ignorance that exists amongst analysts who are not also pharmaceutical chemists concerning the rapid changes that many vegetable and other preparations undergo when kept in stock. Indeed, it would be a considerable advantage to both analysts and the public if the former were required to pass the major examination of the Pharmaceutical Society before going in for the more stringent chemical examination of the F.I.C., since a knowledge of the physical and histological character of crude drugs is practically essential to the accurate determination of their purity or otherwise.

It may here be remarked that a fear lest the B.P. might be used as a legal standard seems to have had a deteriorating influence on its construction, having apparently led in some cases, such as those of myrrh and aloes, to a lowering of the limits of purity, so that it is possible for very inferior qualities of the same drug to be sold and still meet the B.P. requirements. Such latitude is deplorable, since it leads to unfair competition and affords no security to the public that they get the article they want when they desire that their medicines—for instance, compound liquorice powder, Gregory's powder, or confection of senna—should be of the best quality and effective action, even if prepared according to the B.P.

AN INTERNATIONAL PHARMACOPŒIA.

A general pharmacopœia that would enable a pharmacist to dispense a prescription with uniformity in any pharmacy on the continent may be regarded as a utopian rather than a practical idea and could only be attained by alphabetically arranging in dictionary form all the formulæ in all the known pharmacopœias. But there can be no reason why an approach towards it should not be made by a congress of medical men and pharmacists, limiting their attention, in the first place, to poisonous preparations only, and in order to avoid international jealousies adopting as a standard the formulæ that approach nearest to decimal proportions. The comparison of different formulæ is rendered a simple matter by the publication of the different strengths of preparations of the various pharmacopœias in Squire's "Companion to the British Pharmacopœia." The next step might be to make uniform the strength of the most generally used preparations that are not poisonous. A really useful International Pharmacopœia cannot be otherwise than a gradual growth.

The introduction of standardisation of the more powerful preparations of the Pharmacopœia and the stringent chemical and microscopical tests now ordered in that work to ascertain the purity of drugs cannot be carried out in any but large businesses where several assistants are kept and where one man can devote his whole time to testing drugs and standardising preparations. Hence the personal guarantee of the purity of the preparation he supplies is passing out of the hands of the single-handed retail pharmacist.

The increase of knowledge in every branch of medical science has caused the study of pharmacy and pharmacognosy and dispensing to be somewhat neglected and forced them to occupy a comparatively unimportant position in the curriculum of medical study, so that the act of prescribing is in danger of being lost. The medical practitioner—anxious to utilise the most recent improvements in scientific remedies, but with his time fully occupied in visiting patients and diagnosing diseases—consequently indicates what he requires to the pharmacist who readily supplies him with a list of formulæ compiled from the most recent publications or specially devised to meet the wants of the prescriber who accordingly chooses from those put before him the one he considers most suitable. Naturally, these preparations can be more economically prepared on the wholesale scale. The retail pharmacist has little chance of success unless he can conduct his operations on the large scale and many of the more enterprising are therefore turning their businesses into limited liability concerns. Co-operation is a growth of the times, an outcome of competition. Judging from past history it is as unwise and useless to attempt to oppose coöperation as it was for the courtiers of Canute to ask him to forbid the advance of the sea. Coöperation has come to stay and, like a forest fire, can only be met by similar tactics—i.e., by coöperation. The only hope for a livelihood for those who have not much capital is in coöperating with those who possess it—a coöperation of knowledge with business capacity.

With respect to the use of the titles "pharmaceutical chemist" and "chemist and druggist" by companies it is difficult to find any sound objection to this provided all the members of the company are legally qualified to use it; but where they are not, and company laws are utilised to cover incompetent persons who have possibly failed to satisfy the legally-appointed examiners of their competency to dispense medicine, such an illogical and unjust use of the titles should be uncompromisingly opposed by a thoroughly well-organised political resistance to any Bill proposing it. In other words, no company should be allowed to use a legal title for which its members have not the qualification prescribed by law. The logical result of such a concession would be to nullify the Pharmacy Act, since if one man who fails to pass an examination in pharmacy can join with six others to form a limited liability company which can use the titles of "pharmaceutical chemists" or "chemists and druggists," a number of persons would be able to do what the law has expressly stated one man may not do. The injustice that would thus be done to those who have already expended much time and money to obtain the title is so obvious that it can hardly be possible that disinterested and conscientious legislators could support such a provision for disregarding vested interests or could adopt the principle it would involve of making one law to enable persons to evade another.

Another change noticeable during the latter part of the century has been the enormous increase in the public demand for what are known as patent medicines. This may be seen from the amount derived from the sale of medicine stamps, which has increased from £43,692 in 1860 to £266,404 in 1899. The preparations commonly alluded to under this heading consist in reality of at least three different classes. 1. The quack medicine, a preparation advertised to cure everything, or nearly so. 2. Proprietary medicines, such as chlorodyne, liquor opii sedativus, liquor bismuthi, fluid magnesia, pepsin wine, &c., which have some real value as medicinal agents, and have been so much prescribed by medical men that in many cases official imitations have been introduced into the Pharmacopœia. 3. Proprietary articles for domestic use, such as perfumes, hair lotions, peptonised and pancreatised and malted foods, inhalers, court plaster, and skin soap. The articles in the first class are objectionable from every point o view. But proprietary medicines are often the result of the application of chemical knowledge and pharmaceutical skill in advance of the time, and, as such, and as comprising also the personal element, have a value of their own. So long as they are prepared by one person directly interested in the excellence and uniformity of the production they are even more likely to be uniform in character than a B.P. preparation prepared by different operators within the too often wide limits of quality of drugs allowed by the descriptions and tests of that work. Proprietary

articles, as distinct from proprietary medicines, are usually started to meet a public want, and although their sale doubtless depends largely on advertisement, they would soon go out of use, like date coffee, if they had no intrinsic merit of their own. Those articles, therefore, form a part of the chemist's business that is worthy of attention from another point of view than that of retail sale. Whilst the limit of profit is reduced by the competition of stores to a level at which it does not pay the chemist to keep his money lying idle in stock, the obvious remedy is for the chemist not to retail any proprietary articles except his own or those which are protected by the P.A.T.A.[1] Each chemist should manufacture his own specialty, since the manufacturer's profit is certain and can be arranged at a paying rate, whilst that of the distributor is not so in many cases. The stores and large capitalists by buying in very large quantities can alone make these retail sales pay at the present ruinous prices, and the heavier their stock and the more numerous the articles they are compelled by the demands of the public and by advertisements to keep in stock the less profit they will get, until a time arrives when the interest lost on money lying idle in such stock must lead to the raising of prices or to giving up the sales.

The present state of pharmacy is a somewhat anomalous one. As hitherto practised in this country it consists, like the fabulous mermaid, of two incongruous halves. On one side it is a business which to be successful must be carried out on business lines; on the other side it is a profession which should be conducted in accordance with professional principles. But as both are usually carried on in one room the public finds a difficulty in discriminating between them and concludes that the price paid for the dispensing of medicine represents an enormous profit on drugs, instead of being partly a legitimate profit and partly a very small professional fee, no allowance being made for the skill and knowledge bestowed on the preparation of medicine or for the responsibility of insuring accurate dispensing. This is not to be wondered at if the pharmacist himself does not draw the distinction, but carries on both the business and the profession in one and the same room. Patent medicines and packed goods and ready-made preparations which require no skill and entail no responsibility cannot be sold at professional prices, and it should not be a matter of surprise, if such prices are demanded, that business men step in and sell them according to business methods. The two departments must be kept quite distinct if the public is to recognise the professional side of pharmacy. But the public is perhaps beginning to understand that there is such a side, for in cases of serious illness most people prefer to have their medicine dispensed by firms whose reputation as accurate and conscientious dispensers is unquestioned rather than at stores. If the public has not yet learned that there is as much difference in the qualities of drugs as there is in the quality of tea, coffee, and other groceries it is the fault of the druggist for not pointing it out and proving that those who sell cheaply must necessarily buy cheaply, since a business man is not likely to sell the best article at the price of the lowest and try to live by the loss. So long, however, as the Pharmacy Act of 1868 continues in operation it is almost impossible for the pharmacist to divorce his business and his profession. He is faced by the position that the Government requires from the pharmacist, for the safety of the public, an expensive and tedious course of study before he can legally acquire the title of "chemist and druggist" and before he can supply certain scheduled poisons to the public, although he may rarely see a prescription, and other traders can sell other poisons, equally fatal and more frequently used, such as carbolic acid. Those, therefore, who live in districts where the business obtainable partakes more of the nature of that of a general dealer in chemical substances used for technical, agricultural, or horticultural purposes, and involving no personal responsibility, only pass the qualifying examination because they are obliged to do so by law, not because the knowledge of dispensing is of much use to them. This class forms probably at least three-quarters of those engaged in business as chemists and druggists, especially in the more populous centres in the Midlands and North of England. What they most need is a commercial education, instructing them in business methods and modern requirements. This has not hitherto formed part of a pharmacist's education and therefore the importance of the course of commercial education which has been started in some of our universities, and already forms an optional subject in the Philadelphia College of Pharmacy, cannot be over-estimated—at all events, for those chemists and druggists who have to depend chiefly upon the sale of miscellaneous chemical and other articles rather than on dispensing. The conditions which have hitherto obtained in the retail trade of chemists and druggists have not during the last 50 years been favourable for acquiring a useful knowledge of business methods, and such knowledge has undoubtedly in some cases been sought in a practical form at coöperative stores in the same way that Germans come to this country to learn English methods of business and then use them against us. The stores have, at all events, served a good purpose in tending to cause coöperation among chemists themselves. Coöperation can only be successfully met by coöperation, and when competition has lowered profits to a point at which it is impossible to live the natural reaction is bound to follow in the form of combinations or trusts to keep up the price to a remunerative ratio. This has been manifested already in connexion with the paraffin oil and cotton thread industries and iodine, and the P.A.T.A represents a step in the same direction.

[1] Proprietary Articles Trade Association.

THE FUTURE OF PHARMACY.

The history of the closing century indicates that scientific progress may be expected to be increasingly rapid in the coming one. As each new theory opens up new roads of discovery new trades will follow, or a differentiation of old ones. The pharmacist or dispenser of medicine will probably find enough to do in connexion with new synthetical products, proprietary articles requiring knowledge and skill, and new medical appliances. The chemist and druggist will find that he must keep pace with discoveries in chemistry and the technical uses of new chemicals, and will learn to realise the meaning of Playfair's maxim, that the competition of industries is the competition of intellect.

As the science of sanitation increases, and the laws of health become better known, demands for antiseptics and preservatives of all kinds, both for public and domestic purposes, are certain to increase, and the time may come when liquid air or liquid oxygen will be as commonly sold for sanitary purposes as potassium permanganate is at the present day. The study of animal chemistry, as yet in its infancy, may lead to the preparation of foods that will involve no waste of energy in digestion, and in combining the maximum of nutrition with the minimum of space. The immense importance of such concentrated food for travellers and for armies engaged in districts where transport is difficult may be easily conceived. The investigation of cellulose and protoplasm will probably reveal to chemists the methods by which gum, wax, fats, oil, starch, and even alkaloids and glucosides, are formed by plants, and before another century is over it may be as easy to obtain artificially by chemical means all these important commercial products from sawdust as it is to prepare glucose at present.

The knowledge that bacteria and ferments can produce substances which result in their own destruction will probably be carried out to its logical conclusion, until for all diseases resulting from these causes appropriate antidotes will probably be discovered and kept in stock by the pharmacist, by whom means of preserving them in active condition for a definite time will have to be discovered. The study of the healthy glandular secretions of the human body as remedies in disease will almost certainly lead to a study of the chemical processes by which they are formed, and the attempt to produce them artificially. This, again, may possibly be followed by an investigation of the nervous stimuli under which they are produced in nature, and to the properties of the nerve force which causes the secretion of the various fluids produced by the glandular system for the reparation of bodily waste.

Another and far-reaching object of research may be the scientific investigation of the inter-relationship of mind and body, the possibility of disease being caused and cured through the mind or by the power of the will to control the supply of nervous force to the various organs of the body. Possibly many of the diseases attendant on lowered vitality might thus be successfully combated. A study of the laws regulating the curious phenomena of idiosyncrasy, which is one of the greatest hindrances to the scientifically accurate treatment of disease, may lead to the possibility of preventing it or curing it at an early stage by hypnotic

suggestion or other means. But whatever discoveries the future may have in store the existence of the pharmacist will in any case depend upon the power of accommodating himself to new conditions and his ability to turn to practical account the very latest discoveries in science.

ADDISON'S DISEASE AND LEUCODERMA.

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IN a lecture lately given at the Medical Graduates' College and Polyclinic by Sir William Gairdner, amongst other subjects said that he wished to say something about the connexion of leucoderma with Addison's disease. He spoke as follows, taking only the points at issue: "Possibly some of you may, and others may not, recollect a very early instance of this association which is of some historical interest. It is in Dr. Addison's famous monograph on Disease of the Suprarenal Capsule. I show you here the book and the plate. It is an evident case of leucoderma which Addison himself at least must have included in the book because he thought it was a case of disease of the suprarenal capsules. But, unfortunately, he had not a post mortem in this particular case. It is curious that Dr. Wilks, writing in Reynolds's 'System of Medicine,' puts his finger on this case and says because it was of a leucodermic order it is not a true case of Addison's disease. In short, he disputes Addison's own view of it. Now a good many years ago I had a case sent to me very late in the disease, when the patient was extremely ill, for an opinion. It was to my mind a case of Addison's disease, with pigmentation, largely of the usual Addisonian type but interspersed with circular and sometimes coalescent patches of vitiligo. That opinion I maintained until the patient's death. A post-mortem examination showed the usual form of disease of the suprarenal capsules. Dr. McCall Anderson, who had seen the case at an early period, had 'spotted' it as a case of leucoderma, but I do not know whether at that time he had made up his mind that there was any sufficient evidence of Addison's disease. However, the case is published in his book." "Not long after this the International Medical Association met in London in 1881 and Dr. Headland Greenhow read a most elaborate paper upon Addison's disease, and you all know how careful Dr. Greenhow was, not only as an observer, but as an almost exhaustive commentator on the literature of a subject. In reference to Addison's disease he may be said to have left almost nothing unnoticed up to the date of his research which is now published in a volume accessible to most of you. At the end of the paper I raised a question and stated briefly the leading facts of the case just referred to which had not at that time been published. I brought forward no theory, but thought the opportunity was a favourable one for ascertaining if anybody else at home or abroad had anything to say on the matter. We got no response. I alluded to the fact of Dr. Wilks having differed from Dr. Addison himself about the significance of leucoderma, as shown in Dr. Addison's own book, and suggested that it was a point requiring to be more carefully dealt with. But there was no information forthcoming and therefore we are bound to assume that no one there present (and it was a large assemblage) had anything to show. I have not seen many cases, but I have seen two or three more or less suggestive of the same thing and I happen to have at this particular time one such case under my care."

I should now like to say something with reference to these remarks of Sir William Gairdner which I think places the subject in a somewhat different position from that in which he sets it forth. I should like to take the opportunity of repudiating altogether the suggestion which some of my friends have made that I had any share in Dr. Addison's work. He was entirely original in his observations and I did no more than that which every pupil does, collect the cases, get the drawings made, and help the publication. This small participation, however, gave me special opportunities for continuing the work. During the next three years several fresh cases came under my notice and then I discovered how unique the disease was, that the change in the capsules was of one uniform kind, and that the discolouration of the skin also had its special characters. The malady, it may well be surmised, was a constant subject of conversation and I may here state that Dr. Greenhow was a frequent attendant in Dr. Addison's wards and acquired knowledge of Addison's views. I then placed all the new cases together, showed what three years had done in defining our knowledge, and in that paper repudiated the case of vitiligo. Before publication I showed my paper containing this repudiation to Dr. Addison. He returned it without comment, but wished me to publish it.

This paper was published in the Guy's Hospital Reports for 1859. I therein say: "As regards the character of the colour when it occurs the observation of several instances since the publication of the original memoir has shown that very great similarity has existed in all of them both as regards the colour itself and its method of affecting the body by a uniform implication of the whole surface. It is true that a case is represented [in Dr. Addison's work] where the body is covered with patches of colour chequered with white, but here no post-mortem took place to verify the diagnosis, and thus the fact is left as we state, that in the first related cases as well as in all subsequent ones there has existed a uniform discolouration of the whole integument. So remarkable has this been that the body has presented the appearance of a person with dark blood rather than that of a European and therefore the answer which Dr. Addison continually makes to interrogatories respecting the peculiarity of the discolouration is that he regards only those cases as characteristic where the surface of the body is seen to be gradually approaching in colour that of an inhabitant of some southern nation."

After another three years I had collected several new cases and wrote a second paper for the Guy's Hospital Reports for 1862. In this I reiterated my statement as to the uniform character of the disease. I say: "My principal object in bringing the subject before the profession is not only to strengthen the original facts by fresh instances but to point out how Addison had somewhat overstepped his own boundaries by including amongst his own cases some which did not present the true features of the disease and thus I hope, by purging his treatise of these examples, to place this remarkable affection on a much surer basis than it has hitherto had. The disease, indeed, will have more unique and special characters of its own and may be regarded with more justice in the light of a true discovery than Addison himself conceived and even more worthy to be honoured with his name than would a disease having the undefined nature which he himself assigned to it. I may at once admit that this want of definition and precision as to its true pathological character has constituted the great hindrance to the progress of the discovery; the belief of Addison being at the time of the publication of this work that any disease which affected the integrity of the suprarenal capsule would be attended by the remarkable phenomena which he described, and consequently his cases include a variety of morbid conditions of these organs which are clearly not true forms of the disease, and Addison, I believe, was beginning to see the truth of what is now evident that some of the cases which he had published have only stood in the way of the full development of his discovery, for all subsequent observations have shown that, so far from his early conclusions being correct, we have no recorded instance of the affection being connected with cancer, or, indeed, with any other kind of disease of the organ than the one which was found in the genuine cases which he first described, and which all subsequent experience has shown to constitute the true form of the malady. Unfortunately, too, Addison had placed in his work the drawing of a patient of whom no necropsy was made to reveal the true nature of the disease and that illustration has in all probability misled many by giving a false representation of the usual character of the discolouration of the skin.

"If these doubtful cases be eliminated from Addison's list there remain five which constitute a sufficient basis for his conclusions. I might say, also, that these were his early ones and those on which his own opinions were formed; it is therefore to be lamented that in the ardour of a fresh discovery he was led to include cases of which he had no opportunity of proving their genuineness. Fortunately for myself I was well acquainted with all the cases which Dr. Addison describes and have also had the opportunity of examining every subsequent example of it which has occurred in Guy's Hospital as well as seeing and discussing with the late lamented

physician many of his private cases, and I know, had he been spared to bring before the profession another edition of his work, he would have cropped his pages of those doubtful instances which have done much to retard the spread of the discovery. I may say, also, that Dr. Addison was in the habit of submitting to me all the specimens which he was constantly receiving from various parts of the country taken from patients who were supposed to have suffered from the affection bearing his name." "In clearing the ground of some of the extraneous matters which Addison introduced into his work the subject will stand much as I believe the author himself would have understood it at the time of his death."

I will now make a few remarks on these two positive statements, made many years ago, with regard to the uniform staining of the skin and the one disease only of the adrenal bodies—statements which have been reiterated by me on many occasions since. As regards the changes in the capsules it has always been surprising to me that anyone who has any knowledge of pathological processes should doubt my position. These changes, which may be in slow progress for years, must have their origin in the capsules themselves and cannot be due to any accidental affection which may alight upon them. The suprarenal disease, therefore, resembles in this respect the primary diseases of other organs, such as phthisis, cirrhosis of the liver, or Bright's disease. In these affections beginning from within there are certain symptoms due to the gradual impairment of the functions of the organ and we never think of looking for these symptoms if the organs have been accidentally attacked by a cancerous growth or hydatid. This shows how crude Dr. Addison's views must have been to have inserted a case of cancer because there was also present some discolouration of the axilla. I was in the habit of describing the true disease as one of inflammation of both capsules causing the production of an albuminous matter which subsequently softened or became cretaceous, and often ending in the disappearance of the organ, such as is sometimes seen in a lymphatic gland or the thyroid body. Before bacterial times we often called these cheesy organs "scrofulous" or "tuberculous." When I speak of this disease of the capsules as primary I include those cases where the inflammatory process has proceeded from caries of the spine.

And now I will state how the matter stands. Dr. Addison taught in his oral discourses that the discolouration of the skin was uniform and he was in the habit of saying that it could not be distinguished from that of a person of dark blood; he never said a word about white patches or vitiligo. I confess it is remarkable in a man of his scientific accuracy that he should have allowed himself to have inserted the case of leucoderma when it was brought before his notice by a man who had only a superficial knowledge of the disease which Addison had discovered. After the publication of his memoir the author continued to teach as heretofore, never saying a word about leucoderma, and when, as I have before stated, I showed him my paper objecting to the case he acquiesced in its publication. What I then said I have reiterated on numerous occasions for nearly half a century, during which time many cases of leucoderma have been sent me as supposed examples of Addison's disease. In no single case has this proved to be true.

Again, Sir William Gairdner speaks of the exhaustive treatise of Dr. Greenhow, written 25 years after Dr. Addison's first memoir, and says that the author makes no mention of leucoderma. What does he infer from this? Now with all this evidence of a remarkably uniform kind of 50 years I have referred to me a case which Sir William Gairdner on more than one occasion has mentioned as opposed to the doctrine which I have all my life maintained. I hold myself open to correction if there be other instances, but the only one to which he referred me and the hearers of his lecture was that which he saw in consultation with Dr. McCall Anderson and could be found in the work of the latter author. It is a pity that the case was not a more striking one for Sir William Gairdner's purpose and as accurately reported as the large series of cases which have hitherto come before me. In his case I do not understand that the patient was covered over his body with white patches as in Addison's drawing, for the history only speaks of the spots on the arms and backs of the hands, which parts had previously been the subject of eczema. Then, again, I consider the description of the capsules is very obscure, and as regards other organs it says: "*Kidneys.*—Both had the character of the large white kidney of Bright." Now Sir William Gairdner will surely agree with me that there is no exception to a law of nature and that the apparent exception must be explained by the discovering other circumstances operating to cause the peculiar result. Now I will not say that the statement I have made as to the nature of Addison's disease constitutes a similar law, but when the same clinical and pathological fact has been observed in thousands of cases without exception during a long series of years I do not think he will charge me with shuffling out of a difficulty when I criticise fully his adverse case and suggest that it is not a clear example of Addison's disease combined with leucoderma. The skin affection is not well described nor is the state of the capsules, and, moreover, the patient was the subject of Bright's disease—another novelty, as I do not remember in other cases to have found any disease but occasional phthisis. I feel sure that so philosophic a man as Sir William Gairdner could not wish me to accept on his authority so poor and obscure a case. Indeed, I should not have troubled the profession with this long communication had not the subject been brought before a society in London by the leading physician in Great Britain.

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CARBOHYDRATES AND DISEASE.

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THE health of all living organisms is determined by two factors—firstly, by their environment, and secondly, by their inherent vitality, or in other words by their capacity to react to stimuli engendered by that environment. Disease, on the other hand, occurs through failure on the part of the organism to accommodate itself to its surroundings, or, otherwise expressed, because the stimuli are excessive, sub-minimal, or absent. Health or disease are therefore determined by the ratio between the stimuli and the power of the organism to respond. The environment may be considered to include all material that can be classed as food, such as solids, liquids, and gases which contain the chemical elements, or groups of elements, necessary for metabolism, and all those physical stimuli, such as heat, light, &c., which are requisite to set the metabolism in motion.

In a complex multicellular organism such as the human body, under the central administration of the nervous system, accommodation to its surroundings is effected in a manner which, from the standpoint of physiological economy, is most advantageous to the individual as a whole, and through its agency the tissues are mutually enabled to coöperate, and in times of stress to afford reciprocal assistance the one to the other. For instance, should the food-supply fail the coördinated action of the central nervous system will administer to the wants of the more vital organs at the expense of those which subserve less important functions; and, on the other hand, in the presence of excess will effect the disposal of those portions which are unnecessary for the performance of useful functions in a manner least inimical to its general well-being. Through want of more complete knowledge it is impossible to predict in any given case what method or methods the organism will adopt to secure the removal of material which it does not require, but reliance may be placed on its perspicuity to select the path of least physiological resistance and that which in its ultimate operations is most conducive to the maintenance of life. The following is an incomplete summary of the more usual methods on which the organism relies for the disposal of supplies which are not requisite for ordinary physiological purposes. 1. Complete metabolism by the tissues, with removal by the excretory organs (luxus consumption). 2. Loss of appetite, vomiting, diarrhœa, and protective coating of the absorbing surfaces with excess of mucus. 3. The metabolism of the food into incompletely oxidised end products and their removal from the body with more or less detriment to the organism. 4. Growth of normal tissues (hypertrophy), and growth of degenerate tissues (mucoid, amyloid, adepoid), new growths (tumours,

granulations), and leucocytosis. 5. Loss of tissues, discharges (purulent, mucous, serous, &c.), and hæmorrhage. 6. Active metabolism with the production of heat (fevers). 7. Development of kinetic energy, restlessness, spasms (tonic and clonic). 8. Parasites. An attempt to deal with these various methods would necessitate a review of the whole domain of medicine. We propose, therefore, in the present paper to confine ourselves solely to the method which is included in Group 3—that is to say, the disposal of excess of circulating material through more or less incomplete metabolism by the tissues; the removal of the incompletely metabolised end products involves certain pathological consequences, which we propose in due course to examine.

The living proteid molecule (biogen), into which highly complex body all assimilated food is ultimately resolved, undergoes, as an expression of its restless vitality, continuous explosive metabolism, whereby atomic groups, more or less simple in character, are discharged from the primary nucleus and oxidised in the presence of oxygen with the liberation of energy. The cleavage products are replaced by corresponding or equivalent elements from the surrounding nutrient media. Under favourable conditions the atomic groups which are thus shed by the biogen molecule consist partly or chiefly of the ultimate metabolites, carbonic acid, ammonia and water, which for purposes of safe removal from the system are further combined into urea (a practically harmless amido-acid) and carbonates, the bases for which are obtained from the circulating tissue juices and the blood. Such an ideal result is, however, seldom obtained; the biogen molecule from want of a sufficiency of oxygen, or from deficient vitality, parts with larger atomic groups than carbonic acid, ammonia, and water, and such bodies as glucose, lactic acid, glycolic acid, oxybutyric acid, acetic acid, propionic and formic acids may under these circumstances be produced. It is still a matter of uncertainty whether these bodies are cast off in their complete form from the biogen molecule or whether they are partly the result of synthetic processes. In any event the sum total of the energy liberated will depend rather on the nature and size of the atomic groups than on the method of their production.

From a physiological and economic standpoint it is difficult to define precisely whether the cleavage of large atomic groups is a conservative or a wasteful process; but presumably, when there is no demand for energy, as, for instance, in an overfed and underworked individual, it is a conservative method; or otherwise, with the complete combustion which goes hand in hand with the liberation of the final end products, carbonic acid, ammonia, and water, there would be a great development of heat and possibly that condition of hyperpyrexia which is characteristic of the riotous metabolism of certain cases of fever. On the other hand, with the development of useful energy, such as occurs when the voluntary muscles are brought into play, and when the oxygen supply is at its maximum, owing to the harmonious coöperation of the circulatory and respiratory systems, it is probable that the biogen molecule extracts to the uttermost unit the energy supplied by the circulating media, or by its own substance, and by a process of rigid economy parts with atomic groups, such as carbonic acid, ammonia, and water, which in a physiological sense are inert and useless bodies from which no further energy can be extracted. At present, however, we are concerned with the cleavage from the biogen molecule of the larger atomic groups such as occurs with deficiency or absence of oxygen—namely, dextrose, lactic acid, and allied bodies. Dextrose, as is well known, may be removed by the kidney without further change, and its presence in the urine is associated with the condition known as diabetes. With regard, however, to the acid products of metabolism it must be remembered that the circulation refuses to deal with such bodies without neutralisation, and hence their affinities for bases must be satisfied at the expense of the potassium or sodium circulating in the blood or tissue juices, or at the expense of the ammonia, which is concomitantly liberated in the act of metabolism. As a matter of fact, the neutralisation appears mainly to be effected by the substitution, in the acid molecule, of one (NH_2) group for one atom of hydrogen with the formation of amido-acids, such as glycocine (amido-acetic), tyrosin (amido-oxy-phenyl-propionic), leucin (amido-caproic), sarcosin (methyl-amido-acetic), cystin (amido-lactic in which one atom of H is replaced by HS), and uric acid (possibly by various methods). The amido-acids are bodies of the nature of weak bases, and they can be removed by the excretory organs without serious consequences. We cannot here discuss the question whether these amido acids are formed *in situ*, or whether the free acids are neutralised by bases (such as Na, K, NH_4) and subsequently converted elsewhere into amido-acids, but in any event the question does not affect the argument of this paper.

Now, the formation of harmless amido-acids out of noxious free acids creates a demand for nitrogen or ammonia, which the biogen molecule may be unable to spare, for of all elements nitrogen is the most essential to the living proteid molecule; and should it be unable from failure in the supply to obtain enough from outside sources its very existence may be jeopardised; hence, instead of parting with (NH_2) for the neutralisation of the free acids, this radicle may be again taken up into the original biogen molecule to form, in conjunction with material taken from the floating supply of carbohydrate, new protoplasmic substances. The amount of nitrogen which can be spared from the biogen molecule must be dependent on the floating supply of nitrogen containing foods; hence we may sum up the position by saying that the formation of harmless amido-acids out of noxious free acids is dependent on an adequate supply of nitrogen-containing food.

There is now the further case to consider of an excess in the floating reserve of nitrogen-containing elements as compared with those that are nitrogen-free. In such an event there will be no difficulty in supplying (NH_2) radicles for the neutralisation of the acid products, but rather a demand for carbon, or carbon-containing groups, to satisfy the affinities of the free ammonia. Under these circumstances we should expect to find a tendency for the production of bodies in which the relative proportions of carbon and nitrogen were more or less evenly balanced, and, as a matter of fact, that is exactly what takes place when there is an excessive ingestion of nitrogenous food, for the following bodies are found in the urine: uric acid ($C_5H_4N_4O_3$), xanthin ($C_5H_4N_4O_2$), guanin ($C_5H_5N_5O$), creatin ($C_4H_9N_3O_2$), and creatinin ($C_4H_7N_3O$).

We may therefore say that, with defective metabolic and oxidative processes, large atomic groups are shed from the biogen molecule, which contain no nitrogen (free acids, such as lactic and glycolic), a small quantity (amido-acids), or a large quantity (uric acid, guanin, xanthin, &c.), according as the nitrogenous diet compared to the non-nitrogenous is deficient, moderate, or excessive. Hence it follows that, under like conditions of metabolism, an absolute or relative excess of non-nitrogenous material (carbohydrates) as compared with nitrogenous (proteid) will promote the formation of free acids such as lactic acid, &c., which after neutralisation will be set free in the circulation.

The group of symptoms associated with the defective metabolism of nitrogen-containing bodies has long been known as gout or lithæmia; the group of symptoms associated with the defective metabolism of non-nitrogenous substances has been dignified by no special title, except in the extreme cases of glycosuria and diabetes. It seems, however, hardly logical to suppose that an organism which is phylogenetically to a large extent carnivorous should be the victim of symptoms and diseases which are exclusively due to the defective metabolism of food by nature intended for its consumption, and that it should be immune from symptoms, however much it may trespass on the food domain of the herbivora.

We propose now to investigate the symptoms which may arise through the defective metabolism of non-nitrogenous material and to take up the history of the cleavage products from the point at which we left them—namely, waiting for neutralisation and removal at the seat of production. Now it is quite clear that if these bodies are not neutralised by ammonia to form amido-acids, or salts of ammonium, they cannot with physiological safety be removed in the condition of free acids; hence as expeditiously as possible they seize hold of such bases as sodium or potassium from the circulating media and satisfy their affinities at the expense of neutral or alkaline salts. Thus neutralised they can enter the circulation, which is itself reduced in alkalinity, in direct proportion to the amount of bases taken up by the acids. After they have effected an entrance into the circulation these neutral bodies can travel here and there until they meet with suitable conditions for their removal. We propose to take the lactates as representing a type of the various salts, which we have shown are a sequence

of excessive carbohydrate metabolism, since it is impossible to follow each in its more or less similar path of excretion.

The kidney, which is *par excellence* the excretory organ of nitrogenous refuse, does not appear to play any important part in the removal of lactates from the system, for they are seldom found in the urine, although the blood normally contains an appreciable, and at times an excessive percentage. Active glands, such as the liver and spleen, and those of the skin and mucous membranes, are probably the situations in which these products are most effectively dealt with. The skin is particularly active when the muscles are contributing a large proportion of free acids, and at times (rheumatic fever) free lactic acid has been detected in the sweat. Both in this situation and elsewhere, when metabolism is active and the oxygen supply is abundant, the lactates are oxidised to carbonic acid and water, and at the lung surface with a copious secretion of mucus various representatives of the series are found in the condition of free acids. Lactic acid is so frequently detected in the gastric juice that it is reasonable to suppose that its origin is the blood stream, and not decomposing ingesta. Such, then, are the normal methods whereby the excretory processes keep pace with the supply. Nevertheless, should any important excretory agency, as, for instance, the skin, be thrown out of action, and fail to take its share in the process of elimination there will be a proportionate increase of strain on those organs which remain to do the work. The more slowly lactates are burnt off the greater will be the accumulation in the circulation and the lower the alkalinity of the blood and tissue juices; free acids will with difficulty be neutralised, and the strain on all internal organs will become increasingly severe as the vicious circle of events extends more and more widely. Under such conditions signs of breakdown or failure may be evidenced in those organs or tissues which are functionally least able to meet the difficulties. Fibrous tissues may become inflamed and mucous surfaces hyperæmic and catarrhal. The system in its efforts to rid itself of potential sources of dangerous metabolites may hastily improvise and cast off in their entirety large quantities of emasculated protoplasm, such as mucin, which is a hybrid proteid containing a large proportion of carbohydrate. In this connexion it is deserving of consideration whether iodine and iodides, owing to their capacity for bringing mucin and mucinoid bodies into a state of solubility in the system, may not have important bearings on the treatment of such diseases (myxœdema, &c.) as may be due to the clogging of the tissues by this compound carbohydrate. In any case there is ample clinical evidence to show that iodine and its salts act as powerful eliminants.

For purposes of illustration we shall now take the hypothetical case of an organism, such as the human body, hampered with excess of carbohydrates—a condition which we propose to call "glycosachthæmia" [γλυκός (sweet), σακτός (crammed), and αἷμα (blood)]—and follow in detail the means that will be employed to get rid of this superfluity of food, and the symptoms that will be produced in the process of its removal. For the sake of convenience we propose to take first the case of young and growing tissues, since, under these conditions, vitality will be at its maximum, and we should expect, therefore, that the difficulties of dealing with an excess of food would be most effectually overcome. We should be prepared to find that an infant, given opportunities of absorbing an excess of carbohydrates from the alimentary tract, would, after satisfying the present needs of growth, activity, and heat production, first store the surplus in the liver and other tissues in the form of a reserve material (glycogen). So soon as storage in this direction has reached its physiological limit the excess of circulating carbohydrate would be laid up in the form of a more or less degenerate tissue (such as fat), or would be excreted after complete or incomplete metabolism. The more nearly the physiological limit of fat deposition is approached the greater would be the amount of circulating carbohydrate, and hence the larger would be the sum total of the end or intermediate products derived from its metabolism. We have previously shown that with deficiency in the supply of oxygen (determined by respiratory, circulatory, and hygienic conditions) there is an increase in the proportion of the intermediate end products (in the form of lactic acid, glycolic acid, &c.) as opposed to normal end products, and *ceteris paribus* with a deficiency of NH_3 (consequent on an insufficient supply of floating proteid) there is an increase in the proportion of these products (in the form of free acids) let loose in the circulation. In an infant, therefore, who is absorbing a large excess of carbohydrates (a process that is facilitated by the solubility of these substances), and in the absence of an adequate supply of oxygen, as well as of proteid (proteid is not readily digested and absorbed by infants), we should expect to find an excess of lactic acid (in the form of lactates) and other acids (in the form of salts) in the system. Moreover, if this excess of lactic acid, &c., be admitted we should expect to find evidence of some attempt on the part of the organism to get rid of it. We should anticipate, therefore, hyperæmia and enlargement of the liver and presumably of the spleen. The skin should show evidence of activity in the form of free perspiration; and should this large and important metabolic surface be thrown out of action (by chill, &c.) we should be prepared to find that a more severe strain is thrown on the other tissues which have been coöperating in the oxidation and elimination of the end products of the carbohydrate metabolism. The mucous membranes would show signs of strain by excessive hyperæmia and mucous secretion, and this would be shown clinically by attacks of bronchitis, pharyngitis, tonsillitis, enteritis, colitis, &c. The liver and spleen would exhibit additional hyperæmia and enlargement. The epiphyses of bone, centres of enormous protoplasmic activity in infancy, would become hyperæmic, and the thymus and lymph glands might share in the general increase of vicarious metabolism. When the increase of excretory activity, as evidenced by the hyperæmia of the tissues which we have mentioned, with the coöperation of a deficient supply of oxygen, fails to keep pace with the supply of the circulating end and intermediate products of carbohydrate metabolism, signs of irritation should be demonstrable in the nervous system in the shape of irritability, restlessness, and convulsions, &c. The muscular system should be inactive and flabby from what is tantamount to the condition produced by fatigue. Fever would be present from excessive metabolism, and those micro-organisms which live upon saccharine substances might find a nidus on the free mucous surfaces (thrush). So far as the fibrous tissues are concerned we should expect some hyperæmia which in the young and growing condition of these structures would be sufficient to enable them to cope with the local difficulties of metabolism, and these, by nervous coördination, would not be of a severe kind. As the glycosachthæmic infant in due course develops into the child, with the evolution of the muscles of locomotion and the concomitant stimuli to the circulatory and respiratory systems, which this change engenders, we should expect to find evidence of a general abatement of the symptoms. At the same time the gross improvement must be somewhat discounted by the general but gradual fall in protoplasmic activity, which throughout the body bears, roughly speaking, an inverse ratio to the age of the individual. In consequence of the defective ossification of the skeletal system which has been brought about by the continued hyperæmia of the active epiphyses (compare Kassowitz's experiments) with lowered alkalinity, and possibly occasional acidity of the surrounding tissue juices, we should expect to find gross modifications in the morphological structure of the osseous tissues in accordance with the mechanical strain exerted upon them by the muscles and body weight. Furthermore, we should expect to get enlargement of the epiphysial ends of the bones. For similar reasons the teeth will late assume that degree of calcification which is necessary for their irruption through the gums and the permanent teeth will show structural modification and may eventually become carious. The fibrous structures, owing to the proliferation of cells which is the physiological sequence of hyper-nutrition and minimal irritation during the active period of their growth, will show signs of laxness and stretching. The joints will be inadequately supported and later there may be signs of fibrosis where growth is almost at a standstill, where the circulation is most feeble, and where there is exposure to pressure or injury (fibrous nodules in the neighbourhood of bones and joints, nodules in the endocardium, and cardiac valves). The capsule of the eyeball and the suspensory ligament would share in the general laxity of the fibrous structures, and herein may lie the explanation of the myopia so often observed in rickety and unhealthy children. The connective tissue of mucous membranes long subject to catarrh may

show evidence of extensive thickening (adenoids, &c.). The nervous system may give way under the long-continued strain, and choreic symptoms, consequent on cerebral irritation, may develop. Moreover, the fibrous lining of the cranial cavity and membranous envelopes of the brain may, along with other fibrous structures, show signs of undue irritation (meningitis). During the early period of childhood chill to the integuments will intensify the symptoms due to the irritation of internal organs and develop acute catarrhs and fevers. As adolescence is reached and passed with concomitant cessation of active growth, the tissues will be less able to deal with the excessive nutriment which is the characteristic feature of the glycosachthæmic condition. Unless, therefore, the muscular system comes into active coöperation with the other excretory organs those tissues will suffer which are least able to cope with the excessive supply of nutriment and the intermediate end products of partial carbohydrate metabolism. We should now expect the fibrous tissues to give early evidence of their inability to deal effectively with these imperfect metabolites. Minimal irritation, which in the case of their embryonic, or young and growing antecedents produced proliferation of cells and increase of growth, now necessitates the adventitious assistance of leucocytes. By positive chemotaxis the migration of white cells may be determined, or, in other words, inflammation produced. Chill will now produce the symptoms of acute inflammation of the fibrous tissues of the joints, endocardium, and other parts, with the development of high temperature. Moreover, there seems no reason why the pyrexia which arises under these circumstances and the vicious habits of metabolism thus engendered should not continue until the combustion of the stored-up carbohydrate material is complete and the end products eliminated from the system. Furthermore, the duration of the fever cannot be measured by the period requisite to get rid of the carbohydrate material only, since the proteid and hydrocarbon foodstuffs (both floating and fixed) must of necessity share in the oxidative processes and thus by saving carbohydrate metabolism prolong the course of the fever. Moreover, in accordance with the recognised dietetic treatment of fever, additional fuel for combustion is provided with unfailing regularity. Again, under the circumstances which we are considering we should expect that occasionally, as the result of long-continued strain or diminished vitality, the synthetic processes connected with catabolic metabolism would fail and the consequent riotous metabolism of the biogen molecule would give rise to hyperpyrexia. The more active the skin and mucous membranes the less will be the intensity of the symptoms due to hyperæmia or inflammation of other tissues. At the same time the skin and mucous membranes under continued stress of work will ultimately show signs of wear and tear. The skin will be hyperæmic and will show a tendency to the development of eruptions—i.e., erythema, purpura, eczema, psoriasis, acne, &c. The respiratory mucous membrane will give evidence of catarrhs (tonsillitis, bronchitis, asthma, pneumonia, &c.). The tongue will be furred and the stomach and intestines possibly coated with excess of mucus. The fibrous tissues of the joints, endocardium, &c., will become acutely inflamed, but we should expect that the endocardial tissues would suffer less than other fibrous structures, inasmuch as they are continuously bathed by a more or less alkaline fluid (the blood). The muscles will give evidence of debility or "fatigue." Hollow viscera will become dilated (the heart, &c.) and the skeletal muscles toneless and weak. The nervous system may develop signs of instability (neurasthenia or even neuritis, epilepsy, &c.). The more chronic manifestations of the glycosachthæmic condition in adult life would be skin eruptions in the form of psoriasis, erythema, acne, eczema, &c. Inflammatory conditions of the respiratory system of a sub-acute type, such as tonsillitis, bronchitis, asthma, &c., would be of common occurrence. We should also expect chronic inflammatory conditions of the fibrous tissues surrounding the joints and other parts. In debilitated conditions glycosuria might possibly occur. With the advent of late middle life and old age when metabolic processes become less and less active, and when in consequence of the hampered condition of the respiratory and circulatory systems oxygen with difficulty reaches the tissues, the biogen molecule may cast off even larger atomic groupings than lactic, glycolic, and similar acids. Under these circumstances glucose and acetone may be shed in their entirety. A strain is doubtless thrown upon the kidneys, but the organism may be temporarily spared for the continuance of a useful existence. Owing to the inhibition of oxidative and catabolic processes the temperature would be low until such time as, in the general break-up of the tissues, chemical affinities are loosened with the liberation of energy in the form of heat and the ultimate destruction of the organism as a corporate body. Before this stage is reached the general interference with nutrition would provoke a more or less widespread degeneration of the tissues, and the possible growth in various organs of micro-organisms which thrive in a saccharine medium.

The hypothetical pictures that we have drawn of the general condition of glycosachthæmia during the various stages of infancy, childhood, middle life, and old age are practically those of the clinical conditions known as rickets, the rheumatic state of childhood, rheumatism, and diabetes; and although, viewing the matter from the standpoint of established facts, it is not always easy to prove that the one condition is an antecedent of the others, nevertheless there is a certain amount of evidence to show that such an assumption is reasonable, and the evidence that we have so far obtained is entirely in harmony with this view. In the case of rickets it is nearly always easy to prove that there has been a great excess of carbohydrate food, and although in the case of rheumatism and diabetes it is easy enough to shelter oneself behind a plea of relative excess, on inquiry it is usually possible to obtain evidence of carbohydrate indulgence which in many cases may be termed "gross." Rheumatic subjects, at any rate before the emaciating effects of defective circulation come into operation, are mostly well-nourished and often fat; and they are liable to exacerbations of the symptoms at times of forced inactivity, after periods of healthy energetic life, and when a good appetite remains to them, although its legitimate stimuli may be in abeyance. Soldiers proceeding on sea voyages, vigorous from regular exercise, are especially liable to attacks of rheumatism and pneumonia, and Londoners returning to town after their holidays nearly always contract a "cold." Athletes when they go out of training, unless they can physiologically protect themselves by a rapid deposition of fat, are liable to various ailments, such as may be readily explained by a condition of glycosachthæmia. Conversely, starving people rarely contract diseases of this type, and most striking evidence can be drawn from the present war in South Africa; in Ladysmith and Mafeking the semi-starved defenders were exposed in trenches half full of water to the sudden changes of temperature which characterise the autumn and winter months, yet rheumatism was conspicuous by its absence, especially towards the end of the period of siege when one may suppose their tissues were depleted of all carbohydrate reserve. In this respect the experiments by Araki[1] and Irisawa[2] in Hoppe Seyler's laboratory are of the utmost importance, for they have shown that in the case of animals lactic acid is produced in excess when the oxygen supply is curtailed, and that when the supply is minimal even dextrose may appear in the urine; but in the case of starving animals, however much the oxygen supply is reduced, no dextrose appears in the urine nor is the percentage of lactic acid in the blood increased.

Further evidence can be adduced from the field of therapeutics, for those measures which are known to be effective in the case of rickets, rheumatism, and diabetes are those which would be rationally prescribed for persons suffering from saturation with carbohydrates. Milk diet, or, in other words, semi-carbohydrate starvation, is the universal panacea for rickets and rheumatism, and in diabetes there is no more efficacious treatment. In chronic rheumatism our own experience, which is amply confirmed by others, goes to show that the effects of the "Salisbury treatment" (total carbohydrate starvation) are sometimes almost sensational in their efficacy. All those drugs which encourage the activity of the skin are of value in rickets, rheumatism, and diabetes. Purgatives by the rapid removal of ingested food are recognised as essential adjuncts to all lines of treatment, and alkalies hold a time-honoured position in the treatment of all these complaints.

[1] Zeitschrift für Physiologische Chemie, vol. xv., p. 335, and vol. xvi., p. 201. [2] Ibid., vol. xvii., p. 340.

By neutralising the acid products and thus assisting in their elimination their action is in harmony with our view. Salicylates above all drugs are specifics of rheumatism and are said to be useful in diabetes. We firmly believe that they are strongly indicated in rickets, though as yet we have had few opportunities of estimating their value. On our hypothesis they are of value in the treatment of rheumatism because they combine with that atomic group which in the break-up of the biogen molecule is a fore stage of lactic acid, glycocene, and perhaps other bodies.[3]

$$C_6H_4\begin{cases}OH\\COOH\end{cases} + CH_2\begin{cases}OH\\CN\end{cases} = C_6H_4\begin{cases}OH\\CNOH\\COOH\end{cases}$$
$$CH_2$$

Salicylic acid. Methene cyan-alcohol. Salicyluric acid.

They are of less value in diabetes because the entire dextrose molecule is separated from the biogen molecule and requires no neutralisation. They are of value in such cases by preventing the formation of certain by-products which are usually found in company with dextrose in the urine. With regard to the use of salicylates it must be remembered that the maximum effect is only obtained when they are given in large doses; large doses would obviously be required if our view is correct.

In the attempt which we have made to establish a causal connexion between excessive carbohydrate ingestion and the incidence of disease we have avoided for the most part making an appeal to the evidence derived from clinical experience. Our reason for this obvious omission is that our complete recognition of the essential features which underlie the theory which we have advanced, is of such recent growth that we have not yet had time to accumulate clinical testimony in sufficient amount to carry weight in support of our contention. Nevertheless, the observations which we have thus far been enabled to make on the clinical side of the subject are in complete harmony with the conditions which on theoretical grounds we should expect to obtain. Furthermore, we may point to the clinical experience of such keen and original observers as Rabagliati and Keith which lends strong support to the views which we have enunciated. Rabagliati gives convincing proofs of the evils which may be wrought by the over-ingestion of carbohydrates, and Keith, in his advocacy of the therapeutic efficacy of starvation (so-called) in the treatment of disease, supplies indirect evidence in support of our contentions.

Although we have endeavoured to clearly distinguish between the condition known as lithæmia or gout, and the one we have termed glycosachthæmia, we have not attempted to indicate the effects which might be produced by the possible action and interaction of their respective metabolites. That such reaction and inter-action between the metabolites of these conditions does take place there can be little doubt with the production of disease, which in its pathological significance combines in varying degrees the features common to lithæmia on the one hand and glycosachthæmia on the other.

Although it cannot be asserted that we have advanced any convincing proof of the existence of the condition which we have termed glycosachthæmia we venture to hope that the evidence which we have brought forward will serve to stimulate other observers to investigate the subject. For our own part we feel convinced that further inquiry will serve to strengthen the views which we have advanced in this paper and to establish the theory of glycosachthæmia on a firm foundation of fact.

[3] P. W. Latham: Croonian Lectures, 1886.

BRENTRY HOME FOR INEBRIATES.—At the meeting of the Gloucestershire County Council held on July 10th it was reported that this home was now contributed to by 23 county and borough councils to the extent of £25,000. This involved a provision of 104 beds for women and 73 for men. When their arrangements were completed there would be 183 beds against the required 177. Up to the present 58 cases had been admitted.

CARDIFF INFIRMARY.—At a meeting of the Executive Committee of the Cardiff Infirmary, held on July 17th, it was decided to recommend to the governors of that institution that the appointment of general superintendent be vested in the resident medical officer and that the duties of the secretary be solely confined to secretarial and financial work.

THE WAR IN SOUTH AFRICA: JOTTINGS IN BURGHERSDORP.[1]

BY HERBERT CAIGER, M.B. LOND., F.R.C.S. ENG.

I WAS in Burghersdorp during the Boer occupation of the town and saw a number of the wounded after the battle of Stormberg.

THE BATTLE AT STORMBERG, DEC. 10TH, 1899.

At this battle General Gatacre's forces met with a serious defeat, losing 650 men as prisoners. About 70 of these prisoners were wounded and they passed through Burghersdorp on their way to Bloemfontein. 24 of them were kept at Burghersdorp for a month or more in an extemporised hospital arranged by the British residents at the request of the Free State authorities. Many of the wounds were trifling in nature, and 18 of these men marched 20 miles from Stormberg to Burghersdorp on the day following the battle and the remainder were brought to Burghersdorp by ox wagons at different dates. Half of these would be fit for service within a month. The transport by ox wagon was bitterly complained of, the jolting over the rough roads having caused much aggravation of painful wounds. One man's chest was blistered by the heat of the sun, the wagons being uncovered. The wounded officers were brought to Burghersdorp in covered carts. The wounded men spoke well of the treatment which they had received from their Dutch captors at Stormberg.

On the battlefield the men were attended by two medical men who went out from Burghersdorp on the chance of being of some use. The men were anxious to know whether they would be attended by English practitioners, and they were very pleased to hear that there were none but English medical men in Burghersdorp. The nursing in the hospital was done by English (male) residents and refugees from the Republics. The school building was used for the hospital and came to be used more or less as a club as most of the Englishmen of the place met there, as it was almost the only place, with the exception of the private houses, where it was considered safe to speak freely. The amateur male nurses worked well in watches of three hours at a time. There were but few cases which required skilled nursing. Lord Roberts subsequently wrote to the mayor of the town thanking the British residents of Burghersdorp for all that had been done for the wounded and prisoners who passed through the town.

An interesting cerebral case.—A private who had been shot through the head completely lost his memory of events preceding the battle. There was no paralysis. A Mauser bullet had entered at the outer end of the left eyebrow and had passed out on a level with the occipital protuberance about an inch to the left. When seen 10 days after the wound of entrance was perfectly healed and difficult to see. The exit wound was still covered by a small scab. He had a dazed look, and when asked questions would reply, "I cannot rightly mind that, sir." He remembered one thing in his past life. He said that he was married and that his wife was married too. This latter statement he is said to have reiterated again and again shortly after the battle. With this exception he remembered nothing of his past history, and did not regain his memory up to the time when he left for Bloemfontein, 40 days after the injury. His memory for events after the battle seemed to be fairly good.

Nerve injuries.—The men who seemed to suffer most and longest were those who had wounds involving nerve trunks. I had three of these patients under my care for several weeks, and it was sad to see the agonies they suffered. Morphia in large doses was the only thing that gave any relief to the pain. A sergeant had an oblique flesh wound of the thigh which healed by first intention, but pain came on about 14 days after the injury. He had had severe hæmorrhage immediately after receiving the wound which he stopped by means of an improvised tourniquet which was left on for 36 hours. Possibly this may have had something to do with the causation of the pain. The pain was felt in the outer side of the leg below the knee and in the toes. There was no evidence of any paralysis, and, indeed, the man had been up and about for several days before the pain

[1] An abstract of Dr. Herbert Caiger's article which appears in the August number of the Phonographic Record of Clinical Teaching and Medical Science.

came on. The pains continued for a long time and were still very severe when he wrote from Cape Town in April. No operation was done. In the two other cases there was marked paralysis and wasting of muscles. In one some cord of the brachial plexus was probably injured, and in the other the median and ulnar nerves were injured by a wound about the middle of the arm. In both these cases the pain came on on the day of the battle and was intense from the first. The operation in one of the cases was performed at Bloemfontein, and with relief to the pain.

Fatal mental disease following severe wounds.—An officer was wounded by shrapnel fired by our own artillery. The nature of the wounds necessitated amputation of one leg and some of the fingers of each hand; he had also several wounds of the trunk, and for some time was not expected to live. He recovered so far, however, that he was removed to the hospital at Burghersdorp some weeks after the battle. The wounds healed completely, but he continually brooded over the disaster at Stormberg, which troubled him much more than the mutilation he had suffered from, and at length he died from acute mania. Shortly before his death the Free State Government had granted his release in return for a wounded commandant who had lost one of his legs after the battle of Elandslaagte and was released by Lord Roberts. The officer was dying when the news of his release arrived and he could not be moved. His body was taken back to the British lines where he was buried by his comrades with military honours. This was the only death which occurred among the wounded prisoners who were brought back to Burghersdorp from the battle of Stormberg.

Septic cases.—The proportion of septic cases to the whole number of wounded was small. The worst case was a wound involving the mouth. The bullet entered at the angle of the mouth and passed backwards and slightly downwards, emerging at the back of the neck about an inch from the middle line. It had ploughed along the inside of the cheek, knocked out a lower molar, broken some fragments off the lower maxilla (which came away at a later date), and perforated the posterior wall of the pharynx. This man's mouth was in such a foul condition when he arrived at Burghersdorp, four days after the battle, that he had to be placed in a separate ward. After the separation of some very foul sloughs the mouth wounds healed, but he then developed a deep abscess in the sub-maxillary region. This was opened just before he left for Bloemfontein, nearly six weeks after the battle. Many of the wounds were inflicted by Martini-Henry bullets, and, of course, the wounds were more severe than those caused by Mauser bullets and a greater number of them suppurated. Many of the shrapnel wounds, on the other hand, remained quite aseptic. A compound fracture of the lower end of the ulna from a shrapnel bullet, which was under my care, did perfectly well.

PHYSIQUE OF THE BOERS.

I have had the experience of six years' practice among the Boers of the Jacobsdal and Burghersdorp districts, and am of opinion that in comparing the Boers with Tommy Atkins the advantage is on the side of Tommy. The Boers are more used to out-of-door life and irregular meals, they suffer less from syphilis, and they are more independent and more accustomed to act on their own responsibility, but, on the other hand, although the average age might not be very different, the Boer ranks include many below as well as above the age limits which obtain in the British army. I have seen a boy of 11 years of age brought by his father on commando from the Free State. There were many under 16 and 17 years of age, and many over 40 years of age. Men suffering from organic disease, such as of the heart, which would unfit them for any unusual fatigue went on commando. The Boers who were commandeered in the district in which I lived were not subjected to any medical examination to prove their fitness for service, and in one case I gave a certificate of unfitness for service to a man with phthisis partially arrested but still with extensive signs in one lung, but the certificate was disregarded by the officials and the man was sent to the front, where he took part in a reconnaissance which took up 22 hours and completely knocked him up. A few days later the man obtained another certificate from a Free State surgeon, for which he paid a guinea, and was then allowed to return home.

OVERWORKED TOMMIES.

There can be little doubt that the cause of the disaster at Stormberg was bad generalship. The men were tired out before the fight began. During the retreat, after the battle, many of the men are said to have dropped down and fallen asleep from sheer fatigue. It is said that many who were taken prisoners there were found lying fast asleep in their trenches. The prisoners told us that they had marched all the night before the battle and had had very little sleep during the preceding night. Notwithstanding this, and the fact that all the advantages of position were with the enemy, some of the Boers themselves admitted that our men had made a good fight. Had it not been for the loss of their leaders at a critical moment through the mistake of our own artillery, many think that the result of the battle would have been very different. Of course, on special occasions men must have severe strain put on their powers of endurance, but there is a limit, and from all I have heard this limit was much exceeded in the operations ending in the battle of Stormberg. Further, I have heard that it was the practice of the officer commanding a regiment recently stationed in this neighbourhood very frequently in the mornings to take the men a long march to the top of some stiff hill before breakfast, bringing them back so fatigued that when breakfast time arrived many of them had no appetite for it. This sort of thing would be well enough once in a way, but to make a frequent practice of over-fatiguing the men before they have had any food would hardly improve their fitness for service.

SANITARY ARRANGEMENTS—BOER AND ENGLISH.

The absence of proper sanitary regulations in the Boer laager at Stormberg was a disgrace to any nation that pretended to civilisation. Dead animals and the remains of slaughtered sheep and oxen lying about unburied caused a terrible stench. In the offices and waiting-rooms at the railway stations all sorts of refuse were allowed to accumulate, and in some instances dead horses were left behind inside the railway offices. There was a good deal of sickness and at least two fatal cases of enteric fever occurred among the Boer forces at Stormberg. At the same time the sanitary arrangements for our troops who were stationed in, or who passed through, the district were not free from reproach. At the Bethulie Bridge camp the stench along the river bank and for some considerable distance from the river was bad. The same thing was noticeable at Sterkstroom camp. At Burghersdorp station at the time when large numbers of troops were passing through, according to the stationmaster on more than one morning the station yard was in a disgusting state. These things ought not to be. Proper sanitary arrangements for large bodies of troops in transit may be difficult to arrange, but surely some steps could be devised which would obviate such a state of affairs as that just mentioned. With reference to the camps there is less excuse; either the sanitary arrangements must have been at fault, or the discipline for their proper enforcement must have been lax. Many of the cases of typhoid fever which have occurred among our troops lately may have been unavoidable—for instance, in the case of the men surrounding Cronje's laager at Paardeberg—but other cases have probably occurred which might have been avoided by more attention to sanitary arrangements and stricter discipline in this matter. At Bethulie Bridge the water from the Orange river was used for drinking purposes. My opportunities for observations regarding military sanitary arrangements have been confined to this district. It is to be hoped that elsewhere matters were better regulated.

THE OBJECT OF THE WAR.

From the talk of the farmers and Free Staters there is no doubt that the object of this war was aggressive not defensive—to get rid of English authority and government from the whole of South Africa. At a Bond meeting held in this district about a year ago one speaker said that he prayed that the day might come when the whole of Africanderdom would be free from the foreign yoke. No one made any protest against this statement. One of the Free State commandants addressing a number of recruits on the market square of Burghersdorp last November said, "We have come to assist you in throwing off the foreign yoke." Very little was heard of saving the independence of the Republics, but the common talk among the farmers was of "cleaning the land" or "driving the British into the sea." The Dutch farmers were urged to join in a triumphal progress through the colony, in which no serious opposition was expected from any British troops. They were told by Free Staters that it would be only a matter of a few weeks and that in

every district which they reached they would be joined by large numbers of Africanders, and they talked of drinking champagne in Cape Town over their conquest within a month. With the great majority of the burghers their confidence of success was absolute. One burgher said that after they had killed all the English soldiers General Joubert would hire a ship and they would send him and his men to England to fetch "Victoria" out of her house and bring her to the jail at Pretoria.

BOER NEWS—OFFICIAL AND OTHERWISE.

An information commission at Bloemfontein sent out official telegrams recording the progress of the war. On the whole the news was reliable, but in one point these official telegrams consistently perverted the truth. They grossly exaggerated the casualties on the British and always understated those on the Republican side. For instance, after Belmont the official telegram stated the Boer losses as ten killed and 40 wounded, and said that the British losses were estimated at far in excess of 2000. In this instance they seem to have divided their actual losses in killed by ten whereas they multiplied ours by about the same figure. Current gossip exaggerated the British casualties still further. We were said to have lost 7000 or more men at Belmont. At Magersfontein we were reported to have lost 9000 killed, and the blood had run four feet deep. The man who brought this report said that he had it from the lips of a minister of the Dutch Church so that it must be true. Our losses were heavy but when they were exaggerated to this extent it is not to be wondered at that the Dutch farmers imagined that there was little chance of British success in this war. When the news of the naval brigade fighting under Methuen reached them it was said that England evidently had no more soldiers to send and was sending sailors to fight now.

CONCLUSION.

In justice to the Free State officials it is only fair to state that in Burghersdorp the English residents were on the whole very fairly treated. Among the Free State burghers drunkenness was certainly less in evidence than with our own men. The liquor regulations during the Boer occupation were more stringent. As soon as the town was re-occupied the difference in this respect was painfully brought to our notice.

TACHYCARDIA FOLLOWING ENTERIC FEVER.

BY CHARLES BURLAND, M.D. BRUX., F.R.G.S.,

LATE PRESIDENT OF THE BRUSSELS GRADUATES' ASSOCIATION, PRINCIPAL MEDICAL OFFICER TO H.M. HOSPITAL TRANSPORT, NO. 77.

THE subjoined synopsis of cases of enteric fever and dysentery which recently came under my care as medical officer in charge of one of the hospital transports from South Africa to Southampton, and the preponderance of typhoid fever cases will, I trust, plead my excuse for submitting a somewhat extensive and varied personal experience to the readers of THE LANCET.

There were under my care, out of a total of 632 patients, 265 cases of enteric fever and 82 cases of dysentery. All these patients had been discharged direct from hospital to the steamer in the early stages of convalescence, and one pronounced symptom which was present in the majority of cases greatly impressed me; this was an unusually rapid, small, and compressible pulse peculiar to the enteric fever cases, associated with signs of early cardiac dilatation. For purposes of investigation I enlisted the help of Surgeon-Captain Fenwick of the New Zealand Mounted Infantry and we made a careful and exhaustive examination of 300 cases of enteric and dysenteric convalescents. In every case in which the pulse-rate exceeded 90 the heart was examined binaurally by Surgeon-Captain Fenwick and myself.

Roughly gauging the severity of the illness by the past military history, as regards work and hardships; having regard, in the case of civilian soldiers, to the sufferer's previous occupation and habitual mode of life; calculating the number of weeks which were spent in hospital; and after prolonged and searching individual examination we obtained the following results. The lowest pulse-rate in the military enteric fever cases was 72 per minute and the highest was 150, an average exactly of 98·25. In 56 per cent. the pulse-rate was 80; in 25 per cent. it was 95; in 10 per cent. it was 100; in 5 per cent. it was 110; and in 4 per cent. it was from 120 to 140.

In investigating 50 cases of dysentery we found an average pulse-rate which varied from 72 to 80. The number of hearts examined was 75 per cent. of the total cases. In five cases valvular disease was present and these were excluded. In 25 per cent. of those examined the apex beat was displaced. In 50 per cent. the impulse was diffused, undulatory, and difficult to localise. A feeble first sound and a sharp and accentuated second sound were frequent features, while in a small percentage of cases undoubted dilatation was present.

The following is an interesting case illustrating the points which I wish to bring forward.

A Scots Guardsman, aged 30 years, a man of superb physique, came on board apparently convalescent. Seven days later he collapsed suddenly on deck and was at once placed in his cot. His condition was so serious that I summoned Dr. Atherstone, assistant medical officer, in early consultation. The pulse at this time was 150, and was thin and compressible. Dyspnœa was distressing, the face was pinched, cold, and markedly blanched, while the body was covered with a clammy sweat. The patient complained of acute abdominal pain and the abdomen was tympanitic but not rigid. The pain on deep-seated epigastric pressure was excruciating. I was inclined to regard the case as one of acute cardiac failure, but as there seemed to be a possibility of perforation—these men take every opportunity of eating forbidden food surreptitiously—I asked Surgeon-Captain Fenwick for the benefit of his surgical experience. It was decided to continue the medical treatment. The patient rallied slightly under a very free exhibition of stimulants, but expired 36 hours after his first seizure.

The post-mortem examination, one hour after death, revealed enlargement of the heart with dilatation of the left ventricle. The valves were healthy; the lungs were deeply congested; the abdomen was healthy; there was no perforation; and the cardiac walls, left ventricle especially, were very thin. The finger readily perforated the heart substance on slight pressure.

My experience of typhoid fever had hitherto, I confess, led me to coincide with the views of the recognised English and American authorities on the slow pulse usually found in convalescent patients from this disease, and it was certainly startling to find that of all my convalescents not 2 per cent. had a pulse-rate below 70.

How can this rapid pulse-rate in military patients be accounted for? Surgeon-Captain Fenwick adduced a theory of sympathetic irritation which I could not bring myself to accept, but which nevertheless recalled cases of physical exhaustion and cardiac disturbance with rapid, feeble pulse due to hardship and privation, which I, in common with other travellers, have found associated with mountain sickness upon the Himalayas, similarly with well-known phenomena which occasionally prevail in the collapse attending persistent and aggravated sea-sickness. It must, of course, be remembered that in the enteric fever cases which I now portray the majority of the patients had been grievously debilitated by fatiguing marches and poor and irregular feeding—thus engendering a state of cardiac irritation which the subsequent typhoid fever had not conduced to allay. May we not assume that the symptoms described are the natural and inevitable sequelæ of such conditions?

I have selected the following cases of relapsing enteric fever and dysentery, my object being to show that although the dysenteric attacks equalled the enteric in severity, yet in the former disease the pulse-rate was markedly slower.

CASE 1.—An officer, aged 27 years, who went through the whole siege of Kimberley, where he distinguished himself by his unceasing energy, had an attack of typhoid fever and was in due course invalided home. Surgeon-Captain Fenwick, who knew him intimately, stated that he was apparently quite convalescent when discharged from Wynberg Hospital. The patient complained of feeling ill directly he reached the ship and was admitted to hospital treatment at once. After a trying illness, which presented all the features of a severe primary attack but which were unquestionably due to a terribly bad relapse, he suddenly had an attack of cardiac failure on the fifth day of the homeward voyage. He was extremely ill throughout the remainder of the journey

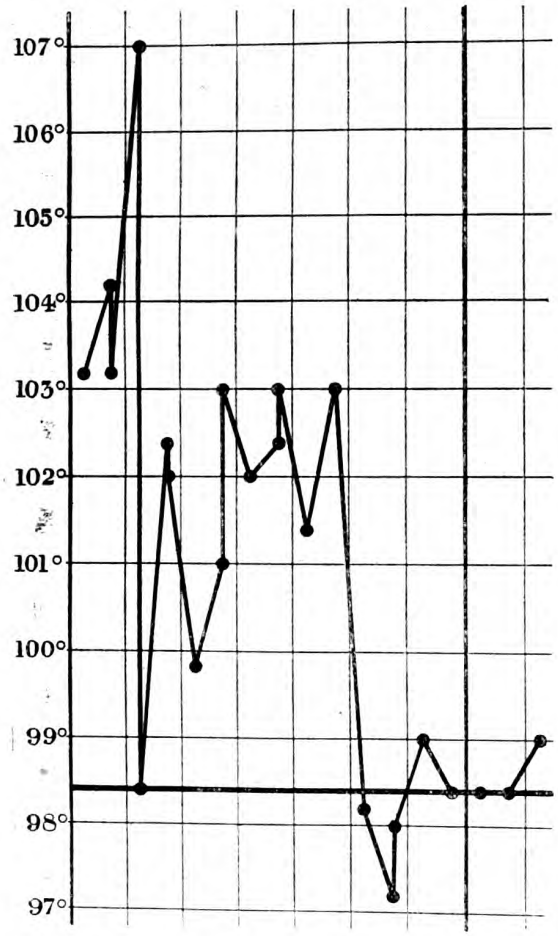
and was eventually despatched by ambulance to Netley Hospital on the arrival of the ship in England.

CASE 2.—A soldier, aged 30 years, had a very severe relapse two days after embarkation. He was much emaciated and was for several days in grave danger. The heart was weak, but the pulse, after the initial rise, was uniformly steady and slow. It will be seen to what a high degree his temperature rose (107° F.).

CASE 3.—A ship's fireman, one of the crew of the transport, had a severe attack of typhoid fever. The pulse was steady and slow and the heart's action was forcible and good.

Case 2 and Case 3 would seem to contradict completely my statements regarding the rapid pulses of my soldier patients, but as a matter of fact the patient in Case 2 had been on garrison duty, with no marching or hardships, while the patient in Case 3 was a ship's fireman with regular hours of duty.

I make no comment on the cases, my only object being



This chart serves to illustrate the severity of some attacks of dysentery. Many writers state that a temperature above 102° F. is unusual, but I have not unfrequently seen the temperature in this disease rise to 104° and over. In this particular case I had a doubt as to the existence of hepatic abscess, but the patient's rapid recovery dispelled this idea.

to show that although the relapses were equally severe, yet a marked difference was noticeable in the cardiac action in the two diseases.

The treatment was simple, consisting of free stimulation with brandy and champagne, while digitalis, carbonate of ammonia, and strychnia were the drugs chiefly relied upon, the latter being administered hypodermically in several extreme cases.

Among the enteric fever cases were four who had undergone antityphoid inoculation. My experience of these does not justify me in saying more than that they appeared to have been mild attacks with an early and uninterrupted convalescence. With regard to the treatment of dysenteric cases I found that doses of ipecacuanha administered by the mouth in the manner I advocated some years ago in your columns,[1] in an article on hæmatemesis, were most effectual, the one point being to soothe the stomach by a small dose of opium, a short time before administering a bolus of ipecacuanha (20 grains) moistened with a few drops of glycerine, all liquids being absolutely prohibited for some hours after the medicine. Cases in which the drug was rejected when given by the mouth were treated by rectal injection.

While regretting that the military exigencies and the ever-increasing demand for hospital accommodation should necessitate such early removal of patients before they are really fit to travel—to which must be in a measure attributed the very serious relapses which have occurred—it must be remembered that as the Equator is approached meteorological and climatic conditions are encountered which are sufficiently trying even to persons in health.

Infinite credit is due to the Royal Army Medical Corps for their unceasing devotion to their patients, and it is in no spirit of criticism upon them that I record these observations.

To Colonel J. F. Supple, R.A.M.C., principal medical officer, Lieutenant-Colonel O'Connor, R.A.M.C., and Major Tatham, I tender my humble tribute of admiration for the excellent arrangements which they made for the embarkation of patients, combining a minimum of fatigue with a maximum of comfort. To these gentlemen, also, we were indebted for our well-organised hospital and excellent staff.

To Captain Sir E. Chichester, Bart., R.N., we all owed much; no suggestion for the benefit of the sick and wounded failed to secure his kind and patient attention and practical coöperation.

In conclusion, I trust that the officers of the Royal Army Medical Corps, whose experience of typhoid fever cases has of late been enormous, will give the profession the benefit of their observation, especially with regard to the points which I have raised.

A FURTHER NOTE ON
THE INFLUENCE OF THE TEMPERATURE OF LIQUID HYDROGEN ON BACTERIA.[2]

BY ALLAN MACFADYEN, M.D. EDIN.,
AND
SYDNEY ROWLAND, M.A.

IN previous communications we have shown that the temperature of liquid air has no appreciable effect upon the vitality of micro-organisms, even when they are exposed to this temperature for one week (about – 190° C.)[3] We have now been able to execute preliminary experiments projected in our last paper as to the effect of a temperature as low as that of liquid hydrogen on bacterial life. As the approximate temperature of the air may be taken as 300° absolute, liquid air as 80° absolute, and hydrogen as 21° absolute, the ratio of these temperatures roughly is respectively as 15 : 4 : 1. In other words, then, the temperature of liquid hydrogen is about one-quarter that of liquid air, just as that of liquid air is about one-quarter of that of the average mean temperature. In subjecting bacteria, therefore, to the temperature of liquid hydrogen we place them under conditions which, in severity of temperature, are as far removed from those of liquid air as are those of liquid air from the condition of the average summer temperature. By the kindness of Professor Dewar the specimens of bacteria were cooled in liquid hydrogen at the Royal Institution. The following organisms were employed: bacillus acidi lactici, bacillus typhosus, bacillus diphtheriæ, proteus vulgaris, bacillus anthracis, bacillus coli communis,

[1] THE LANCET, Oct. 14th, 1893, p. 923.
[2] A paper read before the Royal Society on May 31st, 1900. Communicated by Lord Lister, P.R.S.
[3] Proceedings of the Royal Society, Feb. 1st and April 5th, 1900. THE LANCET, March 24th (p. 849) and April 21st (p. 1130), 1900.

staphylococcus pyogenes aureus, spirillum choleræ, bacillus phosphorescens, bacillus pyocyaneus, a sarcina, and a yeast.

The above organisms in broth culture were sealed in thin glass tubes and introduced directly into liquid hydrogen contained in a vacuum jacketed vessel immersed in liquid air. Under these conditions they were exposed to a temperature of about – 252° C. (21° absolute) for ten hours. At the end of the experiment the tubes were opened and the contents were examined microscopically and by culture. The results were entirely negative as regards any alteration in appearance or in vigour of growth of the micro-organisms. It would appear, therefore, that an exposure of ten hours to a temperature of about – 252° C. has no appreciable effect on the vitality of micro-organisms.

We hope to extend these observations upon the influence of the temperature of liquid hydrogen on vital phenomena and to make them the subject of a future communication, and to discuss their bearing upon problems of vitality.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ACTINOMYCOSIS.

BY EDWARD T. JONES, M.R.C.S. ENG.,
AND
JOHN C. MACKAY, M.D. ST. AND.

THIS case appears to be worth recording because of (1) the uncommonness of the disease and (2) the enormous doses of iodide of potassium taken during treatment. The patient was a male, aged 42 years, who is the driver of a traction-engine used with a threshing-machine. Early in November, 1898, he had an old stump of a tooth removed from the right side of the lower jaw. This was followed by enormous swelling of the tongue accompanied by great pain. This apparently subsided under treatment and he came under our care a month later with a large swelling under the jaw in the anterior triangle, which was rapidly increasing. The skin was very red, thickened, and œdematous; the tongue was bound down and when protruded came out markedly on the right side. At one spot there was a patch of softening, this was incised and was found to contain thick curdy pus loaded with actinomycotic granules (confirmed by the Clinical Research Association). The treatment adopted was to open all places of softening as they appeared, to swab out the cavities with 1 in 3 carbolic solution, and to administer iodide of potassium internally. The dose of the iodide was increased from 30 grains per day to a maximum of four drachms per day in the course of six weeks. The patient never had any unpleasant symptoms from the iodide; in fact he put on flesh. The changes in the discharge and granules due to the iodide as recorded by Fairweather[1] were observed. The disease proved extremely chronic, spreading in the subcutaneous tissue downwards and forwards over the larynx, crossing the middle line. Finally it cleared up and early in March, 1899, the patient was discharged with no further sign of the disease and with nearly all the induration and thickness of the skin gone. Whether the iodide had much to do with the apparent cure it is difficult to say. Indications for treeatment were not easy to find. Veterinary surgeons appear to treat their cases in cattle with enormous doses of iodide with success. Perhaps more radical surgical treatment at the beginning, as recommended by Ransome,[2] would have produced a good result more quickly, but on the other hand it is worth noting that with the exception of one week at the commencement of treatment our patient was able to keep at his work during the whole time.

St. Columb, Cornwall.

[1] Brit. Med. Jour., June 27th, 1896.
[2] Ibid.

NOTE ON THROMBOSIS OF CEREBRAL VEINS OCCURRING IN A CASE OF CHLOROSIS.

BY EDWARD F. M. NEAVE, M.B., CH.B. EDIN.

THROMBOSIS of cerebral veins or sinuses is a very rare complication of chlorosis. Dr. Byrom Bramwell in his book on anæmia states that "thrombosis of the veins of the leg occasionally occurs [in chlorosis], but thrombosis of the cerebral sinuses very rarely." He does not record a single case of the latter. I have not been able to ascertain the frequency of this complication, but judging from the scantiness of the literature on the subject it must certainly be very rare. On consulting Osler's "Practice of Medicine" I find that Brayton Ball has recently reported a case and has collected 10 or 11 others from the literature of the subject. All were in girls with anæmia or chlorosis. Ball's patient was dull and stupid and had vomiting, dilatation of pupils, and double-choked discs. Slight paresis of the left side occurred. In some of the other cases the patients had headache, vomiting, and delirium. In Douglas Powell's case with similar symptoms there was loss of power on the left side.

The diagnosis of cerebral thrombosis is very difficult and in many of the cases it was made only at the necropsy. The symptoms pointing to thrombosis in the cerebral sinuses and veins are described by Sir Dyce Duckworth[1] as follows: "(1) headache, at times very severe, and sometimes plainly localised; (2) vomiting, generally severe; (3) motor symptoms, indicative generally of irritation, either cortical or central—hence tremors, jerking, spasms, and contractures in other parts, usually of one side, ending in paresis or paralysis; (4) drowsiness, delirium, coma; (5) variations in the size of the pupils."

The following case, in which most of the above symptoms were present, seems worthy of record:—

The patient was a married woman, aged 31 years, and she had no children. She complained of breathlessness, palpitation, and weakness. The duration of the illness was indefinite, but she had felt ill for some months and ultimately became so weak that she had to take to her bed. The family history was good. The patient had anæmia when a girl several times, but she always quickly recovered under a course of iron. When I visited her on May 19th, 1900, I found her lying in bed on her back, looking extremely exhausted and presenting most of the typical features of chlorosis. Her development and nutrition were good, but her face was extremely blanched and the lips and conjunctivæ were very pale. Pulsation was visible in the neck and a *bruit de diable* was well marked. On the 20th the patient had a few fainting fits, from which she always quickly recovered. On the next day (the 21st) she had a severe attack of vomiting, with severe headache. A blue pill, followed by a saline draught, was given with some benefit. On the evening of the 22nd she seemed very weak and could not turn on to her side. She slept fairly well but on awakening next morning she complained of a feeling of numbness in the left arm and leg, saying that those members appeared to be "dead." At the time she complained of great pain over the vertex and frontal region. This pain could not be localised to any one side. Her memory was confused—for instance, she did not know the day of the week or what she had had for breakfast. She was slightly delirious at times. The speech was unaffected. There was paralysis of the left arm and leg. As regards the leg the paralysis was complete, while the paralysis of the arm was partial. The opponens and adductor of the thumb were in action, the flexors of the wrist were slightly in action, while all the other muscles of the limb were paralysed. There was no facial paralysis. When the tongue was protruded it pointed distinctly to the right side. The left knee-jerk was slightly exaggerated. There was no ankle clonus. At this time there was incontinence of urine. The pupils were very large and they reacted to both light and accommodation. The discs, beyond being pale, seemed normal. There was no optic neuritis. The urine contained no albumin or sugar. The pulse was 120 and the temperature was 100° F. As regards the sensory symptoms there was slight anæsthesia of the left arm and leg. There was no hyperæsthesia.

[1] THE LANCET, Feb. 22nd, 1890, p. 404.

Dr. J. Russell of Arbroath saw the patient with me and after weighing carefully all the possibilities we came to the conclusion that the cause of the hemiplegia was a clot of blood in one or other of the cerebral sinuses or veins in the region of the right motor area. We excluded secondary thrombosis, i.e., thrombosis due to disease of the internal ear, fracture, tumour, or suppurative disease. Embolism was excluded.

Under appropriate treatment the patient gradually improved. A belladonna plaster was applied over the præcordial region, while digitalis, nux vomica, and iron were given internally. The bowels were kept regular with cascara. A light nutritious diet was added. In two days under this treatment improvement was noted. The temperature and pulse gradually came down to the normal, and six days later the paralysis of the arm began to pass off. The patient could not move her toes till about three weeks from the time that the paralysis occurred, and three weeks later she was up and limping about. Two months after the beginning of her illness she was practically quite well, except for some dragging of the left leg.

Friockheim, N.B.

A CASE OF ABSCESS OF THE PAROTID GLAND PRESENTING UNUSUAL SYMPTOMS.

BY W. J. BEVERIDGE, L.R.C.P., L.R.C.S. IREL.,
SURGEON TO THE CAYLLOMA SILVER MINING COMPANY, LIMITED.

ON May 14th of this year I was consulted about an Indian boy, aged about 10 years, who was suffering from an inflammatory swelling involving the right side of the head and face. He gave the following history. He had had a slight soreness in the throat, accompanied by pain over the right parotid region from May 2nd. On the 6th he noticed a swelling in front of the right ear. This swelling increased during the following days, spreading forwards over the cheek and upwards over the temporal region; from the temporal region it spread backwards and downwards, till on the 11th he noticed (to use his own expression) "a soft pimple" in the groove behind the helix of the ear. The boy presented a most peculiar appearance. The helix of the ear was tilted forward by an abscess situated in the groove behind; the position of the zygoma was marked by a hard groove, below which there were œdema and deep fluctuation; and there was considerable œdema over the temporal region and extending down to the mastoid process. Both tonsils were slightly swollen. The pus sac behind the ear being evidently about to burst I opened it, allowing a quantity of pus to escape. The flow of pus was greatly increased by pressure over the parotid. I applied an absorbent dressing and gave the boy a boric acid gargle. On the next morning I made an incision into the parotid, opening into a fairly large abscess into which I inserted a gauze drain. A considerable quantity of purulent matter escaped during the next few days. The œdema rapidly diminished and the boy is now quite well. I have no doubt that the lesion in this case was the very ordinary abscess in the parotid region following on the introduction of septic organisms through the tonsils. In this case, however, the pus worked its way upwards, passed under the zygomatic arch, then backwards beneath the strong temporal fascia, escaping under the lower border of which it was at length able to reach the surface. Previously to my seeing the patient no treatment whatever had been applied.

Cayllomа, Peru.

AUGUST BANK HOLIDAY ON THE CONTINENT.—For the convenience of holiday-makers on the Continent cheap tickets will be issued to Brussels available for eight days, viâ Harwich and Antwerp. Passengers leaving London in the evening reach Brussels next morning. Tickets at cheap fares will be issued by the Antwerp route to Berne from July 25th to 28th. For visiting The Hague, Amsterdam, and other parts of Holland, the Rhine, north and south Germany, and Bâle for Switzerland, especial facilities are offered viâ the Great Eastern Railway Company's Royal British Mail Harwich—Hook of Holland route, through carriages being run to Amsterdam, Berlin, Cologne, and Bâle, also restaurant car on the North and South German express trains to and from the Hook of Holland. The General Steam Navigation Company's fast steamers will leave Harwich for Hamburg on August 1st and 4th, returning August 5th and 8th.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

BELGRAVE HOSPITAL FOR CHILDREN.

A CASE OF CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

(Under the care of Dr. EDMUND CAUTLEY.)

CONGENITAL hypertrophic stenosis of the pylorus is still sufficiently uncommon in this and other countries to warrant placing the following instance of the disease on record. It is a remarkable circumstance that as soon as a new morbid condition is described many older records of its occurrence are discovered, and before long it is found to be by no means so rare as was thought at first. Dr. Cautley's paper on hypertrophic stenosis of the pylorus in infants, read before the Royal Medical and Chirurgical Society in November, 1898, though not the first account of this interesting disease, contained the first thorough description of the condition with a collection of the previously recorded cases. We have no certain knowledge of the real cause of this malady, and so far the only satisfactory treatment appears to be surgical.

A female infant, aged three months, was admitted into the Belgrave Hospital for Children under the care of Dr. Edmund Cautley on June 29th, 1900, and died on the next day. Her parents were described as healthy. She was born at full time and seemed to be a normal infant. She was the fourth child, the others being alive and well. The mother had had no miscarriages. During the first six weeks of life the infant was fed on cow's milk and barley-water, and was said to have had about a pint of the former in the 24 hours. She was constantly sick and was then put on one teaspoonful of condensed milk with four tablespoonfuls of water and lime water for a feed, and was only fed four times a day. During the two days before admission she had meat juice and whey. The mother's account of the feeding and of the past history generally was variable and unreliable. She stated that the vomiting had been constant since birth, the food being kept down only a short time, and that constipation had been very troublesome. For three weeks before admission the vomiting and wasting had been more pronounced.

On admission the child was dirty, flea-bitten, and emaciated, weighing 6 lb. 3 oz., and had occasional slight general convulsive movements. The temperature was normal. The vomiting was frequent and persistent, food being retained a very short time. There was no bile in the vomited matter. The bowels acted five times; the stools being small, watery, and greenish, and containing traces of fæcal matter. The convulsive movements became continuous and the temperature gradually rose, reaching 105° F. before death, which took place a few hours after Dr. Cautley first saw the child.

Necropsy.—On making a post-mortem examination it was found that there was great emaciation. The stomach was largely dilated and its walls were thinned, except in the region of the pylorus where the wall was thicker than usual in these cases. The contents consisted of a little partially digested food and some excess of mucus. The mucous membrane was not inflamed but presented a slightly catarrhal appearance. The pylorus formed a definite elongated, cylindrical tumour which was an inch long and firm and hard. Its limits were very easily defined, especially on the duodenal side. On laying open the duodenum the pylorus presented the same appearance as the os uteri when seen from the vagina—a small central orifice surrounded by a thick, smooth, ring-like wall. Occlusion of the orifice was completed by the folds of mucous membrane, and the liquid contents of the stomach could not be squeezed through it, though a small probe could be passed through into the stomach. On laying open the pylorus longitudinally it was noted that the mucous membrane was

thrown into a thick, raised, ridge-like fold, bifurcating into the mucous membrane of the stomach. The wall was three-eighths of an inch thick at the duodenal end and thinned off towards the gastric end, though very definitely limited in this direction, hence the pylorus as a whole was somewhat funnel-shaped. As in previous cases the increase in the thickness of the wall was due to hypertrophy of the circular muscular fibres. The intestines were collapsed and empty. The other organs were normal.

Remarks by Dr. CAUTLEY.—In a paper[1] on this affection read before the Royal Medical and Chirurgical Society in 1898 I described two typical cases of this disease which came under my care in 1897; mentioned a specimen in the St. Bartholomew's Hospital Museum presented by Dr. J. Raglan Thomas and subsequently shown at a meeting of the Pathological Society of London by Dr. H. Morley Fletcher;[2] and gave brief abstracts of 17 other typical cases collected from medical literature, and also short notes of six allied cases which were not sufficiently definite to be included as typical. Since that paper was written no less than 11 other instances have been recorded by Schwyzer,[3] Stern,[4] Rolleston and Hayne,[5] Meltzer,[6] Adler (referred to by Meltzer),[7] Abel,[8] Still[9] (three cases), Batten,[10] and Pritchard.[11] Together with the present case this makes a total number of 32 undoubted cases. It is noteworthy that no less than 26 of these have been recorded in the last five years. It is clear, therefore, that the disease is not so rare as has been supposed.

Fuller details of the symptoms, diagnosis, pathology, and morbid anatomy of this condition will be found in the paper first referred to. In only one respect does the present case differ from the typical instances—namely, in the small, watery stools passed during the last day of life. Complete constipation is the condition usually present. It was noted at the necropsy that the intestines were practically empty and that the occlusion of the pylorus was complete. Possibly the stenosis is aggravated by post-mortem contraction of the hypertrophied muscle and during life it is not quite so extreme.

The two chief theories put forward as to the causation of the disease are as follows:—1. It is due to a simple redundancy of fœtal growth. Nature, in her extreme anxiety to provide an efficient pyloric sphincter, has over-exerted herself and produced too great a quantity of muscular tissue. 2. Thomson[12] suggests that the essential lesion is not a muscular but a nervous one—a functional disorder of the nerves of the stomach and pylorus leading to ill-coördinated and therefore antagonistic action of their muscular development. Neither of these theories is completely satisfactory and the affection still requires further elucidation. Treatment consists in giving small, easily digested, or pre-digested meals. Nasal feeding has proved beneficial. Rectal feeding prolongs life. Probably the only chance of permanent benefit lies in operation. In Abel's case operation resulted in cure; that is to say, the child was discharged from the hospital as cured in two weeks. So far no other successful operation has been recorded. Pylorectomy offers the best chance of success. It is, no doubt, a serious operation and, apart from that, the infant when the disease is diagnosed is hardly in a condition to stand such an operation. Now that more attention has been attracted to the subject it is probable that an earlier diagnosis will be made and more successful results will be attained.

NEWCASTLE-ON-TYNE ROYAL INFIRMARY.

A CASE OF HYDATID OF THE LIVER AND SUPPURATING HYDATID OF THE LEFT LUNG.

(Under the care of Mr. RUTHERFORD MORISON.)

THE early diagnosis of the presence of an hydatid cyst in the lung is very difficult, and though exploratory puncture may afford definite information in doubtful cases, yet the danger of rupturing the cyst during the puncturing and of flooding the lungs with the hydatid fluid is by no means small, several fatal cases having been recorded. When the hydatid has given rise to an empyema the treatment is much more simple. The modern method of treating hydatids of the liver by incision after free exposure of the organ gives much more satisfactory results than those obtained by tapping, as it is possible to remove every portion of the parasite and the cavity in the liver is gradually obliterated. For the notes of the case we are indebted to Dr. Henry Fielden, house surgeon.

The patient was a single woman, aged 30 years, who was admitted into the Royal Infirmary, Newcastle-on-Tyne, on March 3rd, 1899, complaining of a swelling on the right side. She stated that in August, 1895, she began to suffer from pain below the right breast and at the top of the right shoulder, increased by deep breathing and by swallowing. The pain on swallowing was so prominent a symptom that her condition was attributed to indigestion. At Christmas of the same year she noticed that the right side was becoming larger and at the same time the pain was more marked than it had been before. She continued going about her housework suffering in this way till August, 1898, when she had a severe attack of pleuritic pain in the left side which was accompanied by a dry cough. For this attack she remained in bed for three days and then got up. She had only been up for three days when while walking along a landing she was seized with a violent, continuous fit of coughing which lasted from 7.30 P.M. to 4.30 A.M. and almost a gallon of muco-purulent material was expectorated. To her medical attendant the case now assumed all the appearances of phthisis and this it was considered to be. This appearance was rendered still more deceptive by the occurrence 12 months previously of hæmoptysis. Until she reached the age of 15 years her parents had a dog living in the house. From the age of 18 years she was maid in a hotel where she was accustomed to eat freely of green vegetables. On admission she had the appearance of a patient suffering from phthisis. She had a cough and expectorated a good deal of muco-purulent material. Respiratory movements were much freer on the right than on the left side, especially at the base, and the base of the right chest bulged. Percussion gave a resonant note all over the chest except over an area of about the size of the palm of the hand below the scapula on the left side, where there was a great loss of resonance but not absolute dulness. The breath sounds were rather harsh on the right side. At the left base behind the breath sounds were feeble and were accompanied by bubbling râles. The heart sounds were normal. There was a large swelling in the right hypochondrium which made the ribs bulge forward and moved with respiration. The swelling felt elastic and fairly tense. On percussion it was possible to obtain a "hydatid thrill." The liver dulness was increased. A diagnosis of hydatid of the liver was made.

An operation was performed on March 9th. Under chloroform a transverse incision was made from the right rectus in front to the quadratus lumborum behind and the liver was freely exposed. An exploring syringe was then introduced into the liver and a clear fluid like hydatid contents was drawn off. The liver was then incised, the cyst was opened, and the contents of the cyst, about half a gallon of fluid and daughter cysts, escaped. By the aid of lithotomy forceps, sponges, and washing the whole of the remainder of the cyst wall was removed. No pus was discovered. A gauze drain and a tube were then introduced into the cavity and the abdominal wound was closed except behind where the tube and gauze were left projecting into the loin. For some time the temperature remained elevated and the cough was extremely troublesome. On the 25th she expectorated some muco-purulent material containing "grape skins." The base of the left chest was examined and was found to present the physical signs of an empyema. An exploring needle was inserted on the 29th and pus was drawn off. On the same day chloroform was administered and portions of the seventh and eighth ribs were removed, and the collection of pus in the lung was cut into, when a large number of cysts escaped. A gauze drain and tube were inserted and she had no further bad symptoms. The cough almost entirely ceased. She was discharged on May 4th; she had regained perfect health and is now in a housemaid's situation.

[1] Transactions of the Royal Medical and Chirurgical Society, 1899, vol. lxxxii., p. 41. (This paper contains a full bibliography.)
[2] Transactions of the Pathological Society of London, 1899, vol. l., p. 98.
[3] New York Medical Journal, vol. lxvi., p. 726.
[4] Deutsche Medicinische Wochenschrift, 1898, Band xxxviii.
[5] Brit. Med. Jour., 1898, vol. i., p. 1070.
[6] New York Medical Record, 1898, vol. liv., p. 253.
[7] Ibid., p. 257.
[8] Münchener Medicinische Wochenschrift, November, 1899, and Brit. Med. Jour., Epitome, 1900, vol. i., p. 89.
[9] Transactions of the Pathological Society of London, 1899, vol. l., p. 86.
[10] THE LANCET, Dec. 2nd, 1899, p. 1511.
[11] Archives of Pediatrics, 1900, p. 241.
[12] Scottish Medical and Surgical Journal, June, 1897.

Medical Societies.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Untoward Results following Abdominal and Pelvic Surgery and the Means to Prevent them.

A MEETING of this society was held on July 13th at Buxton, Dr. W. J. SMYLY (the President) being in the chair, a number of the Fellows of the society and their lady friends being previously hospitably entertained. The scientific work of the meeting took place in the Town Hall, where Mr. J. E. HARRISON, vice-chairman of the Buxton Urban District Council, delivered an address of welcome, which was acknowledged by the PRESIDENT.

Mr. CHRISTOPHER MARTIN (Birmingham) showed a specimen of Ruptured Cornual Pregnancy.

Mr. CHARLES RYALL showed a specimen of Necrosis of the Cervical Stump following Supra-Vaginal Hysterectomy.

Mr. E. STANMORE BISHOP (Manchester) introduced a discussion on Untoward Results following Abdominal and Pelvic Surgery, and the Means to Prevent them. He said that defective results after abdominal or pelvic work reacted upon future cases to the detriment of the reputation of the operation itself, and deterred other patients from resorting to operation in time to receive effective treatment. The type of operation which Mr. Bishop selected for discussion was that of hysterectomy for fibro-myoma. The defective results treated of were as follows: 1. Fatality, which was due most often to delay and next to sepsis. In connexion with this Mr. Bishop spoke of the advisability of early purgation and gave reasons for this and explained the rationale of its action and the methods of operation. 2. Ventral hernia; the percentage of occurrence was given and explanations offered for its occurrence, with the reasons for adopting suture in layers and the use of celloidin. 3. Intestinal and omental adhesions, which showed the need for perfect re-formation of the peritoneal potential cavity. 4. Vaginal prolapse; reasons were given for the closure of the pelvic peritoneum and the dangers of non-closure were pointed out. 5. Persistent sinuses, in connexion with which Mr. Bishop explained the preparation of the ligatures and the use of the drainage-tube. 6. Other defective results.

Dr. HEYWOOD SMITH remarked that he thought that subperitoneal hysterectomy was safer than panhysterectomy. The risk of ventral hernia could be minimised by making the incision not through the linea alba but an inch to one or the other side.

Mr. CHRISTOPHER MARTIN (Birmingham), in contrasting the various methods of hysterectomy, said that he failed to see what good the cervix could do after the rest of the uterus had been removed. The objection that the removal of the cervix weakened the vaginal vault and predisposed to prolapse was, he believed, a purely theoretical one. He had never seen such a result after panhysterectomy. Referring to the question of ventral hernia he said that he was at one time much opposed to the use of buried sutures, but since adopting the late Mr. Greig Smith's suggestion of boiling chromicised catgut in xylol or absolute alcohol he had not had any stitch abscesses and he thought that the plan of sewing up in three layers was the best.

Dr. MACNAUGHTON-JONES pointed out that the same rules hold good in gynæcological as in other branches of surgery, and he agreed with Mr. Bishop that cases requiring operation should be dealt with as soon as possible. He was quite satisfied with the three-layer method of sewing up; he never had any trouble with buried sutures and he had had only two cases of hernia following operation. The form of operation for hysterectomy that he preferred was the supra-vaginal.

Dr. E. T. DAVIES (Liverpool) said that in cases of fibroids where there were no symptoms it was very difficult to know whether to advise operation or not. He had had one case under observation for six or seven years and the patient had had no inconvenience from the tumour except from the æsthetic point of view. His preference was for Baer's operation, but he did not think that the stump of the cervix was of any importance in maintaining the vaginal vault, for no inconvenience was observed in cases where the uterus was completely removed by the vagina for cancer. Malignant degeneration of the stump appeared to him somewhat of a bugbear; he had read of the occurrence but had never seen a case.

Mr. CHARLES RYALL observed that hernia was due in some cases to the use of drainage through the abdominal wall and he had never adopted this plan without regretting it. The best way to drain was through the pouch of Douglas or by Muscatello's plan. Stitch abscesses were in some cases unavoidable when the intestine had been opened, for the fingers were then liable to become infected and, similarly, the abdominal wound might become infected with malignant disease if such a growth were allowed to come in contact with the abdominal wall during removal.

Dr. ROBERT BELL (Glasgow) considered that the danger of opening the abdomen was due entirely to sepsis; but it was only when the septic matter was in a condition for absorption that sepsis could occur. The view that sepsis could occur from bowel infection appeared to him to be entirely theoretical; if that view were correct why should not infection result from constipation? The number of cases of hernia following abdominal section was appalling—he was not speaking from his own experience for he had had only one case himself. To prevent it the first thing was to close the peritoneum carefully; the operator could then take proper time to secure the fascia and arrest all bleeding. By this means suppuration did not occur, and if healing took place by first intention there would be no subsequent hernia.

Mr. J. W. DRAPER (Huddersfield) said that in the cases of fibroid that had been under his observation in general practice (about 15) the patients had not been subjected to myomectomy. In one case the ovaries had been removed; in another, a case of small pedunculated fibroid producing pressure symptoms, the tumour had been removed. Of these patients none had died from the disease and most of them had passed the menopause. On the whole he believed that they had enjoyed a better life, in spite of the lumps which they carried about inside them, than they would have done if they had been operated upon; but these cases required watching.

The PRESIDENT said that his experience had been very different from that of the previous speaker. He had seen a large myoma forced down into the vagina and suppurating there; he had seen malignant degeneration, sloughing, and hæmorrhages threatening life as the result of not operating in cases of myoma. It was noticeable that in speaking of the risk of hernia everyone seemed best satisfied with the particular method of suture that he had last adopted; also most operators found herniæ in the practice of other men but not in their own. This was because, naturally, the patient did not come back to the man who had given her a hernia. His own plan was to be careful to secure the fascia, using boiled catgut. It did not seem to him that a strong case had been made out for celloidin. If a wound were aseptic it would heal whatever the dressing, and if it were not aseptic it seemed to him that celloidin would be a disadvantage.

Mr. STANMORE BISHOP briefly replied.

EDINBURGH OBSTETRICAL SOCIETY.

The Treatment of Dysmenorrhœa.—Election of Honorary Fellows.

THE special summer meeting of this society was held on July 11th, Dr. R. MILNE MURRAY, President, being in the chair.

Dr. F. W. N. HAULTAIN opened a discussion on The Treatment of Dysmenorrhœa. From a professional standpoint dysmenorrhœa might, he said, be defined as "pain associated with, and dependent on, menstruation of such severity as to materially interfere with the sufferer's performance of her usual duties." As a rule the pain was local and pelvic, but in certain cases it was referred to the head, the stomach, and to other organs. From the frequent presence of more or less discomfort along with menstruation the lay mind had come to consider pain as a physiological attribute of the function, and that even in an aggravated form the pain was to be borne with resignation, and that it was wrong, even if possible, to attempt amelioration. But pain at the menstrual periods sufficient to interfere with a woman's usual duties was to be considered pathological and was usually due to local abnormal conditions. Practically the causes of dysmenorrhœa might be briefly considered as inflammatory and obstructive, alone

or combined. The inflammatory variety embraced congestive and inflammatory conditions of any of the organs physiologically concerned in the function—the uterus and its appendages. The obstruction necessarily was confined to morbid states of the uterus alone. A rational explanation of the pain in the latter was that the blood which escaped from the capillaries of the uterine mucosa was impeded in its escape from the uterus. This might be by a temporary state of spasm or by a permanent blocking of the uterine canal through flexions, new growths, or developmental stenosis. The obstruction caused retention of blood which might or might not coagulate in the uterine cavity and which stimulated forcible contraction of the organ for its expulsion. When the pain was inflammatory it was due to the vascularity which occurred before menstruation still further congesting the already inflamed tissues; the discomfort was necessarily diminished after the depletion which occurred during the flow. The pain might be menstrual or pre-menstrual or both. The ovarian or tubal dysmenorrhœa was mainly pre-menstrual in its character, the depletion occurring as a result of the flow giving considerable relief. On the other hand, in uterine inflammation, such as endometritis, the pain, though pre-menstrual, might be continued through the period by the contractions of the tender uterus or by the thickened and swollen mucosa offering a block to the easy exit of the menstrual blood. Congested or inflamed ovaries gave rise to both menstrual and pre-menstrual pain. In Dr. Haultain's experience the obstructive or menstrual greatly preponderated over the other—in a proportion of quite ten to one. The treatment of dysmennorrhœa depended on the many different causes and it must be adapted to these causes. If a displacement were present it must be rectified; if a new growth, it must be removed; and if a stenosis, the dimensions of the canal of exit must be enlarged. By far the most common causes of this type were stenosis and flexions, the latter being usually a congenital anteflexion though exceptionally it was a retroflexion. In retro-displacements, replacement and retention in position was the only method to be adopted. In the most common congenital anteflexion with stenosis vaginal supports were practically valueless and uterine stems were dangerous to use, and therefore treatment in these cases consisted in dilatation or incision of the uterine canal to such an extent that mechanical obstruction was removed. Dilatation might be accomplished in two ways, forcibly or gradually. The use of the tent or the forcible dilatation by bougies up to 15 French or 10 Hegar was most efficacious, but in the majority of aggravated cases there was present a coincident endometritis, in which cases curettage with subsequent hot vaginal douching materially assisted in effecting a more rapid and permanent cure. Incision of the canal was not now so frequently adopted as formerly, but in well-marked cases of stenosis it was of much value in establishing a permanent dilatation of the cervical canal. Care should be taken to keep the incision open for 48 hours by packing with iodoform gauze. The treatment of the menstrual variety of dysmenorrhœa by means of drugs was most discouraging, a result to be expected if the cause was a mechanical obstruction. By drugs hope for alleviation of the symptoms only could be entertained. Unfortunately medicinal treatment consisted largely of the use of stimulants and anodynes, both of which were objectionable from their deleterious effect upon the general health and morale of the patient. Many dipsomaniacs and morphomaniacs could trace the origin of their degradation to the comfort given by alcohol and opium during painful menstruation. In inflammatory and congestive forms, particularly those due to ovarian causes, sedatives, such as bromides, gelsemium, camphor, and hydrastis, found most favour, combined with hot applications, hip baths, and counter-irritants. When the ovarian condition was intractable, it was in rare cases found necessary to perform oöphorectomy. This was very exceptional and was only applicable when for special reasons it was imperative that the dysmenorrhœa should be removed. A point of prime importance was the question of the justification of the local treatment of dysmenorrhœa. With regard to married patients there could be no divergence of opinion that local examination and, if necessary, treatment should in all cases be carried out. With unmarried females the lines of conduct were by no means so clear. It was impossible to separate sentiment from duty. Yet sentiment must not be considered in those patients who had to maintain themselves by their own exertions and who were incapacitated for a day or two each month. Their dysmenorrhœa prevented their taking or keeping good situations. With those women who were affluent and did not require to work dysmenorrhœa might only mean a day or two in bed with a hot bottle and the use of anodynes. But if they desired to be cured, then it seemed right to examine them under an anæsthetic and at the same time to be prepared to dilate, replace, or curette the uterus if necessary. Some objected to local treatment as it directed attention to the sexual organs, but being *hors de combat* every month during a menstrual period was surely more potent in the same direction. Another argument was that dysmenorrhœa might improve spontaneously, but so did fissure of the anus, and yet it was treated whenever complained of. Whenever drugs had failed to relieve the dysmenorrhœa then a local examination under an anæsthetic was the correct mode of procedure, carrying out any treatment that might be required.

Dr. H. M. CHURCH considered prevention better than cure and that it was the duty of guardians to be very careful at the commencement of menstrual life in the case of girls who were growing. It often happened in these days of school pressure that the education of the mind was carried on at the expense of the bodily health. This occurred more in city life than in country life and dysmenorrhœa was probably more frequent in city life. It was certainly true that dysmenorrhœa and morbid functional neuroses arising therefrom were more common in the cultured and educated classes than in the comparatively uneducated. This pointed to the desirability of a system of education less straining to the nervous system of the growing girl than it commonly was in many schools. In school life, with examinations and competitions, there was a more or less continuous excitement and strain. This affected all the secretions of the body both in quantity and quality. In the case of the uterus the disturbance might show itself in dysmenorrhœa, probably due, as Dr. Berry Hart had pointed out, to the deficient secretion from the cervix of that mucus which was believed to keep the blood of menstruation from coagulating. This would result in clotting of the menstrual blood and in the occurrence of spasmodic pain to expel it, and perhaps would be accompanied with sickness and retching. In order to prevent trouble Dr. Church recommended two or three days' rest on the sofa at menstrual periods, or if there was pain complete rest in bed where it could possibly be carried out. He referred specially to rheumatism of the uterus as a cause of pain in some cases; and if it attacked the fibrous tissue at the os internum it might lead to anteflexion. Salicylate of soda generally gave relief. In cases of dysmenorrhœa he recommended judicious cycling or gentle horse-back exercise between the periods.

Professor KYNOCH (Dundee) thought that it was important to remark that dysmenorrhœa was a symptom indicative of disease, uterine or extra-uterine or both. In young girls he did not think it was advisable to resort to any local treatment without a prolonged trial of constitutional remedies. With regard to local treatment his experience of dilatation was that rapid dilatation was not very satisfactory. These patients came back in a very short time, and dilatation was necessary again. He had now entirely given up the rapid method, using a tupelo tent which he left in for 12 hours, replacing it again for two subsequent days and plugging the uterus in the intervals with sterilised gauze. This method was more tedious but the results were more permanent, and he had not seen any bad effects from septic trouble. With regard to dysmenorrhœa due to extra-uterine affections, commonly occurring after a pregnancy, douching was very effective. But it must not be carried out in a sitting posture, which was practically useless, and the water must be hot enough to have a beneficial effect on the inflammatory processes. This temperature, as a rule, could not be borne, as the water produced so much pain on flowing over the skin as to make the patient cry out with pain. An instrument introduced by Stratz he had found very useful in allowing water at any temperature to be applied to the vagina, the return flow being prevented from touching the skin. If that failed he had had satisfactory results, and some unsatisfactory results, by opening the abdomen from the vagina and breaking down adhesions, and if necessary inspecting and treating the ovaries, &c. He had very little experience in the removal of the ovaries for this trouble. In two cases under observation just now where the ovaries had been removed for pain there

had been no improvement whatever. He would reserve removal for cases of defective development of the uterus associated with atresic conditions. In other conditions he preferred the vaginal route to the abdominal route and had obtained quite satisfactory results.

Dr. JAMES FOULIS referred to the large number of causes of dysmenorrhœa and considered that uterine treatment should only be carried out when the uterus was proved to be the cause of the pain. The question of morale always came up in the local treatment of girls, and examination was only justifiable when all ordinary remedies had failed. Many girls got well without treatment; marriage often cured them. He specially referred to the use of iodide of potassium as of great service in treating painful menstruations, giving it for several days before the period. The ovaries were often the seat of the dysmenorrhœa, and yet considerable disease of the ovary might be present without pain. Even large tumours of both ovaries might be present and yet menstruation might occur without pain. He believed that it was often ignorance of the true cause of the pain which led operators to remove the ovaries in one case and to leave them in another. Many cases had been operated upon injudiciously.

Dr. JOHN CONNEL (Peebles) had seen many cases of dysmenorrhœa even under conditions of healthy country life. He desired to emphasise the opinion that local examination should be the very last thing to be thought of in the unmarried. He knew of dozens of young women who had suffered severely and had got well somehow. He believed that the introduction of the bicycle had had more to do with the removal of painful menstruation than any other remedy he had heard of in late years. Constipation was a very common cause of dysmenorrhœa and it was often overlooked by parents in attending to the health of their daughters. As regards remedies he deprecated the use of alcohol in any shape or form; he had often found it to be the case that female drunkards had been prescribed alcohol for painful menses when they were young girls. Recently he found a young married woman being given three half-cupfuls of whisky by her relatives at her menses; she was practically drunk when he saw her. Whatever was given for dysmenorrhœa alcohol should be avoided.

Dr. J. M. MUNRO KERR (Glasgow) considered dysmenorrhœa as a symptom which was at present called a disease owing to the lesion causing it being obscure or hidden. These cases would gradually disappear so that there would be as little justification in making this diagnosis as at present there was of diagnosing "menorrhagia." The disease "membranous dysmenorrhœa" should be taken out of this class and properly spoken of as "endometritis exfoliativa menstrualis." In an analysis of 60 cases he had found an abnormally small uterus in three, stenosis of the cervix in six, and pathological anteflexion in 16. As regards stenosis it was very slight, and it was a question whether it was the cause of the pain. In treatment he favoured gradual dilatation by Hegar's dilators. No doubt in the majority of the cases the pain returned in four or five months, but it was not very trying to have the operation repeated. Electricity had occasionally been attended with good results. He had not found bleeding very successful. He had tried iodide of potassium and salicylate of sodium, but the only drugs which he had found of any benefit were antipyrin and phenacetin. He agreed with the remarks made about the use of the bicycle.

Dr. A. H. F. BARBOUR considered that operative treatment in this condition depended on the amount of the patient's suffering, and this was difficult to estimate. It depended largely on the up-bringing of the patient whether she thought a great deal about herself and magnified her ailments and suffering. If trained to think more about others and to work for them the patient did not suffer so much. In judging of the amount of pain attention should be kept on two factors—the stimulus to the peripheral end of the nerve and the irritability of the sensory nerve-centres. One of the largest benefits ever done to gynæcology had been done by Dr. Weir Mitchell, who benefited these cases so much by feeding and improving the central nervous system. He disagreed with Dr. Haultain with regard to the various operations for these cases, believing strongly in medical treatment and attention to diet at least for a few months. A course of arsenic helped very much and antipyrin could be given at the periods.

Dr. JAMES RITCHIE did not believe in local examination until every other reasonable means of treatment had been exhausted. Many cases were due to a low type of inflammatory condition and yielded to douching and ichthyol inunction, and he had known these means to suffice in cases where removal of the ovaries had been advised. The treatment of anæmia and rheumatism often relieved the dysmenorrhœa. As regards the pathology of the condition he considered that there was a periodical flushing of the pelvic organs every month and that the nervous system and vasomotor nerves had a wonderful influence over the amount, so that if the person were ill there was much more likelihood of excessive flushing from excessive dilatation of the blood-vessels. There were certain organs of which we were not conscious in a condition of health but which when they became slightly over-congested immediately became painful. In the treatment of these cases tonics were of advantage.

Dr. HOLMES (Chicago) did not believe in the mechanical theory of obstruction, as the blood that could flow through a capillary could surely pass the internal os with a diameter larger than a capillary. If clotting were present the case was altered. The amount of pain suffered depended on the amount of innervation of the uterus. He had attended a woman who never had any pain with her menses and who passed through her labour entirely without pain until there was distension of the vulva. The uterus in this case was faultily innervated; on the other hand, in dysmenorrhœa there might be excessive innervation. In the States gynæcological practice had fallen off; this was due to the fact that among American girls cycling was exceedingly common and tennis and golf also were cultivated.

Dr. J. W. BALLANTYNE considered it necessary to treat dysmenorrhœa completely till it was cured, not partially and then tell the patient nothing more ought to be done. Constipation was a very frequent cause of the trouble. The more correctly the cause was diagnosed the more successful the treatment would be. With the consent of the patient and the parents this ought to be made in every case and the proper treatment ought then to be applied; otherwise they failed in their duty.

The PRESIDENT specially referred to the appalling results that sometimes arose from the administration of alcohol to young women during painful menstruation. Local examination under an anæsthetic he considered necessary when other means failed. He did not believe that any damage could be done to a girl's feelings by an examination under chloroform at all comparable to the constant dread and anxiety with which the patient must look forward to those monthly recurring attacks. He had known many women to express the greatest gratitude for a comparatively slight operation—an amount of gratitude that might seem unreasonable unless they put themselves in their position.

Dr. HAULTAIN replied.

Professor Sänger of Prague and Professor Fehling of Halle were elected, after ballot, Honorary Fellows of the society.

Reviews and Notices of Books.

Reports from the Laboratory of the Royal College of Physicians of Edinburgh. Vol. VII. Edited by Sir JOHN BATTY TUKE, M.D. Edin., and D. NOEL PATON, M.D. Edin. Edinburgh: Oliver and Boyd. 1900.

THE present volume of these reports is considerably larger than its precedessors, probably for the reason that it is composed not of articles appearing here for the first time as in previous years, but of reprints of work which, though emanating from this laboratory, have seen the light first elsewhere. This change is perhaps the natural outcome of the multiplicity of medical publications at the present time and the not unnatural desire of writers and workers that their results shall be made public both as widely and as soon as possible. Though necessarily less interesting than fresh matter, the periodical collection of work done in individual laboratories and schools has many advantages.

The papers before us are collected into four groups according as they are physiological, anatomical, pathological, or pharmacological. The physiological section contains the great bulk of the material and serves as a monument to the energy and successful industry of Dr. Noel Paton, the superintendent of the laboratory. Both the most

important and, at this time of the year when, like everyone else, the medical man's "fancy lightly turns to thoughts" of his yearly holiday, the most interesting articles are the 18 papers dealing with Investigations on the Life History of the Salmon in Fresh Water. The first 17 of these constituted a report made to the Fishery Board for Scotland in 1898. Among the many interesting points decided in this report it appears that salmon migrate into rivers not from an urgent impulse to spawn, for their genitalia may be found in all stages of development, but because the fish tend to return to what was their original habitat after accumulating the necessary amount of food. Though they take a fly, salmon never really feed in fresh water; there is a peculiar degenerative change in the stomach and intestine of salmon during their stay in fresh water which shows that the organs are for the time functionless. Salmon return to the sea to get food, which is stored up in the body for use during their long fast in fresh water. During the stay in the sea an enormous accumulation or storage of fat takes place in the muscles; this is subsequently utilised to supply the fat of the growing genitals or is used up by the muscles.

Dr. James Dunlop's report on prison dietaries presented to the Prison Commission in Scotland is a complete and laborious piece of work, and contains as an appendix notes on the prison dietaries of other countries. Among the other varied papers that are to be found in this report reference should be made to a valuable series of articles on animal pigments by Miss Newbigin, and to further papers inspired and in part contributed by Dr. Noel Paton.

Encyclopædia Medica. Under the general direction of CHALMERS WATSON, M.B. Edin. Vol. IV.: Foot to Hernia. Edinburgh: William Green and Sons. 1900. Pp. 534.

THE fourth volume of this extensive undertaking appears well up to its promised time and contains a number of authoritative articles written by recognised experts. Thus the editor is to be congratulated on the success that has attended his efforts in obtaining the services of Mr. Mayo Robson as a contributor on Diseases of the Gall-Bladder and Bile-ducts, of Dr. Dawson Williams on Glandular Fever, of Dr. David Newman on Hæmaturia, and of Dr. Graham Steell on Diseases of the Myocardium and Endocardium. It is impossible even to refer to all the articles, but it is only right to draw attention to some of the more notable. Dr. G. F. Still, who is well known in connexion with his careful pathological work on diseases of children, has wisely been chosen to write on the Gastro-intestinal Disorders of Infancy and has admirably justified his title thereto. Dr. A. E. Garrod's name is so rightly associated with modern knowledge on urinary pigments that it is satisfactory to find that he is responsible for the articles on Hæmoglobinuria and Hæmatoporphyrinuria. The heart is fully treated in this volume and an extremely careful and accurate contribution on its pathology is provided by Dr. T. N. Kelynack, who is associated with his former teacher and present colleague, Dr. Graham Steell, in the valuable section on diseases of the myocardium and endocardium. Lastly, while congratulating Dr. Watson on his success in an editorial capacity, we must compliment him on his admirable contribution on the important subject of Gout.

Annual and Analytical Encyclopædia of Practical Medicine. By CHARLES E. DE M. SAJOUS, M.D. Vol. V.: Methyl-blue to Rabies. Philadelphia, New York, and Chicago: The F. A. Davis Company. 1900. Pp. 662.

THE present instalment of this useful book of reference bears the date of October, 1899, and contains, in addition to a succinct account of the subjects treated, references to the literature of the three years 1896–97–98. Each article is complete in itself, and though it embodies, does not confine itself to, the advances of comparatively recent years. In these days of specialism the present volume must have been a laborious one to bring out, for it includes many specialties—otology, laryngology, neurology, obstetrics, ophthalmology, pediatrics, &c., in addition to subjects classed under general medicine and surgery. The printing and general appearance of the work are fully up to the standard of the preceding volumes, and, like them, volume V. will serve as a useful source of reference.

Progressive Medicine. Vol. I., March, 1900. Edited by HOBART AMORY HARE, M.D., assisted by C. A. HOLDER, M.D. London: Henry Kimpton. 1900. Pp. 428. Price 12*s.* 6*d.*

THIS is the first volume of the second year of Dr. Hare's summary of current medical literature, and is planned to provide the busy practitioner with an account, not of everything that has been written, but of those contributions that really mark an advance and are worthy of his time and attention.

In the surgery of the head, neck, and chest there is a useful *résumé* of the operative treatment of tuberculous disease of the lung. The next section, on infectious disease, including acute rheumatism and pneumonia, under the care of Dr. F. A. Packard, contains a coloured plate of Koplik's spots on the buccal or labial mucous membrane—the pathognomonic sign of measles. Dr. Blackadder has put together a very readable and interesting account of the recent work in diseases of children, while the account of the last year's advance in pathology by Dr. Ludvig Hektoen covers a great deal of ground and contains a large amount of interesting information. The volume closes with two reports on the Progress of Laryngology and Rhinology by Dr. Logan Turner of Edinburgh, and on Otology by Dr. Randolph of the Johns Hopkins University, Baltimore. In conclusion, the editor may be congratulated on the continued success of this useful medical quarterly.

LIBRARY TABLE.

The Standard Intermediate-School Dictionary of the English Language. Designed to give the Orthography, Pronunciation, Meaning, and Etymology of over 38,000 Words and Phrases in the Speech and Literature of the English-Speaking Peoples. With 800 Pictorial Illustrations. Abridged from the Funk and Wagnalls Standard Dictionary of the English Language by JAMES C. FERNALD, Editor of the Students' Standard Dictionary; English Synonyms, Antonyms, and Prepositions; The Spaniard in History, &c. London: Funk and Wagnalls Company. Price 4*s.*—This dictionary is certainly in many ways a remarkably good one. It is not, of course, satisfactory in every way, as, for instance, in the definition of the word "camel," although a good illustration is given of the Bactrian or two-humped camel of Asia no mention is made of the fact that the African variety has but one hump. This variety is given under the word "dromedary." Again, under the word "spider" we find the following: "An insect-like creature that spins a thread and makes webs to catch its prey." We cannot agree that a spider is an insect-like creature, neither do all spiders make webs to catch their prey, as the definition would probably convey to one who did not know. On the whole, however, the book will be found very useful and we are glad to see that in the illustrations of animals the amount of reduction is given.

For Britain's Soldiers. By RUDYARD KIPLING, S. R. CROCKETT, Sir WALTER BESANT, and others. Edited by C. J. CUTCLIFFE HYNE. London: Methuen and Co. 1900. Pp. 315. Price 6*s.*—Detailed criticism is out of place with regard to a book like this one, for all the stories were written by their respective authors as a contribution to the war fund, while the publishers are giving all the profits for the same object. But we may say that all

the stories are eminently readable and some are remarkably good. Mr. Rudyard Kipling introduces us to the son of the immortal Estreekin Sahib whom we all admired in the "Mark of the Beast." Adam is, indeed, his father's son, and one to be proud of. Sir Walter Besant supplies an interesting little study in psychology and Mr. A. E. W. Mason gives us as creepy a story as ever was written. The art of horrifying by the use of the indefinite is not within everyone's power, but Mr. Mason's account of the ride through that dreadful ravine ranks with the closing scenes in Lefanu's "Watcher," with that awful scene in "Dr. Jekyll and Mr. Hyde," where the butler and Mr. Urmson stood outside the locked door, and with the nameless horror of Miss Violet Hunt's "Story of Mrs. Arne." The book is one for holiday-makers to read.

JOURNALS.

Caledonian Medical Journal.—In the July number Mr. Alexander Macdonald of Inverness concludes his articles on the Ethnology of the Scottish Gael, the first of which was noticed in THE LANCET of April 21st (p. 1139). About the sixth century there were three principal kingdoms in Scotland—namely, the Pictish kingdom on both sides of the Grampians; the kingdom of Strathclyde, occupying Mid-South Scotland; and the kingdom of the Scots (who had come over from Ireland) in the south-west. The Picts were, he believes, an early offshoot northwards of Britain's (i.e., England's) earlier settlers who not improbably came into Scotland when another section of the same people migrated into Ireland. A few centuries later the Scottish Gaels might be resolved into two nearly equipotent races—(1) the Brito-Scottic, or early Celt, of dark hair, dark eyes, dusky skin, and small limbs; and (2) the fair or xanthous Celt, of fair or flaxen hair, blue or light-grey eyes, clear skin, and large limbs. In conclusion Mr. Macdonald describes at considerable length the facial characteristics of the modern Highlanders, classifying their features as "Ibero-Celtic," "Germano-Celtic," and "Scandinavian Celtic."

Dublin Journal of Medical Sciences.—The original communications in the July number are on Epidemic Cerebro-Spinal Meningitis, by Dr. H. C. Drury; on Epidemic Cerebro-Spinal Meningitis in Dublin, by Dr. A. R. Parsons; and on the Symptoms or Phenomena formerly known as Croup, by Mr. Langford Symes.

New Inventions.

AN APPLIANCE FOR DEODORISING ESCAPING SEWER GAS.

THE disgusting emanations which escape from fresh air drain inlets or from sewer ventilators, whether from the gratings in the roads or from shafts against buildings, are a constant source of annoyance and very often also of ill-health. Several attempts have been made, with more or less success, to render these aereal effluents innocuous. The latest addition to these contrivances has just been submitted to us by the inventors, Messrs. Bostel of 73, Ebury-street, S.W. It consists of a metal box about four inches square which fits over the inlet pipe having a grid on one side. Internally the box contains a glass dish filled with some non-corrosive disinfectant. For this purpose pine oil is to be recommended, for in addition to its pleasant smell this oil does undoubtedly absorb oxygen which it gives up again in contact with foul gases, thus destroying their noxious and unpleasant character. Behind the face of the grid is a screen composed of a number of small woollen wicks the lower ends of which rest in the disinfectant which ascends the wicks and keeps them loaded by capillary force. The air passing in or out through the grid travels through the screen and comes into intimate contact with the disinfectant, and thus the foul emanations are cleansed. The idea is certainly ingenious and so long as the apparatus is attended to its object will be gained. Every part is easily accessible, so that no difficulty need be experienced in keeping it in order. A small apparatus constructed on a similar principle is made for the diffusion of a volatile disinfectant in the air of the water-closet or other places where unpleasant smells are in evidence. The apparatus is inexpensive, is in use in our offices and elsewhere, and has given every satisfaction. It certainly appears to provide a much needed accessory to our systems of sewer ventilation both on the domestic and the large scale.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE:

A LAST WORD.

THE Thirteenth International Congress of Medicine will be held at Paris from August 2nd to 9th inclusive.

HOW TO BECOME A MEMBER.

Every duly qualified medical man wishing to become a member of the Congress must send to the offices of the Congress at 21, rue de l'Ecole de Medécine, (1) his name, Christian name, and qualifications; (2) his address; (3) his subscription of 25 francs; and (4) a note showing to which section he wishes to be inscribed as belonging. Names can be sent in up to the date of opening of the Congress, but in order to obtain railway facilities they had better be sent in as soon as possible.

PROGRAMME OF THE CONGRESS.

The Congress will sit every day except on Sunday, August 5th, and hold either general meetings or sectional meetings.

A. *General meetings.*—These meetings will be three in number and will unite all sections of the Congress. They will be devoted to the customary addresses and to the passing of the usual votes. (No one can deliver an address at a general meeting unless he has been previously invited to do so by the Executive Committee.)

B. *Sectional meetings.*—These meetings will be held every day. They will be devoted to the reading of papers and to discussions thereupon. Any member can take part in any of the work of any section whatever be the one to which he shall have been formally allotted.

C. *Visits to hospital and laboratories.*—Some sections have organised visits to the above establishments for certain days and at certain times. But in addition to these corporate visits members of the Congress are at liberty to visit any hospital or laboratory which they may choose.

Fêtes.—We have already given a list of the fêtes to be held during the Congress in our issue of July 7th, p. 34.

The *railway arrangements* for British members were published in our issue of July 14th, p. 127.

THE GENERAL MEETINGS.

So far the arrangements are as follows:—

At the *first general meeting* to be held on August 2nd at 2 P.M. in the Salle des Fêtes de l'Exposition, with the President of the Republic in the chair, the following addresses will be delivered:—Official addresses: (1) address by the President of the Congress; (2) report of the General Secretary of the Congress; and (3) addresses by the delegate members of foreign Governments. Scientific addresses: (1) address on Traumatism and Infection, by Professor Virchow; and (2) address on Experimental Therapeutics as a New and Fertile Method for Physiological Research, by Professor Pavlov.

The *second general meeting* will be held on August 6th at 2 P.M. in the large theatre of the Sorbonne, when the following papers will be read:—Professor Baccelli, On the Treatment of Tetanus by Hypodermic Injections of Carbolic Acid; Professor Sir J. Burdon Sanderson, Some Pathological Problems of To-day; Professor Jacobi, Medicine and Medical Men in the United States; and Professor Albert, On the Architecture of Bone in Man and in Animals.

The *third general meeting* will be held on August 9th at 2 P.M. in the large theatre of the Sorbonne, and the business will be as follows: award of the triennial prize founded in 1897 and given by the city of Moscow; announcement of the place of meeting and the names of the officers of the Fourteenth International Medical Congress; and declaration of the closing of the Congress.

THE LANCET.

LONDON: SATURDAY, JULY 28, 1900.

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

IN March, 1800, the Royal College of Surgeons of England received from GEORGE III. its first charter and during the present week the College has been celebrating the hundredth anniversary of its foundation. The history of the granting of the Charter and of the College during these 100 years is not without interest.

Towards the end of the eighteenth century the old Company of Surgeons came to a somewhat inglorious end through the illegal action of part of its governing body, and an attempt to reconstitute it by an Act of Parliament in 1797 was thrown out at its last stage; but three years later the Royal College of Surgeons was established by a Royal Charter. To it was intrusted the care and maintenance of JOHN HUNTER'S museum. The members of the Council under this Charter of 1800 were elected for life and filled any vacancies which might occur in that body by coöptation and by such a method of election it cannot be supposed that a very efficient governing body would be obtained. The museum and library were not utilised as they deserved. The museum for many years was uncatalogued and was open to the Members only during four months of the year, and then only for four hours each day. To the library the Members of the College were not admitted at all. These were only a few of the evils under which the College laboured. Reform in some measure gradually took place and the rights of the Members were recognised to a slightly greater extent; but it was felt that while the constitution of the College remained unaltered no thorough improvement could be effected. At last, after years of discussion and of debate, the Government decided to make the Council an elected body, but it was thought undesirable to confer the franchise on the whole body of Members, and therefore it was decided to create a new body of Fellows, to whom should be intrusted the right to elect members of the Council. Members of the College were to attain to the higher rank of Fellows by examinations of increased severity, but the first Fellows were all elected to that dignity from the general body of Members. It is under this constitution that the College at present exist and that it has merits cannot be denied. The number of Fellows has greatly increased, so that they now exceed 1200, but even at the present day the constitution of the College is oligarchical and the government is even narrower than it appears, for many of the acts of the College, which should be the work of the Fellows at least, if not of the Members, such as the election of the President and the appointment of the representative on the General Medical Council, are performed by the Council itself. The stream of reform in the College, however, still flows on, if slowly. Year by year greater concessions are granted to the Fellows and the Members. The museum is now open for nearly the whole year and for many hours a day. Every year at a general meeting of the Fellows and Members the Council presents a statement of the work done during the past year, and although these meetings have no legislative or executive power, yet their very existence forms a tacit acknowledgment of the right of the Members to a share in the body corporate. The tone also of the Council is changing and we may look forward with confidence to seeing at no distant date the Members allowed a part in the government of the College. Brief though this sketch of the history of the College may be, yet it will serve to show that substantial progress has been made in converting the institution set up in 1800 into a College of Surgeons founded on a broad basis of justice to all the constituents of the body corporate. Of the many other internecine conflicts that have occurred it is unnecessary now to speak. Suffice it to say that the original *non possumus* attitude of the Council is passing away. Slowly and reluctantly it yields to the steady pressure of modern thought and feeling.

Whatever opinion may be held as to many of the acts performed during its corporate life—and few indeed will be found willing at the present day to support all the actions of the Council during the early years of the century—all will agree that the Royal College of Surgeons of England is a most important element in surgical education and examination in this country. Although it is only one out of 22 examining bodies in the British Isles which have the power of conferring a licence to practice, yet it is probable that there is no body which exceeds it in beneficial influence on surgical knowledge at the present day. In two respects it is practically unequalled.

In the first place the unrivalled museum is a collection of which any institution might be proud. It is founded on the specimens prepared by JOHN HUNTER at an enormous expense. These were bought by the Government for £15,000 at HUNTER'S death and they were given into the custody of the Royal College of Surgeons. The collection has been greatly increased so that the preparations at present exceed by many times the original number. They include specimens connected with normal human anatomy and with pathology, anthropology, and zoology. There is also a very elaborate series of specimens illustrating physiology. It may safely be said that there is no other museum like it in the whole world.

The library also, though perhaps not quite so peerless as the museum, contains an exceedingly good and extensive collection of books connected with medicine and the allied sciences.

The work of the College in surgical education has been great in the past; it may well be much greater in the future. Let the Council make such arrangements as shall utilise to the full all the teaching power of the museum and the library; let there be established in addition to the few lectures given now to scanty audiences series of lectures on special branches of surgery, anatomy, and zoology, to be illustrated by the specimens from the museum. In this way the teaching power of the College could be greatly increased in addition, and not in opposition, to the ordinary lectures of the medical schools of London.

On the occasion of the centenary celebrations honorary diplomas have been conferred on the PRINCE OF WALES,

the Marquis of SALISBURY, the Earl of ROSEBERY, and many eminent men of this country and from abroad, and for this purpose a special supplementary Charter was obtained.

Although on many occasions we have felt it to be our duty to point out faults in the management of the College, yet we confess that in spite of all its faults—and they are many—we are proud of possessing in this metropolis of the world an institution like the Royal College of Surgeons of England.

THE starting-point of the wide discussion of the pathology of the nervous system presented to us in Dr. MOTT'S lectures[1] is the nerve-cell, the central nutritional element of the neuron. The peculiar granules revealed in its substance by basic staining agents, the method of NISSL, he regards as revealed, but not actually produced, by the influence of the hardening process. When the cells have been stained during life the granules are invisible, but this only shows that the hardening agent has increased the contrast between tissues that present a chemical and functional difference during life which is augmented by the process to which they are subjected after death. These Nissl granules are of great pathological importance on account of the changes they present in many conditions. They seem to consist of a nucleo-proteid substance which is precipitated in hardening, and is regarded as lying between the nerve fibrils which pass through the cell; it seems to be a protoplasmic substance intimately related to the nucleus of the cell and to its vital function. A change in the appearance of these granules and their coalescence attend most important functional alterations, and when they unite, so as to fill the cell with a mass homogeneously coloured, the conducting fibrillæ are apparently so far damaged as to be no longer capable of function.

The investigations of WALLER not only revealed the dependence of the nutrition of the nerve-fibres on the cells from which they proceed, but, as Dr. MOTT shows, he distinctly anticipated the conception of the functional units which is the essence of the neuron theory. Later research has shown that the section of the axis-cylinder has an upward influence on the cell, although far slower and slighter than that on the peripheral part of the nerve. This upward influence was, indeed, observed as a late result of amputation by Dr. W. H. DICKINSON long before the modern means of discerning the early and slighter changes in the nerve-cells were available. These changes are remarkable. After experimental division of the nerve the protoplasmic granules which stain so readily no longer remain distinct and the nucleus is displaced towards the periphery of the cells. A similar change is observed in cases of peripheral neuritis in which the axis-cylinder perishes at a distance from the cell. If recovery is possible the cell increases in size, the staining material resumes a more normal aspect, and the nucleus regains its central position. Ultimately the normal aspect returns after the nerve fibre has regenerated. The enlargement of the cell is regarded as evidence of physiological activity connected with the increased trophic energy. If the damage to the nerve is too severe to be recovered from, slow progressive changes occur in the proximal part of the fibre, with diminution of the myelin, and ultimately changes in the axis-cylinder and the alterations in the nerve-cell, instead of diminishing, progress to atrophy.

The slighter but definite changes in the nerve-cells when the nerve-fibre recovers have an interesting practical application which it was perhaps beyond Dr. MOTT'S province to notice. After recovery from pure peripheral inflammation such as that of the facial nerve, which causes the common form of facial paralysis, a remarkable over-action invariably ensues, in consequence of which there is undue tonic contraction of the muscles, sometimes accompanied by clonic contractions, and an associated over-action between the upper and lower parts of the face. It has been recognised that this must be ascribed to a morbid state of the nucleus, secondary in some way to the disease of the nerve trunk. The observed changes in the cells are important in this connexion. The associated over-action is, however, of muscles too distant to be explained by the changes in the individual cells, but the dendrons which convey the impulses to the cells must share the disorder of nutrition of the latter, and we are thus able to perceive a possible mechanism for this peculiar symptom, which has also been observed as a sequel to paralysis of the nerves of the arm.

Dr. MOTT'S observations on the appearances in the nerve-cells of the brain in experimental anæmia, which is soon relieved by the collateral circulation, are of considerable interest. He finds the transient disturbance of function is associated with swelling in the cells, an alteration in the arrangement of the staining Nissl granules, and a displacement of the nucleus towards the periphery of the cell, which may proceed to its extrusion and the death of the cell. The amount of destructive change can be traced by subsequent degeneration of fibres in the spinal cord. The slighter alterations gradually pass away if the circulation is soon enough renewed, and the several degrees of change closely resemble those which have been found in experimental anæmia of the spinal cord, according to its duration and in correspondence with the transient or permanent paralysis of the limbs which results. Another instructive subject is the influence of temperature on the nerve-cells. Their condition in cases of hyperpyrexia in the human subject shows a remarkable correspondence with those which have been found in animals that have been exposed to heat. In proportion to the degree and duration of the temperature there is the same confluence of the Nissl granules above described, indicating a profound alteration in the protoplasmic constitution of the cell. In man, however, the conditions found may be sometimes in part ascribed to the toxic agent which causes the high temperature. The proteid constituents of the nervous matter coagulate at different temperatures, and it has been found that one of the most important of these coagulates at a lower temperature if the exposure is more prolonged. A slighter degree of pyrexia for a longer period causes the same change as a higher degree for a shorter time. Thus, chemical investigations throw some light on the processes observed in disease. Moreover, it has been found that a slight degree of the change induced by hyperthermia is compatible with recovery, as is the

[1] See also leading article, THE LANCET, July 21st, 1900, p. 198.

similar change observed after injury to a nerve, and Dr. MOTT suggests that this may indicate a mode in which the cold bath effects its beneficial influence by reducing the temperature before its effects have continued so long as to preclude recovery.

The influence of toxic agents in causing degeneration of the neuron is perhaps the most important part of the subject from a practical point of view. It is this influence which has led to the wide extension of our knowledge of the mechanism of disease and the causes of symptoms. The toxic agents may be derived from without or may be generated in the body by micro-organisms or by perverted normal processes. The special selective influence of these toxic agents on certain parts of the nervous system is a familiar and special feature of their action of which Dr. MOTT gives many striking illustrations. As he insists, it shows that the tissue of the nerve structures of different function presents some slight modification in constitution which involves a different susceptibility. A striking instance of the difference in selective action which is caused by a most trifling difference in chemical composition is the discovery of Dr. A. WALLER that the difference of a molecule of water determines the action of one poison, veratrin, on the muscle or on the nerve. One of the most striking instances of local influence is afforded by the poison of tetanus. The affinity of this for nervous matter is strikingly shown by the fact that it loses much of its poisonous power if previously made into an emulsion with nerve substance. There is much discrepancy of observation regarding the occurrence of changes in the nerve-cells of the spinal cord after death from the tetanus toxin, a fact which may find its explanation in the chief action of the poison on the extremities of the dendrites.

The study of the chemistry of nerve degeneration has yielded interesting results, some of which are perhaps still open to the criticism which very few are qualified to afford. One practical point on which Dr. MOTT brings forward some weighty evidence is the probability that some of the symptoms in diseases attended with rapid nerve degeneration are due to the toxic influence of the products of the nerve tissues themselves. Choline, which seems to be a normal product of the metabolic changes in the nerve structures and is produced normally in small quantities and passes out of the system probably as urea, is found in general paralysis in amounts large enough to cause its characteristic effect of lowering the blood-pressure. Another product, neurine, which is thought to be sometimes produced in degeneration, has highly toxic qualities. The amount of proteid matter in the cerebro-spinal fluid in general paralysis is three times the normal and experiments seem to show that it would favour an occurrence of congestive stasis and even thrombosis in this disease. Dr. MOTT is inclined to attach much weight to this influence in causing special changes in the frontal and central convolutions because the veins from these ascend into the longitudinal sinus, and even open into it, so that the blood from them enters in a direction opposite to the current in the sinus. But it is to be noted that the current in this part of the sinus is very feeble and the influence of the descending blood in the posterior part is probably sufficient to prevent much tendency to stasis. If the mechanism were really effective, actual thrombosis in the veins of this part should be a more frequent incident in general paralysis than it is.

The close pathological relationship of general paralysis and tabes, which has been widely recognised, and formed the subject of a discussion at the Pathological Society which was opened by Dr. MOTT, is discussed in his fourth lecture. It is more than 20 years ago since WESTPHAL pointed out the frequency with which the posterior columns of the cord are degenerated in general paralysis of the insane, and the frequency with which the symptoms of the two diseases are combined, the frequency with which those of one or the other predominate or are chiefly manifested in the early stage of the disease, has been repeatedly noted. In the cases in which the combined symptoms are present, some special symptoms characteristic of tabes may occur in general paralysis when pronounced tabetic symptoms are absent. Of this Dr. MOTT gives many striking illustrations. The occurrence of loss of the reflex action of the iris to light has been frequently observed in general paralysis, and some instances are given of perforating ulcer of the foot and of tabetic arthropathy in this disease. In many of the combined cases in which the symptoms of tabes lead the way, these continue slight, remaining in the "pre-ataxic" stage after the mental affection has developed. The lecturer has had a unique experience of juvenile general paralysis and finds it associated with congenital syphilis just as juvenile tabes is known to be. He regards the two diseases—tabes and general paralysis—as really one, affecting sometimes the neurons which associate different parts of the central and frontal convolutions and in others the neurons of the posterior ganglia of the cord. The only objection to this which can be taken depends on the conception attached to the word "disease" and on the importance to be given to distinctive symptoms presented by a similar process in different regions.

There is, of course, a very large amount of assumption in Dr. MOTT'S lectures, and its quantitative estimation is a task for which very few can present the requisite knowledge. This does not lessen their value, because a careful reader can discern where the process comes in. Suggestion is precious if only it is taken as it should be—as an indication of the direction in which to look for truth. The field of science which he has ploughed with remarkable skill is in the most advanced region into which pathological knowledge has penetrated. It is certain that his lectures, fruitful as they are, will have far more prolific results from the investigations to which they will give rise.

But their admirable character and the manifest extent to which they are dependent on the opportunity and facilities afforded by the arrangement of the London County Council excite in us one regret. We should like to see the therapeutics of insanity investigated in a manner equally thorough and equally scientific under the same auspices. At present individual symptoms are relieved and all available external circumstances are combined to facilitate recovery, but how seldom is any systematic effort made to influence the course of disease by medicinal treatment. It is regarded as useless, and the belief that it is so is the cause of the absence of effort. The experience of many physicians outside

asylums testifies to the fact that even in general paralysis wisely ordered medicinal treatment is not seldom strikingly beneficial, but we hear little of attempts thus to influence the disease in asylums. The lectures of Dr. MOTT contain abundant evidence of the influence of certain definite substances of known chemical composition in causing disease. There is sufficient evidence also that drugs of definite composition may be employed to relieve or cure disease. We confess that we should be glad to hear that the London County Council has ordered a wing of one of its asylums to be set apart for cases, carefully selected, each one of which should be subjected to systematic treatment by suitable chemical agents, the results of which should be closely and persistently observed, recorded, and ultimately reported for the general good. No doubt most alienists will regard the suggestion as visionary, but we do not doubt that many of our readers who have had opportunities of observation will agree with us that the results would not improbably justify its adoption.

ALL members of the medical profession in this country must feel desirous of seeing the matters in dispute between the Council of the British Medical Association and a large section of the members of the Association amicably settled. Even the most advanced members of this section would disclaim any wish to weaken the power of the Association or to diminish its numbers. But the difference of opinion between the Council and those who succeeded in defeating it at the special meeting in Exeter Hall on July 18th is considerable and this fact must be faced. It does not seem to us that matters are incapable of adjustment if a little moderation on both sides be observed and clear ideas be kept in the ascendant as to the nature and the objects of the Association. The general meeting at Exeter Hall had an importance which general meetings of the Association, and conspicuously the general meetings of the annual congress, have not often had. It had the importance of numbers, coming in this respect nearer to what a general meeting of an association with 17,000 members or more should be. Comparatively small numbers always assemble at general meetings of the profession to discuss alleged grievances—a fact which shows that after all we are a profession and not a trade and that scientific and professional questions have a charm for us that ethical and social questions have not. At the annual meetings of the Association it is difficult to get a general meeting together with a larger attendance than 50 or 60. Dr. J. R. THOMSON, the chairman of the Council, says that 30 is a good average attendance for these general meetings. But at the Exeter Hall meeting last week there was an attendance of 270 or more when the Council failed to obtain the requisite majority of three-fourths for the adoption of the new Articles of Association.

We need not here enter into all the details of difference between the Council and those who defeated it, but it would be foolish to make light of the difference or to neglect any reasonable means of removing it. The essence of the difference is that the Council think it best for the Association that the management and control of the business and affairs of the Association, including the disposition and expenditure of its funds, should rest with the Council, while the majority of the members present at the Exeter Hall meeting consider that the individual members of the Association acting through general meetings should have more power. The Council at the Exeter Hall meeting submitted a new set of regulations embodying their views and the thirty-fifth clause of these new articles[1] is the one round which the chief contest rages. This clause gives to the Council the important powers to which we have alluded, vesting the whole business conduct and pecuniary discretion of the Association in the Council practically without appeal. It is very natural that the members should wish for more powers, but it is obvious that these can only be exercised mediately. 17,000 men cannot all govern an association. Some means must be found of easily ascertaining the views of the majority of the members and of securing for them complete expression in the Council. The difficulty is to ascertain what the real majority of members actually think. A mere general meeting does not necessarily help much towards finding this out. As we have seen, these meetings are generally scantily attended, and are not unfrequently monopolised by a few louder voices. Of one thing we are certain. To make the Council mere delegates, every councillor being pledged to vote in accordance with the views of his constituency, would be an unsatisfactory way of governing the Association. Men who have to give the last judgment on a question of importance should be in a position to hear all sides of it and to decide accordingly. For a member to issue a post-card to the Council with a cut-and-dried deliverance on a difficult question and for this deliverance to bind the executive of an association with 17,000 members would be an easy and flattering way of governing so far as the member is concerned, but not one that would be likely to conduce to the moral, scientific, or financial reputation of the Association.

A few well-attended general meetings at which some plain speaking on both sides might be advisable, would do much to effect a reconciliation of view between the Council and the members. It will probably be found that the best way of increasing the attendance at general meetings and their authority will be to hold them separately from the annual meeting at some convenient centre. The Ipswich meeting will have a great advantage in following so closely on the discussion at Exeter Hall, and it is to be hoped that all parties will come together with a disposition to find a *modus vivendi* which, while securing respect for the opinion of members of the Association, will leave the chief control over its business and expenditure with the Council. There is no derogation from the function of members in leaving such control with the Council so long as members have due control over the election of the Council, any more than it detracts from the English constitution that the House of Commons has control over the public purse. The number of the Council exceeds that of the average general meeting, and it is an elected body representing more or less all the members. Such a body cannot be called an autocracy or

[1] See Brit. Med. Jour., July 7th, p. 54, et seq.

an irresponsible junto. It will not conduce to the stability and influence of the Association to lessen the responsibilities of the Council or to make it too easy for a small number of members to tamper from time to time with its regulations and by-laws. And as long as general meetings are so sparsely attended their views must be regarded as the views of a small number.

THE First International Congress on Medical Ethics or Deontology commenced its sittings in Paris on Monday, July 23rd, and comes to an end to-day, Saturday, July 28th, thus overlapping the Congress of the Medical Press and impinging upon the great International Congress of Medicine. The plethora of congresses arranged to take place in Paris during the end of July and the beginning of August should have led to larger attendances for the view that the medical man interested in any one of them, finding himself in Paris, would inevitably attend them all, was a probable one. As a matter of fact, however, a great many medical men, especially English medical men, have been frightened away by the fear of finding Paris over-full of the medical world. In England other abstentions have been due to the fact that the British Medical Association meets at Ipswich during the first week in August and also to a widespread feeling that the attitude of France, especially of Paris, is so inimical to England that the Englishman is better away from the beautiful city of pleasure. We trust that even if the attendance be a little sparser than was expected the proceedings at the Congress of Deontology will be thoroughly successful, for the work that it proposes to do lies very near our heart. It is impossible that a body of earnest men, attending either as delegates from ethical bodies or on account of their own individual work in ethical fields, can deliberate carefully upon the important practical questions comprised under the phrase "deontology" without some good accruing to the medical profession. We are aware that the different customs of different nations no less than the various ways of regarding social problems of all sorts preclude any idea of an international code of medical ethics being established; but medical men of all nations will be benefited by learning what situations are created in other countries than their own by hospital abuse, by quackery, and by lay exploitation. On p. 275 of our present issue will be found a report from our special correspondent of the proceedings at the First International Congress on Medical Ethics, and the success that has already attended the formation of medical unions in Austria and Belgium should encourage those members of the British medical profession who have made practical attempts in this country to the same end.

Annotations.

"Ne quid nimis."

THE PATHOLOGY OF INSOLATION.

AT a recent meeting of the New York Academy of Medicine Dr. Ira van Gieson read a paper on sunstroke, a subject which has just now a special importance. The pathology of this affection was still unknown. The symptoms and manifestations had interesting resemblances to those of poisoning by snake venom, while the loss of consciousness and the convulsive and tetanoid seizures brought it into relationship with the coma of diabetes and uræmia in particular. Among the pathological theories two occupied a prominent place. The caloric theory stated that the symptoms were due to the direct action of excessive heat on the body, and important facts illustrating or confirming this view were furnished by the experimental investigations of Goldscheider and Flatau, Ewing, and others, who had found certain characteristic (destructive) lesions in the cerebral and spinal nerve-cells of animals submitted to artificial hyperthermia which ended fatally with symptoms resembling those of sunstroke. Dr. van Gieson points out that these changes might be secondary to changes in the blood brought about by exposure to the excessive heat to which these animals were subjected. The toxic or autotoxic theory sought to trace a toxic agent which circulating in the blood acted on the nerve-centres as a poison. He stated that his investigations and experiments at the Pathological Institute in New York during the epidemic of sunstroke in 1896 convinced him that the disease was due to an acute toxæmia originating somewhere in the body and acting violently on the nervous system, particularly on the cells which governed the heart and controlled the vaso-motor apparatus. The delirium, convulsions, opisthotonos, and mental derangement could be partly explained as the outcome of such a poisoning of the nerve cells by an agency of autogenous origin. In cases which resulted in recovery within a few hours there was probably very little degeneration of the ganglion cells. Between this grade and that in which the cells were permanently damaged there were probably many intermediate conditions. "The source of the poison, as well as its relation to the cessation of perspiration prior to and during the attack, were unknown. The sudden onset of the disease favoured the autotoxic theory." Experiments on animals made by Dr. P. A. Levene showed that the blood of patients suffering from insolation contained a poison the virulence of which was as great as that of some snake poisons and in some respects resembled their action. The urine of convalescent patients when injected into the circulation of rabbits was found to produce decidedly toxic results, and injections of blood serum taken from two patients gave prompt and decisive results. The two classes of animals which perspired most—viz., human beings and horses—were the ones which showed the most marked classical symptoms of sunstroke. Probably the pathogenesis of sunstroke could be formulated somewhat as follows. The exciting cause in the form of excessive external heat induced a change in the blood the nature of which was unknown. As a result of this an angio-paresis resulted, this being probably caused by a paralysis of the vaso-constrictor nerves due to the toxic action of the altered blood. The cessation of perspiration in the subject of sunstroke and the accumulation of carbonic oxide in the blood were concomitant with the angio-paresis. With the angio-paresis and the accompanying stasis of blood in the vessels began the hyperpyrexia, for they interfered with the free radiation of heat from the cutaneous surfaces to the extent of 80 or 90 per cent. The toxic condition of the blood acting upon the cerebral nerve-cells produced loss of consciousness. The best working hypothesis, sustained to some extent by the few facts definitely ascertained, pointed to an auto-intoxication of somewhat sudden origin. It was interesting to observe that as in the cases of persons dying from snake-poisoning the post-mortem clotting of the blood was retarded. In the discussion following the reading of the paper Dr. P. A. Levene observed that in sunstroke there were a marked diminution of the urine secreted (ischuria), a decrease in the quantity of urea and other ingredients, and the specific gravity of the urine was lowered. This fact could not be explained by postulating an organic change in

the kidneys, such as parenchymatous nephritis, as no albumin or casts could be detected in the majority of cases. Pfaff of Harvard had recently demonstrated that defibrinated blood influenced the function of the kidneys in a similar manner to that produced by sunstroke. This would suggest that extreme heat produced changes in the blood similar to that produced by defibrination, or probably even rendered the blood less coagulable than normally. The latter fact was observed by some pathologists in cases of sunstroke and would be a corroboration of the autotoxic theory. Dr. George M. Parker, who was a resident physician in hospital at the time of the epidemic of sunstroke in 1896, said that the mortality was 66 per cent., death occurring in from 12 to 36 hours after the onset of the attack. The symptoms were those of an acute general poisoning. Comparatively few cases of sunstroke occurred until the hot weather had lasted for several days. Dr. Charles A. Whiting, referring to the same epidemic, emphasised the statement that the cases were rare during the first two or three days of the hot spell and then began to multiply rapidly.

THE RELATIVE VITIATION OF THE AIR OF ROOMS PRODUCED BY VARIOUS HEATING AND LIGHTING APPLIANCES.

"WHEN a coal fire is in use for heating and the electric light for lighting an inhabited room the air is purer than by any of the other plans tried for heating and lighting." Such is, perhaps, the most important conclusion arrived at in an interesting investigation on this subject by Mr. Francis Jones, F.R.S. Edin., F.C.S. The results are published in a *brochure* which has recently reached us. This conclusion may have been anticipated when the conditions described are considered. But Mr. Jones's investigation has led to other observations which are not less in point of interest as bearing upon the question of the healthy condition of domestic apartments. He finds, for instance, that the air of a room, however heated and lighted, is purest at the floor, less pure three feet above, and most impure at the ceiling, and that when a gas fire is in use for heating and the electric light for lighting the amount of carbon dioxide in the room rises rapidly in the first two or three hours and then remains uniform for three or four hours afterwards. When a coal fire is in use and an ordinary gas-jet is burning the air of the room is purer than when a gas-fire is in use and an ordinary gas-jet burning. The use of a gas cooking-stove with a flue connected with the chimney greatly raises the amount of carbon dioxide in the air of the room. The humidity of the air of the room is much diminished by the use of gas fires. We do not find any reference to the work of THE LANCET upon this subject, but if Mr. Jones will refer to the report of THE LANCET Special Analytical Sanitary Commission published in THE LANCET of Nov. 25th, 1893 (pp. 1326–1336), dealing with gaseous fuel, gas-heating, and gas-cooking appliances, and also to the report of the same commission on the Incandescent System of GAS Lighting, published in THE LANCET of Jan. 5th, 1895 (pp. 51–55), he will see that some of the conclusions there arrived at are in harmony with his own, and he will find also other results of equal interest in connexion with this subject. Mr. Jones, however, has made a useful departure by employing permanganate of potassium for the estimation of impurities over and above carbonic acid, which has no effect upon permanganate. Oddly enough, although the permanganate tests determine different impurities from those of the carbon dioxide tests there is a remarkable agreement between the two sets of experiments. Thus when the carbon dioxide is low the permanganate is only slightly affected; when it is high the permanganate is greatly altered. The question remains as to what the concomitant impurity is. The results are so parallel as to suggest a product of combustion produced uniformly with the carbonic acid. May this not be due to the sulphur ever present, though in small quantity, in coal gas? It should be remarked that weak solutions of permanganate of potassium undergo deterioration in a pure atmosphere, and this raises a doubt as to whether the method is reliable. Still, the results certainly show a remarkable uniformity. We should like to suggest to Mr. Jones that in continuing his interesting experiments he should try the effect of oil lamps. The results would be of interest since oil burns into little else than carbonic acid and water and the question of sulphur would not obtain. The permanganate method adopted by Mr. Jones was that of exposing a solution of permanganate of potassium in a shallow porcelain tray and afterwards estimating by a well-known method the reduction effected in the strength of the permanganate.

THE NOBLE OFFER OF THE MAHARAJAH OF GWALIOR.

IN the House of Commons on the night of July 23rd various questions were asked as to what provision had been made for the care of British wounded in China. Lord George Hamilton in answering said that the Government of India have provided a hospital ship and were preparing to convert three transports into hospital ships. The American hospital ship *Maine* had also been placed at the disposition of Her Majesty's Government, and he begged to express the gratitude of the country to those who had provided and furnished this ship. He was able to inform the House that his Highness the Maharajah of Gwalior had offered to equip fully a hospital ship for China at the expense of 20 lakhs of rupees. This princely offer was made by the Maharajah on behalf of himself, his mother, and his wife, in testimony of their loyalty to the Queen-Empress. This statement was naturally received with loud cheers. At the present exchange 20 lakhs of rupees represents, we suppose, something between £120,000 and £130,000, a gift which is indeed worthy the tradition of Oriental munificence. The century is closing amid stress and trouble of every kind, but never perhaps before have the various items composing the British Empire been so united in their loyalty to the Sovereign. If feudalism has passed away there yet remains the old feeling of faith owed to the head of the body politic, and from the lowliest trooper who is serving his Sovereign to the great native Princes of India there is but the one idea of faithful service.

MEDICAL EXCURSION TO FRENCH MINERAL WATER RESORTS.

OUR Paris correspondent has already announced the forthcoming excursion and we now give some further details. The next Voyage d'Études aux Eaux Minérales Françaises will last from Sept. 2nd to 15th and will be taken up with visits to localities in the south-west of France, including Luchon, Capvern, Bagnères de Bigorre, Argelès, Baréges, Saint Sauveur, Cauterets, Pau, Eaux Bonnes, Eaux Chaudes, Saint Christau, Salies de Béarn, Biarritz, Cambo, Sanatorium d'Hendaye, Dax, and Arcachon. For the similar excursion held in 1899 the locality selected was Central France and Auvergne. The party will consist exclusively of medical men and medical students, who may be of any nationality. The scientific part of the programme has been entrusted to Dr. Landouzy, Professor of Therapeutics in the Paris Faculty, who has arranged for the holding of discussions in different places on the therapeutic applications of mineral water. Luchon will be the starting-point of the expedition, and all the French railways will carry foreign medical men at half the ordinary rates both to Luchon from the place at which they enter France, and also on their homeward journey from Arcachon to the frontier station

where they first arrived. For the trip from Luchon to Arcachon an inclusive charge of 300 francs (£12) will be made to cover all expenses of railway travelling (in special trains), carriage drives, hotels, food, conveyance of luggage, and gratuities. Every information may be obtained from Dr. Carron de la Carrière, 2, Rue Lincoln, Paris, by whom the excursion has been organised. Names of those intending to join the party will be received up to August 15th.

HÆMORRHAGIC EFFUSIONS INTO THE PLEURAL AND PERITONEAL CAVITIES (PLEURO-PERITONITIS) FROM ALCOHOLISM.

INFLAMMATORY effusions occupying simultaneously the pleural and peritoneal cavities are usually due to cancer or tubercle. The following case related by M. Fernet at the meeting of the Société Médicale des Hôpitaux of Paris on June 22nd is remarkable in that neither of these diseases was present, and, further, in that the effusions were hæmorrhagic, a circumstance which is sometimes the result of tuberculous, but usually of cancerous, infection. A man, aged 50 years, entered hospital with intense dyspnœa and mental confusion. He was evidently addicted to alcohol. His illness was of several years' duration. He first had alternating diarrhœa and constipation. Then, two years before, he noticed that his abdomen was enlarging and he felt pains in the right side of the chest. For several months his condition remained stationary, but seven or eight weeks previously to his admission it became suddenly aggravated and he then felt increasing oppression. On examination a large pleural effusion extending nearly to the clavicle was found on the left side. The heart was displaced and pulsated just inside the right nipple. There was a considerable effusion in the abdominal cavity. The lower border of the liver extended below the ribs for a distance of two or three fingers' breadth. There was diarrhœa and the urine contained a trace of albumin. To relieve the dyspnœa puncture was decided upon. Thoracentesis gave issue to dark sero-sanguineous fluid the flow of which was arrested when one and a half litres (42 ounces) had been withdrawn. The patient was relieved and pulmonary resonance and murmur returned in the upper part of the affected side. He was put upon a milk diet. Later abdominal puncture was performed, which gave exit to two litres of fluid similar to that which had been withdrawn from the pleural cavity. Numerous red corpuscles were observed in the fluid. No evidence of cancer or tuberculosis could be found. 550 cubic centimetres of urine containing 16·9 grammes of urea were excreted in the 24 hours. Thoracentesis was performed a second time and one and a quarter litres of fluid were removed which appeared completely to empty the pleural sac. Ten days later, however, it was again full. A third operation gave exit to one and a half litres of similar fluid. The patient became worse: at intervals he had delirium and periods of complete mental cloudiness; the respiration was irregular and of the Cheyne-Stokes type. These symptoms were attributed to uræmia. The renal permeability was tested by the administration of methylene blue. The excretion lasted for five days and was therefore much delayed. He died from uræmia. At the necropsy sero-sanguineous fluid was found in the peritoneal cavity. The intestines were glued together by thin and fragile lymph, indicating recent inflammation. The intestinal peritoneum was cyanosed and blackish in parts, as if ecchymosed. The question arose whether oozing of blood had not taken place and given to the effused fluid its sanguineous character. The liver was enveloped in a whitish fibrous coat at least a millimetre in thickness. The organ was in the condition of atrophic cirrhosis. The spleen had a fibrous covering similar to that of the liver. The capsules of the kidneys were removed with difficulty and the cortex was sclerosed. The left pleural sac contained sanguineous fluid. The right pleura and the pericardium were everywhere adherent. Evidently there had been inflammation of these membranes. Microscopical examination showed renal and pulmonary cirrhosis. M. Fernet attributed all the lesions to alcoholic irritation. Possibly the sanguineous effusions were produced through the medium of the hepatic and renal cirrhosis and the concomitant vascular changes. The fact that these effusions can result from other causes than cancer or tubercle is the important point shown by the case. In the discussion which followed M. Galliard pointed out that in his work, "Les Hémorragies Pleuro-pulmonaires de la Cirrhose," he had shown that hæmorrhagic pleurisy was not rare in cirrhosis of the liver. In THE LANCET of Nov. 11th, 1899, p. 1286, Dr. G. S. Middleton has recorded a case of hæmorrhagic ascites in cirrhosis of the liver (in an alcoholic subject) and pointed that this complication is practically unrecognised. An annotation on "Primary Hæmorrhagic Effusions into the Pleuræ and Peritoneum"[1] and an article on a case of hæmorrhagic ascites published by Dr. Theodore Fisher[2] may also be compared.

PLAGUE IN TURKEY.

ON July 16th Dr. Vouros, sanitary inspector of Beyrout, telegraphed to Constantinople that he had on that day in company with several military and civilian medical men visited four patients employed at a shop in the centre of the city. The extraction of sesame oil was the business carried on at this place. The ages of the patients were from 12 to 25 years. The youngest had been in bed for four days; he had a bubo of the size of an egg in his axilla and a small bubo in Scarpa's triangle; his temperature was 40·5° C. (105° F.); he suffered from vomiting, headache, and mental vacuity. Of the three other patients one had been in bed for four days and the other two for eight days. All three had inguinal buboes, painful on pressure, non-adherent to the skin, and of moderate size; their temperatures were about 38° or 39° C. They complained of headache, but did not vomit. There were no lesions of the skin of the lower limbs on the same side as the buboes. All the patients were Mahamedans from Lebanon. Three had been working in the same shop for several months, but the fourth only for 12 days. A fifth patient, a male, aged 16 years, had been ill and had recovered; he did not exhibit more than an indurated inguinal bubo. All these cases were suspected to be plague and were isolated, their surroundings being at the same time disinfected. Fluid aspirated from the buboes has been examined microscopically by Dr. Férid-Ibrahim, and culture experiments have been made with rabbits, but positive results have not yet been reported. The Conseil Supérieur de Santé has ordered 10 days' quarantine for arrivals from Beyrout. No fresh case of plague has been registered at Smyrna since July 8th.

SULPHONAL HABIT ENDING FATALLY.

Dr. A. E. Taylor and Dr. J. Sailer have published an interesting case in the volume of "Contributions from the William Pepper Laboratory of Clinical Medicine, University of Pennsylvania," just issued, illustrating a somewhat rare condition resulting from the habit of taking sulphonal. The case was that of a woman, aged 52 years, unmarried, and presenting symptoms of hysteria. On inquiry it was discovered that she had been in the habit of taking sulphonal for some time, the dose being 15 grains per diem. She was informed of the evil results likely to follow the continued use of the drug and she discontinued its use for

[1] THE LANCET, Oct. 14th, 1899, p. 1028.
[2] THE LANCET, Jan. 6th, 1900, p. 17.

some weeks. After this she resumed taking the drug and began speedily to exhibit all the symptoms of sulphonal poisoning—viz., mental confusion, marked insomnia, difficulty of speech, and a peculiar sighing dyspnœa. The urine was tinged a deep pink colour (hæmato-porphyrinuria) and a stiffness and paralysis of both legs soon developed. The control of the sphincters was lost. Cutaneous sensibility was not affected. The paralysis spread rapidly upwards and death resulted from cardiac failure. Spectroscopic examination of both urine and blood disclosed the presence of hæmatoporphyrin. At the necropsy the following conditions were revealed. Fatty degeneration was present in the heart, liver, and kidneys. The spleen was filled with a greenish pigment, both free and within the lymphoid corpuscles, the fibrous trabeculæ were greatly increased in size, and the lymphoid follicles were extremely well developed. Excessive pigmentation was found also in the lymphatic glands of the body and in the lungs. No notable morbid changes could be found in the spinal cord or brain. Cases of sulphonal poisoning are rare, and a case like the above in which the necropsy disclosed lesions of a characteristic nature in the various viscera of the body is rarer still and possesses much importance both from a diagnostic and pathological standpoint. It is interesting to note, however, that hæmatoporphyrinuria—an indication of serious alterations taking place in the blood—from the use of sulphonal is nowadays less frequent than in the earlier days of the use of sulphonal when the drug was not always obtained in a state of purity.

ON THE EXCITABILITY OF NERVOUS MATTER.

DR. AUGUSTUS D. WALLER in his presidential address to the Neurological Society published in the spring number of *Brain* dealt with the subject of the excitability of nervous matter with special reference to the retina. The general argument was that "a sigmoid curve expresses the ratio between physical stimulus and physiological effect as well as between physical stimulus and psychological effect," this being a development of the well-known Weber-Fechner law of physiology. The main argument was developed as follows. A nerve separated from its natural termini, isolated from the rest of the organism, gave no sign of life when excited except an electrical change which could be measured and demonstrated with accuracy by suitable apparatus. The electrical response given forth by a living tissue was one of the most general and most delicate signs of life, and a nerve was "an almost ideal sample of living matter upon which to test the comparative effects of all manner of reagents when the galvanometer was made its organ of expression." Living tissue, inasmuch as it *is* living, is also dying tissue, ceaselessly evolving energy and ceaselessly "restoring" it. This double chemical activity, of which living matter is the centre, manifests itself by actual chemical and structural changes when it is sufficiently intense or prolonged, but its weakest and briefest pulsations are manifested by electrical changes. At the moment of exposure of the retina to light and at the moment of cessation of the light-stimulus characteristic electric changes were present, and these curves of electrical variation could be registered on a photographic plate suitably arranged. A latent period occurs at the "making" of the light-stimulus, "a period of hesitation during which a tug-of-war, so to say, is taking place in the retina between two opposite forces or processes, positive and negative, that for a period counterbalance each other in the circuit." A similar, if less pronounced, opposition of forces occurs at the end of illumination, when the forces cease to act. During the continuance of the light-stimulus, however, the positive force rises and remains the stronger, whereas when the stimulus has ceased the negative force rises into prominence gradually. The reactions in an injured or moribund eyeball are different from those of a fresh eyeball excised with the least amount of injury. In regard to the action of colours Dr. Waller, after referring to the theories of Helmholtz and Young on the one hand and Hering on the other, finds that in all cases "different colours give rise to electrical effects in one direction, though of varying magnitude." To quote an instance, the galvanometric deflections gave for red light four units, for blue nine, for green 12, and for yellow 16. It was further proved that, taking two very weak colour-stimuli conjointly—e.g., red and green—the united effect of both stimuli was always greater than either of the separate effects, and not far short of their sum, and that a retina, subsequently to prolonged green or prolonged red stimulation, exhibits equal fatigue to green and to red stimuli. These experiments refer to the frog's retina. Further, the presence and significance of fatigue in nerves was investigated and Dr. Waller concludes that medullated nerves are practically not liable to fatigue, whereas non-medullated nerves, as shown by experiments conducted by Miss Sowton on the olfactory nerve of the pike, appear to suffer readily from exhaustion and fatigue as muscle does. Dr. Waller concludes from the curves obtained as the results of experiments made with gradually increasing stimuli on retina and nerve that a sigmoid curve represents more faithfully than Weber and Fechner's logarithmic curve the relations of stimulus and sensation. The curve in its early stages rises very slowly, then more rapidly, and, finally, it rises more slowly again. And an apt psychological illustration of this is given by language. In the learning of language we know that the first steps cost much and that acquisition is at first very slow. "Then the upward progress becomes more rapid, successive equal increments of energy give successive increasing increments of knowledge; finally, progress slackens, and the last steps towards perfection cost energy far in excess of those taken within the range of mediocrity." Dr. Waller's studies throw an interesting light upon the problem of nervous development.

MASSAGE AS AN OCCUPATION FOR THE BLIND.

THE occupations which can be undertaken by the blind with any hope or prospect of being remunerative and of enabling them to contribute to their own support are unfortunately few in number. Brush-making, mattress-making, basket-making, bookbinding, and piano-tuning, almost complete the list for the less intelligent; tutorial work is occasionally undertaken, though few can hope to be brilliant professors like Penjou the mathematician or like Saunderson of Cambridge. There is, however, a restricted field open to those who have sufficient ability to qualify themselves for the post of organist. We are informed that a small committee of gentlemen and ladies who are interested in the welfare of the blind have resolved at some cost to themselves to make an effort which they trust will receive the favourable support of the profession to introduce a new industry for those who are so unfortunate as to have lost their sight. It is that of massage. It is said that it has been found by actual experience that massage as performed by blind people can be as efficiently practised as by those who see and that their delicacy of touch and intelligent manipulation have been fully appreciated by those placed under their care. It is proposed, if funds will allow, that rooms should be taken in some central situation under the control of a matron who should be in communication with a certain number of thoroughly educated blind masseurs and masseuses. To these rooms physicians and surgeons could send their patients, or if it were preferred, from this centre, as in the case of other nursing establishments, a male or female blind expert could be sent into the country. The blind are clever in making their way about and it is

not apprehended that any difficulty will be experienced in enabling them to reach their destinations, whilst when once they have made themselves familiar with a house their gentleness, quietness, and cheerfulness would be certain to render them satisfactory temporary inmates. Information in regard to the Institute for Massage by the Blind can be obtained from the honorary secretary, Mr. F. Talfourd Chater, Oxford House, Bethnal-green, E.

ANGINA EPIGLOTTIDEA ANTERIOR.

THE *Albany Medical Annals* for July contains an important paper by Dr. C. F. Theisen on this rare affection. "Angina epiglottidea anterior" was the name given by Michel in 1878 to an inflammatory process involving the anterior surface of the epiglottis, as a rule confined to it, and accompanied by more or less œdema, which is the characteristic feature of the affection. The larynx itself may be affected to a certain extent. The disease may be primary, or secondary to acute inflammation of the tonsils, pharynx, or lingual tonsil. The following cases are described in the present paper. Case 1.—A man, aged 36 years, was seen on the second day of an illness which had supervened while he was in good health. Sitting in a chair, with anxious countenance, he complained of a severe sharp sticking pain at the base of the tongue when he attempted to swallow. Attempts to swallow even a few drops of water brought on severe attacks of choking and coughing. There was pain when he moved his tongue and severe headache and anorexia were present. His voice was clear and there was no dyspnœa. The pharynx was not reddened. The anterior surface of the epiglottis was intensely inflamed, of a uniform bright red colour, and œdematous. The larynx was practically normal. The temperature was 101° F., and the pulse was 110. An iced ichthyol spray, one-half per cent. solution, was used every 20 minutes, and an ice pack was applied round the neck. Ice was also frequently taken. On the next day the inflammation had subsided considerably, but there was still dysphagia. On the fifth day he was practically well, though the inflammation did not entirely disappear for several days more. Case 2.—A woman, aged 40 years, in good health, became restless and feverish and had great pain and choking when she attempted to swallow. There was dyspnœa on lying down which compelled her to sit up. The anterior surface of the epiglottis was reddened and so œdematous that the laryngeal entrance was partly closed. The vocal cords were slightly reddened and there was some swelling of the left ary-epiglottic fold. The temperature was 102° and the pulse was 120. Calomel was given and similar treatment to that employed in the previous case was adopted; later in the day, as breathing was still difficult, free scarification was performed which gave some relief. She was much better on the next day and in a week she felt well, although the epiglottis did not become normal for several days more. After the scarification cultures were taken from the epiglottis which showed mixed infection by the staphylococcus albus and pneumococcus. The reason why an œdematous condition of the anterior surface of the epiglottis does not involve the larynx is anatomical. Hayek has shown that the submucosa of the anterior surface is abundant and that the mucosa is not tightly adherent, while on the laryngeal surface the mucous membrane is tightly adherent. But when the œdema is very great it may extend by way of the thin mucous tissue of the pharyngo-epiglottic ligament to the ary-epiglottic folds. As to the causation, angina epiglottidea anterior may result from injury, such as swallowing irritant fluids or substances, or from the inhalation of pungent vapours. It may be part of a general œdema of the fauces resulting from large doses of iodide of potassium. It may occur during infectious diseases, such as measles, erysipelas, septicæmia, &c. Very often it is an acute primary process.

THE HOLIDAYS AND LOCUM-TENENTS.

THE time of holidays is come—for patients. It is not so easy to see how medical practitioners are to secure their much-needed change. With the majority of medical men—perhaps a larger majority than some of us think—taking a holiday is a rare and difficult matter. We remember once to have met a worthy practitioner in an old town of Surrey who had practised for 40 years and had only once had a holiday—and that was when he had typhoid fever! At the present moment the obstacles are unusual. The abolition of the unqualified assistant and the demand for medical men in the naval and military services and abroad are such that a locum-tenent has become an expensive luxury. There seems to us to be only one way out of the difficulty. Medical men must come to terms amongst themselves. They should meet and arrange to give each other holidays; this has its inconveniences, but they must be faced. Such action on their part will moreover have a good effect on the tendency of locum-tenents to over-rate their services. We are not sorry that they are more appreciated than they used to be. Nothing can be more valuable in its way to a medical practitioner wanting a holiday than to know a gentleman of character and ability to leave behind him as a locum-tenent. It doubles the rest of a holiday to be able to leave his patients in the care of such a friend. And they have not always been adequately appreciated. The danger now, however, is the other way—namely, lest they should expect a rate of remuneration more than general practice will bear. The error will be the sooner corrected if medical men in their own neighbourhood and amongst each other agree on a system of mutual help.

LOCAL ANÆSTHESIA AND NARCOSIS.

DR. CARL LUDWIG SCHLEICH contributes to a recent issue of the *Berliner Klinische Wochenschrift* (No. 13, 1900) a long and valuable article embodying the results of his more recent experiences in local infiltration anæsthesia, a subject previously referred to in these columns.[1] He proclaims that it is coming more and more into general use and must in many instances supersede general anæsthesia where the latter may be attended with danger. Infiltration anæsthesia properly conducted is, according to Dr. Schleich, absolutely without danger, owing to the very small amount of the anæsthetic used locally, and it is particularly indicated in all tumours and neoplasms of the skin and subcutaneous tissues—e.g., fibroma, nævus, angioma, lipoma, in most plastic and superficial operations such as tenotomies, excisions of scar-tissue, ganglion, transplantations, and the suturing of fresh and recent wounds and injuries, and for dermoids, chancroids, and sarcomata. The *modus operandi* is to fill the entire skin and subcutaneous tissue at and around the site of the intended operation with the infiltration fluid and to infiltrate the tissue no more than is necessary. In nervous patients the needle-pricks of the hypodermic syringe may be made painless by the application of ethyl-chloride spray. Major amputations may be performed as well as operations on the abdomen (herniotomy and cœliotomy). In injecting the fluid for operation on boils, carbuncles, or abscesses it is necessary to begin the infiltration on the surrounding healthy and non-inflamed tissue. For operation on the fingers or toes the method practised by Oberst—viz., that a ligature should be tightly applied at the base of the digit, after which injection may be made into the

[1] THE LANCET, April 29th, 1899, p. 1171.

subcutaneous tissue—is recommended. The pressure of the blood in this case causes œdema and aids the infiltration to diffuse readily and evenly throughout the finger in about half a minute. Cocaine and its derivatives, tropococaine and nirvanin, are the drugs most employed. Referring to the subject of narcosis or general anæsthesia Schleich recommends that a special solution as follows be used in cases where general anæsthesia is imperative—viz., ethyl chloride one-half to two parts, chloroform four parts, sulphuric ether 12 parts—and he states that he has used this mixture in about 5000 cases without any bad symptoms resulting. Local anæsthesia has been extensively adopted in amputations, resections, and operations on bones (Rubinstein), in gynæcological operations (Abel), and in ophthalmic operations (Wurdemann), as well as for costal resection, urethrotomy, hydrocele, hæmorrhoids, and fistula, &c. Schleich has in 250 cases used the infiltration method in operating on medical men, and with success. As in other papers on this subject, there is less said about the dangers of local anæsthesia than is perhaps advisable. Even when the obvious dangers of sepsis are omitted, since with due care they can be almost eliminated in hospital work provided their presence is appreciated, there yet remain drawbacks to the use of the infiltration method. The average patient does not go through a severe operation even when rendered analgesic—for analgesia and hardly anæsthesia is obtained in Schleich's method—without considerable shock and nerve prostration. There is always the fear that he is going to be hurt, besides the actual sickening pain when the viscera are being handled, which in some cases produces faintness, even collapse. It must be conceded that, valuable as the method is, it should be used as an adjuvant to, rather than as a supplanter of, general anæsthetics.

PLUMBERS' APPRENTICESHIP.

IN London, and, indeed, in the southern counties generally, the system of apprenticeship in the plumbing trade has been gradually dying out, while the plumbers' ranks, as a rule, have to be recruited from a class of men known as plumbers' mates; now the master plumbers, together with the operatives, have at length recognised the importance of this fact. They are of opinion that it is a system alike injurious to the best interests of the London plumbing trade and to the public health. A joint board has therefore just been formed under the influence of the Worshipful Company of Plumbers consisting of certain elected members of the London Society of Associated Master Plumbers together with representatives from the London lodges of the United Operative Plumbers. The aims of the board are to encourage the taking of apprentices under an agreed form of indenture; to exercise a certain control over the apprentice so as to insure his attendance at a duly approved technical school; to occasionally examine him as to the progress made in practical and theoretical knowledge; and finally to register him in order that information respecting his training and abilities may be readily accessible at any future time. It is, indeed, a most welcome sight to see employers and employed united together both for their own and the public good, while so far as the object to be attained is concerned it is one to be commended. The embryo plumber caught in the first blush of early youth is likely to prove like plastic "clay in the hands of the potter." The conditions, however, existing in the plumbing trade, in the South of England more particularly, are not such as to encourage a revival of the apprenticeship system. The scheme suggests a rather expressive Americanism that "there is no good in whopping a dead nigger," and it is to be feared that the process of natural decay in the existing system has passed beyond the reach of stimulants. Unless a course of instruction can be devised, conducted by an organised body upon lines distinctly different to those at present governing apprentices, the difficulties to be overcome are too great to warrant much hope of success. The future development of the joint board will be watched with interest.

HOUSING OF THE WORKING CLASSES.

A CONFERENCE is to be held by the Sanitary Institute on Monday and Tuesday next, July 30th and 31st, for the purpose of considering the problem of the housing of the working-class population in London and other large towns. In connexion with the Conference an exhibition of plans and models is being arranged in the Parkes Museum, and among the drawings that will be exhibited are those prepared for the London County Council, the Corporations of Liverpool, Manchester, Leeds, and Belfast, the Guinness Trust, the Peabody Trust, the Improved Industrial Dwellings Company, and other public bodies. On Monday the Conference will be presided over by Mr. Melvill Beachcroft, L.C.C., and the subject of discussion will be Unhealthy Areas and Displacement of Town Populations. On the second day Sir Sydney Waterlow will preside and the subject for discussion will be Improved Houses for Town Dwellers and Improved Means of Communication. About 400 delegates have been officially appointed by local authorities to attend the Conference, and in the afternoons visits will be paid to the new buildings being erected by the London County Council on the Millbank site, to the Boundary-street area at Bethnal Green, to the dwellings erected by the Improved Industrial Dwellings Company at Bethnal Green, and to the dwellings erected at Richmond, where the delegates will be received and entertained by the Mayor.

ON THE SIMULATION BY HYSTERIA OF OTHER DISEASES.

DR. ERNEST FUERST of Dantzig has published in the *Deutsche Medicinische Wochenschrift*, No. 14, April, 1900, two very interesting cases illustrative of the above, showing not only the degree and extent to which the clinical signs and symptoms of other diseases may be simulated by hysteria, but the practical importance of such cases as regards prognosis and treatment. The first of these was a unique case of œsophageal spasm following the attempt to pass a tube into the stomach. The patient was a woman, aged 36 years, with no hereditary taint, who had suffered for some weeks from gastric disturbances with pains and vomiting of such a character as to point to the presence of gall-stones. There was no icterus, and morphia failed to relieve the symptoms. The vomiting was on one occasion very troublesome and a tube was passed into the stomach. This being done the stomach contents were duly evacuated, but on attempting to withdraw the tube it was felt to be firmly grasped by the œsophagus, which had apparently passed into a condition of spasm. Finally chloroform was administered and when the œsophageal spasm had been sufficiently relaxed the tube was withdrawn. It was then found that the tip of the tube had got folded on itself, probably owing to the spasmodic obstruction being near the cardiac orifice of the stomach, and this combined with the spasm had rendered its withdrawal difficult. The woman was suspected to be suffering from hysteria and was subjected to hypnotic treatment and suggestion, after a brief course of which she was completely cured. The second case was of importance owing to the positive indications which it gave of phthisis. The case was that of a man, aged 29 years, of healthy family. He suffered from pains in the chest, the sputum was slightly blood-stained and there was a febrile elevation of temperature which was not at first suspected to be of hysterical origin. Careful examination of the sputa failed to show the presence of tubercle bacilli, though the

tuberculin test caused an elevation of temperature to 38·5° C. after five milligrammes were administered, and the patient complained of pain over the left side of the chest. The symptoms complained of were, however, peculiar and led to the suspicion of hysteria. Hence an injection of a few drops of distilled water—supposed by the patient to be tuberculin—was given with the result that the same reactions followed, and on another occasion the mere introduction of the hypodermic needle and its withdrawal without making any injection caused a repetition of the symptoms. The case was regarded, therefore, as one of hysteria, and the temperature was attributed to hysterical fever in that it also oscillated in a characteristic and irregular way. With appropriate care and treatment the patient recovered.

ALCOHOL AND THE TROOPS RETURNED FROM THE WAR.

DAY by day it is announced in the press that the victims of war, whether laid low by wounds or by disease, are returning from the front. Some of them are well enough to be sent to their own homes or to convalescent homes almost at once, and we wish to urge upon everyone coming into contact with these returned warriors the plain fact that knowing a man as a friend or the possession of admiration for a man who has done his duty is no reason for treating him to an overplus of alcoholic drinks. We do not say this because we have an objection to alcohol *per se*, but for any man, and more especially for one who has just recovered from a serious illness, to be filled with a selection of alcoholic drinks, and those, too, in many instances, not of the best quality, is conducive neither to his health nor to his chance of success in civil employment. A mixture, as is very possible, of beer, rum, and "whisky-and-soda" is calculated seriously to disturb the progress of convalescence, in addition to the fact that if a man on sick leave is treated to over-indulgence his resulting state of incapacity would not raise him in the eyes of a possible employer. The Army Temperance Association are issuing leaflets upon the same subject. We have treated the matter in a more practical way, but whether it be looked at from the practical or from the intellectual point of view we hope that the pleasure of the return home of those who have done well by their country will not be marred by their being subjected to either the pathological or the legal penalties of over-indulgence in alcoholic drinks.

TABES DORSALIS IN INFANTS.

TABES dorsalis is a rare disease in infants and the cases recorded in literature amount to six in all—viz., three cases published by Remak, one by Strümpell, one by Mendel, and one by Bloch. Dr. L. Dydynsky gives an interesting account of a seventh case[1]—viz., that of a boy, eight years of age, in whom the tabes had its onset at the age of five years and gave rise to bladder troubles. The patient has since then suffered from incontinence of urine and sometimes from retention of urine. He showed Romberg's symptom while standing, the pupils were of the characteristic Argyll-Robertson type, and Westphal's sign (loss of knee-jerk) was pronounced. There were muscular hypotonia and feebleness but no atrophy or manifest incoördination. He had lightning pains and paræsthesia in the lower limbs, as well as patches of hypoæsthesia and hypoalgesia. The personal history of the patient showed a remarkable freedom from any infectious disease and there was not any direct sign of hereditary syphilis. The family history was as follows. The child's father had had syphilis when a young man, aged 20 years, and was at the time of recording of the child's present illness suffering from incipient tabes with characteristic knee symptoms and pupillary conditions. The child's mother had had five miscarriages before the present child was born. Following him were three other children (infants) who so far appear to be well. Dr. Dydynsky insists on the fact that in all the cases observed of infantile tabes and juvenile tabes (Raymond, Homen) syphilis has been noted in the parents, especially the father. Hereditary syphilis is undoubtedly the cause of infantile tabes dorsalis just as it is also the cause of the characteristic cerebral degeneration which may bring about juvenile general paralysis (Thiry, Alzheimer). It is interesting to note that in nearly all the recorded cases of infantile tabes the symptoms began with bladder troubles and troubles of micturition, after which ocular symptoms followed. Troubles of sensibility of the skin followed next in order of time, whereas ataxia and loss of the power of balancing and walking supervened late or did not appear at all. Considering the syphilitic etiology it is a question whether the prevention of both tabes and general paralysis in juveniles might not be effected were appropriate anti-syphilitic treatment adopted in the case of every infant subject to hereditary syphilis. The question opens up one of the most important departments of preventive medicine.

[1] Abstract from the Russian by A. Raichline in Revue Neurologique, May 30th, 1900.

DENTISTS AND THE COMPANIES BILL.

MR. MORTON SMALE, Dean of the Dental Hospital of London, speaking at the conversazione and prize distribution in the Prince's Room, Piccadilly, on Wednesday night, July 18th, adverted to the effect of the Companies Bill now before Parliament on the profession of dentists. He said that almost every clause of the Dentists Act, 1878, began with the words "A person," from which it might be assumed that the intention was to restrict the practice of dentistry to individuals as apart from companies—in other words, that when a person went to consult Mr. Smith he should not be referred to Mr. Jones. This was a professional rule which had led the Royal College of Physicians of London to go so far as to say that even Fellows of the same College should not practise together. Within a few years of the passing of the Act, however, certain persons formed themselves into companies and proceeded to practise dentistry. While the question of remedying this grievance was under consideration the new Companies Bill was brought before the House of Commons and through the instrumentality of some members of the dental and medical professions two clauses were inserted with a view to prohibiting the practice of medicine, surgery, and dentistry by companies. At the moment when they thought they were secure Mr. Ritchie stated in the Grand Committee which was considering the Bill that he thought that it was necessary to drop the clauses because they were not germane to the subject matter of the Bill. Mr. Smale could not imagine that any Act which dealt with the formation of companies should not have reference to this matter, and he failed to see the potency of Mr. Ritchie's remarks. There was no more appropriate place in which to insert clauses for stopping this disreputable practice than this Bill. Everybody in the House of Commons was agreed that the practice was a disreputable one and it was nonsense to postpone the matter indefinitely. It was a monstrous injustice that dentists after going through a five years' curriculum should have to be met by companies carrying on their profession. We thoroughly agree with every word that Mr. Smale said and so does the whole of the medical and dental professions. But unfortunately the clauses in question were excluded on Tuesday night last

when the Bill was considered in the House of Commons as amended by the Standing Committee.

THE Liverpool School of Tropical Medicine has received a communication from the expedition which was despatched last month to America *en route* for Brazil to the effect that, at the suggestion of Surgeon-General Sternberg, medical chief of the United States Army, the expedition had joined for a short period the official Yellow Fever Expedition which the American Government has just despatched to Cuba.

MR. A. MARMADUKE SHEILD has been elected surgeon to St. George's Hospital in the room of Mr. J. Warrington Haward, who retires on completing 20 years' service on the full staff. Mr. H. S. Pendlebury, who has filled the post of Demonstrator of Anatomy and more recently of Surgical Registrar, has been elected assistant surgeon.

WE regret to announce the death of Mr. W. Storer Bennett, F.R.C.S. Eng., L.D.S., dental surgeon and lecturer on dental surgery to the Middlesex Hospital. Mr. Storer Bennett was lately President of the Odontological Society and stood very high in the esteem of the medical profession. He died at the comparatively early age of 48 years.

Pharmacology and Therapeutics.

DORMIOL.

IN an article published in the *Münchener Medicinische Wochenschrift* of April 3rd Dr. Peters of the Luisenhospital in Aix-la-Chapelle gives a very favourable account of a new hypnotic which he has employed in practice for nine months. This substance, which has been named "dormiol" by its discoverer Dr. Fuchs, is a compound of one molecule of chloral with one molecule of amyl hydrate and is an oily colourless fluid having a specific gravity of 1·24 and an odour like that of camphor. It is manufactured by Kalle and Co. of Biebrich, and is sold by them either in the pure state, or in 10 per cent. aqueous solution, or in gelatine capsules. The patients to whom Dr. Peters gave dormiol were almost without exception kept under observation for some time previously, and in order to counteract the influence of suggestion injections of distilled water were given to some of them before the dormiol. These patients were 45 in number, and their morbid conditions were classified under the following heads: nervous system, 20; lungs, 3; heart, 1; intestines, 1; kidneys, 5; liver, 2; peritoneum, 1; genital organs, 2; bones and muscles, 5; blood, 1; chronic poisoning, 2; convalescence after influenza and scarlet fever, 2. They all took dormiol without repugnance, and some said that it tasted like ammonia or ether. It was given either in the form of a 10 per cent. watery solution mixed with milk or in gelatin capsules containing half a gramme (seven and a half grains). No unpleasant after-effects were ever experienced. In seven of the 45 cases no particular effect was produced, but these patients were also found to be unaffected by trional in gramme doses (15 grains), and by amyl hydrate in doses of from four to six grammes. In 84 per cent. of the cases a more or less deep sleep was induced. As with other hypnotics, the effect was for the most part palliative, but in some instances habitual insomnia was permanently benefited. Dormiol was especially serviceable in insomnia due to functional neuroses. It was also tried in cases of organic disease of the brain and spinal cord and was found useful in all but one. A patient suffering from paralysis agitans in whom the smallest mental excitement brought on insomnia was soon sent to sleep by half-gramme doses of dormiol. Half-gramme doses were usually given to commence with, and on an average the hypnotic effect appeared in from half an hour to an hour. The quantity might be increased to one gramme, but it was seldom necessary to give as much as two grammes. In conclusion, Dr. Peters recommended dormiol on the grounds that it was easy to take, that it was harmless in doses of from half a gramme to two grammes, that it was cheaper than other hypnotics, and that it was at least as serviceable as paraldehyde, amyl hydrate, and trional.

IODALBACID.

Iodalbacid is a preparation of albumin containing 10 per cent. of iodine and is recommended as a therapeutical agent on the ground that in the animal organism it appears to be a much more stable compound of iodine than the alkaline iodides, acting less rapidly than the latter but more continuously, and never with the production of the phenomena of iodism. It is a yellow powder, having hardly any taste or smell, and is not readily soluble in water. It is made by L. W. Gans of Frankfort. The dose is from two to five grammes (from 30 to 75 grains) daily, sometimes for several months in succession, taken either in wafers, or baked in macaroons, or in half-gramme tablets. In the *Wiener Medicinische Wochenschrift* of April 7th Dr. Arthur Briess gives a summary of 25 cases of syphilis treated with it in the clinic of Professor Neumann of Vienna. In the greater number of these cases it acted well, and sometimes with comparative rapidity. In some instances, however, it failed, especially in recent syphilis, and other antisyphilitic remedies had to be resorted to. The patients who recovered under iodalbacid mostly suffered from late relapses, exanthemata, papules on the genitals and mouth, periostitis, and gummata. Two patients in whom iodide of potassium produced cardiac troubles, headache, and skin affections, had none of these symptoms when taking iodalbacid. Professor Neumann's patients had from eight to 12 pastilles of iodalbacid daily, with strict injunctions that they were to be taken only after food. Chemical analysis showed that iodine soon appeared in the urine and saliva.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia of the Fellows was held on July 11th, the President, Dr. W. S. CHURCH, being in the chair.

The PRESIDENT informed the Fellows that he had accepted the invitation made to him as President of the College by the Secretary of State for War to become a member of the commission appointed by the Government to inquire into the condition of the sick and wounded in South Africa. In accordance with the by-laws he nominated Dr. F. W. Pavy to act as President during his absence.

On the motion of the PRESIDENT it was decided to send a congratulatory address to the Royal College of Surgeons of England on the occasion of their approaching centenary celebration.

A communication was received from the Secretary of State for War, asking the advice of the College on a proposal for encouraging the investigation of the nature and cause of dysentery affecting armies in the field and its relationship (if any) to enteric fever.

After some discussion the PRESIDENT was requested to express to the Secretary of State the hearty appreciation of the College of the proposal submitted, and to suggest that in their opinion the end in view would best be attained by appointing a small commission of suitably qualified persons to conduct the inquiry.

A communication was read from the Secretary of the Royal College of Surgeons of England reporting certain proceedings of its Council.

Two Reports were received from the Laboratories Committee.

On the motion of the REGISTRAR By-laws 13 and 28, which were amended in consequence of the re-constitution of the University of London, were re-enacted a second time, and By-law 133 which was amended to make it conformable to the conjoint regulations, was re-enacted for the first time.

NOTIFICATION OF MEASLES AND WHOOPING-COUGH.—The Plymouth Town Council has given notice that the order for the notification of measles and whooping-cough will come into operation on Sept. 1st.

THE FIRST INTERNATIONAL CONGRESS ON MEDICAL ETHICS OR DEONTOLOGY, HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

IN the large white hall of the cream-coloured Palace of Congresses on Monday, July 23rd, rather more than 200 medical men, coming from all parts of the world, met to inaugurate the first international congress of medical men who have gathered together solely for the purpose of discussing how to organise the profession so as to take an active part in the economic struggles of the day. This is not a scientific congress, unless we qualify political economy as a science, but a meeting of militant medical men who are resolved to maintain the highest ethical standard as the rule of their profession and to defend the economical interests of its members. A considerable number of the delegates who are expected were not present, nor was there any need for all to attend, as it was well known that the proceedings would be of a purely formal character. Nevertheless, it was an encouraging gathering. The few speeches delivered were certainly mild in character; it seemed as if the speakers felt they were treading on new ground and were anxious not to appear prematurely boastful. But there was a thoughtful, earnest tone which is probably quite as likely to produce good results. Dr. Théophile Roussel, senator and author of the admirable law for the protection of abandoned children, was honorary president and opened the proceedings by a few almost inaudible words of encouragement. Dr. Lereboullet, the President of the Congress, then delivered a more lengthy discourse in which he first expressed his thanks to all who in France and abroad had helped to render the Congress not only possible but successful and representative. He pointed out that the time was propitious, for the questions at issue had now reached the domain of practical politics. On all sides it was felt that the profession was overcrowded, that medical men worked more and earned less than formerly, and that their position was attacked from many sides. He denounced quacks, the sale of secret medicines, and unprofessional advertising, as contributing, as well as the great societies that organised contract work, to degrade the profession morally and to lower the incomes medical practitioners might legitimately hope to earn. All these evils could only be met by the organisation of strong medical unions for the purpose of defence and of educating the profession to a knowledge of its economical position. As a secondary task the medical unions might strive to establish some form of mutual insurance against accidents, sickness, and old age. In all these matters at every stage the principles of deontology must be brought to bear, namely, the duty of the medical man to the public, to his patients, and to his professional colleagues. Deontology sprang from the soul. It was difficult to define. It followed the principles of equity, it engendered a sense of refinement, it produced harmony, it obliterated strife, and though the most vague it was the most powerful force they possessed. The medical unions, by bringing the prosperous and the struggling together, helped to engender higher feelings, to efface selfishness, and to create a real professional brotherhood.

Honorary presidents selected from each nationality were then elected, and the general secretary of the Congress, Dr. Jules Glover, gave a short account of the origin and scope of the Congress. He expressed his regret that it would take up too much time to read all the letters of sympathy and approval the organisers of the Congress had received. This correspondence would show how warmly and enthusiastically the Congress had been approved by medical men of all nationalities. Under the Congress hall was the exhibition of social economy and now medical men were also beginning to study social economy as it affected their profession. Dr. Glover went on to show how the various phases of this problem had been intrusted to experienced technicians who had gathered together a great store of facts that bore on the points at issue. There was but little eloquence, but little oratory, in these papers which the Congress would be called upon to discuss, but they were essentially practical and full of information. This opinion will doubtless be endorsed by those who read the subjoined summary of some of these reports which I have been able to make from the proofs. After these few speeches the Congress adjourned to the restaurant of the Congress which faces the Congress hall, where light refreshments were served and the delegates indulged in friendly conversation.

MEDICAL MEN AND FRIENDLY SOCIETIES.

Very shortly after nine on Tuesday morning the real business of the Congress began. The delegates met in the large amphitheatre of the École de Médecine. Dr. LEREBOULLET was in the chair and the discussion was opened on Dr. CUYLITS'S paper. This paper, on the Relations of Medical Men with Benefit Societies, which came first on the list of reports presented to the Congress, was written by Dr. Cuylits of Brussels, and it would be difficult to find in Europe anyone with greater practical experience of the subject. Dr. Cuylits is well known to the readers of THE LANCET as the energetic secretary of the Brussels Medical Union during their memorable strike against the Federation of the Benefit Societies of the Belgian capital. Dr. Cuylits commences by going back to the guilds of the Middle Ages which he describes as a rational attempt to organise labour, but the guilds had now been replaced by trades unions and professional unions. The same spirit of organisation, the necessity of association for mutual help and protection, likewise led to the formation of the vast "mutualities," benefit or friendly societies, to provide pensions and medical attendance in times of sickness, accident, or old age. As in all these cases medical care is necessary the medical officer is the foundation-stone on which such organisations rest. But these societies are philanthropic and not commercial undertakings. Therefore in most countries there are special laws in their favour and they sometimes received subscriptions and donations from benevolent persons. This movement is of the utmost importance because it is spreading so rapidly. Thus in Belgium there were 756 benefit or friendly societies in 1895 and in 1899 they had increased to 2928. In the same time the coöperative societies had augmented from 394 to 1297 and several of them had a medical service for their members. Dr. Cuylits estimates that out of the 6,670,000 persons that constitute the population of Belgium close upon 3,000,000 receive medical aid in some form or other and do not pay the usual medical fees. This state of affairs is not stationary; the evil is rapidly increasing. After alluding to similar conditions prevailing in other countries Dr. Cuylits insists that organisation can only be met by counter organisation. If the medical practitioner is to live in selfish isolation, without coming to a common understanding with his colleagues on matters of common interest, he must inevitably fall a prey to the solid organisations brought to bear against him. On the other hand, by organisation medical men may hope ultimately to abolish the contract system. The members of friendly societies, &c., should receive only financial aid when ill, and with the money thus obtained they would be free to call in and pay for the services of the practitioner whom they prefer. Dr. Cuylits proposes, however, that there should be a fixed minimum charge for each consultation given to members of such benefit societies as apply strictly a wage limit. This fee could vary according to the social standing of the members of the society; it would be notified to all practitioners and none would be allowed to accept less. Dr. Cuylits is uncompromising in his opposition to contract work. Let the subscriber make weekly payments not for medical aid but for money allowances when he is ill and with this money he will be able to secure and pay at a fixed rate per consultation any one of the practitioners who have come to terms with his society.

M. GAYRAL, after Dr. Cuylits had concluded amid warm applause, was the first to speak. He declared that he was in favour of reform, though he represented, not the medical profession, but the great friendly societies. He denounced the presence of wealthy members of such societies. They might remain as honorary members, but should not receive the medical aid intended only for the poor.

Mr. ADOLPHE SMITH (London) then suggested verbal modifications to the motions proposed, as the term *vraie* or "true" friendly societies would not be understood by those who had not followed the discussion. At the request of the secretary of the Congress he gave some details of the abuses prevailing in England, which were greeted with loud applause and not a little laughter. When he insisted that

cheap contract work tended to degrade the profession the Congress enthusiastically and unanimously approved.

Dr. VANDAM, President of the Brussels Medical Union, followed and insisted that the medical officers should have a voice in the management of the friendly societies. He denounced the "blacklegs" of the profession and demanded the creation of a representative body possessing sufficient authority to ostracise those medical men who undersold their brothers in the profession. Such an authority would be greater if it were international.

Dr. LASALLE (Bordeaux) explained how it was sought to establish a minimum fee of one franc per consultation and one and a half francs per visit. This effort had failed through the action of the "blacklegs."

Dr. CUYLITS said he had no fear that his meaning would be misunderstood, for Mr. Smith was not only an eloquent and humorous orator, but one of the ablest correspondents of the medical press and would not therefore fail to make his meaning clear.

After a lengthy and at times a somewhat confused discussion the motions which concluded Dr. Cuylits's report were finally adopted with some slight modification and are as follows:—

No. 1.—All genuine friendly societies, that is to say, societies composed exclusively of workers, are entitled to a minimum tariff which in all other circumstances would be incompatible with the dignity of our profession.

No. 2.—The friendly societies will only be allowed to profit by such tariffs if they undertake to accept and to retain as members only such persons as are in poor circumstances.

No. 3.—These tariffs may differ according to the resources of the friendly societies according to local circumstances.

No. 4.—These tariffs shall be established by mutual arrangement between the friendly societies and the medical societies. These tariffs shall be notified to all practitioners, thus leaving each practitioner free toaccept or reject them.

No. 5.—The system of subscribing (contract work) cannot be authorised under any conditions whatsoever, and the members of the friendly societies are free to select the medical attendant they may prefer.

No. 6.—The administrative committees of friendly societies must comprise a medical man as one of the administrators.

The Congress having unanimously passed these resolutions adjourned for lunch.

INTERNATIONAL RECIPROCITY AMONG MEDICAL MEN.

At the afternoon sitting on Tuesday Dr. SCHWALBE of Berlin opened the discussion on the conditions of practice enjoyed by medical men in other than their own country. Some States, notably Denmark, were very hard on foreign practitioners. Great Britain was, comparatively speaking, very lenient, and so also were Bulgaria, Roumania, and Turkey. —Dr. STOEBER protested against the treatment of French doctors in Alsace and Lorraine, and wanted to see an agreement concluded with Germany similar to that which existed with other countries.—Dr. VANDAM alluded to a Bill before the Belgian Parliament based on the principle of reciprocity. The Belgians would grant the right to practise in Belgium to those foreign medical men who came from countries where Belgian medical men were likewise allowed to practise.

The discussion now drifted from the question of general practice to that of frontier practice. This is a question and a grievance that will not have occurred to the English mind as England has no immediate neighbours, but on the Franco-Belgian frontier it often happens that a Belgian practitioner living in Belgium is nearer to a French farm or hamlet than the nearest French practitioner living on French soil. Therefore, especially in emergencies, it is the Belgian medical man who is called to the French patient. Conventions allowing this so-called frontier practice have been agreed upon by the two countries. It is now said that the Belgian medical men carry out not a "frontier practice" but a "penetrating practice," travelling sometimes 15 miles beyond the frontier and passing the residences of one or more French medical men. The Congress, therefore, adopted the following resolution:—

The Congress resolves that the conventions relating to the practice of medicine on the frontiers be modified, and that the distance which medical men may penetrate beyond the frontiers be precisely defined.

HOSPITAL ABUSE.

The next paper, which was by Dr. PAUL THIÉRY, surgeon on the staff of the Paris hospitals, dealt at great length with the question of hospital abuse. The Medical Union of the Parisian practitioners have discussed this matter extensively and published many pamphlets and articles on the subject. The evil—namely, the use of hospitals by those who can afford to pay fees—is increasing so rapidly in most countries that M. Armand Lefèvre declared in the Municipal Council of Paris that in spite of all efforts to the contrary the time would come when bread and medical aid would be given gratuitously to all who applied, and that the time was not far off when the medical practitioner would be a paid functionary of the State. Dr. Thiéry discusses at length the class of persons who are entitled to frequent hospitals and maintains that workmen protected by legislation rendering their employers liable in case of accident have no right to admission in the hospitals. There is no need of charity in such cases, particularly as the employers are generally insured against such risks. Many cases of abuse are cited, notably that of a jockey who was earning £1000 a year and went to the Hôpital de la Pitié to be treated for a sprain; and a lady was able to pay for her journey from America so as to obtain advice at the same hospital. The cashier of a commercial house earning a salary of £800 went to the Hôtel Dieu, and to-day any number of visitors to the Paris Exhibition profit by the opportunity to obtain gratuitous advice at the Paris hospitals. A young lady came from Russia, was operated upon gratuitously at the Hôpital St. Louis, and then went for her convalescence on a journey to Italy. A celebrated singer wanted the hospital surgeons to come to her own house—she did not like to go to the hospital—and yet she strongly objected to pay any fee whatsoever. All classes and conditions of people seem to think that they have the right to be treated for nothing at the hospitals. Dr. Le Blond had proposed that no one should be admitted whose rent was equal to £40 or more per annum. There are about 50,000 births every year in Paris. Out of these 18,000 take place at the public expense, yet it is scarcely likely that one-third of the mothers in Paris are so poor that they cannot pay for a private medical man. If the well-to-do did not so constantly profit by the public charities the genuine poor would receive greater and more efficient help. Medical practitioners too often are themselves to blame, for they readily give letters of recommendation for treatment at the hospital to patients who should be independent of these charitable institutions. Nor is this grievance met by establishing paying wards and such institutions as the Hôpital Dubois, pompously called the Maison Municipale de Santé, which is practically a cheap medical hotel where wealthy patients only pay a part of what they cost. Dr. Thiéry has sent a circular asking questions to the hospitals of 21 important French towns. The answers received all go to show that no real effort is made to prevent abuse, and the institution of paying patients is very widespread, the charges made varying from 2*s*. to 16*s*. per day, yet the physicians and the surgeons receive no fees from these paying patients. At Havre, however, some attempt is made to ascertain what is the financial position of the patients and at Lyons a certificate of poverty is demanded before a consultation is given at the hospitals. Similar inquiries made in the leading capitals of Europe, and notably in London, show that hospital abuse prevails in all directions and in all countries, and the grievance comprises the paying as well as the other patients. The payment is simply a means of soothing the conscience of the patient; he nevertheless remains a recipient of public charity. For instance, the administration estimates the average cost of the maintenance of patients at the Hôtel Dieu of Paris at three francs 65 centimes per day. But the land on which this hospital stands is worth 75,665,000 francs which if divided by the 563 beds the hospital contains means 134,398 francs per bed. At 4 per cent. interest this is equal to 14 francs 75 centimes per bed per day. Adding the cost of maintenance each bed costs 18 francs 40 centimes per day, and this is not all, for there is the cost of the central administration, so that each patient may be said to cost about 20 francs or 16*s*. per day. Now if a well-to-do patient pays five francs a day he is still taking daily about 15 francs out of the public purse, money which the taxpayer pays so as to help the poor. In response to the efforts of Dr. Porson the Paris Municipal Council recently voted that well-to-do patients should not be admitted in the hospitals and that they might only be received in special buildings when they paid sufficient to defray the entire cost of their maintenance without in any way trespassing on the resources at the disposal of the poor. This resolution has not, however, been sanctioned by the Prefect. In conclusion Dr. Thiéry urges that the clerks or porters at the hospitals, instead of merely taking the names and addresses of patients, should make inquiries as to their means of subsistence. A special inspector attached to the poor relief authorities of each district should then make an

inquiry to verify these statements. The patient on his side should be made to sign an agreement by which he undertakes to pay for his treatment if it should be proved that he has misrepresented his financial position. Should such deception be practised a second time by the same person then there should be a possibility of obtaining a conviction entailing a penalty of a fine and even of imprisonment. Unless under well-defined and altogether exceptional circumstances there should be no more paying patients admitted into the public hospitals. It will be seen that this paper deals with very similar grievances to those described as prevalent in England.

Dr. VACHOT, after Dr. Thiéry had concluded, pleaded in favour of the genteel poor, who he thought were quite as much entitled to hospital treatment as the working classes.

Dr. NOIR (Paris) suggested that the outdoor patients should first be treated at the local dispensaries established by the poor relief administration or Assistance Publique. All such medical relief led to inquiries and charitable persons called at the houses of the people. Such visits would be very disagreeable to persons who were in good circumstances and would materially tend to prevent abuse. In this manner also only the more serious cases would be referred to the hospitals. He further thought that students should begin by this practice among the poor and go to the hospitals at a later stage of their studies.—Dr. VANDAM protested against inquiries made as to the financial position of patients and thought that there was not much hospital abuse in Belgium.—A number of Parisian doctors then followed, warmly debating details of hospital practice in Paris, and the foreign delegates became impatient at the purely local character which the debate was assuming. At last Mr. ADOLPHE SMITH strongly protested that this was an International Congress and that a great part of the conclusions of the report only applied to France. He then narrated some incidents of hospital abuse in England showing the total difference of the state of affairs on the English side of the Channel. This was further explained by a paper written by Colonel Montefiore, which gave many statistics and showed that one-third of the London population received medical aid from charitable and Poor-law institutions. At last the conclusions of Dr. Thiéry's paper were set aside as better suited to a French congress, and the Congress adopted a resolution stating that hospitals should be reserved exclusively for the poor, and that local medical unions should strive to enforce this principle in the manner best suited to their respective local circumstances.

The Congress now adjourned to the big hall of the Hôtel des Sociétés Savantes where "a wine" was offered by the Medical Union of Paris and the neighbourhood. The hall was very elegantly decorated with palm trees and the flags of all nations. The greatest cordiality prevailed and it was generally agreed that a very good day's work had been done.

THE ILLEGAL PRACTICE OF MEDICINE.

The Congress continued its sittings on Wednesday morning when Dr. DESCOURT, Professor of Forensic Medicine at the Paris Faculty of Medicine, read a paper on the Illegal Practice of Medicine. He points out that the economical position of medical practitioners is more and more compromised, not only by the increase in the number of practitioners, by the competition of the hospitals, by the sweating proclivities of medical aid associations, and by the sale of largely advertised patent drugs, but also because a large number of unqualified persons illegally practise medicine. In Paris alone he considers that from 15,000 to 20,000 consultations are given daily by others than qualified practitioners. If this continues medical men will in time be compelled to surrender their independence and become mere employés of the State or of large organisations, companies, &c., whose interest it will be to pay their medical officers as little as possible. The law restricting the illegal practice of medicine is not fully applied. The lay population does not take the matter in hand and medical men are too busy and too poor to risk doubtful and expensive legal proceedings. The remedy lies in the constitution of strong medical unions. Such organisations could undertake legal proceedings and in France have done so successfully on several occasions. These trials may cost each member of a medical union a pound or two in the course of a year but they will save him from illegal competition, and both the moral and material gain is far greater than the cost. Some discussion ensued.

GREAT SUCCESS OF MEDICAL ORGANISATION IN HUNGARY.

In regard to the formation of medical unions a most encouraging report was presented by Dr. ERNEST JENDRASSIK of Budapest. It appears that at first it was proposed to form a chamber of medical men on the model of the Chamber of Barristers which was created in 1874. But it was found that such an organisation would place medical practitioners too much under the control of the Minister of the Interior. By law every medical man would be compelled to join the Chamber; he would be protected by the law, but while many duties would be imposed nothing in the constitution of such chambers indicated that anything effective would be done to deal with the economic condition of medical practitioners. Further, the results acquired in Austria and Germany, where such chambers of medical men exist, was not calculated to encourage the Hungarian practitioners. Therefore they resolved to form a free medical union which was entitled the General Medical Association of Hungary. The rules were adopted at a medical congress held in 1897, and these were shown to the Minister of the Interior and approved by the Government. The object of the association is to unite all the medical practitioners into one great corporation so as to protect their moral, social, and material interests. The association is subdivided into local branches which must consist of at least 20 members, with president, secretary, and treasurer elected for three years. The branches enjoy considerable local autonomy, but must of course conform to the general rules. The central, or, as it is called, the Presidential, Council is the link between the branches. This general medical council consists of a president, two vice-presidents, a general secretary, two assistant secretaries, a treasurer, 10 members selected among the practitioners of Budapest, 20 from the provinces, and the presidents of all the branches. As there are actually 74 branches the presidential council now consists of 112 members and is thus a very representative and influential court of appeal. An annual congress of the entire association is held in September each year at Budapest. The weakest point of this organisation is that it cannot compel by law every medical practitioner to join, but though a chamber may force everyone to subscribe it cannot compel them to obey, and unity of action is more important than the multiplicity of subscriptions.

At first some doubts were expressed as to whether the movement would be successful, but when the first branches became sufficiently numerous for it to be possible to issue a monthly publication recording what had been done the great majority of the medical practitioners of Hungary joined. It is now calculated that no less than four-fifths of the medical men in practice have become members of this widespread organisation. This is a tremendous result, achieved in an incredibly short time, and it seems to indicate that a new principle is more readily adopted in a new country than in the older established nationalities. The General Medical Association of Hungary has already collected statistics setting forth the financial position of the practitioners; it has fixed a tariff of charges for medical examinations for insurance companies; it has drawn up a report on all the laws that affect the practice of medicine and their deficiencies and forwarded the same to the members of the Government. Now the association is engaged in striving to fix a minimum fee for medical consultations which shall also govern the payments made for contract work. Finally, a benefit fund has been created to help medical men who are in distress. Members alone are allowed to subscribe to this fund, but they are not compelled to do so. It is a form of mutual insurance. The fundamental purpose of the association is the defence of the economical interests of the medical practitioners and to abolish that form of competition based on "under-cutting"—namely, taking lower fees. Hence the absolute necessity of establishing a minimum fee and bringing the whole power of the association to bear so as to prevent any practitioner accepting less. The fact that four-fifths of the practitioners of Hungary are members of this association is an example that medical men in all countries should take to heart. It is one of the most encouraging statements that have been made to the Congress. No discussion followed.

The Congress then adjourned.

A DEFINITION OF MEDICAL DEONTOLOGY.

Dr. GRASSET, Professor at the Medical Clinic of the Montpellier University, has a very lengthy paper in which he strives to define and explain what is meant by the term "deontology." This is to be read to-morrow (Thursday), but I send its substance for the consideration of your readers. He protests that the word was not created, as Max Simon says, by Deschambre, but had been previously employed by Bentham in 1747, the British jurisconsult to

whom the National Convention decreed the honorary title of French citizen. Bentham's work was entitled "Deontology or the Science of Duty" and was translated into French by Laroche in 1834. The great Cruveilhier, when writing on the duty of the medical practitioner, said that duty is honour; it is the moral life of man and of society; where it is lax degeneration has set it; where it ceases to exist death soon follows. Deschambre said that for medical dignity to be respected the medical man must first be imbued with the sentiment of self-respect. Max Simon insisted that the preliminary step towards medical reform was to reform the medical man, but Dr. Grasset urges that before blaming medical men for not observing the principles of deontology they must first be certain that they are acquainted with those principles, and at the present time the young practitioner finds no book, code, written rule, or guide in such matters. Now deontology has nothing to do with civil or criminal law. Montesquieu said: "There are means to repress crimes; these are legal penalties; but to correct bad manners there only exist better examples." Jules Simon argued that they did their duty simply because it was their duty, and Max Simon that the abstract idea of duty was alone capable of maintaining the medical practitioner at the height of his mission. "Preserve the cult of honour. In its indefinite character it is superior to the written law, it cannot be reasoned with, it can only be felt, it is a religion." It may be said that deontology is one of the highest phases of the moral law and in no profession is a higher moral standard more necessary than in that of medicine. Therefore, from the very first the medical man will not aim at success in the worldly sense. He will first seek to honour his profession by honouring himself; placing himself beyond the possibility of reproach he will pay every deference to his colleagues and be guided by the sentiment of duty and honour, not by the desire of material gain. If the public are to respect medical men the latter must first respect each other, a fact too often obliterated by feelings of jealousy and the spirit of competition. To judge others leniently and to be severe to one's self and to avoid all backbiting is the surest way to win the public respect for the profession. The Medical Union of the Paris medical men has issued a special circular to its members on this subject. It urges them never to criticise the treatment ordered by a colleague. "Let us remember that any malevolent word discredits not only certain doctors but the entire profession."

Dr. Grasset then proceeds to quote a number of rules drawn up by medical societies of different countries against all sorts of cabals or intrigues having for object to attract clients or to advertise some special remedy. Every form of self-advertisement must be strictly prohibited, as also the giving of commissions to agents, interpreters, couriers, &c., so that they may bring clients to some special establishment where a physician is attached. Monfalcon speaks even of ecclesiastics who bring members of their congregations to certain doctors and are paid for doing so, and then there are touts, matrimonial agencies, but above all hotel servants, who all receive commissions for the patients they send. Dr. Brouardel has mentioned dispensing chemists who received as much as 50 per cent. of the fees paid by the patient they had sent to a particular practitioner. This paying of commissions, though greatly opposed at first, has become very prevalent in France, and though, of course, energetically condemned is thought preferable to advertising. Sometimes the grievance is in the contrary sense and it is the practitioner who receives commissions from the chemist whom he recommends to his patients. This sometimes leads to the prescribing of expensive drugs that are not really needed. Again, there are medical men who receive commissions from the proprietors of hydropathic establishments for sending their patients to these places, and practitioners often receive circulars offering such commissions. Then there are medical men who are shareholders of such establishments and have therefore a direct financial interest in sending their patients where they will help to increase the dividends. There is no law to prevent a medical practitioner purchasing shares of a company that exploits some medical mineral springs. But deontology teaches us that the practitioner should be above suspicion, and therefore it should not be possible to say that he had any financial interest whatsoever in the remedies or methods of treatment he prescribes. In a word, though the medical practitioner has the right to claim payment for his services his first object is not to earn money but to acquit himself with dignity and integrity as a member of the medical profession. His first interest is the interest of the profession; his first care is the honour of the profession; the making of money is altogether a secondary matter; if he thinks money is the first object then let him go into trade or finance.

The next important point in medical deontology is the conduct of medical men towards fellow medical men, and especially when treating the same patient or taking each other's duty. On these matters great differences of opinion prevail among medical men themselves. For instance, in a case of acute illness can a medical man consent to continue a treatment which has been commenced by one of his colleagues? Some reply in the negative and others that the patient should have the right to change his medical adviser if he thinks fit. Dr. Grasset argues that in cases of urgency a practitioner may visit his colleague's patient, but should hand back the case when there is no longer any urgency and not accept any fee. When it is the patient who wants to change his medical adviser the new attendant called in should be in a position to show that he has done nothing whatsoever to bring about such a change, and, above all, that he has not offered to accept lower fees. The patient should be made to give a formal notification to his former medical attendant and the new medical attendant should make it his business to see that his predecessor is paid before he himself accepts any fees. On this point the opinions of a great number of medical authors and of medical societies are quoted which it would take too long to reproduce here.

Then there is the question of nomadic practitioners who go to a town or village once in the month or once a week and of the army or naval surgeons. The former system is only approved for localities where there is no resident practitioner; but with regard to the ethical right of army surgeons to practise among the civil population opinions are very much divided. The expressed opinion of authors and of medical unions is also quoted in regard to the etiquette that should govern the choice of a consultant. So long as the personal and professional standing of the consultant is beyond question the medical attendant must submit to the choice made by the patient. At Bordeaux, however, the opinion prevails that the medical attendant may object if the consultant chosen is not possessed of the special experience the former may judge necessary, and it is suggested that in such a case there should be two consultants, one chosen by the patient and the other by his regular medical attendant. Again, the question is raised—and on this also opinions are divided—whether a medical practitioner should refuse to meet a consultant who is not working in harmony with the local medical union and also whether a consultation with a homœopath should be objected to. It would seem from what is said that there is less objection to act as a consultant when sent for by a homœopath than to send for a homœopath as a consultant. The necessity of punctuality in meeting the consultant, the manner of his reception, the importance of avoiding all criticism or fault-finding in presence of the patient, &c., are dealt with at great length. The opinions of a large number of medical unions are quoted which concur in recognising that in his own house the consulting-room of the consultant is neutral ground and there he may give advice to patients who call on him without inquiring whether they have a regular medical attendant. But at the same time the consultant should not break through this neutrality by persuading his patient to change his regular medical attendant. "Theft for theft, why steal away the confidence a patient has in his doctor?" Also, if the patient is wearing some apparatus the consultant should refuse to remove it unless it be in the presence of the practitioner by whom it was applied. Indeed, in all cases it is preferable that the patient should inform his regular medical attendant that he is going to visit a consultant. After dealing with some other points the paper then proceeds to consider how these ethical principles are to be enforced and at once suggests that there should be a course of lectures on deontology at all the medical schools. Then there should be some book published on the subject and it ought to be placed in the hands of medical students. The *Concours Médical* has offered a prize of £20 for the best pamphlet on the subject and the *Lyon Médical* opened a subscription for a similar purpose. But, after all, such pamphlets would only express the opinions of their authors. The code of ethics should be based on the opinions expressed or the resolutions voted by numerous medical societies or unions. But these associations have all got the defect of being too

local in their conceptions and sentiments; a more general authority is required. Therefore, local societies should federate nationally, and, better still, internationally, and thus create a really representative body which could elect a committee capable of treating such a question in a broad spirit and in a manner applicable to all districts and to all nations.

Paris, July 25th.

THE WAR IN SOUTH AFRICA.

THE news from the seat of war is again unsatisfactory and disappointing. From a military point of view the progress towards any final settlement seems to be very slow, and until General De Wet and his forces have been disposed of or some fresh and decisive movement has taken place on the part of the British it is not likely that things will be otherwise. The history of De Wet's raids and movements and of his successful though chequered career since the capture of Pretoria is remarkable reading. He is a sort of Rob Roy and has shown uncommon skill and ability as a military leader and guerilla chief.

We gather from all the accounts which we have received from South Africa that the cold weather has had a beneficial influence in checking the progress of enteric fever. The reports from medical officers have assumed a much more assured and hopeful tone in regard to it. With the limited railway transport at Lord Roberts's command and its insufficient amount of rolling stock and worn-out and comparatively powerless locomotives, and the long distances that have to be traversed, the difficulties in the way of supplying the army can be readily imagined. It is therefore greatly to be regretted that at this stage of the war we should hear of the frequent interruption of the railway and lines of communication by the enemy's forces.

Now that the South African Commission has not only been definitely constituted but has begun its inquiry at Burlington-gardens under the presidency of Lord Justice Romer we trust that people will be content to set aside for the time being all acrimonious feeling, of which there seems to be a good deal in South Africa, and to patiently await the result. The measures which have been taken to elicit the truth and to guard the witnesses from all injury to themselves in giving their testimony should, we venture to think, satisfy the most fastidious. It is simply ridiculous to suppose that the members of the Commission are not well qualified by their high personal character, attainments, and business qualifications to conduct an inquiry of this kind in an unbiased and thorough spirit. The preliminary inquiry, so far as it has already gone in this country, will have the effect of educating them in the principles of army systems and organisation in matters of transport, supply, and hospital field service generally. It is satisfactory that Mr. Harrison is a member of the Commission, for his intimate acquaintance with railway traffic and organisation, where the matter of transport enters so largely into the question before the Commission, will be very valuable. We may here briefly advert to the letters referring to the subject which appeared in the *Times* of July 23rd. They were all worth reading, but that by Mr. Watson Cheyne struck us, as might have been expected, as especially so. He has had large personal experience in South Africa and took a deep interest in everything connected with the hospital systems in force and he describes what he saw and the arrangements and efforts that were being made and in which he took a prominent part in consultation with the various medical officers concerned. Mr. Watson Cheyne gave evidence before the Commission on Wednesday last.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

It is hard to think that we are in July. Really it seems much more than five months since we were getting ready to start in London. Though we are in mid-winter it is so warm in the sun that we are able to carry most of the patients out into the open air for some hours each day. They like it and there is no doubt that it does them good.

Christian De Wet is not broken yet, but surely it cannot be many days before our many divisions which are all round him bring about his downfall from his high pedestal as the one efficient discomforter left and so put an end to the war. There ought to be a big bag soon and there is an impression that Botha will surrender when De Wet is settled and that then the resistance to Lord Roberts will fizzle out quickly. We hear that Lord Kitchener has gone down to have a go at this most sporting of generals. There is, in fact, a widespread feeling manifest in this camp and among those who come into it that the war is all over, and the chief question on everybody's lips is how soon we shall get home. The words "impending dissolution" fairly define the feeling that pervades the hospital. The colonials who came on to our staff in various managerial capacities are all anxious to get away and to return to their permanent work. Our dental surgeon and one of our dressers (Hay) have already gone home. Blathwayt, as I told you, is in the isolation hospital and we have made him the medical officer in charge there. Poor FitzHugh is dead and two of our medical men (Greenfield and Elliot) are still in the wards recovering from enteric fever, so that the number at mess has been somewhat attenuated of late. Breeks, who came out as one of the dressers but who is a qualified medical man, has been promoted to fill the vacancy caused by FitzHugh's death.

I am thankful to say that the epidemic of enteric fever is rapidly diminishing both in the number of its victims and also in the virulence of the disease. This is what we have been hoping for ever since the cold weather set in. The effect upon the work in the various hospitals is immediate and very marked. The report from Bloemfontein is that already the hospitals there are half empty, and certainly the authorities show nothing like the anxiety they did, even two or three weeks ago, to fill up our vacant beds as soon as we notify them as empty. Indeed, we have not taken in a train-load since the sick and wounded from Mafeking arrived a fortnight ago, though small parties of Yeomanry still drop in with great regularity every day—almost, I might say, by every train. In spite of this we have been quite busy with surgery up to the middle of last week. The various hospitals which for some weeks past Surgeon-General Wilson has had ready packed in trucks to be shot up to the stations north of Bloemfontein have not all of them got through even yet. The difficulty is not one of deficient medical resources but of deficiency of transport; for, what with the repeated interruptions inflicted by De Wet upon the railway service, the worn-out condition and the small number of the engines, the delays at the deviations where a bridge has been blown up, and the scarcity of fuel and water, it requires the entire energy of the railway staff to keep the army fed.

My rubber, who came out with me, had to spend a week in hospital lately, and his services were very much missed. He pays from 30 to sometimes as many as 50 visits every day and has been so useful that we have sometimes kept cases in the hospital much longer than we should otherwise have done so that they might benefit from his attentions. Chilblains have been a great nuisance to the sisters recently. I never saw such bad ones as they have had out here, particularly the sisters in the enteric fever huts, for they have to be perpetually wetting and drying their hands.

It is rather late in the day to mention the great loss incurred because friends at home label the parcels they kindly send to South Africa with a full indication of the tempting nature of their contents; the best way is for only a general description to be put on the parcel—e.g., "gifts for the troops," rather than "tobacco," "cigarettes," or "sweets."

I should have spoken of this earlier if I had known how great the loss has been, but I told you before that people "commandeer" in this happy land, and also most people are making collections of any trophies they come across. Mafeking siege stamps are very scarce and are considered cheap at 30 guineas the set of 19, and the siege paper money sells readily at 20 guineas for notes the total face value of which is £2 6s. Talking of Mafeking, we have, as you know, a large number of men here who went through the siege, and it is rather amusing to hear their criticisms of the inflated accounts which reach their ears from outside of the doings of some of their fellow-captives during the siege. Every one of them is loud in praise of General Baden-Powell.

The metal badges of the hospital have arrived and were distributed on Saturday by Lady Chesham to the entire staff. Also the name-boards of the wards and beds have come and

are being stuck up as quickly as possible. Two names which I appropriated for two of my wards are the "Wills" and the "Article Club," because it was owing to some friends of mine that they were endowed—Sir Frederick Wills being personally responsible for the first, while his son, Arthur Wills, prompted the generous efforts of the club which equipped, and therefore named, the second. Mr. Wills was only just starting his good work when we left England, and I am delighted to see that he succeeded in carrying through his project of equipping the whole ward. During the past week there has arrived from the Royal Army Medical Corps Fund in London a welcome present of pipes, tobacco, and clothes for each of the non-commissioned officers and men of our staff. The gift gave them great pleasure, for it showed them that they were not forgotten, and, indeed, I do not think that Her Majesty's forces contain any harder or more devoted workers than the hospital orderlies. Their position is one of considerable danger. I know of one hospital which has lost no less than 30 orderlies from enteric fever out of less than 200, and their work in the words is exacting and continuous. For them there is no such thing as a halt, from the beginning of the war to the end, unless, indeed, they get sick themselves, and they deserve all the kindness and recognition which friends at home can secure for them.

I think I told you some time ago that my wife had kept some of the patients occupied by starting essay competitions. More lately she got one or two of them to try their hands at sketching and some others at wool-work. Both of these pursuits have "caught on" to such an extent that it takes up all of her spare time to keep the hardy warriors supplied with needles and wool and canvas and other necessaries, and it looks most quaint to see them sitting up in bed stitching away for all they are worth. Some of them rush through a pair of slippers in an incredibly short space of time. Others, again, devote their entire attention to the various games that have been sent out from home. Cards, perhaps, form the most popular of these diversions, and when we move the patients, on their reaching convalescence, from the huts to the bell tents and subsequently into the trains for Cape Town, they do not fail to provide themselves with means for whiling away the time, so that there is a perpetual demand for a fresh supply of these smaller articles of diversion to the serious wards.

Deelfontein, July 2nd.

(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

The slack season having set in at Cape Town the usual "military hospital" baiting has recommenced, this time headed by no less a person than the Archbishop of Cape Town, ably seconded by the wife of the Military Secretary to the Governor and the majority of the members of the Good Hope Society, backed up by the *Cape Times*, which paper for some inscrutable reason seems to have delighted from the very commencement of the campaign in throwing dirt at the military medical arrangements. Perhaps some of its staff have been refused admission to the wards when wishing to pass away a leisure hour. They say—or rather I believe that Tennyson does—that half a lie is worse than a whole one, especially if it contains a modicum of truth, but that the *Cape Times* can give credence to the hearsay evidence on which it bases its leader of June 26th gives one the idea that it is only too willing to believe such manifest untruths as it publishes. What can be said for the "charity" exhibited by the head of the Church in South Africa who on the secondhand evidence of a "friend" accuses the medical officers of military hospitals of diverting clothing from the sick, and alleges that blankets provided by the society never reached the wounded, and who further states on the same evidence that only the strongest pressure would induce the "medical men" to supply the necessary comforts? Comment on such statements I leave to abler pens than mine, but I confess to a feeling of utter disgust that any person should be ready to accept on such flimsy evidence such disgraceful allegations against a body of officers who have been working their hardest to overcome difficulties of which a person in the archbishop's position can have no knowledge. I pass over the remarks of the Rev. J. J. McClure, as of course he followed in his superior officer's footsteps, and any remarks which he might make regarding the dieting of patients or their treatment by the medical authorities must be put down to ignorance of the matter in question, but still it shows the necessity of measures being taken by the proper authorities to keep meddling interlopers outside the precincts of military hospitals. The medical officers in charge of our hospitals are quite capable of doing their duty without interference from the outside by irresponsible persons, and if they do not there are means of supervising them without any assistance in the shape of "visiting ladies," whose presence, in the capacity for which they are delegated, is an insult to the medical authorities. It is a curious coincidence that this hysterical agitation should have taken place in Cape Town synchronously with the letters to the *Times* written by Mr. Burdett-Coutts, who was staying in Cape Town prior to embarking for England. To put an end once and for all to this constant interference by these (I do not doubt well-meaning) people I would suggest a committee of inquiry to investigate these alleged atrocities who should take the evidence of the men themselves, who, I must say, are remarkably silent regarding them.

I am happy to say, turning to a more genial subject, that enteric fever is diminishing in Bloemfontein and that the general health of the troops is undoubtedly improving, though, of course, every week sees a great number of invalids homeward bound. Still, on the whole there is a distinct improvement and the pressure on the hospitals is lessening.

Bloemfontein, July 1st.

THE ACTION OF THE SMALL-BORE BULLET AND SHELL FRAGMENTS AT THE SIEGE OF MAFEKING.

To the Editors of THE LANCET.

SIRS,—The Mauser bullets as generally used by the Boers at the siege of Mafeking are of small calibre, low trajectory, high velocity, light in weight, and covered with a nickel casing. They do not cause any great amount of bruising in and around the wound and they are not so liable to smash a bone as are bullets of large calibre and slower velocity. In most cases the bone is merely perforated or grooved, and the missile passes through the body or limb and rarely lodges. It appears that the small quantity of bone carried on by the Mauser bullet after passing through a bone is so pulverised by the high velocity of the projectile that the particles are lost in the tissues surrounding the exit from the bone, and do not in any way retard healing of the parts, as spicules of bone formerly did when a bullet of large calibre was used; both the wound of entry and the wound of exit are small. At a range of about 1200 yards and upwards the Mauser bullet appears to lose its great velocity, as the wound of exit somewhat enlarges. This is caused by the bullet having a tendency to become deflected out of a straight line by meeting with resistance when the range is great, but as a general rule it passes through the body and rarely lodges. The fatality following the wounds made by the Mauser bullet is very low, especially in relation to the limbs, even when joints are implicated. I observed one patient who was shot through both frontal lobes; he was again on duty in a few weeks. Wounds through the lungs proved fatal, also no cases recovered where either the large or small intestines were perforated. Flesh wounds healed very quickly and without suppuration. On one or two occasions the nickel casing surrounding the ordinary bullets used stripped in the wound without any apparent contact with bone; when this occurred the wounds healed slowly and suppurated considerably. The stripping was probably caused by some defect in the manufacture of the bullet or by the enemy having tampered with the nickel-coating before firing.

Shell wounds.—Shell wounds of all descriptions healed with great difficulty, and the suppuration in most cases was profuse. This is accounted for in consequence of the great amount of tearing and contusion which the tissues encounter, by the large surface exposed, by fragments of clothing being carried into the wound, by pieces of shell, and by the general dirty condition of the projectiles. The shock to the system is in all cases very great, and was often the cause of death, as hæmorrhage is usually slight in all cases of wounds caused by shell fragments. From personal observation and practice I found that shell wounds treated by copious antiseptic irrigation, free and continuous drainage by ordinary indiarubber tubes, and apposition of the torn tissues by deep and superficial sutures, gave the most satisfactory results.

I am, Sirs, yours faithfully,

F. A. HOLMDEN, M.B. Edin.,
Medical Officer, Her Majesty's Service, British Bechuanaland Protectorate.

June 15th, 1900.

CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE PROGRAMME OF THE FESTIVAL.

THE proceedings in connexion with the Centenary Festival of the Royal College of Surgeons of England began on Wednesday morning, July 25th. From 11 until 1 in the unrivalled museum of the College Professor C. STEWART gave demonstrations to the Fellows, Members, and guests of the College. During the same hours Dr. T. G. BRODIE, director of the laboratories of the Conjoint Board, gave lantern demonstrations at the Examination Hall, Victoria Embankment, in illustration of the work done under his surpervision.

MEETING OF THE COUNCIL.

The August Council meeting of the College was held in the afternoon, the President, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., being in the chair.

Dr. FREDERIC SHEPHARD DENNIS was introduced and after signing the by-laws and making the required declaration he was admitted a Fellow of the College.

The SECRETARY reported the death on July 19th of Mr. Storer Bennett, elected on July 12th a member of the Board of Examiners in Dental Surgery.

The Council passed a vote of condolence with his family.

The PRESIDENT stated that the vacancy in the Board so occasioned would be filled up at the quarterly Council meeting in October.

The PRESIDENT reported that the deputation appointed by the Council had attended at Marlborough House on July 24th and had conferred the Diploma of Honorary Fellow on H.R.H. the Prince of Wales.

The Council proceeded to elect to the Honorary Fellowship 35 surgeons whose names we have already given.

A letter was read from Sir Henry E. Roscoe, Vice-Chancellor of the University of London, requesting the Council to appoint two persons to represent the College on the Senate under Section 12 of the Statutes. The Council appointed Mr. H. G. Howse and Mr. A. Pearce Gould.

Professor PACHOUTINE, President of the Imperial Military Academy of Medicine of St. Petersburg, presented to the Council an address of congratulation on the centenary of the College. Addresses of congratulation were also received from Professor Sklifossovsky on behalf of the Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, from the Royal College of Physicians of London, and from the Royal Institute of Public Health.

THE CONVERSAZIONE.

On the evening of Wednesday there was a well-attended conversazione at the College, when the English surgical and scientific world was thoroughly well represented, although the tropical heat no doubt accounted for some regrettable absences.

On the morning of Thursday Professor C. STEWART and Dr. T. G. BRODIE continued their work of demonstrating, and at 2.30 P.M.

THE CENTENARY MEETING

was held in the theatre lately used by the University of London at Burlington-gardens. Sir WILLIAM MAC CORMAC then delivered the following address of welcome.

AN ADDRESS OF WELCOME BY SIR WILLIAM MAC CORMAC, BART., K.C.V.O., &c. (PRESIDENT).

MY LORDS AND GENTLEMEN,—One hundred years have passed since the charter granted by King George III. incorporated the surgeons of England into a Royal College, whereby the art and science of surgery might be the better cultivated and the commonweal of the people of this kingdom benefited. We meet to-day in order to celebrate the centenary of our incorporation, and the occasion compels us to reflect how far the College has fulfilled its high mission and merited the public consideration and confidence it enjoys and, as we believe, deserves to enjoy through unselfish service to the State.

My first and most pleasant duty is to welcome our illustrious guests who have come from many and distant countries to do honour to our College. Amongst them are great surgeons from almost all the nations, men who not only hold the highest professional position in their respective countries, but whose public record has made their name familiar to us all, while many of them are dear personal friends. We have guests, too, our own countrymen, whom we delight to honour; dignitaries of the Church and of the Law and heads of our ancient seats of learning. Although I cannot enumerate all, I can and do extend to each and every one the most cordial welcome and would wish to express our grateful appreciation of their presence amongst us.

An occasion like this possesses historic interest. We contrast our present position with that of our predecessors, and rightly congratulate ourselves on our greater knowledge and opportunities, on the facilities we enjoy for investigating the mystery of disease and for its more effective treatment. The comparison enables us to realise, as only such a comparison can, the extent of our gains and our increased opportunities for doing good. It leads us at the same time to recognise as we ought how large a debt we owe to the workers who have preceded us for so many of those happy results which are now matters of daily accomplishment.

The progress of surgery has been greater during the present century, more especially in the latter portion of it, than in all the preceding centuries combined, and it is of especial interest to us to note that this period of rapid advancement exactly corresponds with the life-history of our College, whose centenary we are assembled to commemorate. If we look back—and it is well to look back sometimes—we find in the labours of the old masters of surgery much to enlighten, to widen, and to confirm our views. A knowledge of the history of our art and science tends to make us juster judges both of our own work and of that of others. When we search the history of the development of scientific truth we learn that no new fact or achievement ever stands by itself, no new discovery ever leaps forth in perfect panoply as did Minerva, from the brow of Jove. Absolute originality does not exist, and a new discovery is largely the product of what has gone before. "We may be confident that each forward step is not ordered by one individual alone, but is also the outcome in a large measure of the labours of others. The history of scientific effort tells us that the past is not something to look back upon with regret, something lost, never to be recalled, but rather as an abiding influence helping us to accomplish yet greater successes."[1] Again and again we may read in the words of some half-forgotten worthy the outlines of an idea which has shone forth in later days as an acknowledged truth.

We see numerous instances of this in the history of surgery. Some fellow worker in years long past has discovered a new fact or indicated the path leading to a fresh truth. It is forgotten, and a century later something nearly the same, or mayhap a little better, is discovered afresh. The psychological moment has arrived, and the discoverer reaps the reward not only of his own labours but of those of his predecessors as well. The countless trials and experiments which ended in the general use of ether and chloroform in surgery—that trebly blessed discovery of a sure relief from pain—were guided by the experience of previous trials, half successful, half failures. The patient labour of our distinguished Fellow, Lord Lister, now President of the Royal Society, has been rewarded by a success to which all the world does homage, and which will crown his head with imperishable laurels. Yet none will be readier than Lord Lister to acknowledge how much the antiseptic methods of wound treatment owe to the researches and discoveries of Pasteur.

If we examine the old books we may find again and again something very near to what is the accepted doctrine of the present time.[2] History, it is said, repeats itself, and so very certainly does surgery. The difficulty of discovering anything really new is as great in surgery as in other branches of knowledge. Hippocrates (460 B.C.), the father of medicine, classified injuries of the skull in much the same way as that adopted in our modern text-books. He spoke of contusions of the cranium without fracture or depression, of simple fractures, depressed fractures, indented fractures involving the outer table alone, and fractures at a distance from the seat of injury which we now style fractures by

[1] Presidential Address, British Association, Dover, 1899, by Sir Michael Foster, K.C.B.

[2] For many of the details which follow I am indebted to an interesting history of surgery by Dr. Billings, which is to be found in the "System of Surgery," by Dr. Dennis, F.R.C.S., of New York.

contre-coup, a classification which leaves but a small margin for improvement. Many of the surgical instruments found in Pompeii are precisely similar in principle, if not quite equal in workmanship, to those now in use, and Pompeii was destroyed 1800 years ago (A.D. 79). Heliodorus, who lived at the beginning of the second century A.D., in the time of the Emperor Trajan, was a surgeon of much originality and appears to have been familiar with some of our modern methods and discoveries. He knew, for instance, of the ligature of arteries, of the radical cure of hernia by extirpation of the sac, and of the excision of a rebellious stricture of the urethra. Oribasius, who flourished in the middle of the fourth century A.D., was the friend and physician of the Emperor Julian. He has preserved for us the work of Antyllus, whose treatment of aneurysm by ligature of the vessel above and below the sac, with subsequent incision and evacuation of its contents, has of late years been revived with success, and is still considered by many of our surgeons as the best method of treatment in certain cases. One might cite other examples of old methods consciously or unconsciously revived, but these may perhaps suffice. The modern specialist finds his prototype in very ancient times and what we are apt to regard as a recent development is in reality a survival. Herodotus tells us that in Egypt there were as many branches of the profession as there are parts of the human body.[3]

In Europe, until the rise of the Italian Universities, surgery was mainly in the hands of peripatetic charlatans who cut for stone and operated on hernia. They travelled from town to town, kept their methods secret, and handed them down as family property to their descendants. The Hippocratic oath restricted the performance of lithotomy to those who had specially devoted their whole energies to the cultivation of this operation, and may partly serve to explain this remarkable survival. Some of these "cutters" were skilful men, but all were of necessity very ignorant. A very famous "cutter," whose name we do not know, died in Genoa in 1510, and Senerega, the Genoese historian, tells us that his method was to introduce an iron rod along the urethra into the bladder until it touched the stone, which he then extracted through a perineal wound. It has been suggested that this Genoese taught his method to John of Cremona who is credited with the invention of the grooved staff. One of the most celebrated "cutters" was Pierre Franco who was born in Provence about 1500 A.D. He used a staff and cut on the gripe as well and employed instruments for the purpose of crushing large stones. He was a man of determination and resource for he relates a case of a boy in whom, having failed to remove a stone by way of the perineum, he successfully performed the supra-pubic operation. The stone was of the size of a hen's egg and the patient subsequently made a good recovery. Colot was appointed lithotomist to the Hôtel Dieu of Paris in 1556. He had learnt what is known as the "Marian operation" from an itinerant quack, and he practised the method with, it is said, much success. The office and its secret descended to his son and to his grandson. In the great metropolitan hospitals—in St. Bartholomew's and St. Thomas's, for instance—persons were at one time specially appointed for the purpose of cutting for stone. John Bamber, who lived during the reigns of William III., Queen Anne, George I., and George II., was the last of the special lithotomists at St. Bartholomew's. He resigned his office in 1730, and his duties were transferred to the surgeons of the hospital, who were specially paid a small stipend each year as lithotomists until 1868. Bamber's portrait, by Verelst, may be seen at Hatfield House, and Lord Salisbury inherits some portion of his property through an heiress of this line who married a Marquis of Salisbury. At St. Thomas's Hospital certain of the surgeons were specially appointed to cut for stone, but before the year 1730 there appears to have been a special "surgeon for the stone," and the first of these was James Molins, who held a similar office at St. Bartholomew's. There is, indeed, no end to the matters of interest in the history of our art.

The great French surgeon Guy de Chauliac, who was born about 1500 A.D., studied at the three most famous centres of learning of that time—Bologna for anatomy, Paris for its surgery, and Montpelier for medicine. He travelled much, but finally settled at Avignon, where he became physician in succession to Pope Clement VI., and afterwards to Pope Innocent and Pope Urban. It was in Avignon he wrote his "Great Surgery," and in a special chapter of this work he records opinions which have an application even in the circumstances of our own times. "Formerly," he says, "all medical writers were both physicians and surgeons—that is to say, well-educated men; but since then surgery has become a separate branch and fallen into the hands of mechanics." It is interesting to find from Guy that there were in his day exponents of that modern foolishness called "Christian Science." These Guy describes as "consisting of women and many fools." They refer the sick of all diseases to the saints, saying: "Le Seigneur me l'a donné, ainsi qu'il Lui a plu. Le Seigneur me l'ostera quand il Lui plaira, le nom du Seigneur soit bénit. Amen." As a striking instance of my thesis I may take the great French military surgeon Ambroise Paré. We know his title to fame in substituting the ligature of arteries for the use of the hot iron in the arrest of hæmorrhage. We know also the story of how he forbade the barbarous practice of pouring boiling oil into gunshot wounds, due to the then prevailing belief that these wounds were poisoned, a belief revived with almost every war, even the latest one in South Africa. Paré had been apprenticed to a provincial barber at the age of nine years. Soon afterwards he came to Paris, attended lectures at the Faculty of Medicine, and gained admission to the Hôtel Dieu. He lived there as a dresser for three years, "seeing and knowing a great variety of diseases constantly being brought there." He was only 19 when he accompanied the king, François I., into Provence to meet the army of Charles V. He was attached to the Courts of four kings of France and, although a Huguenot, was spared at the massacre of St. Bartholomew by the direct intervention of Charles IX. It is interesting to learn that Dionis, more than 100 years after Paré's time, was urging at the Hôtel Dieu the adoption of arterial ligature in place of the caustic even then in vogue. Dionis, too, although he advised the Marian operation for stone, considered that the risks of the suprapubic method had been over-estimated, an opinion revived and insisted on by Sir Henry Thompson in our own time. We all remember J. L. Petit (1674–1750) who invented the tourniquet known by his name in the early part of the last century, and Anel who tied the brachial artery for traumatic aneurysm at the bend of the elbow, upon which procedure a claim was based for priority over Hunter, though Hunter's operation is wholly distinct in the principle involved. Towards the end of the eighteenth century, Desault, who nearly lost his life in the Revolution, was the leading French surgeon. He was accused of poisoning the wounds of some of his revolutionary patients in the Hôtel Dieu, and to be accused was in those times almost the same thing as being condemned. Desault, whose fame has been eclipsed by the brilliance of his pupil Bichat, was the first surgeon to teach surgical anatomy after the modern manner, although the great French hospital where he practised was described at that time as "the oldest, largest, richest, and worst hospital in Europe." I need not refer to more recent and greatly honoured names—Dupuytren, Velpeau, Nélaton, and many others.

In Germany, even so recently as 100 years ago, surgery was at a low ebb. George Fischer[4] tells us that quacks of all kinds, "cutters" for stone and hernia, cataract operators, and bone-setters, flourished in the land. The public executioner, whose business it was to fracture bones and dislocate joints on the rack, was supposed thereby to have acquired a knowledge of disorders of these parts and was consulted freely about them—so much so that Frederick the Great in 1744 published a decree limiting the powers of these men, and while permitting them to treat fractures, wounds, and ulcers forbade them to practise medicine. Hildanus (1560–1634), who lived in Germany at the end of the sixteenth century and beginning of the seventeenth century, has been called the father of German surgery. He was a voluminous writer, a bold operator, and his "Opera Omnia" was a work of reference for many years. Heister (1683–1758), a surgeon of much note in the eighteenth century, wrote a "General

[3] "The medical profession," he says, "is distributed among them [the Egyptians] in this wise: each physician is for a single disease, and not for more. The whole land swarms with physicians: some are appointed for the eye, some for the head, some for the teeth, others for the region of the belly, others again for unseen (internal) diseases.'—Herodotus, ii., 84.

[4] Chirurgie vor 100 Jahren, Historische Studien.

Surgery," which enjoyed much repute and was translated into English. Bilguer (1720–1796), a surgeon-general in the German army, was noted for opposing the indiscriminate amputation of limbs then in vogue for gunshot fracture of the extremities which his predecessor Schmucker had warmly advocated and practised to an inordinate extent. Towards the end of the eighteenth century Von Siebold (1736–1807), a famous surgeon who enjoyed great repute as a clinical teacher and operator, taught anatomy at Würzburg, and about the same time Richter (1742–1812) was professor of surgery at Göttingen. Richter had travelled much, was familiar with the work done in England and France, and was the best writer and teacher of his day. He was the first to place surgery in Germany on a truly scientific basis. Of those German surgeons whose names still fill our ears with their fame and whose loss we have recently deplored—Stromeyer, Langenbeck, Billroth, Volkmann, Thiersch, Nussbaum, and others—I could only repeat what all of you know as well as or better than I.

The first English surgeon of whom we possess any definite knowledge and whose writings are still in existence is John of Arderne; he was born in 1307. He must have been an accurate and close observer, to judge by the graphic description which he furnishes of cancer of the rectum. He says: "It breeds within the fundament with great hardness but with little pain. After a time it is ulcerat, oftentimes all the circumference, and the excrement goeth out continuallie." He gives a true and telling description of how the condition is to be diagnosed, and of the progress and termination of the disease.

It is noteworthy how many of the older surgeons who attained eminence spent part of their career in the army or Navy. William Clowes (1540–1604), who was surgeon to St. Bartholomew's, had been a surgeon in the navy, and wrote "A proved Practice for all Young Chirurgeons concerning Burnings with Gunpowder and Wounds made with Gunshot," and he refers to Ambroise Paré in terms of admiration. The greatest English surgeon of the seventeenth century was Richard Wiseman (1622–1676). He served in the Dutch Navy till 1644, and then entered the army of Charles I. Afterwards he spent three or four years in the Spanish navy and on the restoration joined the forces of Charles II., by whom he was appointed one of his surgeons. He published many treatises, which exercised a considerable influence on English surgery but were little known abroad. William Cheselden (1688–1752) was a surgeon of great renown in England in the early part of the eighteenth century. He was a surgeon and lecturer at St. Thomas's Hospital. In 1723 he published a treatise on the high operation for stone, but he soon abandoned this for the lateral method which he so much perfected and improved that the operation remains at the present time much as he had left it. Percivall Pott (1714–1788) was the famous English surgeon of the middle portion of the last century. He was surgeon to St. Bartholomew's Hospital, and made many and most important contributions to surgery, especially on hernia and on injuries to the head. His name remains attached to many surgical disorders. Of John Hunter (1728–1793) no detailed mention is required here. His memory and his methods continue a living influence amongst us. He made our surgery a science, and has given to us in our museum an imperishable memorial of his industry. In it are illustrated those marvellous powers of observation which had never before been equalled, and will never in all probability be surpassed. So long as surgery continues Hunter's influence must be felt. It is witnessed in the creation of so many distinguished disciples imbued with his principles and able to expound his doctrines. He embodies and represents the glory of our science, our College, and our country.

The historical *résumé* I have attempted would not be complete without some account of the connexion existing between the Surgeons and the City of London which appears to have continued quite without interruption since the middle of the fourteenth century until the foundation of the Surgeons' Company in 1745.[5] There are many entries in the City records of the admission by the Lord Mayor of Surgeons and Master Surgeons to practice in the City of London, and the licence thus granted exacted a promise "that they should well and truly serve the people in their cures and report to the Lord Mayor and Aldermen any Surgeon neglecting his patients." In 1416 the Craft of Barbers practising Surgery petitioned the Lord Mayor and Aldermen "to provide a sure remedy against unskilful persons who indiscreetly pretend to be wiser than the Masters of Surgery, and who expose the sick to the greatest danger of death or maim by their presumption." The City took immediate and, as we learn, successful action on this petition. The City recognised the distinction between Barbers and Surgeons, for they appointed "Masters of surgery" to control those practising surgery only, and other masters were annually selected to supervise those practising barbery. Early in the fifteenth century the surgeons appear as a distinct body, and in 1423 a College of Physicians and Surgeons, which had been founded chiefly through the influence of John Morstede, a surgeon who accompanied Henry V. to Agincourt, was formally sanctioned by the Lord Mayor, and powers granted to it to examine and control persons practising medicine and surgery in the City of London.

The Livery Company of Barber-Surgeons was founded in 1540 and its Hall in Monkwell-street is still standing, as it escaped destruction in the Great Fire of London. The famous picture by Hans Holbein of Henry VIII. delivering the charter of the company to the assembled Barber-Surgeons is still there, where until recently one might see the old theatre, where lessons in anatomy were read upon the bodies of executed malefactors. Thomas Vicary (149(?)–1561), sergeant-surgeon to the King, the first Master of this Company, was a wise and honest gentleman. He held a unique position at St. Bartholomew's, and there is in Holbein's picture at the Barber-Surgeons' Hall a characteristic portrait of him. Vicary was succeeded by Thomas Gale (1507–1587), who had served with the army of Henry VIII. in France in 1544 and under Philip II. of Spain in 1577. In his "Institutions of Chirurgeons" there is an account of wounds made by gunshot. He opposes the view that they are poisoned, and gives cases to prove that bullets may be left for long in the body without danger. The Barber-Surgeons appear to have borne their due share in the city pageants. At one pageant given at the Restoration the Lord Mayor and Aldermen appointed that the Company should provide "twelve of the most grave and comlyest personages; appareled with velvet coats, sleeves of the same, and chaynes of gold, to attend the Lord Mayor on horseback." Mr. Edward Arris, an alderman and barber surgeon, had a great desire to increase the knowledge of chirurgery, and to this intent bequeathed to the Company a sum to found lectures, in 1645, on anatomy, on condition that a "humane" body should once in every year be publicly dissected. The Gale Lecture was founded by John Gale a little later, in 1655, and Havers, well known for his description of the canals in bone, since called Haversian, was appointed the first reader. The Arris and Gale Lectures are still annually delivered in this College, for when the Surgeons finally separated from the Barbers in 1745 they carried nothing with them but the Arris and Gale bequests. The hall, library, and plate remained the property of the Barbers, and the new Company of Surgeons had to make a fresh start in the world.

The Act of Parliament separating the Surgeons from the Barbers became law in 1745, and a corporation was established consisting of a "Master, Governors, and Commonalty of the Art and Science of Surgery in London." John Ranby, one of the prime movers in effecting the change, became the first Master. He was serjeant-surgeon to George II., and accompanied that monarch to the battle of Dettingen in 1743. The other active mover was Cheselden, surgeon to Queen Charlotte's, to Chelsea, and to St. Thomas's hospitals. The first meeting of the new Company was held in the Stationers' Hall on July 1st, 1745. Mr. Ranby, as Master, occupied the chair, and Mr. Cheselden and Mr. Sandford were his wardens. Ten examiners were appointed to conduct the examinations of those seeking the diploma of the newly constituted company, and this number is continued in the present Court of Examiners. Part of their duty was to examine surgeons for His Majesty's army and navy, and the examination of surgeons for those services, which had been instituted in the reign of Henry VIII., was continued for a long time by the Court of Examiners until other arrangements were made at a comparatively recent date. It was for this examination, I may note in passing, that Oliver Goldsmith presented himself in order to qualify as a naval surgeon's mate on Dec. 21st, 1758. He was unsuccessful and it was well; perhaps, since he could scarcely have written "The Vicar of

[5] South's Memorials of the Craft of Surgery.

Wakefield" in the cockpit of a man-of-war. In "Roderick Random" we possess a graphic and probably fairly correct description of one of these examinations, derived, doubtless, from Smollett's personal experience, as he obtained the Company's diploma for the post of surgeon in His Majesty's navy.

The Surgeons established themselves in the Old Bailey and there they built a theatre. In 1753 Percivall Pott and John Hunter were chosen as the first Masters in Anatomy, and no more brilliant choice could have been made. It is recorded that immediately after this election the Court proceeded to discuss how they should dispose of the bodies of the three persons who were to be executed a few days afterwards for "murther" and then sent to the College theatre to be dissected. Amongst the bodies brought in this way was that of Lord Ferrers, executed in 1760 for killing his steward. It was not, however, dissected, but was buried in Old St. Pancras churchyard at the intercession of Lady Huntingdon. On July 7th, 1796, Henry Cline the elder was elected a member of the Court, but, as it subsequently turned out, the meeting at which this occurred was irregular and its proceedings were illegal, a properly constituted quorum not being present. Although only a technical illegality had taken place this incident led to the final extinction of the Company of Surgeons, for a Bill shortly afterwards introduced into Parliament to legalise the proceedings was thrown out and the Company was thereupon dissolved. The Bill had passed the House of Commons but was rejected in the House of Lords, mainly through the influence of Lord Thurlow, who was bitterly opposed to Mr. Gunning, a very distinguished surgeon, and at the time Master. "There is no more science in surgery," Lord Thurlow is reported to have said, "than there is in butchery." "Then," replied Gunning, "I heartily pray your lordship may break your leg and have only a butcher to set it, and my lord will then find out the difference between butchery and surgery." In 1796 the Surgeons migrated from the Old Bailey to Lincoln's Inn-fields. In that year a new Bill they sought for was rejected in the House of Lords on the ground that the College premises were too far removed from the place of execution and that it would be indecent and improper to carry the bodies of deceased criminals so long a distance through the streets of London. Finally, the Court in 1797 decided to apply to the Crown, and not to Parliament, for a new charter, and although opposition was again offered it proved unsuccessful, and on March 22nd, 1800, the Royal College of Surgeons in London was established by charter of King George III. This charter gave the College its former rights on condition of resigning its municipal privileges. The titles of "Master" and "Governors" were retained for a time, but a supplementary charter from King George IV. in 1821 replaced these by those of "President" and "Vice-Presidents." In 1843 another charter, granted by Her Majesty Queen Victoria, changed the title to that of "Royal College of Surgeons of England, with a President, two Vice-Presidents, Council, Fellows, and Members, as they exist at the present time. Thus it was that the Royal College of Surgeons of England was created.

It would seem in consonance with the tenor of this address, and calculated to identify this College as far as may be with the progress of surgery in England during the last 100 years, if I append a brief record of the life and work of those men who have during that period presided over its destinies, men who for the greater part have occupied a foremost position in their day, many of whom have achieved the highest honours and have each in turn devoted time and labour, often in a conspicuous degree, to further the interests of this College and thereby the advancement of the entire profession.

During the century of its existence this College has witnessed discoveries which have profoundly changed the character of surgical practice and the scope of surgical aspirations. An immense development has been effected in the operative surgery of every region of the body, and the victories of the surgeon over disease and death are without end. John Hunter and many of the older surgeons regarded operations as somewhat of an opprobrium to surgery and as a confession of failure. How far otherwise it is now! Intra-cranial, intra thoracic, and intra-abdominal operations are successfully carried out, many of them by proceedings which had never previously been imagined even by the boldest amongst us. A great impetus has been given to conservative methods in surgery, and the preservation of life and limb is now attainable in cases innumerable, and of the most different description, where conservation was previously regarded as impossible. How largely, also, have physicians and surgeons alike developed and cultivated that highest form of conservation, the conservation of the race in the happiness and vigour which are associated with physical health. Plastic methods have been perfected in an extraordinary degree. I would only mention as a striking although common example, the union of the ends of an accidentally divided nerve and the re-establishment of its function. Although the number and variety of operations have multiplied a hundredfold, the skill and fertility of resource exhibited in their performance have equally increased and the measure of success which has been realised, whilst it rewards and gratifies the surgeon, will appear, even to the educated layman, as little short of miraculous. In the early part of the century the surgeon knew of but a limited number of operations and for the most part those only were performed which appeared to be inevitable. He knew by sad experience how generally fatal important operations and cases of severe injury were when treated in hospital wards. His patients were more than decimated by infective diseases—pyæmia, septicæmia, erysipelas, tetanus, and by suppuration, hectic, and gangrene. He recognised, and could to some extent control, these scourges, but of any effective manner of dealing with them he knew nothing. Now we possess an intimate knowledge of the essential causes of many of these diseases, and if we cannot always cure them we can do much to prevent them. Some things have hitherto baffled our efforts. The cause and the cure of cancer are as yet unknown. We possess some crude ideas about the exciting causes of the disease and attempt with indifferent success to cure it by timely extirpation. Let us hope that the new century will still be young when some surer means of dealing with this terrible and increasing malady is discovered. A notable feature of our time is the development of the museums which are now attached to most of our public institutions. Those which more immediately concern ourselves illustrate everything within the range of biological science, and foremost amongst them all is our own great collection.

Much more might one say, and much certainly there is to say, but I will only repeat that our welcome to you all is sincere and heartfelt, and most especially so to our foreign colleagues. Our science knows no narrow national boundary. It is the common property of us all. We desire to sympathise with our fellow-workers abroad and to appreciate their work, as we trust and believe that they appreciate ours. In this address I have ventured to urge that we are much beholden to those who have gone before. In but a few years all who are now present will also belong to the past. Let us hope that, as we have not altogether forgotten those who preceded us, we, too, may be remembered a little by those who are to follow.

On great occasions like the present one the older seats of learning and other public institutions had power to grant honorary distinctions. Formerly we possessed no such faculty, but by the act of Her Gracious Majesty we, too, have recently obtained permission to grant a certain number of Honorary Fellowships of this College. The Fellowship is the greatest distinction it is in our power to bestow, and we regard it as the highest purely surgical qualification obtainable in this country. It is, therefore, a great privilege and pleasure for me to present, in behalf of this College, this high honour to those distinguished men who are about to receive it. I am sure also all present will be gratified to learn that His Royal Highness the Prince of Wales has graciously consented to become the first of our Honorary Fellows. His Royal Highness has always shown his interest in the College, and has evinced a special care for the success of its centenary. It is quite fitting, therefore, that His Royal Highness, who is the patron of so many learned and scientific societies, should add the lustre of his name to the Royal College of Surgeons of England.

(To be continued.)

BRISTOL LUNATIC ASYLUM.—The new wing of the Bristol Lunatic Asylum is now completed. It consists of four wards, which will provide accommodation for 150 female patients, and also rooms for the nursing staff. A small hospital for infectious diseases, fitted with six beds, three for each sex, had also been added. The institution will now afford accommodation for about 1000 patients. The estimated cost of the new buildings is £45,000.

ADMISSION OF THE PRINCE OF WALES TO THE HONORARY FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A DEPUTATION consisting of Sir William Mac Cormac, Bart., K.C.V.O., the President of the College; Mr. John Langton, F.R.C.S. Eng., Mr. Henry Morris, F.R.C.S. Eng., Vice-presidents; Mr. Thomas Bryant, F.R.C.S. Eng., past President and Senior Member of Council; Mr. Edward Trimmer, M.A., the Secretary; and Mr. Sibert Cowell, B.A., the assistant secretary, attended by appointment on Tuesday, July 24th, at Marlborough House for the purpose of presenting to the Prince of Wales the diploma of the Honorary Fellowship of the College to which His Royal Highness was elected on June 14th, 1900.

Sir WILLIAM MAC CORMAC, after introducing the members of the deputation, addressed His Royal Highness as follows:—

YOUR ROYAL HIGHNESS,—It is my great pleasure and privilege to-day, as President of the Royal College of Surgeons of England, to confer upon your Royal Highness the title and distinction of Honorary Fellow of our College. When this question was first mooted, nearly three years ago, we discovered that we did not possess the power to confer any honorary degree. Since then a new Charter has been procured and Your Royal Highness having graciously acceded to our wishes that you should become associated with our Corporation, I now in the name and by the authority of the Royal College of Surgeons of England, admit you an Honorary Fellow of the College.

And now, Sir, that you have become a Fellow of our College, permit me to tender to you our most respectful congratulations. You have on many occasions shown your interest and sympathy with our work, and what has happened to-day is not likely to diminish that interest. We are sure that the intimate association of your illustrious name with our College is an event in its history of the greatest importance, and cannot fail to be an encouragement in the future to all those who are connected with it.

Sir William MacCormac then handed to the Prince a Diploma on vellum engraved with the College arms, impressed with the College seal, and inscribed in the following terms:—

"Know all Men by these Presents that We, the Royal College of Surgeons of England, do hereby admit His Royal Highness Albert Edward, Prince of Wales, Duke of Cornwall, K.G., &c., &c., &c., &c., an Honorary Fellow of the College.

"As Witness our Common Seal this fourteenth day of June, 1900. "WILLIAM MAC CORMAC, President.

"HENRY G. HOWSE, "JOHN TWEEDY } Vice-Presidents.

"Enrolled by EDWARD TRIMMER, Secretary."

The Prince having accepted the Diploma expressed in courteous terms the pleasure it gave him to become an Honorary Fellow of the Royal College of Surgeons, the centenary of which was about to be celebrated. His Royal Highness, as the first Honorary Fellow of the College, having signed his name on the "Roll of Honorary Fellows," afterwards took leave of the President and officers, and the deputation withdrew.

FACTORIES AND WORKSHOPS IN 1899.

I.

THE exhaustive annual report of the Chief Inspector of Factories and Workshops for the year 1899 has just been issued by the Home Office and contains, as usual, much that will repay perusal by those interested in the health of the community and the means taken to safeguard it. Dr. Arthur Whitelegge, the chief inspector, in his interesting summary of the year's work of his department, tells us that 1899 was a busy year with many changes. Trade generally was active, involving the registration and inspection of more premises and an increase in the number of accidents to be investigated, heavier lists of casualties being always expected in times of industrial activity. With regard to these we find from a table appended that the accidents reported to certifying surgeons under the Factory and Workshop Act amounted in 1897 to 15,985, in 1898 to 19,227, and in 1899 to 22,771, these totals including fatal and non-fatal accidents occurring to both male and female workers; while the 22,771 accidents of 1899 include 871 fatal accidents, 858 to males and 13 to females, and the 21,900 non-fatal accidents for the same year comprise 18,758 to males and 3142 to females. These figures give some idea of the relative amount of danger from accidents which is run by the two sexes in our trades and manufactures. We note with regret that a decrease in accidents to children observed in 1897-98 was not continued, there being, on the contrary, some increase in 1898-99. Dr. Whitelegge further points out that while the minor accidents reportable only to the inspectors increased 25·2 per cent., from 38,335 to 47,989, the number reported also to certifying surgeons advanced 18·4 per cent., from 19,227 to 22,771, and the fatal accidents 19·8 per cent., from 727 to 871. On the whole, therefore, he observes, the increase was less marked in the more severe forms of injury, but only under the head of "Loss of sight" was there actual decrease, and in that group the numbers are small, reference to the tables showing that loss of sight was recorded in 53 cases in 1898 and in 47 cases in 1899. With regard to the compulsory notification of certain forms of industrial poisoning under section 29 of the Factory and Workshop Act of 1895 the tables and details given show that cases of plumbism were on the whole fewer, which was mainly owing to the decrease in the number of cases reported as occurring in, and in connexion with, potteries. Under some of the sub-heads under which occur other trades in which lead in various forms is a source of danger diminution is also observable. Such sub-heads are "Glass-making," "File-cutting," and "Smelting." There was increase, however, in lead poisoning in some industries, especially in the manufacture of white lead and paints and colours, and in the miscellaneous group of minor lead industries. For the third year in succession there was no reported case of industrial arsenical poisoning. In the case of phosphorus necrosis also it is satisfactory to learn that fewer instances were reported, but anthrax seems to have increased and to have become unusually prevalent. Anthrax arises in dealing with horsehair, hides, and skins, and the degree of danger appears to vary markedly with the various sources from which these are imported, the worst country in respect of anthrax being conspicuously China. Mercurial poisoning occurs in the report for the first time, the Home Secretary having availed himself last year of the power given by Section 29 to place diseases traceable to mercurial poisoning in a factory or workshop among those of which notice must be given to his department.

The provisions of this Section of the Act of 1895 should be borne in mind by all medical men wherever practising. Those in large manufacturing centres are presumably familiar with them, but the medical inspector in his report in the Blue Book before us states that many elsewhere are not, such diseases as scarlet fever and their duties with regard to the notification of them being matters of everyday practice, while cases of lead poisoning are comparatively rare. The result of this is that the statistics with regard to lead poisoning are in some respects not to be relied upon as accurate or exhaustive. We may mention that the 29th Section of the Factory and Workshop Act of 1895 provides that every medical practitioner attending or called in to visit a patient whom he believes to be suffering from lead, phosphorus, or arsenical poisoning or anthrax contracted in any factory or workshop, shall (unless the notice required by the Section has previously been sent) send to the Chief Inspector of Factories at the Home Office a notice stating the name and full postal address of the patient and the disease from which in the opinion of the medical practitioner the patient is suffering. The medical man duly giving this notice is entitled to a fee of 2*s*. 6*d*. to be paid by the Home Office; by neglecting to do so he is liable to a fine of 40*s*. Care must therefore be exercised not to omit reporting a case proper to be reported, but it must be borne in mind that the illness must have been contracted in a factory or

workshop. The case, therefore, of a man who had contracted lead poisoning in coach-painting, or in burning off or removing old paint (one of the sources of danger mentioned in the report), in a factory or workshop should be notified, but that of a man poisoned in pursuing in the ordinary way the trade of a house-painter or a plumber should not. These do not come within the terms of the Factory Acts, except in so far as they may have contracted lead poisoning while performing such processes as grinding lead pigment in factories and workshops, and some friction has arisen through the necessary refusal to grant fees not authorised by the Act when lead poisoning has been reported and investigation has shown that it did not arise in a factory or workshop. The present practice at the Home Office is stated to be to assume that the practitioner can say that the patient is employed in a factory or workshop in which risk of lead poisoning may reasonably be anticipated and that he will not notify cases in which he cannot affirm this.

The extent to which lead poisoning is to be anticipated among house painters and plumbers is shown by the fact that under the conditions of limited notification mentioned 100 cases have been notified, while in addition information has been received from the district registrars of 18 cases in which lead poisoning was directly or indirectly the cause of death.

Before leaving the subject of the reports from which these useful statistics are compiled we observe that 63 certifying surgeons appointed under the Factory and Workshop Act of 1891 failed to make the report required of them under Section 19 of that Act, and that of 37 of these the appointment was cancelled owing to no satisfactory explanation of the omission being forthcoming. It is stated that the returns ultimately missing would not materially affect the figures given in the tables, so no doubt these cases arose where the certifying surgeons were seldom, if ever, called upon to perform their duties, but at the same time it is to be regretted that such returns as those before us should not be as complete and as accurate as possible. With regard to so much of the summary of the Chief Inspector of Factories and the reports of his subordinates as refer to dangerous processes and manufactures there is one matter which appears to us to be highly satisfactory. The stringent regulations which have been framed from time to time in order to minimise the danger of the workers in particular trades have evidently in many cases had the effect of abolishing the danger entirely. The regulations are possibly irksome, while the infringement of them may be attended with penalties, and either ingenuity is exercised which before lay dormant in order that the dangerous work may be done by machinery instead of by the hand of the workers, or else the process in which the employment of a poisonous substance was formerly regarded as necessary is found to be equally possible with the help of an agent that is innocuous. Match-making affords an instance of each of these changes, for we are informed in a single paragraph that in some match factories machinery is taking the place of hand labour in dangerous processes, while in one the firm has announced its intention to discard yellow phosphorus as it has succeeded in making "strike-anywhere" matches without it. Match-making, however, does not stand alone in its increasing safety; the use of lead for glazing earthenware and china lingers, the glazing being, as a rule, applied under conditions which protect the workers as far as they can be protected while lead is used, but the disuse of lead and the substitution of other glazes equally effective which do not contain it appear to be considerably on the increase and, indeed, form a hopeful feature in the report. Again, under the heading of "Industrial mercurial poisoning" we note a paragraph which informs us that the silvering of mirrors by means of an amalgam of mercury and tin (water-gilding), which was in former years the chief industrial source of mercurial poisoning, has been superseded in this country by the nitrate of silver and ammonia process. It will be seen from these instances that legislative interference with manufacturing processes with a view to protecting the health of the workers does not necessarily imply the undoing of the trade or manufacture interfered with merely because the interference is at first sight arbitrary and irksome. On the contrary, it stimulates the invention and adoption of better and safer methods, which better and safer methods must of necessity attract workmen of a better class who were deterred before by the danger of the employment.

THE LIGHT TREATMENT AT THE LONDON HOSPITAL.

MORE than three years have now elapsed since Finsen of Copenhagen introduced to the profession his method of treating lupus by means of light, and the favourable evidence obtained at his clinic is amply sufficient to justify a more extended employment of this valuable agent in the treatment of this troublesome disease. Although Professor Finsen has used his method for three years, yet it is only a little more than six weeks since any public institution in this country has been in a position to employ this therapeutic aid. The London Hospital is the pioneer in this matter, and this is due partly to the gift to the hospital by the Princess of Wales of some of the apparatus needed for its working and partly to the praiseworthy energy of the authorities of the London Hospital who have done all that can be required for the efficient working of the method. The "light cure" is carried on under the superintendence of Dr. Stephen Mackenzie and more immediately under the direction of Dr. J. H. Sequeira who attends for several hours daily for that purpose. A fair-sized ward has been set apart for the treatment and it includes dressing-rooms for the patients. The apparatus consists of an arc light surrounded by a shade so as to prevent the eyes of those present being dazzled. From this light there radiate four or more telescopes, each telescope conveying the light to one patient. The telescope contains lenses composed of quartz which has less obstructive effect on the active rays than any other refractive medium. The space between two of the constituent lenses of the telescope is filled with distilled water to moderate the temperature and an enclosing water-jacket serves still more to abstract the heat. The lenses are so arranged as to render convergent the divergent rays proceeding from the arc light, and they are brought to a focus by another lens which is held in position by a nurse. This lens is composed of two plates, which may be of quartz or even of glass, and the space between them is filled with water and may be connected with a supply so that there is a continuous replacing of the water which may have become heated by water which is cold. This cooling lens is held by the nurse and pressed by her fairly firmly on to the affected part. The object of this pressure is to render anæmic the part to be treated, as it has been found by experience that the therapeutic effect is much greater if the tissues are bloodless than if the circulation in them is proceeding normally. The active rays seem to be those which are usually called actinic, and are ultra-violet in the spectrum; they are therefore the most refractive rays, and they are accurately focussed on the part, the pressure being so adjusted that a red halo is seen surrounding a colourless centre of a little less than a shilling in size. The lens pressing on the skin may be held in position by rubber bands, but it is thus liable to shift and the employment of an intelligent nurse gives much more satisfactory results. It is, however, necessary that the nurse's eyes should be protected by coloured spectacles, as the light reflected from the lens pressed on the skin is intensely brilliant. Whenever it is necessary to readjust the position of the patient a red cloth cap is placed over the lower end of the telescope. The patient lies on a raised table or is seated in an adjustable chair the position of which can be varied so that the rays of light shall fall perpendicularly on to the skin. Each application or *séance* lasts about an hour and as each patient is treated only once a day and the department is open from 9 A.M. to 12 30 P.M. three sets of patients are under treatment every day, an interval of a few minutes being allowed between two sittings. The nurses after a little practice do not find it at all tedious to keep the compressing lens in position, exerting pressure at the same time, even though it lasts three hours each day. Great care is taken against sepsis; in order to prevent any such accident a separate pressure lens is kept for each patient and also separate parts of any other portion of the apparatus which comes in contact with him. These are kept in a series of lockers inscribed with the patients' names. Care is taken to protect the eyes and the unaffected parts of the patients' skin from the effects of the light rays. The light is provided by an arc lamp taking 60 to 80 ampères of current. This is obtained in the following

way: the public electric main is employed to work a converter which increases the ampèrage of the current from 10 to 60 or 80, while reducing its voltage from 140 to 60. The present converter is quite capable of supplying two such arc lamps as that employed at present, so that the capacity of the department could be doubled if necessary.

The same treatment can be carried out by the employment of the direct rays of the sun, and a small portion of the grounds has been shut off by a high paling from which can be hung curtains so as to exclude the gaze of the curious. The parallel rays of the sun are focussed on to the part by a large hollow lens containing an ammoniacal solution of copper which absorbs a large proportion of the heat rays. A separate lens has to be employed for each patient and a pressure lens, like that used with the electric light, is held against the affected part. There is no essential difference in the results obtained by the two methods.

The effect on the patient is in no way painful; the application itself causes no discomfort, and in so far as it is felt at all it is said by the patients to give a sensation of gentle warmth. But a few hours after the first application there is a certain amount of "reaction"; the part swells, becomes reddened, and is tender, but even then there is no real pain. This reaction varies in degree in different cases and is always seen in lupus vulgaris, but does not occur in cases of lupus erythematosus, so that it may be of some diagnostic value. As a rule it may be said that the greater the reaction there is the better the result. The beneficial effect of the treatment is often manifested within a few days, and one or two cases have occurred in which recovery ensued after only a few applications. Generally about 15 to 20 or 25 applications have to be employed before a satisfactory result is obtained. At one time an area not larger than the size of a shilling can be treated, so that if the diseased patches are extensive a prolonged course of treatment is required. The results, however, are eminently satisfactory: the skin becomes smooth, soft, and pliable, and what scar there is attracts little notice. The cases that are the most suitable are those with small recent patches of disease, but extensive chronic cases are improved, though not so rapidly. Lupus vulgaris seems to be the only disease in which the results are marked; in lupus erythematosus there is a little beneficial action, and one case of this disease is now under treatment at the London Hospital. It is early yet to speak of the permanence of the result, but Professor Finsen finds that recurrence occurs in only a small proportion of the cases, and in those a little further treatment removes the recurrent disease. When each patient is first admitted to this treatment at the London Hospital a photograph is taken and an elaborate system of notes has been devised. At the end of the treatment a second photograph is taken, and we hope in a few months' time to show the results when sufficient interval has occurred to render it probable that recovery is permanent. It is intended in a short time to provide an afternoon *séance* for paying patients if a sufficient number present themselves. Whatever may be the ultimate verdict of dermatologists on the Finsen treatment no one can deny the striking beneficial effects in lupus of this variety of phototherapy.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to July 20th, when the total reached nearly £48,000:—

	£	s.	d.
Per the Chief Rabbi (including Great Synagogue, Aldgate, £254; New West-end, £134; Bayswater, £78; Central, £74; Hampstead, £69; St. John's-wood, £34; South-east London, £34; Dalston, £24; East London, £22; Maiden-lane, £20; New Dalston, £20	924	0	0
St. Mary Abbot's, Kensington, Parish Church	314	0	0
St. Paul's, Vicarage-gate	126	0	0
Christ Church, Victoria-road	97	0	0
Church of the Annunciation, Marylebone	286	0	0
West London Synagogue	205	0	0
Christ Church, North Brixton	82	0	0
Corporation of the City of London	105	0	0
St. Thomas's, Telford-park	22	0	0
Holy Trinity, St. Marylebone	65	0	0
St. John the Baptist, Leytonstone	20	0	0
St. Alban the Martyr, Holborn	40	0	0
St. Philip's, Sydenham	28	0	0
Box outside Mansion House	11	0	0

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6486 births and 3662 deaths were registered during the week ending July 21st. The annual rate of mortality in these towns, which had been 14·5 and 15·6 per 1000 in the two preceding weeks, further rose last week to 16·4. In London the death-rate was 16·1 per 1000, while it averaged 16·7 in the 32 provincial towns. The lowest death-rates in these towns were 10·0 in Huddersfield, 10·7 in Cardiff, 11·6 in Burnley, and 11·7 in Bristol; the highest rates were 21·0 in Manchester, 22·2 in Salford, 23·0 in Sunderland, and 23·6 in Liverpool. The 3662 deaths in these towns included 555 which were referred to the principal zymotic diseases, against 344 and 427 in the two preceding weeks; of these 214 resulted from diarrhœa, 118 from measles, 91 from whooping-cough, 69 from diphtheria, 37 from "fever" (principally enteric), and 26 from scarlet fever. No fatal case of any of these diseases occurred last week in Plymouth; in the other towns they caused the lowest death-rates in Burnley, Halifax, Bradford, and Gateshead, and the highest rates in Derby, Salford, Leeds, and Sheffield. The greatest mortality from measles occurred in Derby, Oldham, Huddersfield, and Sunderland; from scarlet fever in Blackburn; from whooping-cough in Liverpool, Bolton, and Blackburn; and from diarrhœa in West Ham, Birkenhead, Liverpool, Salford, Leeds, and Sheffield. The mortality from "fever" showed no marked excess in any of the 33 towns. The 69 deaths from diphtheria included 21 in London, 10 in Sheffield, six in Leicester, and five in Leeds. No fatal case of small-pox was registered last week either in London or in any of the 32 provincial towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 17 at the end of each of the two preceding weeks, had declined to 14 on Saturday last, July 21st; one new case was admitted during the week, against four in each of the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1877, against numbers increasing from 1754 to 1861 on the six preceding Saturdays; 222 new cases were admitted during the week, against 210, 229, and 208 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 140 and 160 in the two preceding weeks, further rose last week to 169, but were slightly below the corrected average. The causes of 39, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bolton, Oldham, and 10 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Salford, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·9, 17·7, and 17·2 per 1000 in the three preceding weeks, rose again to 19·0 during the week ending July 21st, and exceeded by 2·6 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Perth and 14·3 in Dundee to 19·7 in Greenock and 22·2 in Glasgow. The 588 deaths in these towns included 38 which were referred to diarrhœa, 22 to whooping-cough, 18 to measles, 11 to "fever," six to diphtheria, five to scarlet fever, and two to small-pox. In all 102 deaths resulted from these principal zymotic diseases, against 85 and 73 in the two preceding weeks. These 102 deaths were equal to an annual rate of 3·3 per 1000, which was 0·8 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 32 and 23 in the two preceding weeks, rose again last week to 38, of which 23 were registered in Glasgow, four in Edinburgh, and four in Dundee. The deaths from whooping-cough, which had been 22 and 21 in the two preceding weeks, rose again to 22 last week, and included 16 in Glasgow, two in Aberdeen, and two in Paisley. The fatal cases of measles, which had been 20 and 17 in the two preceding weeks, rose again last week to 18, of which 10 occurred in Glasgow and six in Edinburgh. The deaths referred to different forms of "fever,"

which had declined from four to none in the three preceding weeks, rose again to 11 last week and included 10 in Glasgow. The fatal cases of diphtheria, which had been two and four in the two preceding weeks, further rose last week to six, of which three were registered in Glasgow and three in Edinburgh. The deaths from scarlet fever, which had been four and seven in the two preceding weeks, declined again to five last week, and included two in Glasgow and two in Edinburgh. The two fatal cases of small-pox were both registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 97 to 71 in the three preceding weeks, rose again last week to 80, and were 22 in excess of the number in the corresponding period of last year. The causes of 29, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·8 and 18·2 per 1000 in the two preceding weeks, further rose to 23·4 during the week ending July 21st. During the past four weeks the death-rates in the city has averaged 19·9 per 1000, the rates during the same period being 14·6 in London and 17·0 in Edinburgh. The 157 deaths belonging to Dublin registered during the week under notice were 35 in excess of the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against three, six, and eight in the three preceding weeks; of these, five resulted from whooping-cough, four from diarrhœa, two from "fever," one from scarlet fever, one from diphtheria, and not one from either small-pox or measles. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 2·6 in London and 2·9 in Edinburgh. The fatal cases of whooping-cough, which had been two, three, and four in the three preceding weeks, further rose last week to five. The deaths referred to diarrhœa, which had been two and one in the two preceding weeks, rose again to four last week. The fatal cases of "fever," which had been one and three in the two preceding weeks, declined last week to two. The 157 deaths in Dublin last week included 26 of infants under one year of age and 34 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons considerably exceeded the number recorded in the preceding week. Seven inquest cases and three deaths from violence were registered; and 52, or one-third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Samuel W. Vasey to the *Centurion*. Staff Surgeon James McC. Martin, D.S.O., to the *Barfleur*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant A. D. Jameson has proceeded to Woolwich for temporary duty.

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion the East Lancashire Regiment: Surgeon-Lieutenant A. Little resigns his commission. 2nd Volunteer Battalion the Essex Regiment: Surgeon-Captain S. A. Mugford resigns his commission.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Edmund Eustace Dyer, 7th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Glasgow Companies: Surgeon-Captain G. T. Beatson to be Surgeon-Major and to command under paragraph 55A Volunteer Regulations.

THE SOUTH AFRICAN COMMISSION.

The Commissioners have lost no time in commencing their labours. The preliminary meeting was held at the commencement of the past week at Burlington House, when the President, Lord Justice Romer, stated that although the Commission was directed to inquire into and report upon the arrangements for the care and treatment of the sick and wounded during the South African campaign they had no compulsory or special powers conferred upon them; but they hoped and believed that practically they would not be hampered in their work by not having such powers. They proposed first of all to take the necessary departmental evidence and then to obtain from unofficial witnesses in England as much information as possible bearing on the subject of the inquiry. The Commissioners hoped to leave for South Africa on Saturday, August 4th, and they would therefore in all probability not be able to complete the evidence in England before they left. He further stated that should the Commissioners find that their anticipations were not realised and that they were substantially hindered from ascertaining the facts by the absence of compulsory powers they would not hesitate so to report to the Prime Minister and to ask his assistance in procuring the necessary powers.

It is hardly necessary to remind our readers that the Commission is now composed of the following gentlemen: Lord Justice Romer (President); Dr. W. S. Church (President of the Royal College of Physicians of London), Professor D. J. Cunningham (Trinity College, Dublin), Mr. Frederick Harrison (General Manager of the London and North-Western Railway), Sir David Richmond (ex-Lord Provost of Glasgow), and Major Tennant (secretary).

The following have been examined as witnesses:—Surgeon-General J. Jameson, C.B. (Director-General A.M.S.), Lieutenant-Colonel Johnston (Assistant-Director A.M.S.), Major W. G. Macpherson, R.A.M.C. (Deputy-Assistant Director A.M.S.), Lieutenant-Colonel J. S. Cowans (Deputy-Assistant Quartermaster-General), General Sir Henry Brackenbury (Director-General Ordnance Department), Colonel Steevens (Principal Ordnance Officer), Sir Ralph Knox (Under-Secretary of State for War), Colonel Stirling Ryerson (Canadian A.M.S.), Rev. W. H. Orford, Sir Howard Vincent, M.P., and Mr. Watson Cheyne, F.R.C.S. We hope to report the proceedings at some length next week.

THE RELIEF OF KUMASI.

A telegram has been received by the Colonial Office from Colonel Willcocks dated "Bekwai, July 20th," in which he says: "I left Kumasi 17th July, leaving behind 150 native soldiers under Captain Eden, Lieutenant Mayne, Medical Officer Thompson, (and) Sergeant Desborough, R.A., all West African Frontier Force, and ample supplies of ammunition and of food for seven weeks, long before which I will have reinforced detachment with a force sufficient to free itself from the surrounding villages, &c. I brought away from Kumasi old garrison, most of them in hammocks, and also a great many refugees, women and children. Before departure from Kumasi had buried heaps of rotting corpses which must have been lying near fort for weeks past. I had also cut short bush and the grass which was growing up quite close to (the) walls of the fort. The work was sickening in the extreme, but at the same time all ranks helped bravely. ..... I cannot end without bringing to notice the soldierly qualities of officers and men under trials I have personally never previously known in my long experience of jungle warfare, their cheerfulness under every form of discomfort, their valour against the unseen and unknown numbers, on half rations, native soldiers without any blankets, yet always cheery. They are deserving of high praise." Amongst the names thus brought to notice is that of Dr. McDowell, Principal Medical Officer.

DEATHS IN THE SERVICES.

Surgeon-Major Arthur Croker, late A.M.D., in his 69th year.

Brigade-Surgeon Thomas William Wright, A.M.S. retired, aged 68 years, at Blackheath, on July 20th. He served in the Ashanti war in 1873–74 and retired from the service in 1882.

Lieutenant-Colonel Charles James Hislop Warden, late I.M.S. (Bengal), on July 18th, at his residence, Highbury-grove, N., aged 49 years. He entered the Indian Medical Service in 1874.

Fleet Surgeon Thomas Martyn Sibbald on July 13th, at Taku, aged 48 years. He joined the naval service as surgeon in 1876, and was surgeon of the *Shah* when, in May, 1877, she engaged the Peruvian rebel turret-ship *Huascar* off the town of Ylo. He served in the two night torpedo expeditions, and was mentioned in despatches. During the Zulu war he landed with the *Shah's* naval brigade, accompanying the Ekowe relief column, and was present at the battle of Gingihlovo in April, 1879 (Zulu medal with clasp). He became staff-surgeon in 1888, and fleet-surgeon in 1896.

THE SICK AND WOUNDED AT TIEN-TSIN.

We have as yet no sort of well-grounded assurance that our worst fears regarding the Legations at Pekin are unfounded. It is quite clear that the upheaval in China is a national one and of a very formidable character. The fighting at Tien-tsin has been serious and the losses on the part of the allies are considerable. We know but little regarding the medical arrangements. The navy has mainly supplied the medical officers. General Gaselee, as soon as he reaches China with his force from India, is to telegraph as to the suitability of Wei-Hai-Wei (our possession) for the location of a base hospital. His force is accompanied by medical officers and field hospitals from India and by a hospital ship as well as by transports capable of being used as hospital ships. Moreover, the American hospital ship *Maine* has been placed at the disposal of Her Majesty's Government. Most important of all—as a munificent expression of loyalty and good feeling—the Maharajah Sindhia of Gwalior has made the offer of a fully-equipped hospital ship for China, upon which he is willing to spend 20 lakhs of rupees. This princely offer is made on behalf of himself, his mother, and his wife, to testify their loyalty to Her Majesty the Queen-Empress.

TRANSVAAL WAR NOTES.

The following officers of the Royal Army Medical Corps have been discharged from hospital to duty:—Major C. G. Woods, Lieutenant J. W. H. Houghton, Lieutenant R. D. Jephson, Major J. G. Black, and Major A. P. Hart; also Civil Surgeon F. G. Ralston.

Major Greig, R.A.M.C., and Major Anderson, R.A.M.C., are returning home invalided in the *Avondale Castle*.

The Mayor of Devonport has inspected the military hospital, Stoke, and visited the sick and wounded soldiers, who number about 45, all the others having recovered sufficiently to leave for their homes. The mayor, who was received by Surgeon-General G. J. H. Evatt, P.M.O., Lieutenant-Colonel J. R. Rahilly, and Major C. J. Addison, R.A.M.C., distributed presents to the men. About 250 more invalids have arrived by the *Cavour* and will be accommodated in the hospital.

The steamship *Britannic* arrived at Southampton on July 22nd from South Africa. She carried 505 invalids, who were admitted to the wards of the Royal Victoria Hospital, Netley.

Telegraphic news has been received of the sudden death of Captain J. S. Stevenson, I.M.S., who was lately appointed deputy sanitary commissioner. We hope to publish an obituary notice of this very promising young officer.

Correspondence.

"Audi alteram partem."

"THE FOURTH DISEASE."

To the Editors of THE LANCET.

SIRS,—I accept without hesitation the differentiation of rubella into two distinct diseases which Dr. Clement Dukes has made. His reputation as an accurate observer and his position as an acknowledged authority on all affections to which boys are subject during the school period compel attention to his important communication on rubella, and the minute description he has given of the two diseases which have passed under this name is most convincing. I was, however, prepared for his conclusions. I have said for many years that there were at least three kinds of measles, but the casual and desultory experience of consultation work did not admit of the establishment of the differences by which they might be distinguished one from the other. More particularly it was impossible to ascertain if the different species "bred true." Now that the distinctions have been laid down I recognise their accuracy at once.

I am Sirs, yours faithfully,

Brook-street, W., July 25th, 1900. W. H. BROADBENT.

To the Editors of THE LANCET.

SIRS,—Whilst writing a short note on the clinical contrasts of scarlatina and scarlatiniform erythema my attention was called to Dr. Clement Dukes's article entitled, "On the Confusion of Two Different Diseases under the Name of Rubella (Rose-rash)," published in THE LANCET of July 14th (p. 89). The publication of that article has made more patent to my mind a probable fact which I have for some time suspected—viz., that scarlatina is frequently diagnosed erroneously owing to forgetfulness of the existence of a disease comparatively recently described by Brocq as "erythema scarlatiniforme desquamativum." Though I say that the disease has been recently described under this name the name only is new, since under the designation of "roseola æstiva" the same disease has long been known to us. Dr. Dukes's "fourth disease" is assuredly nothing more or less than our old friend, appearing this time without the dignity of a name. That the difficulty of distinguishing this exanthem from scarlatina is very great is evidenced strongly by the special references of many of the older authors and by modern works devoted to dermatology. More recent works on the practice of medicine are guilty of the sin of omission. The prevalence in an epidemic form of Dr. Dukes's new disease does not, I think, negative the view which I have expressed, as competent observers have related instances of epidemic roseola.

The clinical differences between cases of scarlatina and scarlatiniform erythema have been at all times little discussed, at least not sufficiently considering the importance of the subject. For some time the similarity of the simpler disease to scarlatina in most of the cases of the former which I have seen has been so great that I have considered the subject worth more attention than it commonly obtains. The ability in a given case to declare the presence or absence of scarlatina—a disease attended by so many dangers not only to the individual but to others also in his immediate vicinity—will readily be admitted to be most desirable, and yet, I fear, too often the medical man has to possibly err on the safe side and advise precautionary measures of isolation and disinfection unnecessarily. These precautionary means are at all times quite an undertaking even when necessary and are proportionately more so when directed for a passing exanthem of little importance. The most trying circumstances occur in the case of adults, amongst whom, especially in the case of middle aged females, roseola æstiva is not very uncommon during the summer months. In several cases such as I have mentioned the thermometer has registered an unexpected relatively high temperature; this fact is worth mentioning as I find that one of our best authorities on the matter particularises the fact that in the minor disease rarely does the temperature rise beyond 101° F. Instances of an elevation above this do, I believe, occasionally occur and they serve to indicate the importance of not relying too implicitly upon the thermometer as a guide in differential diagnosis here. I only record the result of my observations after most careful consideration of recent cases under my care where erythema was diagnosed and where the diagnosis was verified, in so far as it was possible to do so, by the absence of the sequelæ of scarlatina or previously acquired immunity, and from the fact that there was no resulting infection from any of them. The practical advantages of directing attention to this subject through the medium of THE LANCET consist, I assume, in recording, after mature consideration, clinical distinctions between the diseases under discussion, preferably after the method selected by Dr. Dukes, in tabular form. I do not wish to recapitulate unnecessarily, nor would I presume to an act almost amounting to a revision of so able an article by appending a lengthened table of diagnosis, but I will briefly state the results of my observations in the form of contrasted sentences.

—	Scarlatina.	Erythema scarlatiniforme.
Eruption... ...	Diffuse, punctiform; affected skin area not hypersensitive; rash when once out does not fade and reappear.	Patchy and erythematous, with well-defined borders; affected areas of skin sore to touch; rash evanescent, disappearing and reappearing in different parts of the body.
Throat	Swelling generally present, and ulceration often present.	Redness of fauces constant; no swelling or ulceration.
Glands	Sub-maxillary glands frequently markedly involved.	Sub-maxillary glands slightly or not at all affected.
Tongue	Strawberry character seldom absent.	Nothing characteristic.
Temperature...	Usually above 103° F.	Seldom reaches beyond 101° F.
Complications and sequelæ	Nephritis, otitis, &c.	None.

I have mentioned in the above table those symptoms only which, in my experience, offer a constant contrast in the two diseases. The transient rise in the temperature (never exceeding 36 hours), the enlarged occipital glands, and the coryza seem to form a combination of symptoms almost pathognomonic of rötheln; at least one would imagine sufficiently so to exclude those affections most resembling it.

I am, Sirs, yours faithfully,

ALFRED RUTTER, M.B., C.M. Edin.

Ryhope, Durham, July 16th, 1900.

To the Editors of THE LANCET.

SIRS,—May I make a suggestion to Dr. Clement Dukes as to the genesis of his "fourth" infectious disease. Living here, where there are educational centres for young people, the first two or three weeks of each term are always more or less anxious to the medical officer of such schools, and he has to act without much time for reflection on his diagnosis and isolate the sick from the healthy and so prevent or arrest the spread of epidemic disorders in the schools or district.

As a student I was taught to regard German measles as a hybrid disease between measles and scarlet fever, but like many other medical men found some cases where the diagnosis was almost impossible, and on two occasions (one in the practice of a colleague, the other in my own) the following serious accident occurred. In both cases the utmost care was taken to eliminate any source of fallacy, so much so in my case that a consultation actually was held before the patient was removed. Years elapsed between the occurrence of these cases, but in both instances the diagnosis was mild scarlet fever; they were both removed to different isolation hospitals and within a week both patients took genuine scarlet fever in the hospital. These cases were doubtless examples of this somewhat mysterious "fourth" disease alluded to in THE LANCET of July 14th by Dr. Dukes. Fortunately epidemics of this so-called "fourth" disease are rare, else more mistakes would occur at infectious hospitals.

While travelling in Spain and Portugal I was struck with the numbers of mules, the importance attached to them, and the care bestowed on their breeding. Of course the mule owes its existence to an asinine father and an equine mother, and our old friend German measles may be looked upon as similarly due to the efforts of the microbes of measles and scarlet fever. But there is another animal which is also a hybrid, which owes its genesis to an equine father and an asinine mother; this animal is somewhat rare and is known as a hinny and would correspond to the "fourth" disease.

I do not pretend to give any details as to the maternity or paternity of the microbes of scarlet fever and measles in the production of German measles, or the "fourth" disease or, as Dr. Dukes calls it, the scarlatinal form of German measles. It is generally believed that hybrid animals have no productive power, but this is not strictly true, and I have most direct evidence of a mule conceiving and bringing forth.

How German measles in both forms could propagate themselves seemed a difficulty at first, but as we descend the scale of animal existence fertility and fecundity increase at a most rapid rate, and the space in development from a horse to a scarlet fever microbe might account for the propagation of the infectious diseases and the difficulty in this direction with a mule or a hinny. Still it is well known that scarlet fever and measles are more highly infectious than those hybrid forms of disease. My object in this short note is to show that the idea of a "fourth" disease had occurred to other minds, and also that anyone who reads this may be prevented from sending a case of "fourth" disease to be treated at a scarlet fever hospital. I have suspicions of another hybrid disease which I hope to refer to on another occasion.—I am, Sirs, yours faithfully,

THOMAS JOHNSTONE, M.D. Edin., M.R.C.P. Lond.

Ilkley, Yorks, July 25th, 1900.

To the Editors of THE LANCET.

SIRS,—If the views given by Dr. Dukes in THE LANCET of July 14th, p. 89, be reliable one important result must not be overlooked. Free desquamation alone will not be a sufficient warrant for a diagnosis of scarlet fever in the absence of a clear history and no other sequelæ. Many a medical man who in days gone by has notified such a case straight away and regarded himself as a public benefactor will in future sit on the fence and do nothing of the sort. There has been an impression abroad that however one might be misled by sore-throats and rashes there was a haven of certainty in "free desquamation." I confess to being rather glad that this haven has been bombarded, and I would like to put another missile into it by insisting that even in measles there may be protracted and free desquamation. Such a case happened to me the other day. Two girls (twins) had ordinary measles with catarrhal symptoms and in one case severe dysenteric diarrhœa. In one of these cases desquamation was going on so vigorously a month afterwards that another medical man who accidentally saw it had an overwhelming suspicion of scarlet fever. Holt is the only author I can find who mentions that the desquamation in measles may be protracted—and even he only allows two weeks—yet here is a clear case of over a month.

I am, Sirs, yours faithfully,

July 25th, 1900. GERALD S. WALTON, M.B., C.M. Edin.

THE APPOINTMENT OF SPECIAL MEDICAL OFFICERS FOR THE CERTIFICATION OF LUNATICS.

To the Editors of THE LANCET.

SIRS,—Now that the "St. Pancras Scandals" have brought up the important subject of the certification of lunatics I think it is a very fit time to make a few suggestions concerning such notification and also as to the after-responsibility of people who have been inmates of lunatic asylums.

In the first place I would suggest that medical officers should be appointed for various districts, as in the case of the medical officer of health, with a fixed salary per annum (and not by the number of cases certified); moreover the medical officer should not be in private practice, so that his opinion on any case would not be biased in any way on account of being afraid of offending patients and their friends. Also such medical officers should have had previous experience in asylums, so as to be in a position to give an expert opinion on the mental condition of any person they might be called upon to certify, and in that way many patients suffering from the delirium of various diseases, such as alcoholism, meningitis, &c., would not be sent (long distances in many cases) to asylums for treatment when they should have been sent to a hospital or infirmary, and their friends, moreover, would be saved much pain and anxiety. Another important point that would tend to prevent patients from travelling in an unfit state would be a rule that every medical officer certifying a patient should see that patient not more than 48 hours previously to admission into the asylum. It would not be out of place to mention that many medical men have never certified a case and if called upon to do so would be at a loss to know what are the chief points to inquire into before certifying that a person ought to be under proper care and control, and, finally, some medical men refuse altogether for fear of prosecution. Such medical officers would also be expected to inquire into the family history of each patient and to observe the kind of home they have, their mode of life as regards drink, sexual habits and excesses, with whom they reside, and the manner in which they are treated by their friends, the knowledge of such matters often being of great importance in certain cases so as to be able to judge if statements made by patients with regard to the treatment they have received, the owning of property and money, are really delusions or not. Also that the medical officer should be present when the patient is interviewed by the magistrate so that if there was any doubt as to the patient's sanity it could be thoroughly inquired into before he was sent to an asylum. In some cases, such as mania following a drinking bout (the patient often recovering in a few days), there is no need to send them to asylums for treatment; in fact, if they were sent anywhere, a home for inebriates or a prison would have a better effect in suppressing such cases.

The above information about patients would also be of great help to the superintendents of various asylums when the subject of the discharge of a patient is under discussion, since it is very important in certain cases to know if he would be properly looked after for the first few weeks after leaving an asylum. Again, while the patients are on "trial" (before being finally discharged) such medical officers should

visit them from time to time, and in the case of a patient showing a relapse at once have them removed to the asylum again; in that way many accidents might be avoided. It might be mentioned here that in cases of medical men certifying their own patients they have occasionally been subjected to much annoyance by violence from such people after their release from an asylum which would probably not happen in the case of an independent certifying medical officer. Another important point is the obtaining of work for patients recently discharged from asylums, in which endeavour they might be materially helped by such medical officers, who would probably be in touch with members of town councils, &c.

Finally, there are many cases of insanity brought to the notice of the police owing to the eccentricities or violent habits of patients, and many accidents might be avoided if in such cases an expert in mental diseases was at once called upon to make an examination. To be able successfully to obtain all these various pieces of information without causing undue offence or annoyance to patients and their friends would in many cases require much patience, tact, and judgment, but I think asylum training, especially if combined with some experience of private practice, should enable a man to cope with the majority of cases.

I am, Sirs, yours faithfully,

Hatton, near Warwick, July 23rd, 1900. O. POLHILL TURNER.

LEADLESS CERAMIC ENAMELS.

To the Editors of THE LANCET.

SIRS,—On Nov. 19th, 1898, at page 1338, and again on Jan. 7th, 1899, at page 49, you were kind enough to notice my efforts towards the discovery and practical introduction of leadless glazes, and as you have referred to the recent Parliamentary debate on lead poisoning I should like to point out an error that some persons fall into by assuming that the general use of leadless glazes would of itself entirely remove the liability of pottery employés to contract plumbism.

Reference to statistics shows that such persons as ground-layers and litho-colour dusters yield quite a large proportion of cases, and yet they do not handle the glaze in a free state; what these people use are the *enamel colours*, which are almost invariably compounds of *fritted* lead with borax and colorant oxides (see pages 7, 8, 9, and 40 of the report by Dr. Thorpe and Dr. Oliver). To meet such cases I have for many months been laboriously experimenting with the object of discovering leadless ceramic enamels, and now I submit some specimens which, although willingly admitted to be more or less defective, are nevertheless sufficient evidence that such enamels will ultimately be practicable. Then, and not until then, will it be possible to entirely dispense with lead compounds and thus completely eradicate plumbism in potteries.

I am, Sirs, yours faithfully,

WM. J. FURNIVAL.

Granville-terrace, Stone, Staffs, July 17th, 1900.

A MEMORIAL TO THE MILITARY AND CIVIL MEMBERS OF THE MEDICAL PROFESSION WHO HAVE LOST THEIR LIVES IN THE SOUTH AFRICAN WAR.

To the Editors of THE LANCET.

SIRS,—The Princess Christian Convalescent Homes for Soldiers and Sailors, now in course of erection at Bisley, will soon be available for use. Many of the beds have already been endowed. The Queen has given two beds, the Duke and Duchess of York one bed for a soldier or sailor, the Princess Christian one for the King's Royal Rifles, and Princess Victoria of Schleswig-Holstein and Princess Aribert of Anhalt one bed for a "green-jacket," &c. Princess Christian has suggested to me her wish that a bed should be endowed for the sole use of the non-commissioned officers and men of the Royal Army Medical Corps. I proposed that the bed should be endowed as a memorial to the members of the medical profession, both military and civil, who have lost their lives in the war in South Africa. The ready response which I have received from a few friends to whom I applied privately, encourages me to hope that the scheme will commend itself to the medical profession generally. The amount required for the permanent endowment of a bed is £600, and towards this the Committee of the R.A.M.C. South Africa Fund has voted £200. From other sources I have received £125, and I now venture to appeal to the medical profession to make up the amount required (£275). I append a first list of subscriptions. Cheques or postal orders should be made out to Mrs. Meredith, and crossed "Barclay & Co., Princess Christian Bed." The fund, when completed, will be handed over to the trustees appointed for all the endowed beds.

I am, Sirs, yours faithfully,

CAROLINE S. MEREDITH.

21, Manchester-square, W., July 23rd.

LIST OF SUBSCRIPTIONS.

	£	s.	d.
R.A.M.C. South Africa Fund	200	0	0
Sir William Broadbent...	20	0	0
Sir R. Douglas Powell ...	10	10	0
Dr. Church	10	10	0
Dr. Buzzard	10	10	0
Mr. Alfred Cooper... ...	10	10	0
Mr. Somerset Beaumont	10	0	0
Sir T. Lauder Brunton...	5	5	0
Dr. Barlow	5	5	0
Mr. H. T. Butlin	5	0	0
Dr. Playfair	5	0	0
Lady Broadbent	5	0	0
Lady Vaughan Williams	5	0	0
Mrs. Lang Elder	5	5	0
Mr. Charters Symonds...	3	3	0
Mrs. W. Marshall Webb	3	3	0
Mrs. Wickham Flower ...	2	2	0
Mrs. Barlow	2	2	0
A Friend	2	2	0
Mr. Alfred Willett... ...	2	0	0
Miss Ewart	2	0	0
Mrs. Johnson	1	0	0
Mrs. Fletcher	1	0	0
Total	326	7	0

PROFESSOR LUSTIG'S PLAGUE SERUM.

To the Editors of THE LANCET.

SIRS,—As a new series of observations with Professor Lustig's curative serum was in progress at the Arthur-road Hospital I did not intend troubling you with any communication on the subject until it was completed. But as your Special Correspondent in India, who seems to have taken the serum treatment of plague under his kind, too kind, protection and considers himself the sole arbiter of its destinies—never so happy as when sounding its death-knell and from which he appears to derive a sort of malign pleasure—is again on the warpath, the interests of truth, no less than those of science and humanity, demand that the true facts bearing upon this most vital question should be placed before your readers.

In the issue of THE LANCET of June 2nd (p. 1608) there appears from the pen of your correspondent a critique on a paper read by Dr. Alfons Mayr of the Municipal Laboratory at Bombay, wherein the various issues and conclusions arrived at by the author are so confused and mixed up by him as to prejudice those not conversant with the subject against this line of treatment and to create a distinctly unfavourable impression. And it is with a view to remove this unjust and unfair prejudice and wrong impression that I have ventured to trespass on your space, especially as I have personally conducted all the observations on the serum treatment and am solely responsible for the results achieved up to now. Dr. Mayr's paper was based, in fact, entirely upon the monthly reports submitted by me officially to the municipal corporation and such other records as I placed at his disposal.

Professor Lustig reached Bombay in June, 1897, after the first epidemic of plague had ran its course. A few sporadic cases, however, existed, and these were placed at his disposal for treatment with a curative serum he had brought with him from Florence. The results proved extremely satisfactory. As material for further observation was not available in Bombay he proceeded up country and treated some 30 cases with results equally satisfactory. When, some time after his return to Florence, he learnt that another epidemic had broken out, he offered to prepare and send down some serum with a view to test its efficacy on a sufficiently large scale, and it is needless to say that his offer was thankfully accepted by the corporation. Early in March, 1898, Dr. (now Professor) Galeotti and Dr. Poluctinci arrived in Bombay with a quantity of serum, and as the epidemic was at its height arrangements were made to begin at once with the serum treatment. As the supply of serum was to reach Bombay from time to time and at irregular intervals, and was to be limited, and as the objects then in view were to test its value on a clinical basis and to watch its effects from day to day on the more pronounced symptoms of plague, the following procedure was adopted in treating the cases. All moribund cases (those in which the action of the heart had

become gravely impaired and exhibited signs of failure or impending failure) and as also all convalescents and semi-convalescents were excluded from the treatment. The reasons for such exclusion are sufficiently obvious to all experimenters. Whenever a new mode of treatment has to be tested it is usual to eliminate all disturbing factors that tend to vitiate the final results. And as it was found from our experience of plague that the two above-named classes of cases were such disturbing factors they were excluded. The former when admitted into hospital were generally found to be beyond the reach of all possible human help, and in the case of the latter it was soon recognised that half the battle—nay, more than half and that the most important—had been already fought and won outside the hospital, and no further assistance was required. Moreover, just as the inclusion of the moribunds would not have told against the serum treatment the non-exclusion of the convalescents would have failed to convince us of its value. Nowhere, so far as I am aware, is such material selected for experiments with new methods of treatment, and in adopting this procedure there was no violent departure from the methods in vogue elsewhere—in fact, there was ample justification for it in a preliminary trial.

The first series of observations lasted from March to November, 1898, and again from February to May, 1899. During the course of this period 403 patients received the serum treatment and 1190 patients were treated by ordinary methods. The clinical effects of the serum were watched from day to day, and although in some very grave and advanced cases the patients ultimately succumbed the immediate effects on the general condition of the patients were extremely well marked, and this indicated either that the dose of the serum was too small, or that it was not strong enough, or that the treatment was commenced too late. But on the whole the improvement was quite perceptible and gratifying. When at the termination of these observations the results were tabulated it was found that the serum-treated cases had a recovery rate of 38·2 per cent., whereas that in those not so treated was 19·5 per cent. only. The latter rate was, however, not less than that of the other large public hospitals, and the combined admissions numbering 4762 in two of the largest during the same period had a recovery rate of 19·7 per cent., and thus it becomes apparent that the exclusion of moribunds and convalescents did not tell in favour of the serum by reducing to any extent whatsoever the mortality rate in those treated by ordinary methods. In fact this system of "selection" so-called or rather mis-called, was so strict and accurate as to eliminate even all mild cases, for were it otherwise the mortality rate in the serum-treated cases ought to have mounted up much higher than the average of the other hospitals.

The second series of observations was commenced in May, 1899, and is still being continued. The object with which this series was started was to determine the statistical value of the serum, and hence it was resolved to conduct observations on 1000 cases of plague, 500 to be treated with the serum and 500 by ordinary methods, the latter acting as controls, and the cases were to be taken for treatment *alternately* in the order of admission and *without any attempt at exclusion of any sort*. But objection to this method of treatment was the preponderance of either moribunds or convalescents in either set vitiating the final results. It was, however, anticipated that in two such large sets of 500 cases each these would equalise at the end, and thus no undue advantage would accrue to one side or the other. We shall see further on whether and to what extent this anticipation was justified by practical experience. Further, in order to arrive at strict accuracy and to eliminate all errors some standard had to be fixed as to what cases should be classed as moribunds and as convalescents. It was therefore determined to fix the limit for the former at 24 hours, and all patients dying within 24 hours of admission were considered as moribunds, but it was subsequently found that a large number died between 24 and 27 hours of admission, and hence 27 hours was adopted as the standard. As regards convalescents,[1] all those that had gone over the acute stage of the disease and had a normal temperature or thereabouts and had suppurating or suppurated and open buboes were considered convalescent.

And now as to the results. Up to the end of last month 480 cases have been treated with the serum, and 480 cases have become their controls, under ordinary treatment:—

	No.	Died.	Recovered.	Percentage of mortality.	Percentage of recovery.
Serum cases	480	328	152	68·33	31·67
Control cases	480	382	98	79·58	20·42

The serum cases show a recovery rate of 31 67 per cent., whereas the controls have a rate of 20·42 per cent., a difference in favour of the serum of 11 25 per cent. But the above results are not strictly accurate, and have been rendered fallacious by the undue preponderance of moribunds and convalescents in each series. The anticipation at first entertained about the equalising of these has not been realised in actual practice and thus an element of error has been introduced into the statistics. The 480 serum cases were found to include 139 moribunds and 28 convalescents, whereas the controls had 145 and 38 respectively. The former had an advantage over the latter of six less moribunds, whereas the latter were better off in convalescents by 10. Hence for a strictly accurate comparison, the only course open is to eliminate all the moribunds and all the convalescents from either series, and then deduce results from those remaining. If that is done, the results stand as below.

	No.	Died.	Recovered.	Percentage of mortality.	Percentage of recovery.
Serum cases	313	189	124	60·38	39·62
Control cases	297	237	60	79·79	20·21

The percentage of recovery stands thus at 39·62 per cent. for the serum cases, and 20·21 for the controls, a difference of 19·08 per cent. in favour of serum. These results clearly indicate the value of serum treatment in those cases that are really acute and fit for treatment, and show that in these it is possible to very nearly double the recovery rate by the use of serum. These differences in the percentages do not, however, show the full value of the serum treatment, and that could only be arrived at by following the method adopted by Professor Haffkine in determining the life-saving value of his prophylactic inoculations against plague. That system is based on calculating the relative ratios of mortality amongst the inoculated and non-inoculated, and if the same system be adopted for the serum treatment the ratio of recovery in the serum cases as to control cases would be as 1 of control to 1·55 of serum in *all* cases, and 1 to 1·96 when the moribunds and convalescents are excluded from both the series. Or to put it in another way, if 100 cases out of a given number recover under ordinary treatment the same number if treated with the serum would give 155 recoveries. And therefore the percentage of recovery is enhanced in one case by 55 per cent. and by 96 per cent. in the other.

These, Sirs, are the plain and unvarnished facts with regard to the use of Professor Lustig's serum in the treatment of plague and they place before the reader the truth, the whole truth, and nothing but the truth. We have no reason to be dissatisfied with the progress made within two years of its application. Neither the mode of its preparation nor its application at the bedside have yet been finally determined and it is only by further research, experiment, and prolonged clinical observation that we shall be enabled to place it on a proper basis. So far as we have gone we have been able to prove that the serum treatment is the only treatment that can in any way appreciably reduce the high mortality of plague and we abide by our experience. When the diphtheria antitoxin required more than a decade for its perfection is it not reasonable that sufficient time should be allowed for the application of a serum against a much more rapidly fatal and more deadly disease like plague? And is it demanding too much of special correspondents to ask them to withhold awhile their *obiter dicta* and let those best conversant with the subject to work out, quietly and undisturbed, their destiny until they reach their goal, which has but one and only aim in view—viz., the lessening of human suffering and the saving of human life?

I am, Sirs, yours faithfully,

N. H. CHOKSY, M.D.
Chief Medical Officer, Arthur-road Hospital.

Bombay, July 7th, 1900.

[1] All those that were taken as convalescents in both the series ultimately recovered, and there was not a single death amongst them.

"RODENT CANCER OF THE CORNEA."

To the Editors of THE LANCET.

SIRS,—The interesting case published under the above title by Mr. Sydney Stephenson in THE LANCET of July 21st

would have been much more valuable had the diagnosis of cancer been verified. Judging from Mr. Stephenson's description and diagram the characters of the disease in his case agreed so closely with those of the well-known though somewhat rare chronic creeping ulcer of the cornea, in which there is, I believe, no suspicion of malignancy, that one is compelled to ask in what particulars Mr. Stephenson's case differed from the type? It has always seemed to me unfortunate that the term "rodent," already in use for a form of cancer of the skin, should also have come into use to designate this form of corneal ulcer. If Mr. Stephenson's case were cancerous one can only say that rodent cancer of the cornea, though not hitherto recognised, cannot be very uncommon, for the form of corneal ulcer apparently illustrated by Mr. Stephenson's case is described in most of the standard works on diseases of the eye. The galvanic cautery vigorously applied to the extending border seems to succeed better than any other treatment, but some cases baffle all attempts at cure.

I am, Sirs, yours faithfully,

July 25th, 1900. E. NETTLESHIP.

"ARSENIC IN SODIUM PHOSPHATE."

To the Editors of THE LANCET.

SIRS,—In your criticism of the above case contained in your issue of July 21st, p. 208, after stating the fact that we can supply phosphate of soda free from arsenic, you say: "It is a pity, we think, that if, as these druggists state, they knew of the important impurity they did not give greater and earlier publicity to the fact." As manufacturing chemists we certainly do not feel it our duty to warn the public, the medical profession, the wholesale chemists, or other manufacturing chemists of impurities not provided for by the British Pharmacopœia and contained in the products they are interested in. Our duty appears to us to be in making our articles free from these impurities and of the highest standard of purity.

We are, Sirs, yours faithfully,

MAY AND BAKER, LIMITED

(per W. E. B. Blenkinsop, Managing Director).

Battersea, S.W., July 24th, 1900.

"THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS."

To the Editors of THE LANCET.

SIRS,—My attention has recently been drawn to a paper under the above heading in THE LANCET of June 23rd (p. 1797), by Mr. Arthur H. Burgess of Manchester, and I write to point out that the comparative results obtained by him are greatly at variance with those of other observers and that in my opinion this discrepancy is due to the method which has been employed in arriving at these conclusions. The thread method was formerly much used, but as far as I am aware is seldom employed now as it was found to give discordant results. In my own practice I have given it up almost entirely, except in testing spore-bearing organisms under certain conditions and also in experiments on gaseous disinfection, owing to the uncertainty of its results and the difficulties of manipulation.

One of the difficulties attending the thread method is that due to grease, and Mr. Burgess in his paper does not mention whether he took precautions to ensure the freedom of the threads from grease, as he only refers to sterilising them before use. The most important error, in my opinion, arises from the fact that when the threads are partially dried without any attempt being made to remove the organic matter of the broth emulsion, a film of dry albuminous matter is formed which protects the organisms, and that therefore I cannot agree with Mr. Burgess when he says that "the bacilli are freely exposed to the action of the disinfectant in solution, no albuminous matter being present." Another point which is worth bearing in mind is the fact that it is almost impossible to conduct a series of inoculations in such a short interval as one minute, and if Mr. Burgess used different cultures for his one-minute experiments then the results are not strictly comparable. I notice that his sub-cultures were incubated for 10 days. This time seems unduly prolonged, as with most cultures of bacillus coli communis a growth or turbidity occurs in a much shorter time than that when kept at blood heat. The method described by Mr. J. T. A. Walker in his letter[1] is one which I have employed for some years in a slightly modified form, and I believe it to be at present that which gives the most regular and constant results, and it would be interesting if Mr. Walker would publish in your journal the experiments referred to in his letter as they could then be compared with the results obtained by Mr. Burgess.

I am, Sirs, yours faithfully,

SAMUEL RIDEAL.

Victoria-mansions, Westminster, S.W., July 25th, 1900.

PLAGUE IN TURKEY.

(FROM A CORRESPONDENT.)

FOR some months past plague has been present in more than one portion of the Turkish Empire, but up to the present it has nowhere given rise to anything of the nature of a severe epidemic. The outbreak which has naturally caused the greatest apprehension has been that in Smyrna, on account of the size and importance of the town, of the amount of shipping constantly visiting the port, and of its proximity to Constantinople. Fortunately, the outbreak has so far been of a very mild character, only 17 cases in all having been reported in the course of over two months. But the slowness with which plague takes hold of a place is a well-known character of the disease, and bearing the example of Calcutta and other places in mind it is impossible not to feel some degree of apprehensiveness for the future behaviour of plague in Smyrna.

The first recognised case of the disease there was seen on May 7th, when the patient had already been ill some few days. The patient was an elderly Jew, 60 years of age, living apparently in very poor circumstances. The second case occurred on May 26th, or nineteen days after the recognition of the first case. This patient was also a Jew, a youth, aged 23 years, who occupied a *khan* some quarter of a mile away from that occupied by the first patient; he was taken ill apparently on May 25th. Another short interval without a case followed, but on the night of June 4th–5th a third person fell ill with the disease. This was a boy, an Ottoman, aged 14 years, acting as domestic servant in the Ski-Tchesmelik quarter, a long way from the part of the town where the other patients had lived. The fourth case was also that of a Turk, a man aged 45 years, who lived outside the town of Smyrna, on a hill called Mount Bech-Tepé, where a few people dwell in a small group of isolated huts. He was first seen on June 15th, but the date of his attack is uncertain. All these four persons suffered from the disease in a remarkably mild form and all recovered. In each the diagnosis was made certain by the isolation of the plague bacillus from the bubo. In none could any direct connexion with a previous case of the disease be traced. The fifth case, on the other hand, ended in death, and it proved to be the first of a group of cases which occurred in and around a particular *khan* or group of houses. This is known as the Echeref-Pasha *khan* and is situated in the Bach-Durak quarter of the town. The fifth, sixth, seventh, ninth, and eleventh cases of plague were all in persons inhabiting this *khan* or its neighbourhood. The remaining cases, into the details of which it is scarcely necessary to enter, occurred in various other quarters of the town, and little or no trace of connexion could be found between the successive cases. The last was reported on July 8th; the patient had been ill since the 5th. A week has now elapsed without a fresh case being reported; this is reassuring as far as it goes, but in view of the wide extension of the infection throughout the town of Smyrna only the most sanguine can venture to hope that the outbreak is over and the infection completely eradicated. A less reassuring feature of the outbreak is the tendency shown to a successive increase in the fatality of the disease. At the outset it was of a mild character, and the first four cases all recovered, as already stated. Then followed, between June 17th and 27th, ten cases, of which three proved fatal; but on July 1st, 4th, and 8th three fresh cases were reported, every one of which proved fatal. It is interesting, in connexion with the Smyrma outbreak, that no sickness or mortality among rats has, it

[1] THE LANCET, July 21st, 1900 (p. 222).

is said, been observed. The serum treatment was employed in some of the cases with more or less satisfactory results.

At Trebizond a single case of the disease has been reported. The patient was a child, aged five years, who fell ill on June 11th. Her father was employed in the Custom House in looking after contraband goods, and it has been suggested that the infection may have been imported by means of some goods of this nature. The child had a very mild attack of the disease and for a time it was hoped that in spite of the clinical appearances it was not plague at all. The bacillus could not be found in smear specimens from the contents of the glands, but after some days it was found by means of culture and by inoculations into guinea-pigs, and all doubt as to the specific nature of the disease was thus removed. Fortunately, no subsequent cases have occurred, and it seems possible to hope that, as active measures of isolation and disinfection were at once enforced in regard to this single case, Trebizond may escape without any further spread of the disease.

In the Hedjaz plague has almost disappeared. In the week ending July 9th three deaths from the disease were reported from Jeddah and none from Yambo. In Jeddah from the beginning of the outbreak on April 26th up to July 9th the deaths from plague were in all 81; and at Yambo from April 11th to the same date the deaths numbered 67. It is noteworthy that the outbreak in Jeddah this year, as in past years, coincided with the great annual pilgrimage to Mecca and Medirah.

The remainder of the Turkish Empire appears to be for the present quite free from plague. A few cases of the disease recently occurred in the well-known endemic centre of plague in Assyr, in Arabia. Mesopotamia, on the other hand, where the disease has from time to time prevailed in past years, has this year apparently remained free from it, although in Persia, at no great distance from the Turco-Persian frontier, an outbreak of some severity has occurred within the past few months.

July 15th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending June 9th are as follows. Remaining at the beginning of the week, 88; admitted, 4; discharged, 5; died, 3; remaining at the end of the week, 84. The totals up to the end of the week are as follows. Cases 258; deaths, 95; discharges, 89; contacts, 1512; remaining, 81; cases among contacts, seven. The Chinese are included among the above figures, of whom there were attacked 10, with eight deaths. All other patients were whites.

The number of attacks during more recent weeks having been 38, 23, 23, seven, 17, and four. It is hoped that the epidemic may now be nearing its end.

From time to time sick cats have been mentioned by owners, but on inquiry it was usually found that they had already been got rid of. Two or three have been submitted to examination, however, but the bodies of these felines have furnished no evidence of plague until this week in the case of an animal which was secured and forwarded by a medical man and which was dying at the time of its being received. Having been killed with chloroform, it was found that the cervical glands were swollen and full of plague bacilli. No other organs were affected. The only other evidence that cats could and did suffer from plague came from Mauritius in the course of last year.

June 11th.

By the week ending June 16th there were remaining at Sydney suffering from plague 84 persons; 10 more patients were admitted and 15 were discharged; three died, leaving 76. The totals at this date read: Cases, 278; deaths, 98; discharged, 104; "contacts," 1559; "contacts" remaining, 100; and cases among "contacts," seven. Included among the above are cases among the Chinese, of whom 10 have been attacked, with eight deaths. All the other patients were whites.

No reason at all has appeared for supposing either that the cases recorded during previous weeks have not included practically all cases which have occurred, or consequently that the recorded cases were accompanied by a proportion of the ambulant cases usually observed or assumed during epidemics elsewhere. Recently, however, two or three such cases have been encountered. Thus a case which turned out to be plague having been reported by a medical man it was ascertained during inquiry that the patient's father had fallen ill just a week earlier. He had stayed from work for one or two days but had not thought it worth while to consult a doctor, yet he had an inguinal bubo of small dimensions and had had other symptoms which rendered it quite easy to give a confident diagnosis of plague. In another case, which came to light incidentally, the patient had never given up work; he also had been ill about a week and had a slight bubo. Both of these cases, which were promptly isolated at the plague hospital, would have been overlooked but for circumstances quite unconnected with the illnesses.

The second series of public inoculations yielded in all not more than 2500 inoculated in the course of more than a month, and has consequently been closed. Prophylactic serum is now being distributed to medical men; the demand is small and as such diffusion of it has practically no bearing on its use to prevent or abate an epidemic this need not be regretted. At all events, such preventive use of it has been made as the public would allow.

June 19th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Birmingham and Midland Eye Hospital.

THE annual meeting of the governors of this hospital was held on July 20th, when the seventieth annual report was read. In this it was stated that the extensive and necessary sanitary arrangements of the hospital had been completed, much to the comfort and well-being of the institution. The annual subscriptions amounted to £3716, and the donations to £792 11*s*. The total payments for the year amounted to £7204, but of this no less than £1429 had been expended upon repairs, including the sanitary alterations alluded to. The total number of patients were: in-patients admitted with ticket 589, without ticket 125; out-patients admitted with ticket 17,920, without ticket 9913. The medical report showed that 788 operations had been performed upon in-patients, 315 of which were for the removal of cataract or capsule, of which only three were unsuccessful. Iridectomy was done in 176 cases, and 93 eyes had to be removed. The number of operations on out-patients was 504, including 77 for the cure of squint and 293 for the removal of tumours from the eyelids. The committee expressed their satisfaction at the increased facilities for the accommodation of the nurses and servants. The question of affording aid to the children of the elementary schools who are known to want some sort of mechanical assistance to their eyesight was a subject which had engaged the attention of the committee, the chairman stating that no practical plan had at present been settled, the matter being beyond the power of the staff to deal adequately with such demands as would be made upon them from this source.

University of Birmingham.

The munificent donation of £50,000 from Sir James Chance comes as a welcome addition to the amount required to complete the endowment fund, which is stated to be £250,000. Equally generous is the gift of land from Lord Calthorpe and his son which is valued at £20,000. The new university has been fortunate in the friendship of those who have made large donations. Mr. Andrew Carnegie gave £50,000, and an anonymous donor a similar sum. The total amount promised in land and money reaches about £400,000, of which amount one half has been furnished by six donors. This is an encouraging example, yet there are still numbers who might swell the total by combined efforts in the cause of this valuable scheme in this great industrial centre.

Misleading Statistics.

It is a saying attributed to Sydney Smith that there is nothing so fallacious as figures except facts. The truth of the first part of the proposition is illustrated by the weekly return of the medical officer of health one week being 19·2 per 1000, while in the previous week it was only 15·6. It seems that the statistics from the workhouse had not been included in the latter return. It was stated in explanation at a meeting of the guardians that their returns were made

to the registrar's office and that the blame was not to be attributed to them. The entanglement of red tape appears to have come in as an element of error, and it is to be hoped that some arrangement between the respective authorities will cause some adjustment which will make these returns reliable as authoritative statements from the proper quarter.

July 24.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Manchester Sewage Case.

MR. YATES, Q.C., the stipendiary magistrate, delivered judgment on July 11th in the case of the Mersey and Irwell Joint Committee against the unhappy Manchester Corporation, which for a long time past has been in the condition, so far as the sewage question goes, of living between the hammer and the anvil, or, as some would have it, between the devil and the deep sea. It would be invidious to distinguish in the latter simile, but the Local Government Board, stolid and immoveable, may represent the anvil, while the Joint Committee hammers vigorously and repeatedly, the corporation having a bad time of it as it lies between the two. The corporation has a scheme believed to be efficient which the Local Government Board does not sanction. Meanwhile, pollution goes on to a disgraceful extent so that the Joint Committee prosecutes the corporation. As the magistrate said: "The difficulty really is that a proportion of the corporation do not realise the absolute necessity of doing at once what alone the Local Government Board will sanction, and do not realise the great injury they are doing day by day to those below their outfall." The Board insists on the purchase of land for filtration; the corporation does not want to buy land for that purpose nor does it go on with its own bacterial scheme, and so this filthy sewage flows into the Ship Canal and poisons the air for miles along its course, but it is said that plans and specifications are being prepared and that the whole question will be considered in September, and for that reason the magistrate did not "impose penalties for all the days referred to in the summons, but considering that this is the second occasion on which we have had to impose penalties we think that they must be increased, and we therefore impose a penalty of £50 in respect of each of five of the days (amounting to £250 and costs). We ought to add that if nothing is decided in September we shall have no option but to impose penalties, if asked to do so, *de die in diem*." If the hot weather continues, as it may, for the next two months the condition of the Ship Canal will be better imagined than endured.

The Extinction of Rabies.

It appears that the Board of Agriculture has now no muzzling orders in force. In 1895 as many as 672 cases of rabies were reported, but they have gradually decreased till last year when there were nine. The county of Lancaster suffered specially, having nearly a fifth of the total number of outbreaks. There were only five cases in 1898 and none since, so that we may hope to have done with the disease unless there is re-importation. The restrictions as to the movements of dogs into and out of the country seem in some cases unnecessary and pedantic, but it is as well to err on the side of caution and safety even at the cost of occasional private inconvenience and annoyance.

Glass in the Streets.

It is not very often that one finds public attention roused to one of the dangers of our streets and roads, that of broken glass; yet it has been recognised as a danger certainly since 1844, when an Act of Parliament gave magistrates power to impose a fine of 40*s*. for throwing broken glass into the streets. It is well, therefore, that the attention of the Manchester Watch Committee was drawn on July 12th to this "idle and senseless practice" by an influential deputation. The representative of the Royal Society for the Prevention of Cruelty to Animals spoke of the injuries to horses and other animals through broken glass. The Manchester and District Cycle Traders' Association, the Tram-owners' Association, the Mineral Waters Manufacturers, the Cyclists' Touring Club, the National Cyclists' Union, the Motor Car Club, the cycle employés of the Post Office, and other organisations were represented and concurred in the appeal to the committee. The numbers interested in this matter are very great. There are said to be 25,000 cyclists in the city whose tyres are endangered, as well as the numerous owners of rubber-tyred vehicles of all descriptions. The deputy-chairman of the committee told the deputation that there had been two prosecutions in the previous week, pointed out the great difficulty the police had in detecting offenders, and invited the coöperation of the general public. The throwing about and breaking of bottles is one of the bad habits of the British tripping public when holiday-making and is a great and dangerous nuisance in the country and the seaside. The education of the day has not done much as yet to soften manners and render them less brutish. This, however, does not come within the scope of the new code.

July 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Public Health of Dublin.

THERE has as yet been no practical outcome of the recommendations of the Viceregal Public Health Committee, but it is satisfactory to note that there has been nevertheless a steady and considerable reduction in the death-rate of the city extending now over many weeks. This is all the more important inasmuch as the city is already crowded with tourists, while an entirely unprecedented number of visitors are expected over next year to follow in the footsteps of Her Majesty the Queen.

The Dublin Boundaries Bill.

The judgment of the joint committee of both Houses as regards the Dublin Boundaries Bill was made public on July 19th. In connexion with the health of Dublin it is satisfactory to note the unanimous decision of the committee that it would be better to have the treatment of the sewage and drainage of the city and townships under the same administrative control. The recommendation is to appoint a joint drainage board for the city, Rathmines, and Pembroke representing the corporation and the two urban councils and to distribute over the entire area the past and future burdens of both systems of drainage. From the reply obtained from Mr. Balfour quite recently, in answer to a question put by Mr. T. Healy, M.P., this proposal of the committee will probably soon take legislative shape. In this connexion the corporation have scored a distinct success, for they have secured the condemnation of the outfall advised by the townships, while both Pembroke and Rathmines will eventually be forced to pay their share of the main drainage scheme.

Unqualified Midwives.

An inquest on a case of very great importance, especially at a time like the present when there is such a discussion in reference to midwives, was held on July 17th. It would appear that a married woman of the poorer classes, aged 34 years, died at her residence in a working-class district of Belfast on July 10th from post-partum hæmorrhage, having been previously confined of twins, one of whom was still-born. She had been attended by an unqualified "handy-woman" who, in her evidence, said that she had been practising midwifery for 20 years and had attended the deceased at six different confinements. A certified nurse who was called in found the woman (the children having been previously born) in a dying state. The confinement was in the evening and the "handy woman" said that on the next morning and afternoon she advised that a medical man should be sent for. The certified midwife swore that had she attended the woman in the morning and had seen her condition, as deposed by the "handy woman," she would have considered it her duty to have sent for a medical man. Dr. R. Munn said that death was due to post-partum hæmorrhage. He believed that a proper midwife would not have hesitated on insisting that a medical man should be sent for. The coroner, in summing up, said it was a terrible thing that the lives of people should be sacrificed by persons presuming to act as skilled nurses. If proper medical help had been procured both the mother's and the child's life might have been saved. The jury found that in the case of the mother death was due to hæmorrhage, and they considered that the woman who attended her did not bring about the death by want of skill or attention to her duties. The coroner said that all the jury had violated their oaths by arriving at a verdict contrary to the evidence and in the very teeth of the evidence. The foreman

protested against this allegation. In the case of the child the jury found that it was stillborn. The case is a most unsatisfactory one. On the one hand, those who really knew medically the circumstances of the case said that a medical man should have been called in. On the other hand, a lay jury said the "handy woman" was not at fault in neglecting to summon such advice. The whole case, by lifting the curtain, gives us an idea how the poor are still liable to be attended by the most ignorant women who have had no training; and it is a strong object-lesson in favour of preventing any of the so-called "handy women" being allowed charge of such cases. The better trained a nurse is the more quickly will she recognise that the gravity of the case demands that she should summon a medical man to her assistance.

The Typhoid Fever Epidemic at Belfast.

During the week preceding July 14th it appears that 34 cases of typhoid fever have been notified as compared with 41 in the corresponding one of the previous year. The death-rate from the principal zymotic diseases was 1·6, the death-rate from all causes being 15·7.

The Royal Victoria Hospital, Belfast.

It is said to be probable that the foundation-stone of the New Royal Victoria Hospital will be laid in September by the Prince and Princess of Wales when they visit Ireland.

Disastrous Shipping Accident in Belfast Lough.

On Saturday afternoon, July 21st, in a fog in Belfast Lough, two Scotch steamers, the one full of excursionists returning home from the North of Ireland to Glasgow, the other returning comparatively empty from Scotland, came in collision. The one vessel struck the other with a sliding blow, her anchor scraping along the side of the other and occasioning terrible injuries to the excursionists lining the rail. The excursion steamer returned to Belfast when the injured were removed by the admirable ambulance system (three vehicles were constantly employed) of the city to the Royal Victoria Hospital, where the resident and visiting staff (hurriedly summoned by telephone and messengers) had a very busy evening and night. It is said that five people, owing to the collision, have been killed; 21 are retained in hospital, and an immense number have been treated as extern patients. Not since the terrible railway accident at Portadown have the Royal Hospital staff had to cope so suddenly with such a serious surgical state of affairs. The company owning the steamers, the injured, and their friends have expressed their profound thanks to the hospital authorities and to the fire brigade for the splendid ambulance arrangements. From a surgical point of view there was a large number of injuries to the lower extremities (many of them compound fractures), some head cases, and a special feature was the unusual amount of shock present.

Dispensary Medical Officers and their Holidays.

So far the Local Government Board has made no order for the guidance of the dispensary committees on this much-discussed question and as a result the medical officers are being treated very badly. Here is the latest example. At the Downpatrick Board of Guardians Mr. D. S. Browne, dispensary medical officer of Portaferry, applied for three weeks' leave of absence, nominating Mr. V. P. Tighe of Dublin as his substitute. The guardians, however, agreed to allow him only a fortnight, congratulating themselves on their power to determine the duration of the medical officer's holiday pursuant to the late judgment in the Court of Queen's Bench. It is a great pity, after the statement of the Chief Secretary of Ireland in the House of Commons, that the Local Government Board delays so long in settling the matter. It is certainly not a sign of strength on their part.

The Annual Reports of the Resident Medical Superintendents of the Cork and Kerry District Lunatic Asylums

From the above reports it appears that the number of inmates in the Cork Asylum has increased by 36 and in the Killarney Institution by 22. In the Cork Asylum there are 1496 inmates, which is 239 over the standard limit; while in the Killarney Asylum there is still a small margin of accommodation available as the number of patients was 526 and the number for which there is accommodation is 683. In his report Dr. Woods, the resident medical superintendent of the Cork Asylum, makes the following instructive observations on the causes of insanity: "A further explanation for the steady increase in numbers must, I think, be set down to heredity. In many of my annual reports for the past 25 years I have laid stress on this fact, but some things cannot be said too often, and as the composition of asylum boards has within the last year so materially changed I think no harm can be done by again referring to the matter. Emigration tends to remove the fittest, those best able to withstand the battle of life, from our midst, leaving at home the delicate, the neurotic, and many liable to transmit to posterity the seeds of disease; the result is that at least 35 per cent. of cases of insanity in this country are directly traceable to heredity."

July 24th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Instructions for Troops going to China.

LAST week I mentioned the circular issued by the Minister of Marine giving instructions as regards principles of hygiene to the troops under orders for China. The circular points out that the chief points noticeable from a hygienic point of view in that portion of Northern China which lies between Tien-Tsin and Peking are the great extremes of heat and cold and the abominable quality of the water. Drinking-water in China, says the circular, is of very bad quality and the Chinese hardly ever drink it pure but substitute tea. In ships of the French navy serving in Chinese waters distilled water has been for many years exclusively used and thanks to this custom the health of the companies of French ships has been maintained in good condition under the most adverse circumstances. For an expeditionary corps operating in these parts the question of how to obtain a pure supply of drinking-water is very serious. Troops on the march cannot be supplied either with distilled water or with that sterilised in a special apparatus, for this latter is only available in hospitals and other permanent establishments. The most that can be done is to boil the water and even this measure in the circumstances under which an expeditionary force works is difficult to carry out. However, the ordinary drink of the Chinese is tea and therefore it is necessary to keep ones eyes open for this drink which is the common drink of the country and which has the additional advantage of being cheap and sustaining. On the march use should be made of the pocket filters made upon the Lapeyière system with potassium permanganate. These filters have the advantage of destroying large numbers of noxious germs from water, and several of these appliances have been given out to the troops. Wells, which in China are always contaminated, can be cheaply and easily disinfected by the permanganates either of potassium or of calcium. From five to 10 grammes of permanganate of potassium are enough for a litre of water. Coincidently with the permanganate the use of a mixture of one part of powdered charcoal to three parts of fine sand is recommended. Soldiers should by all means avoid the use of alcohol which is so widespread in China. In the north of China they distil a spirit from *sorghum* (cane) which is of deeper colour in proportion to its inferiority. It is sold at from 60 to 100 sapeks per litre, that is to say, at from 30 to 50 centimes. Spirits are also distilled from sundry kinds of grain which are most impure and dangerous to health. Butcher's meat can be obtained in plenty, as well as poultry, game, fresh vegetables, and fruit of excellent quality. As a general rule the use of pork should be eschewed, the pig being frequently affected with cysticercus and trichinosis. Fresh-water fish is always bad and tastes of mud, as do the fresh-water shrimps and crayfish owing to the dirty condition of the watercourses, and all these had better be avoided. During the hot season malaria is very prevalent in the Pei-Ho basin and the precautions laid down for troops operating in malarious countries must be strictly observed. For any special means to be adopted the commanding officer must confer with the principal medical officer. Heat-stroke and sun-stroke are common in July and August and congestions of the liver are frequent during the summer. After malaria, however, the dominating pathological factor of the summer in China is diarrhœa. Every case of diarrhœa, however slight, should be treated at once, for epidemics of cholera are frequent in China, and any diarrhœa may be a starting point for an attack of cholera if cholera vibrios happen to be present in the intestine. During the winter respiratory affections are common, in

addition to rheumatism, diphtheria, and typhus fever of a petechial type. Small-pox is practically endemic, vaccination being almost unknown outside centres having a resident European population. Revaccination should therefore be carried out throughout the expeditionary corps. For the hot season troops should be supplied with cholera belts, mackintosh sheets, and mosquito curtains. For the bitter winter of Northern China troops should be supplied with additional warm clothing and the commanding officer should be instructed to allow both officers and men to wear furs, which can be obtained in the country at a cheap rate.

Medicine and the Theatre.

Among the numerous congresses which are at present being held in Paris and of which many deal with questions never before discussed, as is only fitting at the dawn of a new century, is one which, although at first sight it would appear to be far removed from having any medical interest has yet put down on its programme a series of questions of the deepest interest to medical men. I allude to the Congress on Theatrical Art which will sit from July 27th to 31st. Here will be discussed the following questions which are most interesting from a hygienic point of view: the mode of nominations and status of the medical men attached to subsidised theatres; the best method of organising the medical department and its relations with the Prefect of Police; the statistics of accidents occurring in the course of representations or rehearsals; the inspection and upkeep of emergency chests (*boîtes de secours*); medical aid to the staff at their homes; reports and opinions; the unhealthiness of rooms, the stage, and the dressing-rooms; warming and ventilation; the representation and the powers of medical men on the governing body of theatres; consideration of the arrangements which could be carried out in the building of the next popular theatre. A report will be laid before the Congress and a committee appointed which will sit until some practical conclusion has been arrived at. M. Lefeuve is in charge of the report and those interested in the matter are requested to communicate with him. Another congress dealing more especially with music will consider the hygiene of singers and instrumentalists. This congress will begin in November and will be assisted by the advice of the most experienced artists and professors.

July 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

An Alleged Hospital Scandal.

A CONSIDERABLE sensation was caused not long ago by an article published in the *Medicinische Reform* drawing attention to a paper in the *Archiv für Klinische Medicin* wherein Dr. Strubell, an assistant in the Jena Medical Clinic, had described certain methods used by him in the treatment of a case of diabetes insipidus. Dr. Strubell endeavoured to combat the disease by limiting the daily quantity of drinking water to a very small amount, the effect being that the patient suffered very much from thirst and procured water and other beverages secretly. Dr. Strubell accordingly locked the man in a room with barred windows and kept the key himself. The sufferings of the patient were described in an unfeeling manner by Dr. Strubell who mentioned that the man was found to have drunk from a waste pipe near the window; he was so tormented by thirst that he drank dirty water out of the washing-tub and even his own urine. Symptoms of cardiac failure appeared during the treatment, and eventually the patient had to be discharged. In the above-mentioned article printed in the *Medicinische Reform* Dr. Strubell's proceedings were very severely blamed, especially because the tenor of his communication might induce readers to believe that the patient was subjected to this treatment not for curative but for experimental purposes. The editor of the *Medicinische Reform* stated that the medical press and the medical profession disapproved of such methods, and he hoped that the medical profession might be able to come to an authoritative decision on the matter without the intervention of non-medical journals. Unfortunately, the expectations of the *Medicinische Reform* were not realised, Dr. Strubell's article being at a later date severely blamed by several non-medical journals of different political views. For several weeks the columns of the newspapers were filled with articles and letters on this question, Professor Neisser's alleged misdemeanours being compared with the above case, and of course unqualified practitioners, homœopaths, and others joined in the general chorus of blame which was raised against the whole medical profession. The chief physician of the Jena Medical Clinic, Professor Stintzing, then declared himself responsible for everything that had happened in this clinic. He said that notwithstanding the malicious suggestions of certain periodicals the facts were that the treatment had been tried for curative purposes, that the patient had been informed of some inconveniences he might experience, that he nevertheless consented to be treated in this way, that he was at liberty to leave the hospital whenever he chose but that he remained there for two months and afterwards returned of his own accord, that the events described by Dr. Strubell happened three years ago, and that the patient (who died in 1899) had up to the time of his death always been grateful to the physicians of the clinic. Professor Stintzing admitted that Dr. Strubell's descriptions might lead his readers to form erroneous opinions, but the charges of inhumanity towards the patients made against the physicians of that clinic were quite unfounded. The respectable periodicals acknowledge the importance of Professor Stintzing's letters, but it is to be feared that Dr. Strubell's case will continue to be the object of severe criticism in some newspapers and at public meetings of that section of the public who are only too glad to have an opportunity of extolling the so-called "popular medicine," homœopathy, and other unorthodox systems.

The Expeditionary Force for China.

Great efforts are being made in order that the troops ordered to China may be provided with a sufficient staff of surgeons and nurses and with an adequate supply of medical stores. Apart from the official organisations afforded by the medical departments of the Army and Navy the German Red Cross Association hastened to join the military authorities in working for the benefit of the wounded soldiers. Trained male attendants and nurses will be sent to the scene of war in China with everything necessary to establish Red Cross hospitals. The direction of the hospitals will be confided to Dr. Küttner of the Tübingen Surgical Clinic, who certainly has become one of the most experienced military surgeons in Europe. Dr. Küttner, who has just returned from Africa, will start at once for China and this will be the third war in which he has served, the previous ones being: (1) that between Turkey and Greece in which he was attached to the great military hospital at Constantinople; and (2) the Transvaal war where he was at the head of the German ambulance with the Boers at Jacobsdaal. A great many surgeons and nurses have applied to the Committee of the Red Cross Association seeking to be enrolled on its staff.

The German Practitioners' Association.

The annual meeting of the German Practitioners' Association (Deutscher Aerztetag) took place on June 22nd and 23rd at Freiburg in Baden, the late president, Dr. Aub of Munich, being replaced in the chair by the vice-president, Professor Löbker of Bochum. The association at present has 291 branches and 16,583 members, and of these 183 branches, including 14,790 members, were represented. The first subject of discussion consisted of questions relative to death certification, and the association adopted a motion of Dr. Becher of Berlin that every case of death ought to be certified by a qualified medical practitioner. The second subject of discussion was the relation of the first-aid and ambulance association to the medical profession. The Practitioners' Association recommended that the first-aid service should be in connexion with the hospitals and that the control should be vested exclusively in medical men. This part of the business was followed by an animated discussion on the conditions under which German medical men carry on practice abroad. Dr. Joachim of Berlin recommended that the association should establish an office for the purpose of giving information to German practitioners intending to go abroad. The assistance of the consular department in this matter had already been asked for by the Berlin branches of the association. One of the Hamburg delegates was of opinion that the office ought to be in that city and that it ought to have control over the appointment of medical officers to merchant vessels both steamers and sailing ships. The association agreed with this proposal. Other subjects of discussion related to fees in club practice, to insurance

companies, to unqualified practitioners, &c. Dr. Löbker of Bochum was elected president.

Hints to Contributors to the Medical Press.

Professor Virchow, the editor of the *Archiv für Pathologische Anatomie*, has addressed some words of counsel to the contributors to that periodical and to medical authors generally, explaining several points which it is desirable that writers for the medical press should always keep in mind. It would be difficult to find a higher authority on this subject than Professor Virchow, the patriarch of the savants and editors of Germany. His remarks are not intended for authors of books, who are at liberty to write as they like; they have been published exclusively for he benefit of contributors to medical weekly, monthly, or quarterly journals. He says that it is one of the elementary principles of journalism that the successive numbers of a journal must be issued at a certain time and in a certain size. Contributors must therefore endeavour to write concisely, taking up as little space as possible and avoiding all superfluous matter. Descriptions of cases, experiments, and necropsies when sent to editors for publication are often so voluminous that it is impossible to use them without serious inconvenience. The publications of series of cases, &c., in the form of tables is a great annoyance both for the editor, the printer, and the readers. Controversies as to priority are often offensive in style and lacking in the courtesy due to professional brethren. Finally, contributors ought to abandon the custom of quoting long passages from other authors with the object only of showing their knowledge of medical literature.

July 23rd.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Sanatorium for Consumptives.

THE first yearly report for 1899 of the Canton of Zürich's Sanatorium for Consumptives offers several points of interest. This sanatorium is situated at Wald at an altitude of 907 metres. The heliograph marked in the four winter months 465 hours of sunshine (Davos 445, Zürich 332). There are 88 beds, of which an average of 72 were continually occupied. 319 patients were admitted and remained an average of 104 days, 36·4 per cent. belonging to the first stage (Dr. Turban's scale), 26·3 to the second stage, and 37·3 to the third stage. Out of 76 patients in the first stage 48 were cured and 22 were eminently better. Of those in the second stage (55) none were cured and 35 were eminently better. Of those in the third stage (78) only 13 were eminently improved. These statistics go far to prove that only cases in the first and also the beginning of the second stage promise good results.

Dr. Tez's Typhoid Extract.

This has been tried at the University Hospital, Zürich, in eight cases, which were all chosen among the worst cases in the first or second week of the disease. After injections they rapidly improved and were free from fever within four days. In one other very severe case which had lasted three weeks and where the temperatures ran up to from 103° to 105° F. continuously the injections of this serum were also crowned with success in seven days, an ensuing relapse being also treated successfully. Professor Eichhorst can thus recommend a trial in all cases severe from the onset or even later. No deleterious effects were observed.

Tuberculin Injections for Diagnostic Purposes.

Though not an advocate of tuberculin injections for therapeutic purposes Professor Eichhorst of Zürich strongly recommends them to secure diagnosis in doubtful cases with pulmonary and other symptoms. The injection of one milligramme of Koch's old tuberculin must be followed by a feverish reaction to secure a positive diagnosis of tuberculosis. Should no reaction follow, three and eventually five milligrammes can be injected at intervals of from two to three days. A case of morbus Addisonii and a case of pseudo-leukæmia were thus diagnosed as based on tuberculosis.

Zürich, July 21st.

RUSSIA.

(FROM A CORRESPONDENT.)

The Outbreaks of Plague in the Kirghiz Steppe.

IN February last I communicated to your columns[1] a short account of an epidemic of plague which had occurred in two Kirghiz settlements in southern Russia. No further details in regard to this isolated outbreak have, I believe, as yet been published. A full account of the epidemic from the pen of an eye-witness is therefore particularly welcome. Such an account is furnished by Dr. Arustamof in the pages of the *Vratch* (1900, No. 15). The article is too long to quote in full, but the following is a short summary of the principal facts which it contains. The scene of the outbreak was the Caspian Sea portion of the Kirghiz steppe in the eastern part of the government of Astrakhan. This steppe extends from about 45° to 50° N. latitude, and from about 47° to 51° east longitude (from Greenwich). It is about 300 versts long and 400 versts broad, and contains approximately 300,000 inhabitants. The greater parts of the steppe is composed of sand, forming irregular mounds and almost devoid of vegetation. To the south the sand gives place to yellow sunken deposits of salt, entirely devoid of vegetation. The Kirghiz inhabitants live a nomad life, in summer in tents, in winter in *zemlianki* or earth huts. On the shore of the Caspian Sea and on the islands near it the population is somewhat denser. It was on one of these islands that plague first made its appearance in October last. On the 25th or 26th of that month the daughter of a *moullah* living on the island of Irsalou-Aral, belonging to the Kirghiz horde, fell ill with symptoms resembling those of plague How she contracted the disease is unknown. The Kirghiz are fanatical Mussulmans and often visit Mecca (where plague, it will be remembered, was present last year), but it seems that they are very loth to give any information to a non-believer as to whether they have or have not been to the Holy Places. Irsalou-Aral (*aral* means a mound) is a small island on the Caspian and it contained at the time of the outbreak a population of 52 persons. On October 25th or 26th, as just stated, the *moullah's* daughter fell ill and she died five days later; on the 26th his son, aged 15 years, fell ill in the steppes, 12 versts away, and died on Nov. 3rd. Other cases followed, and on Nov. 26th the *moullah* himself fell ill but recovered. In all, 25 persons out of the total population of 52 were attacked by the disease and as many as 22 died. In the meantime the infection spread from this island to those of Kishkine-Aral and Kine-Aral, the two islands which were alone mentioned in the accounts of the outbreak first published. They are separated from each other by a strip of water under 100 yards in width, and they lie some 35 versts (or 24 miles) away from Irsalou-Aral. The first case in Kine-Aral, which occurred on Nov. 13th, was that of a woman, the sister of two patients who had died in Irsalou-Aral. It is not definitely stated that the woman had visited her relatives there, but it is to be supposed that some communication between them had taken place. On the same day the woman's son, a boy, aged five years, was attacked, and both died two days later. The disease appeared about the same time in Kishkine-Aral, and in the two islands as many as 39 deaths occurred out of a total population of only 65. Whole families were swept away and the unfortunate survivors became panic-stricken. They were unable, however, either to fly or to get help from the mainland. Just as the outbreak was at its worst a severe storm broke over the northern end of the Caspian Sea; the ice which was beginning to form was broken up, and it was impossible to cross to the mainland either by boat or on foot across the ice. It appears probable that, while this condemned the affected islanders to suffer and die without help, it also prevented the disease from spreading to other islands or to the mainland. It was not until Nov. 28th that news of the outbreak reached the ears of the sole *feldscher* in the neighbourhood—the *feldscher* attached to certain fishing industries—who reported it to the authorities. A medical man reached the scene of the epidemic on Dec. 4th and measures were at once put into action to deal with the outbreak. Later others visited the island and on Dec. 11th the author of the article from which this account of the epidemic is taken himself attempted to cross to the island of Irsalou-Aral.

[1] THE LANCET, Feb. 3rd, 1900, p. 350.

He failed, however, on his first attempt; the ice was as yet too weak to drive over, and on trying to do so the horse and cart fell through into the water, immersing him, with his baggage and supply of drugs which he was taking with him. A second attempt at another part of the ice was equally unsuccessful. On the following day a third attempt was made, but only with the same results—a fresh wetting for himself and all his supplies. On the third day, however, he succeeded in getting across in a boat. At that time 21 out of the small population of the island were already dead and one was still ill. The first 13 bodies had been buried, but eight others remained unburied, the survivors dreading to touch them.

In each of the islands the surviving healthy persons were given a bath in a disinfectant, were clothed in entirely new clothes, and were removed to houses or tents where no case of the disease had yet occurred. The infected huts or tents with their contents and with the unburied bodies of those who had died were burned down. A cordon of mounted Kirghiz was drawn round the infected settlements. These measures seem to have succeeded, or at least to have aided in checking the course of the epidemic. The outbreaks, in fact, practically ceased in all the islands from the time that these measures were put into force. The other conditions were practically favourable at the time for the extinction of an epidemic. The extreme isolation of the communities affected, the smallness of their numbers, and the onset of extremely cold weather were all, no doubt, conducive to the cessation of the further spread of a disease such as plague. But there can be little doubt that the measures above briefly enumerated were mainly instrumental in stopping the ravages of the disease. On Dec. 16th the outbreaks were completely over. The survivors were housed in uninfected huts. All inside the contaminated zone, including medical men, feldschers, police officials, and others, were provided with new clothes, and their old ones were burnt or disinfected. A number of surrounding villages, over a large area, and containing a population of over 10,000 persons, were examined for traces of any suspicious disease, and later the islands were visited by Professor Levin, Professor Raptchevski, and Professor Vinogradof on behalf of the Russian Plague Commission, from whom a report should be forthcoming shortly. Although no bacteriological evidence of the nature of the disease in these outbreaks has as yet been published there seems no reason to doubt that it was the plague. The symptoms were principally those of fever, headache, vomiting, extreme prostration, spitting of blood, and death in two or three days. None of the patients seem to have presented buboes, and it is reasonable to suppose that the outbreak was one of plague in its pneumonic form. In this respect, as well as in regard to its local intensity and fatality, the outbreaks are closely analogous to that which occurred at Kolobovka on the Lower Volga in the summer of 1899. In that, as in the outbreaks now under consideration, no trace of the source of the infection could be discovered.

July 23rd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

A Bureau of Public Health for the Dominion.

DR. RODDICK, M.P., is taking an active interest in the direction of having established a central board of health for the entire Dominion. Speaking on the subject recently in the Canadian House of Commons he pointed out the importance of concentrating all subjects relating to sanitary affairs, marine quarantine, the sanitation of Indian reserves, leper asylums, vital statistics, the sanitary portion of the census, the protection of waterways, sanitary measures in unorganised territories, the protection of public health against the invasion of tuberculosis, and the importation of unhealthy articles of food and freight, such as rags. The question of sanitary police he thought a particularly important one at the present time. The Dominion authorities should have such men now on the shores of British Columbia to guard against the introduction of that loathsome disease, the bubonic plague. Besides, they had need of a bacteriological laboratory, for at present they had to depend upon the United States, England, and even sometimes upon Japan. He thought they should have in their own country a laboratory under the charge of a capable man, in which should be carried on the manufacture of prophylactic serums of various kinds. Recently he had attended a medical convention in the United States where a professional gentleman had read a paper on leprosy who stated that it was his purpose to proceed to Ottawa to make a study of the subject in the laboratory there. Dr. Roddick had to inform him that such an institution did not exist. Canada was a long way behind in this respect and he thought the Government might well look carefully into the matter during recess, which the Minister of Agriculture promised to do, so that very likely there will be a report to deal with at the next assembling of the House. The Government also should have medical men in the great ports of Europe and the Orient who should carefully examine intending emigrants and see that the ships are properly equipped for the sanitary care of those on board. The formation of a Dominion Medical Council, Dr. Roddick believes, will go much toward securing the creation of a department of public health in the Government of the country.

The Extent of Leprosy in Canada.

The Hon. the Minister of Agriculture in the Dominion Parliament, in answer to questions regarding the extent of leprosy in the Dominion, stated recently in the House of Commons that there were 19 lepers in the lazaretto at Tracadie, New Brunswick, 14 being from that province, one from Prince Edward Island, three from Manitoba (the disease having been contracted by these in Iceland), and one from the province of Nova Scotia. One of the Manitoba cases had died in January, 1897, and another in July of the same year. The Minister also stated that he had been informed early in the autumn of 1897 that there were six lepers in the lazaretto on Darcy Island, British Columbia, all of whom were Chinese. Since that year these have not been under the control of the Dominion Government but are in the immediate hands of the Government of the province of British Columbia.

Tinea Favosa Quarantine.

In view of the fact that the quarantine officers of New York and other ocean ports along the Atlantic seaboard are excluding from landing immigrants the subjects of this disease it becomes of some importance to the people of Canada, more particularly those down by the sea in the maritime provinces of Nova Scotia and New Brunswick. Last spring it was stated that several of the rejected ones had found shelter in these provinces and on Cape Breton Island, but although a diligent and persistent search was prosecuted they could not be located. This disease is not as yet considered by the immigration authorities of Canada as a sufficient cause for exclusion or even quarantine; but the recent action of the United States Government, combined with the fact of the continual growth of St. John, N.B., as a port of entry for transatlantic passengers, makes favus one of interest to the profession as well as to the general public in that locality, which is bound to result in similar efforts being put forth to exclude the introduction of these diseased hordes into Canada. The disease seems to be very prevalent in New York and it is from this source when rejected and excluded that New Brunswick and Nova Scotia fear its introduction. Here and there a few isolated cases have been reported in Canada, one particularly interesting case having occurred in the Montreal General Hospital in which nearly the whole cutaneous system was involved.

The Ontario Medical Association.

The twentieth annual meeting of this association was held in Toronto on June 6th and 7th, under the presidency of Dr. Adam H. Wright of this city, Dr. Harold C. Parsons acting as secretary.—The first discussion was an interesting one upon the Use of Morphia in Puerperal Eclampsia, some adhering to and endorsing this method whilst others had found the bromide-chloral treatment superior and more effective.—Dr. Luke Teskey, Professor of Clinical Surgery in Trinity Medical College, read a valuable paper on Appendicitis. He classified this disease into three forms: catarrhal appendicitis, acute circumscribed appendicitis, and gangrenous appendicitis. He laid particular stress upon the chronic symptoms of indigestion and the progressive loss of body-weight in the first class of cases; he counselled operation in all these cases and thought that the recoveries ought to be 100 per cent. In the second class an important diagnostic point was the feeling of resistance which one always finds in local inflammatory processes; when that resistance was first felt that was the time for operation. In the third class an early operation

was the only hope for the patient.—Inter-provincial Medical Registration was a live topic for discussion. Dr. Roddick was present and addressed the meeting at some length on this subject. In his hands is intrusted the Bill to bring this question into practical effect. The meeting unanimously approved of the formation of a Dominion Medical Council.—Two Cases of the Total Removal of the Vas Deferens and Vesiculæ Seminales were reported, one by Dr. George A. Peters of the University of Toronto and the other by Dr. J. Alexander Hutchinson of the University of McGill.—Dr. Peters further gave a very interesting report of a case of Transplantation of the Ureters in the Rectum by Extra-peritoneal Method, for which he claims priority and originality. The little patient is now six years of age and can hold his urine in the rectum at night for eight hours and in the daytime for three hours. The boy had also been the subject of a procidentia recti which had been corrected.—The Adaptation of Patient to Climate in Cases of Phthisis was the subject of an interesting address by Dr. N. A. Powell of Toronto, who pointed out the advantages of the Muskoka region and the North West and Rocky Mountain regions for the subjects of this trouble.—Professor William Oldright of Toronto University showed an interesting case of Necrosis of the Skull in an old syphilitic, aged 56 years. It measured five inches either way in extent.—Numerous cases of Cancer of the Rectum were reported by Dr. E. E. King of Toronto, the illustrations by lantern slides adding greatly to the effect of the reports.—Observations upon Blood-pressure in Dogs were shown by means of lantern slides by Dr. R. D. Rudolf of Toronto.—Dr. H. B. Anderson, Professor of Pathology in Trinity Medical College, read a paper on Acute Rheumatism and reported finding Achlame's bacillus in one case, the patient having died one week after being attacked. He thought the work of this investigator had not met with sufficient approval in England and America.—The subject of the Army Medical Arrangements for the War in South Africa was ably handled by Dr. J. T. Fotheringham and proved a very interesting feature of the meeting.—Dr. Angus Mackinnon, Guelph, Ontario, was elected President, and Dr. Parsons was re-elected secretary.

Toronto, July 7th.

Medical News.

UNIVERSITY OF LONDON.—At the intermediate examination in Medicine held in July the following candidates passed in the subjects indicated:—

EXAMINATION FOR HONOURS.

Anatomy.—First-class: Joseph Ebenezer Adams, St. Thomas's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; Charles Wesley Forsyth, Owens College; Harold Ashton Lyth (exhibition and gold medal), University College; Robert Pugh Rowlands (gold medal), Guy's Hospital; and Arthur Rendle Short, B.Sc., University College, Bristol. Third-class: Arthur Hamilton, St. Bartholomew's Hospital; Constance Brodribb Slater, London School of Medicine and Royal Free Hospital; and John Harry Watson, University College, Liverpool, and King's College.

Physiology and Histology.—First-class: Percy Reginald Bolus (gold medal) and Edwin Henry Britton Milsom, Guy's Hospital; and Arthur Rendle Short, B.Sc. (exhibition and gold medal), University College, Bristol. Second-class: Helen Chambers, London School of Medicine and Royal Free Hospital; Herbert Ernest Corbin, B Sc., and M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; Ellis Gordon Goldie, Guy's Hospital; Harold Ashton Lyth, University College; and Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Third-class: D. Henriques De Souza, B.Sc., University College; Henry Ratcliff Kidner, St. Bartholomew's Hospital; Charles Ernest W. Lyth, University College, Sheffield; and Neville Ivens Spriggs, Guy's Hospital.

Organic Chemistry.—First-class: Herbert Ernest Corbin, B.Sc., (exhibition and gold medal), St. Mary's Hospital; and *Millais Culpin, London Hospital. Third-class: Percy Reginald Bolus and Edwin Henry Britton Milsom, Guy's Hospital.

Materia Medica and Pharmaceutical Chemistry.—First-class: Robert Pugh Rowland, Guy's Hospital; Arthur Rendle Short, B.Sc. (exhibition and gold medal), University College, Bristol; and †Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Second-class: Thomas Paul Baldwin, St. Bartholomew's Hospital; Henry Swarbrick Brown, Guy's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; and Christian Cathcart Robinson, St. Bartholomew's Hospital. Third-class: Stanley Bean Atkinson, B.Sc., St. Bartholomew's Hospital; Herbert Ernest Corbin, St. Mary's Hospital; and David Henriques De Souza, University College.

* Obtained number of marks qualifying for the exhibition.
† Obtained number of marks qualifying for the medal.

PASS LIST.

Entire Examination.

First Division.—John Braithwaite, Guy's Hospital; William Alfred Brend, B.Sc., King's College; George Herbert Brown, Owens College; Harold Benjamin Day and John Alexander Drake, King's College; Harold Cruickshank Lees, St. Mary's Hospital; Agnes Agatha Parson, London School of Medicine for Women; Rees Phillips, Middlesex Hospital; and David Lindley Sewell, Owens College.

Second Division.—Joseph Baird Albury, St. Mary's Hospital; Frederick Hugh Alexander, University College; Oliver Francis Haynes Atkey, King's College; George Ernest Aubrey, St. Bartholomew's Hospital; Anne Thompson Barnard, London School of Medicine and Birkbeck Institution; Mary Cecilia Bell and Ruth Levy Bensusan, London School of Medicine for Women; George Archibald Bosson, University College; William Frederick Box, Guy's Hospital; Sidney Arthur Boyd, Charing-cross Hospital; Walter Briggs, Owens College; Agnes Maud Brown, Queen Margaret College, Glasgow, and London School of Medicine; Gerald Lantsbery Bunting, Westminster Hospital and Birkbeck Institution; Joseph Burfield, St. Bartholomew's Hospital; John Hay Burgess, St. Mary's Hospital; Harold John De Brent, St. Thomas's Hospital; Henry De Vine, University College, Bristol; John Thomas D'Ewart, Owens College; Albert Davies Edwards, University College, Cardiff; Francis William Fawssett, Guy's Hospital; Arthur Frost Forster, St. Bartholomew's Hospital; John Gay French, St. Mary's Hospital; William Gillitt, Middlesex Hospital; Llewellyn Stanley H. Glanville and Philip William Hamond, Guy's Hospital; Thomas Henry Harker, St. Bartholomew's Hospital; Elizabeth Hill, London School of Medicine for Women; Ethel Florence Iredell, B.A., London School of Medicine and Royal Free Hospital; Smeeton Johnson, St. Mary's Hospital; Ivor Davenport Jones, Middlesex Hospital; William Ronald Kirkness, King's College; Reginald Larkin, Guy's Hospital; Alfred Lewthwaite and George Bartley McKean, University College; Lionel Henry Moiser, Guy's Hospital; Gilbert Phillips Moscrop, London Hospital and Alwyne Institution; Arthur Cyril Motta, St. Mary's Hospital; Frederick Cecil Robinson, Guy's Hospital; Dansey Smith, Middlesex Hospital; Mary Townsend, London School of Medicine for Women; Laura Sobey Veale and Edith Waine Turner Watts, London School of Medicine and Royal Free Hospital; Bernard Harry Wedd, Guy's Hospital; Eugene Christopher Whitehead, Westminster Hospital; and Hilda Kate Whittingham and Ivy Evelyn Woodward, London School of Medicine for Women.

Excluding Physiology.

First Division.—George Cuthbert Adeney, St. Thomas's Hospital; and Charles Derwent Pye-Smith and Ernest William Strange, Guy's Hospital.

Second Division.—Ernest William Charles Bradfield, St. Mary's Hospital; Desborough Brodie, St. George's Hospital; George Brooke Forbes Churchill, Guy's Hospital; Ruby Ellen Glanville, London School of Medicine for Women; Herbert Myer Goldstein, Guy's Hospital; Ida Margaret Guillaume, London School of Medicine for Women; Vernon Hetherington, St. George's Hospital; Beatrice Mary Kidd, London School of Medicine and Alwyne Institution; Alexander Manuel, St. George's Hospital; Wilfrid Ombler Meek, Owens College; Henry Richmond Minkley, St. Mary's Hospital; John Noel Sergeant, St. Thomas's Hospital; Herbert Bartlett Simpson and Malcolm William Stewart Smith, University College; James Batson Stephens, St. Mary's Hospital; R. Archibald Slater Sunderland, St. Bartholomew's Hospital; Louisa Graham Thacker and Henrietta Leila D. Williams, London School of Medicine for Women; Agnes Williamson, London School of Medicine and Royal Free Hospital; Frederick Robert Elliston Wright, St. Thomas's Hospital; and Walter Perceval Yetts, St. Bartholomew's Hospital and University of Edinburgh.

Physiology only.

Second Division.—Henry Edgar Barnes, St. Mary's Hospital; Frederick Alexander Beattie, Guy's Hospital; Alwyn Hewett Bradley, Mason University College; John Dell Bridger, Guy's Hospital and Alwyne Institution; Alexander Cameron, Middlesex Hospital; Daniel Cyril Evans, St. Bartholomew's Hospital; John Evans, Guy's Hospital; John William Fox, London Hospital; David Sydney Graves, Guy's Hospital; Helen Moore, London School of Medicine and King's College; Marie Louise Pethick, London School of Medicine and Royal Free Hospital; George Struan Robertson, Guy's Hospital; and Arthur Reginald Schofield and William Bartholomew Vaile, London Hospital.

N.B.—The foregoing lists, published for the convenience of candidates, are provisional only, and are not final until the reports of the examiners shall have been confirmed by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—In July the following candidates passed in the subjects indicated:—

Surgery.—H. C. Cooper, St. George's Hospital; H. S. Davies (Section II.), Michigan; C. J. E. Edmunds (Section I.), St. Thomas's Hospital; E. Evans (Sections I. and II.), Royal Free Hospital; J. S. Goodall (Sections I. and II.), Middlesex Hospital; T. B. Haig (Section II.), St. Bartholomew's Hospital; S. K. K. Haslam (Section I.), Royal Free Hospital; H. N. Horton (Section I.), Middlesex Hospital; J. Klein (Sections I. and II.), St. Mary's Hospital; R. Lamort, Bordeaux; R. A. Lyster, Birmingham; C. J. Marsh, University College Hospital. W. T. Meagher, Cork; R. E. Roberts (Sections I. and II.), St. Thomas's Hospital; F. Robinson (Sections I. and II.), Royal Free Hospital; E. F. Rose (Sections I. and II.), St. Bartholomew's Hospital; W. C. Stanham, London Hospital; M. H. Style (Sections I. and II.), Royal Free Hospital; C. H. St. M. W. Toke, St. George's Hospital; and E. Tyson, St. Bartholomew's Hospital.

Medicine.—P. J. R. Bucknill (Section I.), Manchester; F. P. Bush and C. W. Gibson, Guy's Hospital; J. S. Goodall (Section II.), Middlesex Hospital; T. B. Haig (Sections I. and II.), St. Bartholomew's Hospital; S. K. K. Haslam (Section I.) and D. E. Lockwood (Section I.), Royal Free Hospital; R. E. Roberts (Sections I. and II.), St Thomas's Hospital; F. Robinson (Sections I. and II.), Royal Free Hospital; J. Waters (Sections I. and II.), Middlesex Hospital; A. J. Watson (Section I.), St. Mary's Hospital; and H. F. Willington, Manchester.

Forensic Medicine.—F. P. Bush and C. W. Gibson, Guy's Hospital; T. B. Haig, St. Bartholomew's Hospital; R. E. Roberts, St. Thomas's Hospital; F. Robinson, Royal Free Hospital; J. Waters, Middlesex Hospital; and A. J. Watson, St. Mary's Hospital.

Midwifery.—C. H. G. Atkyns, Birmingham; R. V. Cowley, Edinburgh and St. Mary's Hospital; A. McC. Dallas, Guy's Hospital; and H. F. Willington, Manchester.

The diploma of the Society was granted to the following candidates entitling them to practise Medicine, Surgery, and Midwifery:—F. P. Bush, H. C. Cooper, A. McC. Dallas, H. S. A. Davies, E. Evans, J. S. Goodall, T. B. Haig, J. Klein, R. A. Lyster, W. T. Meagher, W. C. Stanham, M. H. Style, C. H. St. M. W. Toke, and E. Tyson.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

Degree of Doctor of Medicine (M.D.).—Charles George Cowie, M.A., M.B., C.M., Ellon; William Stewart Geddie, M.B., C.M., Gympie, Queensland, Australia; Alexander Barclay Lyon, M.B., C.M., Hammersmith, London, W.; and Alex. Hendry Mackie,* M.A., M.B., C.M., Aberdeen.

Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—Alfred Alwyne Hingston, B.A., Clifton, Yorks.

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch. B.) (New Ordinances).—Alexander Bisset, Aberdeen; William Fraser Bisset, Aberdeen; Allan James Craigen, Georgetown, Demerara; William Flett Croll, M.A., Aberdeen; Arthur Davidson, Dunnydeer, Insch, Aberdeenshire; James Andrew Sandilands Grant, M.A., Methlick, Aberdeenshire; Herbert Johnstone, Upholland, near Wigan; James Macfarlane, Aberdeen; Miss Myra Mackenzie, Aberdeen; Colin Forbes Marr, Ellon, Aberdeenshire; Herbert Playford Sheppard, Bedford; Henry William Martyn Strover, Tonbridge, Kent; Francis Henry Wessels, B.A., Claremont, near Cape Town, South Africa; James Wilson, Gardenstown, Banffshire; and Charles Melville Young, Highgate, London.

The John Murray Medal and Scholarship (awarded to the most distinguished graduate (M.B.) of 1900) and the Alexander Anderson Scholarship were awarded to Henry Fraser, M.B., Ch.B., Aberdeen.

Degree of Bachelor of Science (B.Sc.).—Charles Allan, Burnside, Fordyce; Robert Neal Rudmose Brown, Aberdeen; George Gall Esslemont, Ord of Cardno, Fraserburgh; Joseph Knox, Aberdeen (with special distinction in geology and chemistry); Alexander Christie Reid, M.A., Ellon; and John Wishart, Aberdeen.

Diploma in Public Health.—David Hunter Aioslie, M.B. Aberd., Mintlaw; Alexander Vass Anderson, M.B. Aberd., Stonehaven; Thomas Fraser,† M.A., M.B. Aberd., Aberdeen; Norman James Sinclair, M.B. Aberd., Aberdeen; and David Sivewright, M.A., M.B. Aberd., Strichen.

* Thesis considered worthy of commendation.
† With "credit."

KING'S COLLEGE, LONDON.—In the Faculty of Medicine the following scholarships and prizes have been awarded:—Sambrooke Exhibitions, Eardley Lancelot Holland, Thomas Henry Jones, and John James; Medical Entrance Scholarship, A. J. Wigmore; Warneford Scholarships, John Alexander Drake and Matthew Robert Cecil MacWatters; Senior Scholarship, Arthur Edmunds; Second Year Scholarship, Harold Benjamin Day; Junior Scholarships, Thomas Henry Jones and Eardley Lancelot Holland; Rabbeth Scholarship, Frederick Champ McCombie; Leathes Prize, Harold Balme and Colin James Galbraith; Warneford First Prize, Harold Balme; Warneford Second Prize, Edward Augustine Bell; Barry (Divinity), Arthur Donald Griffith; Tanner Prize, Edgar Winn Fox Dolman; Todd Prize, Arthur Edmunds; Hygiene Prize, James Duncan Clay; Pathological Anatomy Prize, Alfred Hocart Brehaut; Obstetric Medicine Prize, Archibald Douglas Reid; Forensic Medicine Prize, Archibald Douglas Reid; Medicine Prize, Archibald Douglas Reid; Surgery Prize, Frederick Charles Carle; Professor Rose's Surgery Prize, Hubert Liston Willcox; Anatomy Prize, Albert Angelo Myers; Physiology Prize, Albert Angelo Myers; Chemistry Prize, Albert Angelo Myers; and Materia Medica Prize, Albert Angelo Myers.

ST. GEORGE'S HOSPITAL.—Mr. H. H. Macpherson presided at a quarterly general court of the governors of St. George's Hospital in the board-room on July 13th, when Mr. T. Holmes, the treasurer, moved that the weekly board should be empowered to sell stock to the amount of £4000. He said that unless some large donations or legacies were received this step would be necessary in order to finish the work which was now under contract. If the motion were carried the weekly board would only exercise the power in case of necessity. There was a deficiency on the last year's expenditure, normal and extraordinary, of £15,000, the subscription list and the legacies both having been small.—Sir Henry Burdett, in seconding the motion, said that as a visitor he knew the need for the expenditure of £100,000 which had been incurred on reconstruction works. The present was an age of criticism and a political crisis had almost arisen out of hospital affairs in South Africa. He was not in this country when the criticism appeared or he would have felt himself called upon to point out that without special knowledge of the exact circumstances in South Africa that criticism was too narrow to warrant the amount of public attention which it had received. It was the first essential of criticism of hospital affairs that those who undertook it should have an accurate practical knowledge of the circumstances and matters of which they treated. It had been made a matter of complaint against St. George's Hospital that the expenditure was too great, and it had been suggested that if the present policy were continued and extended to other hospitals the time would soon arrive when the voluntary hospitals must be taken over by the State. That was exactly the opposite of the truth. What St. George's Hospital still suffered from was a margin of deficiency between income and expenditure which existed 10 years ago and which had never been wiped out. A great hospital like St. George's must advance with the age. Its sanitary conditions were now perfect, its means of isolating infectious cases were second to those of no other hospital in London, and the accommodation for the staff was a credit to the metropolis. He pleaded for a special effort on behalf of the institution. The hospital had never had a festival dinner, and he thought that if they were to ask for the assistance of a member of the Royal family who would place himself at their head in bringing to the knowledge of London generally, and especially of the inhabitants of that district, the need which existed for an extra £10,000 a year, they would not only get it, but they would get the £100,000, which they had so wisely expended upon buildings, restored to their reserve fund.

HOSPITAL ENDOWED BED.—The late Mr. Augustus Matthew Goddard bequeathed to St. Thomas's Hospital a legacy of £1000 to endow a bed, to be named the "Matthew and Patience Goddard Bed."

VACCINATION GRANT.—Mr. C. J. Perrott, public vaccinator for the Kingswood division of the Keynsham Union, has been awarded a grant for successful vaccination.

THE CRISIS IN CHINA.—Mr. George F. Stooke, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., stationed at I-chang, in the service of the Foreign Mission of the Church of Scotland, was reported safe on July 19th.

DR. AND MRS. J. PRIOR PURVIS, who were married at St. Pancras Church, Euston-road, on June 24th, 1840, celebrated the sixtieth anniversary of their wedding on June 24th last. A reception was held at Lansdowne-place, Blackheath-hill, when some 150 of the leading residents of the district were present to offer their congratulations. The family circle numbered 35, consisting of children, grandchildren, and a great-grandchild.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, MARYLEBONE-ROAD, N.W.—A meeting of governors and friends of Queen Charlotte's Hospital was held on July 20th at 22, Portman-square, when Viscount Portman (the President) presided. The Duke of Cambridge attended and the following amongst others were also present: Colonel FitzGeorge, Lord Hugh Cecil, the Earl of Hardwicke, Canon Duckworth, Lady Farquhar, Sir Edward Hertslet, Mr. and Mrs. F. W. Hunt, Mrs. Charles Inge, Mrs. Beauchamp, Colonel Gordon Watson, Mr. G. N. Taylor, General Lowry, Mrs. Hodgkinson, Mrs. Warde, Mr. and Mrs. H. A. Harben, Mr. H. J. Royds, Major McMahon, Miss Denison, Mrs. Ernest Waggett, Mr. and Mrs. Robert English, Mr. and Mrs. F. Herbert Davies, Mr. J. Dix Lewis, Mr. F. G. Cavendish Bentinck, Mrs. Fenwick B. Barron, Mrs. Anstey, Canon Barker, Rev. G. F. Forbes, Mrs. W. M. Beaufort, Mrs. Benjamin Taylor, Miss Alice Cox, Mrs. Newby, and the Rev. V. G. Borradaile. A report was presented showing that the enlargement of the hospital, which was commenced in 1897, had been completed, but that there were still some improvements required to the building, which it was estimated would cost about £2000. The Earl of Hardwicke (chairman of the Committee of Management) stated that in addition to the £2000 which were needed to accomplish the renovation of the hospital the increased expenditure for maintenance caused by the enlargement of the hospital and enhanced prices would amount to about £1000 per annum.—The Duke of Cambridge brought forward the following motion—

That this meeting desires to express its warm approval of the success which has attended the efforts made by the committee to provide increased and improved accommodation for the growing number of patients seeking the aid of the charity and cordially endorses the appeal for additional support to enable the committee to carry out the further work necessary for the complete renovation of the hospital—

and referred to the long connexion of his family with the institution. He expressed his pleasure at hearing that the hospital had opened its doors to the wives of soldiers and

sailors and reservists now at the front, 68 of whom had been granted admission as in-patients and 24 had been treated as out-patients.—Lord Hugh Cecil, M.P., seconded the motion. He dwelt on the great work which was done in the training school of the hospital in training medical students, midwives, and monthly nurses, which benefited all classes of the community.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

General Laurie and the Medical Act of 1858.

IN accordance with his notice General LAURIE introduced into the House of Commons on Friday, July 20th, his Bill for the extension of the provisions of the Medical Act of 1858 so as to entitle to registration the holders of certain colonial diplomas. The measure is backed by General Laurie himself, Mr. Rothschild, Sir Mancherjee Bhownaggree, Colonel Wyndham Murray, Mr. Middlemore, and Sir James Fergusson. Without going into the merits of the question it is safe to say that in the present state of Parliamentary business there is not the slightest chance of the Bill being passed.

Proposed Labour Licences for School Children.

The question of children of school age engaging in labour calculated to interfere with their education was discussed last week before the Grand Committee of the House of Commons on Law in connexion with the Elementary Education Bill. Mr. GEOFFREY DRAGE proposed to insert in the Bill a new clause for the establishment of a system of licensing under which the local authority would, on being satisfied on certain points, issue a licence to a child to labour and it would become an offence for an employer to engage an unlicensed child and for a parent or guardian to allow the child to be engaged. Sir JOHN GORST, the Minister in charge of the Bill, did not accept the proposed clause, but he announced that the Education Department are prepared to join with the Home Office in the appointment of a departmental committee to inquire into the whole question and frame legislation for introduction during the next session of Parliament.

HOUSE OF COMMONS.

THURSDAY, JULY 19TH.

Invalided from South Africa.

Mr. MACNEILL asked the Under-Secretary for War how many officers, non-commissioned officers, and men had been invalided from South Africa since the outbreak of the war; of these, how many had died on the passage home or in military hospitals or in their own homes, and how many had been incapacitated from further service by wounds or disease.—Mr. WYNDHAM replied: 20,658 have been invalided home; of these 63 died on the passage and 60 in military hospitals; there is no record of any having died in their own homes; 430 have been incapacitated from further service by wounds and disease.

Cholera in India.

Mr. SCOTT asked the Secretary of State for India whether, in view of the outbreak of cholera in the famine districts of India, any, and if so what, addition had been made to the famine medical service, and whether he could state the number of deaths from cholera in the famine districts.—Lord GEORGE HAMILTON replied: I am not able to state the number of additional medical officers and medical subordinates sent to the famine districts in consequence of the outbreak of cholera. I was informed that as regards the worst cholera tract in the middle of June the local authorities there had received as much extra medical help as they thought necessary. The returns which have reached me show that during the month of June the telegrams state that 22,198 cholera deaths were reported from British famine districts and there were 19,122 from native States similarly afflicted. During the three weeks ended on July 7th the reported cholera deaths averaged 6562 a week for British famine districts and 6185 a week for native States affected by famine.

FRIDAY, JULY 20TH.

The Medical Service in India.

Mr. SCOTT asked the Secretary of State for India whether the services of more than one medical man had been available at most of the large famine camps, containing from 20,000 to 30,000 people, at any time during the famine or since the outbreak of cholera.—Lord GEORGE HAMILTON replied: I have not received details as to the individual distribution of medical officers and medical subordinates at the different relief camps and relief houses. The famine codes contain full instructions for strengthening the medical staff in famine districts, for provision of hospital accommodation on relief works, for posting a medical officer or a subordinate qualified for independent charge to each hospital, and for the duties of such medical officers. The instructions as to engaging additional medical officers and subordinates from outside the regular service when need arises are full and clear.

Civil Surgeons in South Africa.

Dr. FARQUHARSON asked the Under-Secretary for War whether it was a fact, as stated by Mr. Burdett-Coutts in a letter to the newspapers, that civil surgeons employed in military hospitals in South Africa had been required by the Army Medical Department to sign a contract not to divulge in any way what their impressions might be on hospital matters?—Mr. WYNDHAM replied: Civil surgeons have to sign a contract, not being entitled to emoluments under the pay warrant or amenable to discipline under the Army Act. They have to sign a contract accepting the terms offered to them and the obligations of discipline, subject to the forfeiture of these terms. I have in my hand a copy of the contract. The only paragraphs that bear upon discipline are as follows: "During the said period I will devote my whole time and professional skill to my service hereunder, and will obey all orders given to me by commissioned military or naval officers or by the permanent medical officers of either of those services." And the next paragraph runs: "In case I shall complete my service hereunder to your satisfaction in all respects, I shall receive at the end of the said period a gratuity of two months' full pay at the rate hereinbefore specified, but in case I shall in any manner misconduct myself, or shall be (otherwise than through illness or unavoidable accident) unfit in any respect for service hereunder, of which misconduct or unfitness you shall be sole judge, you shall be at liberty from and immediately after such misconduct or unfitness to discharge me from further service hereunder, and thereupon all pay and allowances hereunder shall cease, and I shall not be entitled to any free passage home or gratuity." That is the only contract civil surgeons have to sign, and for my part I cannot see that it offers any support for the statement in question.—Mr. BURDETT-COUTTS said he desired to ask a question which, he thought, would contain a correction of detail and which added very largely to the force and significance of the statement referred to. He should like to ask whether it was not the case that when some letters had been published from doctors in South African hospitals they had to sign a statement to the effect that they were not to communicate their impressions of hospital matters to the public or that they were to take the consequences.—Mr. WYNDHAM: I have no knowledge of any such fact. That is the only contract we have made with civil surgeons and I am not aware of any other.—Sir HENRY CAMPBELL-BANNERMAN: Would it not be desirable to have some inquiry as to whether this declaration was ever enforced in South Africa? Telegraphic communication could soon be made.—Mr. WYNDHAM: There is no objection whatever.

MONDAY, JULY 23RD.

Anti-Typhoid Inoculation in South Africa.

Colonel WYNDHAM MURRAY asked the First Lord of the Treasury whether the instructions to the Commission of Inquiry into the Medical Arrangements in South Africa would include the making of a thorough inquiry on the spot by the medical members of the commission into the results of inoculation for typhoid fever in preventing the disease or lessening its effects.—Mr. BALFOUR replied: The inquiry to which my hon. and gallant friend refers, though doubtless one of very great importance, appears to me to be outside the scope of the reference to the commission, and probably it would require a commission of somewhat different constitution to investigate a purely scientific medical subject of the kind suggested.

Hospital Accommodation for China.

Mr. HEDDERWICK asked the Government what had been done to provide for the proper care of the British wounded at Tientsin and Taku; and whether there was any hospital accommodation at Wei-Hai-Wei.—Lord G. HAMILTON replied: Her Majesty's Government have no special information as to the arrangements made at the front for the wounded in the recent engagements, but there were available the medical staffs of the various British men-of-war under Admiral Seymour, and General Dorward took with him other medical officers and appliances. As regards hospital accommodation at Wei-Hai-Wei there is a good hospital on the island and good stone barracks convertible to hospital use if wanted. General Gaselee has telegraphed that as soon as he reaches Wei-Hai-Wei he will report on its suitability for the location of base hospitals. The water-supply on the island is good and ample. To this I have to add that the Government of India have already provided a hospital ship and are prepared to supplement this accommodation by converting three transports into hospital ships. The American hospital ship *Maine* has also been placed at the disposal of her Majesty's Government, and I am glad to take this opportunity of expressing our gratitude for this great act of generosity to the Atlantic Transport Company which has furnished the ship and to the American ladies who have provided the funds for equipping and maintaining it. I have also to inform the House that I have received from the Maharajah Sindhia of Gwalior the offer of a fully-equipped hospital ship for China, upon which he is willing to spend 20 lakhs. This princely offer is made on behalf of himself, his mother, and his wife, to testify their loyalty to her Majesty the Queen-Empress. Her Majesty's Government have expressed their acceptance of this most munificent offer and their deep appreciation of the motives which actuated his Highness to make it.

TUESDAY, JULY 24TH.

Results of Anti-Typhoid Inoculation.

Mr. CHANNING asked the Under Secretary of State for War whether he was aware that the Director-General of the Army Medical Department, at the Indian Medical Service dinner on June 14th, stated that the results of inoculation for typhoid fever, while it afforded some protection against contracting the disease, rather increased the risk of death when contracted, but that this only applied to the men, as both the incidence and case mortality among officers appeared to be increased by inoculation; and whether the recent statistics of Professor Wright of Netley, which show that both attacks and deaths from typhoid fever were seven times less in the inoculated than in the uninoculated, applied equally to officers and men separately.—Mr. WYNDHAM replied: I have no knowledge of the statement attributed to the Director-General of the Army Medical Department, and, as I have already explained to the House on more than one occasion, the statistics at present available are not sufficient to enable me to give a satisfactory reply to the question.

Medical and Nursing Staff in the Orange River Colony.

Dr. TANNER asked the Under Secretary of State for War if he had any official information showing that, in consequence of the arrangements, out of 24 nurses employed in the Orange River Colony 14 had succumbed; and, whether 100 more doctors and 200 nurses were now required and stores stacked at base were to be sent up to the front.—Mr. WYNDHAM replied: Eight nurses have died in South Africa. Lord

Roberts has quite recently asked for 20 more surgeons and 50 nurses. These are being sent. It is usual for stores to be stacked at the base and sent up as required.

A Cow with a Tuberculous Udder.

Mr. FIELD asked the President of the Local Government Board (1) whether he was aware that at a recent meeting of the Northwich Rural Council a communication was received from the county medical officer of health, Dr. Vacher, stating that he was informed by the medical officer of health for Manchester that a cow with a tuberculous udder had been found on a farm in West Cheshire; that Dr. Niven wrote to Dr. Vacher advising to isolate the infected cow, to dry her at once, and have her fed for slaughter; (2) whether the Local Government Board had sanctioned such a system; and (3) whether he was aware that Dr. Vacher, in conjunction with the late Inspector Wagstaffe, inaugurated and carried out a series of tuberculous prosecutions in Birkenhead.—Mr. CHAPLIN: The facts appear to be substantially as stated in the first paragraph. The cow, however, was not sold but was destroyed by the farmer. The answer to the second paragraph is in the negative. Dr. Vacher, before becoming county medical officer was medical officer of health for Birkenhead, and I am informed that during this period the Birkenhead Town Council, as advised by him, arranged for a much more thorough inspection of meat intended for the food of man than had previously been attempted and appointed Mr. Wagstaffe to give his whole time to the work. Dr. Vacher, however, appears to have had nothing to do with the present case except to inform the Northwich Rural District Council of the communication which he had received from Dr. Niven.

Medical Practice and Company Law.

At this sitting the House took the report stage of the Companies Bill, and at the commencement of the proceedings it was decided to strike out of the Bill Clause 2 applying the Pharmacy Act to companies carrying on business as chemists and druggists and Clause 3 declaring that it shall not be lawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife.—Colonel WELBY moved to strike out the former clause.—Mr. RITCHIE, President of the Board of Trade, the Minister in charge of the Bill, said he felt himself unable to resist the motion. In the Standing Committee he himself had recommended that this clause and Clause 3 should be omitted, but his recommendation was not adopted by the Committee. He did not propose to enter into the merits of either clause, though he admitted that there were evils which required to be dealt with. He did not desire to commit himself as to the particular mode by which the evils should be remedied. His main object in assenting to the motion was that in his opinion the clauses were not germane to the Bill. He knew of no instance in which in all the various Companies Acts there had been any attempt whatever made to say who should and who should not carry on companies. They had all been Acts dealing with machinery and the creation and formation and administration of companies.—Mr. BRYCE said that he took the same view of this matter as the President of the Board of Trade. He admitted that the two clauses dealt with important subjects. He thought these subjects ought to be dealt with, and he thought that they ought probably to be dealt with even more strongly than they were dealt with in the clauses now before the House. But they raised questions quite apart from the machinery with which this Bill was concerned, and he thought it better to leave the clauses out of the Bill.—Mr. GIBSON BOWLES thought the House ought to know how it came about that these clauses appeared in the Bill.—Mr. RITCHIE explained that they were inserted in the House of Lords, and he considered it only proper and courteous to the House of Lords that the Bill should be introduced in this House in the form in which it came from the House of Lords.—Sir WALTER FOSTER said that he hoped the House would not omit the clauses. They had received a great deal of consideration. They had been in the Bill in two successive sessions. They were introduced originally in a separate Bill and the Lord Chancellor himself deliberately put them into the Bill as the best method of regulating certain dangers and difficulties to which the public were exposed in the existing state of the law. The thing was done after consultation with the persons affected. Not in the interest of any class, but in the interest of the public generally, he appealed to the Government to retain the clauses and not to yield to the clamour of a particular class. He felt that if they were omitted an opportunity would be lost of protecting the public against many forms of illegal practice in pharmacy, medicine, and dentistry. He did not think that there should be a panic because of the opposition of certain trading interests affected by the clauses.—Sir JAMES HASLETT spoke in support of the omission of the clauses.—Mr. LAWSON WALTON said that there was no question of clamour or of opposition from a particular class. It was the duty of this House to pass legislation which could be easily referred to and which would be free from confusion, and he submitted that if these clauses were retained they would cause confusion and make the statute difficult to refer to. These clauses were, in his opinion, entirely out of place in this Bill, and he hoped that the House would strike them out.—Colonel LONG argued that the President of the Board of Trade had given no sufficient reason for saying that the clauses were not germane to the Bill. Surely the object of the measure was to put down abuses in connexion with companies. Certain abuses were known to exist in connexion with medical, dental, and pharmacy practice and the Lord Chancellor had thought fit, after considering the evidence, to insert these clauses.—Sir J. BATTY TUKE said that he regretted that Clause 3 was to be dropped, as its action would be to put a stop to practices which served to paralyse the action of the Medical Acts in certain important particulars. Under the law now existing persons in no way connected with the medical profession were able to form companies the object of which was to act as physicians, surgeons, and dentists. Over such companies the General Medical Council could exercise no jurisdiction, and one of the main objects of the Medical Acts was inoperative. The public were the sufferers, as it was rendered impossible to distinguish between qualified and unqualified practitioners. He recognised that the clause was not germane to the general tenor of the Bill, but he felt so strongly on the subject that he would take an early opportunity next session of introducing a Bill dealing with the subject.—The motion for the omission of Clause 2 was then put to the House and agreed to without a division.—Mr. MADDISON moved to omit Clause 3.—This motion was also agreed to without a division.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.

Hernia; its Etiology, Symptoms, and Treatment. By W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng. 1900. Price 7*s.* 6*d.* net.

Electricity in Gynæcology. By R. J. Cowen, L.R.C.S., L.R.C.P. Irel. 1900. Price 3*s.* 6*d.* net.

BAILLIERE, J. B. ET FILS, Paris.

Traité de Chirurgie Clinique et Opératoire. Par A. Le Dentu et P. Delbet. Tome neuvième. 1900.

BAUERMEISTER, F., Glasgow.

Ueber Entartung. Von P. J. Möbius. 1900. Price 1*s.* 3*d.*

Functionelle und Organische Nerven-Krankheiten. Von Professor Dr. H. Obersteiner. 1900. Price 1*s.* 3*d.*

Die Aetiologie der geburtshülflichen Dammverletzung und der Dammschutz. Von Dr. M. Krantz. 1900. Price 3*s.*

Die anorganischen Salze im Menschlichen Organismus. Von Dr. R. Brasch. Erste abteilung. 1900. Price 2*s.* 6*d.*

Schädel und Auge. Von Dr. F. Danziger. 1900. Price 3*s.*

Verhandlungen der sechzehnten Versammlung der Gesellschaft für Kinderheilkunde in München, 1899. Von Dr. E. Pfeiffer. 1900. Price 8*s.*

Die operative Beseitigung der durchsichtigen Linse. Von Professor Dr. E. Pflüger. 1900. Price 7*s.* 9*d.*

Der Pemphigus und die Essentielle Schrumpfung der Bindehaut des Auges. Von Dr. E. Franke. 1900. Price 3*s.* 9*d.*

Die Therapeutischen Leistungen des Jahres 1899. Von Dr. A. Pollatschek. XI. Jahrgang. 1900. Price 8*s.*

CASSELL AND COMPANY, London.

Tropical Diseases: a Manual of the Diseases of Warm Climates. By Patrick Manson, C.M.G., M.D., LL.D. Aberd. Illustrated. Revised edition. 1900. Price 10*s.* 6*d.*

CHURCHILL, J. & A., Great Marlborough-street, London.

Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules. By C. O. Hawthorne, M.D., M.R.C.P. 1900. Price 2*s.* 6*d.*

CLARENDON PRESS, Oxford.

The Structure and Functions of Bacteria. By A. Fischer. Translated into English by A. Coppen Jones. 1900.

CLIVE, W. B. (University Tutorial Press), London.

The Organised Science Series. First Stage Botany, as Illustrated by Flowering Plants. By A. J. Ewart, D.Sc., Ph.D., F.L.S. Price 2*s.*

FLOOD AND SON, The Borough Works, Lowestoft.

Reduction of Meteorological Observations, made at Lowestoft from 1879 to 1898. By S. Henry Miller, F.R.M. Society. 1900. Price 3*s.* 6*d.*

GRIFFIN, C., AND CO., Exeter-street, Strand, London.

Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Seventeenth annual issue. 1900. Price 7*s.* 6*d.*

Flesh Foods: a Practical Handbook. By C. Ainsworth Mitchell, B.A. Oxon., F.I.C., F.C.S. Illustrated. 1900. Price 10*s.* 6*d.*

LEWIS, H. K., Gower-street, London.

Medical Electricity: a Practical Handbook. By H. L. Jones, M.A., M.D. Being the Third Edition of "Medical Electricity," by W. B. Steavenson, M.D., and H. L. Jones, M.D. Illustrated. 1900. Price 10*s.* 6*d.*

LUCAS GRÄFE AND SILLEM, Hamburg.

Mikrophotographischer Atlas zum Studium der Pathologischen Mykologie des Menschen. Von Dr. Eugen Fraenkel. Lieferung 3. Bacillus der Beulenpest. 1900.

MACCRELLISH AND QUIGLEY, Trenton, New Jersey.

Twenty-third Annual Report of the Board of Health of the State of New Jersey, and Report of the Bureau of Vital Statistics, 1899. 1900.

MALOINE, A., Paris.

Guide Médical Parisien Public par "L'Indépendance Médicale." 1900.

MASSON ET CIE, Paris.

Leçons sur les Maladies du Sang. Par G. Hayem. 1900.

Le Vade Mecum du Médecin Expert. Par A. Lacassagne. Deuxième édition. 1900.

PENTLAND, Y. J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin. New series. Vol. VII. 1900.

PUBLISHED ON THE PHŒBE A. HEARST FOUNDATION, Philadelphia.

University of Pennsylvania: Contributions from the William Pepper Laboratory of Clinical Medicine. 1900.

REBMAN AND CO., Shaftesbury-avenue, London.

A Treatise on Appendicitis. By John B. Deaver, M.D. Second edition. Illustrated. 1900.

Surgical Anatomy: a Treatise on Human Anatomy in its Application to the Practice of Medicine and Surgery. By J. B. Deaver, M.D. In three vols. Illustrated. Vol. II. 1890. Price 5 guineas net for the complete work of three vols. (not sold separately). Vol. III. ready shortly.

SMITH, ELDER, AND CO., Waterloo-place, London.

Dictionary of National Biography. Edited by S. Lee. Vol. LXIII. Wordsworth—Zuglestein. With Indexes to Vols. I. to XIV. 1900. Price 15*s.* net.

STEINHEIL, G., Paris.

Chirurgie du Rein et de l'Uretére (Indications: Manuel Opératoire). Par V. Rochet. 1900.

SPOTTISWOODE AND Co., 54, Gracechurch-street, London.
Minutes of the General Medical Council—Jan. 1st, 1900, to May 31st, 1900. Vol. XXXVII. 1900.

TROW DIRECTORY PRINTING AND BOOKBINDING COMPANY, New York.
Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. IV. January, 1900 Edited by A. J. McCosh, M.D., and W. G. Thompson, M.D. 1900.

VOGEL, F. C. W., Leipzig.
Encyklopädie der Haut und Geschlechts-Krankheiten. Von Professor Dr. E. Lesser. 1900.

VOLTA BUREAU, Washington, U.S.A.
Helen Keller Souvenir, commemorating the Harvard Final Examination for Admission to Radcliffe College, June 29th-30th, 1899.

WRIGHT, J., AND Co., Bristol.
Operative and Practical Surgery. By T. Carwardine, M.S. Lond. F.R.C.S. Illustrated. 1900. Price 10s. 6d. net.

Montrose Royal Asylums for the Insane, 1781-1900 (House committee, Sunnyside Asylum, Montrose, 1900).—**Magazines, &c., for August: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, and Cornhill Magazine.**

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANDREW, B. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Long Crendon Sanitary District of the Thame Union, vice M. H. Humphreys, resigned.

BULLMORE, W. K., M.D. St. And., M.R.C.S., has been re-appointed Medical Officer of Health by the Falmouth Town Council.

BUSTEED, J. H., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Ellesmere and Welshampton Sanitary Districts and for the Workhouse of the Ellesmere Union, vice J. W. Roe, resigned.

CHADBORN, C. N., L.R.C.P. Lond, M.R.C.S., has been appointed House Surgeon to the Sussex County Hospital, Brighton.

COSTINE, W. C., M.R.C.S., has been appointed Public Vaccinator for the Kirkdale Division of the West Derby Union.

DAVIS, J. H, M.B, B.Ch. Irel., has been appointed Assistant Medical Officer at the Brownlow Hill Workhouse, Parish of Liverpool, vice E. Smith.

DAVIES, H. H., M.R.C.S., has been appointed Medical Officer of Health for the Uwchaled Sanitary District, vice R. T. Davies.

DENYSSEN, P. J., L.R.C.P. Lond, M.R.C.S., has been appointed Medical Officer of Health for the Halesworth Urban District.

EMMETT, RICHARD, L.R.C.P. Lond., M.R.C.S, has been appointed Certifying Surgeon under the Factory Acts for the County Borough of Portsmouth and the Civil Parish of Cosham in Fareham Rural District.

ENSOR, HENRY COLLEN, M.R.C.S., has been appointed Ophthalmic Surgeon to the Cardiff Provident Dispensary and to the Cardiff Infirmary.

FEY, W. L., M.B., B.Ch. Oxon., has been appointed Medical Officer for the Catterick and Scorton Sanitary Districts of the Richmond Union, Yorks, vice H. M. Eyres, resigned.

FORSTER, LUCINDA, M.B., B.S. Lond., has been appointed House Surgeon to the Bristol Royal Hospital for Sick Children and Women, St. Michael's Hill.

GOTT, J., L.S.A., has been appointed Medical Officer for the Ringwood Union and Certifying Surgeon under the Factory Acts for the Ringwood Rural District in the county of Southampton.

HALL, G. C., M.R.C.S., has been appointed Medical Officer for the Ottmoor Sanitary District of the Headington Union, vice C. Black, resigned.

HANLY, T. F., L.R.C.P, L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Gillingham District of Dorset.

HERBERT, A. W. C., L.S.A., has been appointed Certifying Surgeon under the Factory Acts for the Southwold District, Suffolk.

HIRSCH, CHARLES J. W., M.R.C.S., L.R.C.P. Lond, L.S.A., has been appointed Public Vaccinator for Woolwich.

LESLIE, L. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Kvesham Union, vice H. E. Haynes, resigned.

MARTIN, J. P., L.R.C.P. Irel., L.R.C.S., has been appointed Assistant Medical Officer at the Brownlow Hill Workhouse, Parish of Liverpool, vice W. B. Bennett.

MCCALL, EVA, M.B., C.M. Glasg., has been appointed Resident Medical Officer of the Union Infirmary, Salford.

NEECH, J. T., L R.C.P. Edin., L.F.P.S. Glasg., D.P.H. Vict., has been appointed Medical Officer of Health for the Borough of Halifax.

NOLAN, H. F., L.R C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Third Sanitary District of the West Ashford Union, vice J. H. Mitcheson, deceased.

NOWELL, WALTER SALMON, M.A. Oxon., L.R.C.P., M.R.C.S., L.D.S. Eng., has been appointed Assistant Dental Surgeon to the Middlesex Hospital.

PENDLEBURY, H. S., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. George's Hospital, Hyde Park Corner, S.W.

PRICE, D., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the Saddleworth Union.

RIMELL, A. T., L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Long Sutton District of Lincolnshire.

ROUSE, E. R., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the Ticehurst Union, vice W. H. Hall, resigned.

SCATCHARD, J. P., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Tadcaster Sanitary District and the Workhouse of the Tadcaster Union, vice T. B. Ireland, resigned, and Certifying Surgeon under the Factory Acts for the Tadcaster District of the West Riding of Yorkshire.

SHEILD, A. M., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Surgeon to St. George's Hospital, Hyde Park Corner, S.W., vice T. Warrington Haward.

SMITH, E. J., L.R.C.P. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Walton-on-Naze District of Essex.

STOKES, C. E., M.D. Dubl., B.Ch., has been appointed Medical Officer for the Brampford Speke Sanitary District of the St. Thomas Union, Exeter, vice T. Smith, resigned.

SWAINSTON, ELIOT, M.B., B.S. Durh., has been appointed House Surgeon to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, N.E.

SYMONS. W. H., M.D. Brux., L.R.C.P. Lond., M.R.C.S., D.P.H. Oxon., has been re-appointed Medical Officer of Health by the Bath City Council.

WHITE, P. S., L R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Bugbrooke Sanitary Division of the Northampton Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cab-hire, with furnished rooms, fire, lights, and attendance.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks from the middle of August. Board, apartments, laundry, and attendance provided. Apply, stating terms, to the Clerk to the Guardians, Birmingham.

BOSCOMBE HOSPITAL, Bournemouth.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. No beer or spirits.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals. Salary £120 per annum, with board, lodging, and attendance. Apply to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Salary £60, with board, lodging, and washing.

HAMPSTEAD HOSPITAL, Parliament-hill, N.W.—Resident Medical Officer for six months. Salary at the rate of £120 per annum, with rooms, coals, and gas.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

LONDONDERRY COUNTY BOROUGH.—Medical Officer to act as Medical Superintendent Officer of Health and Medical Attendant at Foyle Hill Infectious Diseases Hospital. Salary £350 per annum. Apply to the Executive Sanitary Officer's Office, Guildhall, Londonderry.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the institution.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer to the Out-patient Department, Hardman-street, Manchester. Honorarium £40 per annum.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., rising £10 annually to £150.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH CAMBS. HOSPITAL, Wisbech.—Resident House Surgeon. Salary £130 per annum, with furnished house.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF ROUSAY AND EGILSHAY, Orkney.—Resident Medical Officer. Salary £51 sterling per annum. Apply to Inspector of Poor, Rousay, Orkney.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL INFIRMARY, Sheffield.—Junior Assistant House Surgeon. Salary £70 per annum, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried. Apply to Medical Superintendent.

ST. BARTHOLOMEW'S HOSPITAL, Rochester.—Assistant House Surgeon. Salary £100 per annum, with board, washing, firing, and lights.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, with board, residence, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy of Certifying Surgeon under the Factory Acts at Syston, in the county of Leicester.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. An honorarium at the rate of £20 per annum given, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year to £160, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BRADLEY.—On July 18th, at Greville House, Raynes-park, Wimbledon, S.W., the wife of James Edmund Campbell Bradley, M.B., B.C. Cantab., of a daughter.

CUNNINGHAM.—On June 25th, at The Mount, Glossop-road, Sheffield, the wife of R. Wiseman Cunningham, M.B., C.M., of a son.

PATON.—On July 17th, at Lynedoch-place, Edinburgh, the wife of D. Noel Paton, M.D., of a son.

PRATT.—On July 19th, at Heaton-road, Newcastle-on-Tyne, the wife of E. F. Pratt, M.B., of a son.

MARRIAGE.

PAYNE—DERRY.—On July 19th, at the Wesleyan Church, Streatham, Joseph Lewin Payne, L.R.C.P., M.R.C.S., L.D.S. Eng., of Devonshire-street, Portland-place, to May Castine Derry, youngest daughter of Charles J. D. Derry, of The Woodlands, Tooting-common.

DEATHS.

BENNETT.—On July 19th, at Maidenhead, Berks, William Charles Storer Bennett, F.R.C.S., of George-street, Hanover-square, W., aged 48 years.

CAMERON.—On July 18th, at Chipping Campden, Gloucestershire, Archibald Henry Foley Cameron, M.R.C.S., L.R.C.P. aged 71 years.

CROKER.—On July 18th, at Claremont, Seaford, Sussex, Surgeon-Major Arthur Croker, late Army Medical Department, in his 69th year.

PRESCOTT.—At Great Queen-street, W.C., Thomas Prescott, M.R.C.S., L.R.C.P., aged 52 years.

SHEWEN.—On July 18th, at Lindenhurst, Sevenoaks, Kent, Alfred Shewen, M.D. Lond., of Sydney, N.S. Wales, Senior Consulting Hon. Physician to Prince Alfred's Hospital of that city, in his 57th year.

WRIGHT.—On July 20th, at Vanbrugh-park, Blackheath, Brigade-Surgeon Thomas Wright, late Army Medical Department, aged 68 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PAY OF DISTRICT SURGEONS IN CAPE COLONY.

WE extract the following from the *Cape Gazette*:—

GOVERNMENT NOTICE.—No. 319, 1900.

Colonial Secretary's Office,
Cape Town, 8th May, 1900.

VACANT DISTRICT SURGEONCIES.

INTENDING Candidates are invited to make early application for the following District Surgeoncies, now vacant, viz.:—

1. Hay (Additional), resident at Postmasburg. Allowance £40 per annum, and private practice.

2. Fraserburg (Additional), resident at Williston, vacant by the resignation of Dr. ——. Allowance £50 per annum, and private practice.

3. Namaqualand (Additional), resident at Garies. Allowance £100 per annum, and private practice.

4. Tabankulu, vacant by transfer of Dr. ——. Allowance £200 per annum, inclusive of forage allowance, £50 per annum, and private practice.

5. Flagstaff, vacant by resignation of Dr. ——. Allowance £200 per annum, including forage allowance of £50, and private practice.

6. Mount Fletcher, vacant by resignation of Dr. ——. Allowance £200 per annum, inclusive of forage allowance of £50 per annum, and private practice.

NOEL JANISCH,
Under Colonial Secretary.

Medical men will be interested to see the value that is set upon them. The remuneration offered by the Government of Cape Colony is hardly likely, we think, to tempt many of our readers to a colonial life.

THE INTERRUPTED ELECTRICAL CURRENT IN CHRONIC COMPLETE DEAFNESS.

To the Editors of THE LANCET.

SIRS,—I am treating a case of chronic and extreme deafness (the cause of which is unknown to me) by the application of the interrupted electrical current. After about a week's treatment the hearing has, I believe, slightly improved and the patient tells me that he has to-day heard the brewery steam gong for the first time for years. Could you tell me if this treatment has been found beneficial in other cases of deafness? I am, Sirs, yours faithfully,

DIGBY F. B. COTES, M.R.C.S. Eng.

Burton-on-Trent, July 21st, 1900.

*** It is obvious that in many cases of chronic complete deafness no electrical current could restore or improve hearing. In others some good might follow the treatment. Our correspondent does not tell us how, when, or where the electricity is applied. The cause of the condition is the important point.—ED. L.

A POINT UNDER THE CORONERS ACT.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if you would refer me to any authority as to the law on the following case. A man was brought dead to my hospital the other day and there were no signs as to how he met his death. The coroner ordered me to make a post-mortem examination, which I did, and attended the inquest afterwards and gave evidence. I claimed the usual fee, £2 2*s*., for the work, when the coroner asked me to show him the authority on which I based my claim. House surgeons are not entitled to fees for such work when the patient has died *in* the hospital, but if brought dead to the hospital and an inquest is held, or if a post-mortem examination and an inquest are held and the house surgeon is summoned to attend, I believe the house surgeon receives the usual remuneration. Such has been my previous experience.—I am, Sirs, yours faithfully,

July 16th, 1900. R.M.O.

*** The authority governing this question is contained in the 22nd section of the Coroners Act of 1887 (50 & 51 Vict., c. 71) which runs as follows:—"§ 22. A legally qualified medical practitioner who has attended at a coroner's inquest in obedience to a summons of the coroner under this Act shall be entitled to receive such remuneration as follows—that is to say: (*a*) for attending to give evidence at any inquest whereat no post-mortem has been made by such practitioner, one guinea; and (*b*) for making a post-mortem examination of the body of the deceased, with or without an analysis of the contents of the stomach or intestines, and for attending to give evidence thereon, two guineas. Provided that (1) any fee or remuneration shall not be paid to a medical practitioner for a post-mortem examination instituted without the previous direction of the coroner; (2) where any inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution or in a building or place belonging thereto or used for the reception

of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration." It seems perfectly clear from the above that the coroner was wrong in refusing the fee asked for, unless he believed that the deceased died in the hospital. Perhaps if the section were laid before him he wou'd consider it now. Otherwise the precise remedy of the medical man is not very clear, but it seems to be by suing the coroner in the county-court. This is not a satisfactory proceeding where the amount is small owing to the small amount of costs recoverable, but the plaintiff by clearly stating the facts and citing the section given and the twenty-sixth section, which orders the coroner to pay costs, might be able to make good his case without legal assistance.—ED. L.

"UPWARD *versus* DOWNWARD VENTILATION."

THIS is the title of a little pamphlet which has reached us from Messrs. Robert Boyle and Son of 64, Holborn Viaduct. It contains extracts from the report of Professor Woodbridge on the ventilation of the Capitol, Washington, U.S.A. What Messrs. Robert Boyle and Son maintain is that when natural ventilation is properly and scientifically applied it invariably proves more successful than mechanical or other forms of artificial ventilation and it has the advantages that it cannot get out of order or break down, and costs but little to apply and maintain. In addition, the book contains excerpts from well-known authorities who condemn the downward ventilation of the Plenum system.

"THE DUTIES OF A PUBLIC VACCINATOR."

To the Editors of THE LANCET.

SIRS,—I am much obliged to you for your answer to my letter in THE LANCET of July 14th (p. 148), *re* vaccination prosecutions. Thinking the result of prosecution in this district may be of interest, I send a few lines to let you know. Three cases came before the magistrates, and in each case a fine of 1*s.* and costs was inflicted, the costs to include a fee of 10*s.* 6*d.* per case to the medical men subpœnaed to give evidence. I am not certain, but I think in cases prosecuted in the future that the vaccination officer's evidence will be sufficient to convict, without the public vaccinator appearing in court.

I am, Sirs, yours faithfully,

July 17th, 1900. X.

A PATENT AUTOMATIC BEVERAGE MACHINE.

WE learn that it is proposed to introduce shortly for out-door public use an automatic machine for the supply of non-alcoholic beverages—soda-water, lemonade, ginger-beer, &c. The principle of the penny-in-the-slot will be employed. The act of dropping the coin releases to each customer a collapsible cup which when placed in position under a delivery tube receives on turning a handle a cupful of beverage either effervescent or still. We are glad to notice that every precaution is promised in regard to the cleanliness and purity of the drinks supplied and of the drinking vessels. We fear, however, that certain difficulties will be encountered in thus attempting to place an automatic supply of beverages before the public. Imagine, for example, the machine being bombarded by the sun's rays in weather of the kind that we are now experiencing. The drinks would be somewhere between hot and cold unless the machines were jacketed with an ice chamber. Then special care will have to be taken to avoid metallic impurity. The idea is good in some respects. Some guarantee could be afforded of the purity of the beverages and the recourse to a stuffy or otherwise unpleasant bar or counter could be avoided. The particulars of the invention may be had from the Patent Automatic Beverage Machine Company, of 60, Chancery-lane, W.C.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—Mr. Harris's letter under the above heading in THE LANCET of July 14th, page 147, makes extremely pretty reading, but as an answer to a question, asking for some figures whereby one can base opinion as to the efficiency claimed by its supporters of the Krohne inhaler, it is an ingenious way of "begging the question." It is all very well to quote "If they hear not Moses and the Prophets," but is everybody as satisfied as Mr. Harris that the Krohne inhaler is the present-day representative of the ancient Hebrew law-giver and that its supporters are "the Prophets"? The Krohne Inhaler 1900 can only, in the natural order of events, be on its trial, as six months use of a new instrument by a comparatively small number of observers cannot be considered conclusive. I cannot anywhere in any of the journals or medical papers find any statistics whatever relating to the Krohne inhaler, so that one is absolutely in the dark as to how often it has been used; but I do find recorded in THE LANCET of Nov. 4th, 1899, page 1227, a death with the Krohne and Sesemann inhaler, so it would appear both from that and also from Mr. Harris's carefully guarded statement "that (the Krohne inhaler of 1900) in the hands of any ordinary practitioner with common sense could *hardly ever result* in death," that it is possible to have a fatality even when one has given attentive hearing to "Moses and the Prophets." In THE LANCET of August 19th, 1899, page 515, is an account of a death from chloroform anæsthesia with the statement that at the Children s Hospital, Birmingham, since the opening up to that date, 14,500 cases of anæsthesia had occurred and that only one death had taken place in that number; again, at the Royal Southern Hospital, Liverpool, where chloroform by the "rule-of-thumb" method is almost exclusively used, there has never been a death recorded since the opening—I cannot at the moment tell how many years that is, but I know it is considerably over 20, and the average number of operations being about 30 per week, that will give another big list of figures to the credit side of the "rule-of-thumb" method. Even the greatest advocate of the Krohne inhaler, Dr. Edmunds, does not pretend to claim its absolute infallibility, as anyone may read in his letter in THE LANCET of Oct 28th, 1899, p. 1205. He there plainly states that it is not only the inhaler but the man using it which has everything to do with the result attained. Another fact I wish to insist upon is, what does it matter about registering the exact amount of chloroform used to a drop? Everyone must realise that no two patients require the same amount of the drug to ensure an equal degree of anæsthesia and that the rule of averages is an absolutely fatal one to go by; what would kill outright one patient will not get another one under at all. Another objection to the Krohne inhaler is the time taken to get a patient under, and time is of importance where from 10 to 14 operations are to be performed in an afternoon; but, still, one would set aside that if it were conclusively proved that the new method was an absolutely safe one, which I maintain has not been done yet. Give us some facts and figures to go on; do not quote single cases where a man has taken chloroform in a Krohne inhaler and went off without "any coughing, struggling, or any unpleasant effects whatever"—that is no use at all. One has seen dozens of patients put under by the "rule-of-thumb" method with exactly the same state of affairs. Passing over the rather childish parallel of the weighing or guessing out of strychnine, I shall welcome any reply from Mr. Harris which contains a list of a sufficiently large number of cases of anæsthesia with the Krohne inhaler, also at the same time a record of the casualties.

I am, Sirs, yours faithfully,

Liverpool, July 16th, 1900. FRANK E. MARSHALL, M.B. Vict.

A SURGEON'S FEES.

THE hearing of the case of Collier *v.* Epstein was concluded on July 18th in the Queen's Bench Division before Mr. Justice Kennedy and a special jury. The action was brought by Mr. M. P. M. Collier, of Harley-street, against the widow of Mr. Ludwig Epstein, of Twickenham, to recover £152 5s., balance of fees amounting to 180 guineas alleged to be due in respect of certain surgical operations and subsequent attendance upon the defendant's husband. The jury came to the conclusion that 120 guineas, less the 35 guineas already paid, would be a fair and reasonable remuneration for the operation and attendance, and gave a verdict accordingly. Judgment was therefore entered for the plaintiff for £89 5s.

"WORD-BLINDNESS."

To the Editors of THE LANCET.

SIRS,—I am much obliged for Dr. J. Edmunds's instructive letter and references (THE LANCET, June 16th, p. 1767) chiefly as to paralytic aphasia, but I should like to repeat my question as to those typically pure and uncomplicated cases mentioned (pages 1506–8), where not one of "the various channels of receptivity was affected" save the recognition of the small naked outlines of print. Where there was no difficulty in naming objects from the small pictures of them in a spelling-book, if the letters were first introduced as distinctively coloured objects which could be grasped, involving the cheiro-kinæsthetic and muscular memories (from the weight) and the tactile memory (from variety of textures and materials), would not the ordinary printed letters be recognised as pictures of these?

I am, Sirs, yours faithfully,

Upper Bedford-place, W.C., July 11th, 1900. C. G. S. MENTEATH.

PS.—If the letters were not recognised as the same as the coloured models then it would be helpful to the patient to draw and colour the letters (J. Wyllie, 1894, p. 350). If there is anything in coloured audition or pseudo-chromæsthesia (*s. v.* Tuke, Dictionary of Psychological Medicine), and normal persons have practically used it (Popular Science Monthly, July, 1891, p. 372), also the blind who have once seen (Memorabilien, Heilbronn, 1882, ii., 524–36), and the deficiency of one memory is frequently compensated by the increased memory of of another sense, especially of hearing, the colours and shades of colours should give great assistance. The letters might be named after their colours: blue = *b*; pale blue = *p*; and crimson, cerise = *c*. Only 26 characters need be considered, as most of the capitals are the same as or resemble, the corresponding small letters (it would be almost possible to read without the knowledge by heart of the remainder). Moreover, as the vowels in one case were remembered while the others were forgotten they might be left plain; semi-vowels and the aspirate might be white. But it is in syllable- or word-blindness that the colours would be most useful, as, since juxtaposed colours sometimes mostify, run into each other, "kill," or, on the other hand, set each other off, the patterns or colour complexes of the syllables might obtain some manner of registration in the brain. Thus harmonies or colours would be easily recognised, and combined consonants would be remembered as one colour where they mingled together. The vowels not being coloured the distinctive outlines of the syllables would come out, although it is said that when words are coloured they usually acquire their colour from the vowels which seem to be

the most frequently coloured (Memorabilien). If, however, it were still difficult to remember what colours to chalk the printed letters, then the three primary colours and their shade-varieties respectively would have to be assigned to three principal shapes of letters—the small ones as *n, m, r, c, s, z*; those above the line *b, d, t, f, k, l*; and those below *p, q, g, j*—and still be named after their colours.

A CORRESPONDENT writes:—"Can any reader of THE LANCET recommend a good place to which to send a young woman for instruction in gymnastics of the chest? She wants to learn to expand her chest and has weak erectores spinæ. Somewhere in central or western London would be convenient."

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 26th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
July 20	29·96	E.	...	126	95	68	68	73	Cloudy
,, 21	30·12	S.W.	...	114	79	66	66	70	Cloudy
,, 22	30·12	W.	...	123	84	65	65	69	Cloudy
,, 23	30·10	N.	...	123	86	68	68	72	Cloudy
,, 24	30·05	S.W.	...	131	91	67	69	73	Hazy
,, 25	29·90	S.W.	...	135	95	68	70	75	Hazy
,, 26	30·00	N.W.	...	122	80	68	66	70	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

SATURDAY (4th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

BRITISH MEDICAL ASSOCIATION MEETING AT IPSWICH.

DURING the forthcoming meeting of the British Medical Association at Ipswich the representatives of THE LANCET can be consulted at the Great White Horse Hotel, Ipswich, with regard to our reports of papers and proceedings.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

During the week marked copies of the following newspapers have been received: *Liverpool Daily Post, Morning Herald, Lisburn Standard, Sussex Daily News, Gazette (Middlesbrough), Bristol Mercury, Hereford Times, Norwood Review, Derbyshire Courier, Ilkley Free Press, Midland Free Press, Montrose Standard, Cleckheaton Guardian, Bexhill Chronicle, Gloucester Journal, Oxford Chronicle, Times of India, Pioneer Mail, Surrey Mercury, Lancashire Post, Grimsby News, Dundee Advertiser, New York Sun, Manchester Guardian, Western Mail, Sheffield Daily Telegraph, Scotsman, Citizen, Builder, Architect, Yorkshire Post, City Press, Leeds Mercury, Shanghai Mercury, Cape Register, Vegetarian, Newark Advertiser, Westminster Budget, Sydney Mail, Reading Mercury, Hertfordshire Mercury, Local Government Chronicle, Loughborough Examiner, St. Helens Newspaper, Buckingham Express, Bicester Herald, Bolton Evening News, Hastings News, Science Siftings, South-Eastern Gazette, Oswestry Advertiser, Church Bells, Surrey Advertiser, Bolton Journal, Daily Record, Glasgow Weekly Free Press and Aberdeen Herald, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mons. F. Alcan, Paris; Messrs. Armbrecht, Nelson, and Co., Lond.; Anderson's Medical School, Glasgow, Secretary of; Messrs. Armour and Co., Lond.; Messrs. Arnold and Sons, Lond.; Messrs. Allen and Hanburys, Lond.

B.—Mr. F. E. Bissell, Anstey; Mr. A. S. Barrow, Indwe, Cape Colony; Messrs. Battle and Co., Neuilly-sur-Seine; British Fuel Economiser, Lond.; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. C. Bullmore, Falmouth; Mr. A. Boswell, Brentwood; *Birmingham Daily Post*; T. B. Browne, Ltd., Lond.; Messrs. Burroughs Wellcome and Co., Lond.; Bristol Royal Infirmary, Secretary of; British Institute of Undertakers, Lond.; Secretary of; Mr. E. M. Bowden, Lond.; Mr. W. H. Brooks, Leicester; Messrs. C. Barker and Sons, Lond.

C.—Dr. N. H. Choksy, Bombay; Messrs. Crossley and Co., Lond.; Mr. J. S. Chater, Lond.; County Borough of Londonderry, Clerk of; Cumberland Infirmary, Carlisle, Secretary of; Dr. W. H. Corfield, Lond.; City of Sheffield, Clerk of; Mr. J. B. Cameron, Lond.; City Asylum, Gosforth, Secretary of.

D.—Dr. J. M. Day, Dublin; Mr. R. Dane, Sandown; District Messenger and Theatre Ticket Co., Lond.; Mr. E. Darke, Lond.; Messrs. A. De St. Dalmas and Co., Leicester; Mr. E. R. Dale, Salisbury; Devonshire Hospital, Buxton, Secretary of.

E.—Messrs. Evans, Lescher, and Webb, Lond.; East Suffolk Hospital, Ipswich, Secretary of.

F.—Dr. E. T. Fison, Salisbury; Mr. R. Foskett, Lond.

G.—Mrs. F. C. Gill, Pendleton; Messrs. Gardiner and Co., Wisbech; Glasgow University, Clerk of; Mr. F. Golding-Bird, Lond.; G. E. R., Lond.; Dr. E. Goodall, Carmarthen.

H.—Mr. A. Helbig, Lond.; Messrs. Hodder and Stoughton, Lond.; Mr. W. Hair, Edinburgh; Mr. T. Garrett Horder, Windsor; Mr. G. H. Hunter, Haughley; Mr. Reginald Harrison, Lond.; Dr. T. W. Hime, Bradford; Mr. E. Harrison, Basingwold.

I.—Ingham Infirmary, South Shields, Secretary of; Interested.

J.—Rev. S. B. James, North Marston; Mr. C. H. Jackman, Dr. Herbert Jones, Pentre, R.S.O.; Mrs. K. G. James, Harrow; Dr. T. Johnstone, Ilkley.

K.—Dr. Skene Keith, Lond.; Mr. J. Keswick, Lond.; Dr. R. Kirk, Edinburgh; Mr. J. King, Walthamstow.

L.—Mr. J. L. Leckie, Pontypridd; Lee's Advertising Agency, Lond.; Mons. H. Le Soudier, Paris; London University, Registrar of; Livingstone College, Lond., Principal of; Lambeth Waterworks, Secretary of; Dr. R. P. Lyle, Newcastle-on-Tyne.

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Address in Medicine:

MEDICINE AS A SCIENCE AND MEDICINE AS AN ART.

Delivered at the Annual Meeting of the British Medical Association held at Ipswich on August 1st, 1900,

BY PHILIP HENRY PYE-SMITH, M.D., F.R.C.P. LOND., F.R.S.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—It has sometimes been disputed whether medicine should be regarded as a science or as an art, but there is no doubt that the original meaning of "medicine," and of the corresponding term in other languages, is the art of healing. Medicine is so defined by Aristotle, and the art of curing, to which we may add the art of preventing, disease has all the characters of an art. It depends upon experience and skill, it deals with individual cases, and the perfection it aims at is practical, not speculative—the knowledge how to do and not the knowledge how things happen. Nevertheless, as practical navigation is founded on astronomy, meteorology, and physics, and as the art of agriculture rests on botany, geology, and vegetable physiology, so the art of medicine depends on the science of pathology, the practice of physic on the principles of physic. On the one hand, then, we must never forget that we practise an art. We must never allow theories, or even what appear to be logical deductions, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable, to take the place of the one touchstone of practical medicine, experience. We must never treat the disease without considering the patient, for the art of healing is the art of healing individually. Nor need we wonder if vast knowledge, profound learning, and the best scientific training sometimes fail to make a successful practitioner, since, besides adequate knowledge to save us from gross blunders and a strenuous endeavour to do our best for each patient, however uninteresting the case or however irksome and unrewarded our toil—besides these first requisites for our art there is ample room for those personal qualities which ensure success in every department of life: for power of observation and insight, for the personal influence by which a strong character will secure obedience and inspire hope, for the judgment which divines what kind of remedies are suited to each patient, what kind and of what strength, and for the sympathy which puts one in the patient's place and not only meets, but anticipates, his wants.

If, however, medical science without art is inefficient, medical art without science is not only unprogressive but almost inevitably becomes quackery. As soon as we treat our patients by rule of thumb, by tradition, by dogmas, or by metaphysical axioms we do injury to ourselves as well as to them. The bone-setter who is ignorant of anatomy and the wise woman who cures by charms are not more irrational or less successful than was the physician of the seventeenth century who, in obedience to the doctrine of signatures, advised an infusion of roses for hæmorrhage, and saffron for jaundice, and lungwort for consumption, or the astrologer who prescribed salts of silver, iron, lead, or mercury in accordance with the horoscope of the patient and the planet under which he was born. Not less mischievous, and, in the true sense of the word, unscientific, were the systems of medicine known as the "iatromechanical" and the "iatrochemical," which in their turn had their vogue. The Brunonian system, explaining all diseases as due to laxity of fibre, was no better; for indiscriminate use of "corroborants," or, as they would now be called, "tonics," is as irrational as that of hydropathy, of alcoholic stimulation, or of electricity. There is no such thing as a tonic or strengthening medicine. The only source of strength is oxidisable food, and bitter medicines can only give strength by improving appetite and digestion. The last of the systems of medicine founded on a dogma is homœopathy, of which the theoretical absurdity is somewhat concealed by the more obvious nonsense of infinitesimal doses. It, like other systems which preceded it, is not a rival to rational medicine, it is not a mistaken answer to a legitimate question but an attempted solution of a problem which does not exist and an attempted answer to a riddle which has no solution.

Apart from these exploded systems of treatment our profession has often suffered from lack of the scientific, inquiring, sceptical spirit and has often been led too easily by authority, by tradition, and by fashion. The reckless abuse of venesection in the last century and the former half of this century led to almost complete disuse of a valuable means of treatment and the misuse of mercury in the treatment of syphilis led to the denial of its unquestionable efficacy. Have we not seen the value of stimulants in a contest with fever lead to their indiscriminate use in almost every ailment? Has not the immense value of careful and thorough nursing led to its absurd exaltation to an independent place—as if good nursing was anything more than an intelligent carrying out of the physician's directions? Has not the remarkable power of electrical stimuli led to a blind, unscientific, and mischievous employment of this remedy as if it had some mystic power apart from its demonstrable physiological effects? May we not say the same of hydropathy, of massage, and of hypnotism? It is significant that the irrational exaltation of any of these particular modes of treatment into a panacea, while it begins in want of scientific intelligence, invariably ends in imposture and deceit. Our only safeguard against the spirit of quackery and the deserved loss of public confidence in the profession which it brings with it is continued recurrence to the scientific basis on which the practice of medicine rests. Our art is most satisfactory and efficient when most closely resting on science. The surgeon is continually guided by anatomy and mechanics in dealing with injuries and deformities. The physician is often able to apply his knowledge of chemistry and natural history to the direct and satisfactory treatment of disease. In general, medical science justifies itself in the same way as astronomy or chemistry by its predictions coming true. In particular the detection of plumbism, the diagnosis and cure of scabies and ringworm, the treatment of poisons by chemical antidotes, and of specific diseases by attenuated inoculations, are all instances of strictly scientific medicine. Nor can I refrain from citing the most recent and one of the most remarkable advances of our science in the discovery of the origin of malaria. This heavy tax upon national as well as individual vigour and happiness has been known and treated from the dawn of medicine; but although by a happy accident its efficient treatment was discovered it is only lately that by the combined labours of scientific physicians, Frenchmen, Italians, and our own countrymen, the origin of the disease has been discovered, the mode of its transmission traced, and the diagnosis of its several forms established. We know that treatment of symptoms without a diagnosis is always unsatisfactory and frequently worse, but we know also that diagnosis must rest upon accurate knowledge of morbid anatomy and of the natural history of the disease. Scientific medicine based on observation and experiment is always practical as well, but empirical medicine, whether based upon fanciful speculation or working by blind rule of thumb, is the most impractical thing that can be.

PREVENTIVE MEDICINE AND ETIOLOGY.

That important and constantly growing branch of medicine which deals with the prevention rather than the cure of disease depends no less upon science, for tracking the dependence of one event upon another is the essence of inductive science. All efficient measures for the preservation of health, whether by individuals or communities, rest upon exact knowledge of the natural course of diseases. In fact, disease may be defined as the reaction of the human organism under conditions which make for its destruction. We must never forget that no irritant will cause inflammation in a lifeless skin; that no bacteria can produce fever without a nervous system to play upon; that no meal, however Gargantuan, and no potations, however deep, can produce their wonted effect without a stomach to react. The infection of small-pox, of diphtheria, or of tubercle exerts a very different influence upon vaccinated or unvaccinated subjects, upon one who has received and one who has not received the prophylactic serum, upon an organism which is predisposed to, or which is refractory against, the invasion of the enemy. How closely natural science is related to preventive medicine

is shown by the history of Jenner who was a naturalist, and of Pasteur who was a chemist. How dependent we are upon science is well illustrated by the history of myxœdema. The cretinoid condition in adults which was discovered by the clinical acumen of Sir William Gull, unintentionally produced by the surgical skill of Professor Kocher, and reproduced in animals by Mr. Victor Horsley, is now cured by the eminently scientific method due to Dr. G. R. Murray of Newcastle and to Dr. Hector Mackenzie of St. Thomas's Hospital. Such examples of accurate tracing of causation by observation and experiment admonish us to give up the perfunctory explanations which so often do duty for investigation. If we ascribe every inflammation to cold or if we acquiesce in the popular ascription of disease to overwork, mental strain, and the nervous tension of modern life, we shall make no progress in true etiology. I see many patients suffering from idleness, but few or none suffering from hard work. "Nerve prostration" from "worry" and "brain-tension" generally proves to be a decent veil to the effects of gambling and drink. Modern life is easier, safer, and smoother that it was 100 years ago. Our young men and maidens are healthier, stronger, better grown, less emotional, less hysterical, and sounder in mind and body than their great grandparents. I venture to think that the duty of a physician is not to flatter the selfishness of neurotic patients, but to inspire fortitude and to prescribe regular and steady work as the best cure for a thousand nervous ailments.

As another point in scientific etiology, suffer a warning against the assumption that because many diseases are now proved to depend upon the presence of bacteria this must be true of all. Science does not anticipate but waits for proof. We have complete scientific evidence, according to the criteria so well formulated by Koch, of the absolute and constant cause of anthrax, of relapsing fever, of tubercle, and of several other diseases in both men and animals; but we must not forget the preliminary difficulty of identifying the specific bacillus as in the case of enteric fever and diphtheria, or the difficulty of finding one of the lower animals which is susceptible to the disease as again in the case of typhoid fever and of cholera, or the difficulty of the same anatomical and clinical conditions being produced by different organisms as in the case of pneumonia and ulcerative endocarditis. Moreover, while in some diseases which are undoubtedly infective and specific no constant pathogenic microbe has yet been determined—as in typhus fever, measles, small-pox, and syphilis—we have, on the other hand, in the case or leprosy and of lupus examples of disease unquestionably specific and bacterial in origin, but very unlike other infective maladies in their clinical course and natural history. At present it is surely undesirable to speak of "the undiscovered microbes of rheumatism." Science has to do with proved facts alone, and our language should never outrun our knowledge.

PROGNOSIS AND STATISTICS.

Another important branch of medicine—prognosis—depends as an art upon experience and insight. In making an individual prognosis shrewd observation is needed, and in this, of all branches of our art, it is true that—

> "Old experience doth attain
> To something like prophetic strain."

Yet here also rational prognosis rests on the science of statistics.

It is to Louis and the French School of the second quarter of this century that we owe the application of this important method for learning the natural history of disease—a method which not only supplies a foundation for prognosis but also a criterion of treatment. There are, however, many pitfalls in deducing conclusions from statistics. The morbidity or incidence of a particular disease upon the whole community is often confused with the mortality or the fatal cases of it compared with the population, and this last is confused again with the case mortality. The return of deaths from a certain disease in a town or kingdom has been applied to the population which existed eight or nine years before. The success of treatment of a disease occurring in barracks—that is to say, among picked subjects, all in early manhood, under strict discipline, and sent to hospital as soon as they are unwell—has been compared with that of other measures carried out in totally different circumstances. As examples of statistical misuse take these facts. The numerical returns of the lying-in charity of a London hospital led to the conclusion that more women were delivered of a second child than a first. A physician to inspire confidence in an anxious patient assured him that the mortality of the complaint from which he was suffering was only 1 per cent., and in answer to the further inquiry whether he had seen many cases, said, "Yes, I have looked at my note-books and find that I have seen 99, and they all recovered."

Apart from the corrections and limitations of statistical science we are sometimes in danger of forgetting that to be of any value statistics must be based upon cases which are both numerous and accurate. A small number of cases is useless. It led to the conclusion that myxœdema was peculiar to women and that insular sclerosis was rare in men. It was only after hundreds of cases had been observed that we learnt that infantile paralysis sometimes befalls adults and that osteo-arthritis may occur in children. This defect is remedied by time, but the defect of inaccuracy is without remedy. If diagnosis is perfunctory or careless or nomenclature is arbitrary and inconstant the more cases observed the less do they teach. It is disappointing, after the immense labour, time, and trouble devoted to the compilation of the official nomenclature of diseases of the Royal College of Physicians of London that although adopted in the navy and the army and by the Registrar-General it is constantly neglected, not only in conversation, but in systematic treatises. How can statistics be anything but misleading when made up of cases of one and the same disease under such different titles as "chronic rheumatism," "rheumatic gout," "rheumatoid arthritis," "arthritis deformans," and "osteo-arthritis"? Of what value are statistics when such different diseases as acute lobar pneumonia, broncho-pneumonia of children after measles, pulmonary tuberculosis, cirrhosis, and septic suppuration of the lung are all labeled "pneumonia"? One difficulty is put in the way of the practitioner in making an accurate return by the well-meant, but I think in practice unfortunate, provision for returning a primary and a secondary cause of death. Sometimes this corresponds to facts and gets over a difficulty; but if a patient dies from enteric fever there is nothing gained by adding congestion of the lungs as the secondary cause, still less do we learn from a return of "primary cause, a chill; secondary cause, debility." As a matter of fact, in looking through hundreds of death-certificates one arrives at the valuable conclusion that a frequent cause of death is "exhaustion" or "cardiac failure."

Another and opposite mistake is often made by attempts at too great precision in diagnosis. To say that a man died from apoplexy or from paraplegia is to state a fact within any competent practitioner's knowledge, but in the absence of a post-mortem inspection to say that he died from cerebral hæmorrhage or from myelitis is not a fact but a more or less doubtful inference. It is surely better to be satisfied with a statement that there were ascites and enlargement of the liver when the cause of enlargement is altogether uncertain than to be more exact and less true. I have again and again seen diseases the existence of which no experienced physician would assert without a necropsy returned as if they were common and easily recognised conditions—"pernicious anæmia," "syringomyelia," or "cancer of the lung." It would, I venture to submit, be a great improvement if the return of one cause of death only were demanded, if certainty and definite statements were aimed at rather than speculative minuteness or vague generalities, if a query were allowed to qualify deductions as distinct from observations, if the fact or the absence of a necropsy were always stated, and lastly, if the authorised nomenclature was always used.

EXPERIMENTS IN SCIENTIFIC MEDICINE.

There is one aspect of scientific medicine so important that it must not be omitted—the necessity of experiments for the progress of pathology and through it for the prevention and cure of disease. It requires no argument to convince anyone who is the least acquainted with the principles of inductive science that experiment is no less necessary than observation. In physics and in chemistry this is obvious and is universally acted on. The same method is indispensable for the progress of animal and vegetable physiology, and to such practical applications of science as engineering, agriculture, and medicine. Nor can experiments be restricted to rare and solemn occasions. They must be carried on in large numbers by many different experimenters and under every variety of condition. Any attempt to abolish, to check, or to limit this experimental

work is, in the degree that it is successful, fatal to progress. Happily it can never be successful, for the impulse to increase knowledge of the works of creation is too deeply implanted in men. Investigation must and will go on by the only path which it can follow. The method which was preached by Francis Bacon and followed out by his great contemporary William Harvey, which was continued by Lower, Hooke, and Mayow in the early days of the Royal Society, and by Aselli, Malpighi, and Haller, by Hunter, Hewson, and Hales, by Edward Jenner, by Sir Charles Bell, by Johannes Müller, by Claude Bernard, by Ludwig, and by the many eminent physiologists and pathologists in Germany, in France, and throughout the civilised world—this method of investigation is absolutely necessary for the progress of our art. As its objects and methods are better understood it will secure the enlightened patronage of all who desire the diffusion of human knowledge and the further spread of human happiness. Fortunately this very progress of science has brought with it the removal of the one grave drawback which every right-thinking man must have felt to the benefit we reap from these experiments upon living animals. Inflicting pain upon the humblest of God's creatures is repugnant to our feelings, though no one (unless maintaining a thesis) would contend that it is wrong to exact the most painful efforts, or even the death from exhaustion, of a horse in order to carry help to a human being. The discovery of ether, chloroform, and other anæsthetics and the improved methods that we owe to the genius of Lord Lister have not only relieved the surgeon of the most repulsive part of his duties but have relieved the experimenter also. Except in the investigation of the action of new remedies or in the inoculation of infective diseases—both of which inflict discomfort of a limited degree and duration rather than anything that can be described as pain—the experiments of the laboratory, whether physiological, pathological, or therapeutical, are conducted without inflicting pain. The opposition to them has not succeeded and it is sure to diminish. However mistaken our opponents we are glad to find that there is even exaggerated jealousy to avoid anything approaching to cruelty. Our more candid critics may be assured that this legitimate object is already amply provided for.

THERAPEUTICS AND SCIENCE.

Lastly, how far is the final end of our art—the cure of disease—directly dependent upon science? It rests, we know, upon that sure basis, but even in its practical carrying out we are bound to take with us a scientific spirit. The administration of digitalis for cardiac dropsy, of mercury for syphilis, and of thyroid extract for myxœdema is as truly scientific as prescribing a chemical antidote for poison or nitro-glycerine for angina pectoris, for it rests on a sure basis of observation and experience. But because in many cases we cannot as yet explain how remedies act we should not prescribe them without watching the effects of the experiment. The foolish cry against hospitals as "places where they experiment on patients" is meaningless just because it is true. Every prescription given, every operation performed on rich or on poor, is an experiment and ought to be watched with critical and scientific eyes. Here let me say that our practice is often ineffectual, not for want of an accurate diagnosis or of adequate means of treatment, but merely for want of the needful treatment being thoroughly carried out—a want which inevitably prevents success and therefore leads by a vicious circle to scepticism and want of thoroughness on the next occasion. A man who believes everything he is told of the action of remedies not only in the serious treatises of Garrod, or Wood, or Brunton, but in the partial assertions of advertising druggists, is sure to be unsuccessful, and, beginning with credulity, is apt to end in unbelief of such remedies as digitalis, and mercury, and opium. Such a man will prescribe and will never see that his prescription is carried out, and by the habit of giving multifarious mixtures of drugs in ineffectual doses he will allow what he has ordered to be taken three times a day for a fortnight to be really taken twice or only once a day for a week. He will prescribe exercise or lying down, abstinence or feeding, and never see that his directions are carried out. Who shall blame the patient if he ceases to believe in remedies to which the physician obviously attaches no importance? If we would sometimes prescribe no drug at all, but insist on abstinence from certain articles of food or drink or on more frequent or less frequent meals, on regular exercise or absolute rest, should we not secure more obedience from our patients when we prescribe really necessary drugs—just as a clergyman who desires to get a liberal collection would do wisely to begin by insisting on the sin of giving to charities which one believes to do more harm than good? How can we expect success in treating an obscure nervous affection if we apply galvanism to the spine without making sure of any physiological effect, nay, sometimes without making sure that a current is passing through the electrodes? or if we send a patient to drink the waters of such and such a fashionable watering place without remembering that there are two or perhaps three springs, one of them inert and the other perhaps injurious? What success can be anticipated if we order ointment for a weeping eczematous patch where it floats on the secretion and never reaches the inflamed tissue? or if we prescribe a lotion to be applied twice a day to skin well protected by its sebaceous secretion? We all know this half-hearted ineffectual mode of action in every-day life—we all know the man who wipes his shoes as a ceremony but never looks to see if he has got rid of the mud, the groom who feeds his horse but never sees whether the oats are eaten, and the nurse who washes the baby and still leaves wet places. Now much of this weak and therefore useless treatment comes of the indolence to which we are all prone and against which we must struggle as a temptation, but much of it, I am sure, is the offspring of incredulity which again springs from half-belief in quackery and imposture. Again, our ineffectual treatment often depends upon want of thorough diagnosis. Until we make up our minds whether a certain eruption is psoriasis or a scaly syphilide we shall never deal with it effectually. If we only suspect syphilis we shall give our remedies in too small doses and relinquish them if we do not see immediate benefit; whereas, if our diagnosis is real and thorough we shall use our remedies with confidence, increasing the doses, varying the form, but always persevering until we obtain the result we aim at.

Another source of failure in therapeutics is the legion of new remedies of which the biographies and eulogiums fill our waste-paper baskets and light our fires. It is astonishing to find apparently rational men forsaking the remedies which have been proved effectual by the experience of long past times and of every civilised nation to take up with drugs the very composition of which is often unknown, the use of which they have never learned, and of which the value rests upon the interested or credulous assertions of those who try to sell them. It takes a man long years of practice to learn how to prescribe opium. Why throw away this priceless knowledge to dabble in quack remedies the very praises of which inspire distrust? New remedies are, no doubt, discovered from time to time; in this generation we have had several, and all probable claimants should be tested in pharmacological laboratories and in hospital wards. But I am speaking of drugs which have never passed either of these tests. Surely in this age of advertisements which disfigure and defile the beauties of land and sea, of town and country, of literature and art, the most credulous must be convinced that costly and pertinacious advertisement is evidence of the lack rather than the possession of genuine worth. No, so far from our profession being carried away by this noxious habit let us hope that we may not only stamp it out from among ourselves but spread our own standard of conduct to other pursuits, until some day an honest tradesman shall be ashamed to push his sales by degrading self-laudation and the wealthy manufacturer shall shrink from offending the eyes and deafening the ears of his fellow-creatures by scribbling his name on blank walls and screaming it in every street.

In another popular branch of treatment it seems very desirable that the scientific spirit should be somewhat more freely admitted—I refer to treatment by baths and waters. That both are valuable modes of treatment no one will deny, but will anyone be so bold as to assert that it makes any difference whether our patients take a bath of water heated as it comes from the soil or heated to the same degree in a kettle? Who would pretend that so many grains of laxative or alkaline salts will act differently when occurring in natural solution and when dissolved in the same proportion in the druggist's shop? That benefit is obtained by change of air and scene, by early hours, regulated rest and exercise, and copious draughts of water is beyond dispute, but it is surely a pity when instead of rational explanation of our treatment our patients are deceived by unscientific and more or less untruthful statements.

Is it not a pity for so many of us to prescribe the made-up pills and mixtures offered us by wholesale manufacturers

instead of our own combinations? It leads our patients to ascribe their recovery, not to our skill, but to this or that "cure," and would it not be an excellent task for this great Association to set some of our skilled analytical chemists to strip the veil from mysterious remedies and tell us the exact composition of the many patent medicines some of which are inert and some injurious?

SCIENTIFIC MEDICINE AND ITS WAGES.

Finally, we may ask whether scientific medicine obtains the recognition that is its due at the hands of the public. I believe that on the whole it does, or if in any degree it fails that the failure is due to ourselves. We cannot expect that any but the most educated and enlightened should look at our science or our art from a rational point of view. The popular notion of a medical man among out-patients is a man who has got some wonderful stuff in a bottle which will make them well. The more educated patients suppose that, knowing what is the matter with them, or as we say, having made their diagnosis for themselves, their first business is to choose the practitioner who has devoted his exclusive attention to the malady of which they suppose they are the subjects, or if they chance to suffer from what they call a "complication" of diseases they will consult a "heart specialist" to cure palpitation, a "throat doctor" to cure hoarseness, and a rising young surgeon at "a special hospital for diseases of the knees" to cure weakness in that joint; and if they should find no relief after these consultations—

"Flectere si nequeo superos, Acheronta movebo"

—they denounce legitimate medicine as useless, and go to the lowest impostor, and will afterwards tell their friends that after being "given up by the faculty" they found instant and miraculous relief from a single box of wind pills, a galvanic belt, or a pad of oriental herbs worn on the pit of the stomach. The fact is that we cannot expect that our patients should understand the scientific basis of medicine, the meaning of etiology, or the possible degree of efficiency of treatment. What they frequently ask of us is to allow them to continue the very course of life to which we have laboriously traced their symptoms and to give them some medicine which as if by a charm will break the inevitable sequence of cause and effect. They are slow to understand that this world gives nothing for nothing, and that we can only subdue Nature by obeying her laws.

There is, indeed, only one way in which we can obtain what we call our just recognition. Our services, however great, are services to the individual not to the community. It is therefore absurd for us to expect the honorific or the more solid rewards justly assigned to statesmen, to generals, or to judges; but from individuals we may expect—and I venture to say that as a rule we receive—the trust, the honour, and the gratitude which we have earned. Few of our patients will ever understand our principles or our methods, the reason for our successes or the explanation of our failures; what they do understand is personal character, honesty and sense, kindness and sympathy, and liberality and benevolence to rich and poor. These are the qualities which have always gained and still gain the respect of our fellow-men; and I venture to say that there is not a town in the three kingdoms where such respect is not widely and deservedly enjoyed by our profession. Go to any cathedral or almost to any parish church in England and you will see tablets bearing witness to that respect. If such men do not receive all the money they deserve they have money's worth. They spend their lives in constant exercise of the powers of the mind guided by the best feelings of the heart—a sure path to happiness. They find constant interest in their daily work, and when their work is over and the medical man becomes the patient—as we all shall one day—they can look back on a life spent in the service of God and man with gratitude to both.

ACCOMMODATION FOR INFECTIOUS DISEASES AT BRISTOL.—The Health Committee of Bristol propose to submit to the Town Council a scheme for increasing the accommodation for infectious diseases. At present 147 beds are available, which is an average of one bed for 2300 of the population. The Health Committee suggest the extension of Ham Green Fever Hospital by the addition of the buildings originally intended and in the meantime temporarily to re-open Clift House, Bedminster, as a hospital in case the present hospital should not afford the necessary accommodation.

Address in Surgery:

THE SURGEON IN THE NINETEENTH CENTURY.

Delivered at the Annual Meeting of the British Medical Association held at Ipswich on August 2nd, 1900,

BY FREDERICK TREVES, F.R.C.S. ENG.,

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—The honour of being selected to address an Association which represents not only in numbers but also in dignity and repute the medical profession of this country is an honour of such a kind that I feel it can only be belittled by any expressions of gratitude I am able to command. I will do no more, therefore, than sincerely thank you for bestowing upon me a great distinction, and at the same time remind myself of the words of Goethe that "it is easier to bind a wreath than to find a head worthy to wear it." I am fortunate also in the circumstance that the occasion for the giving of this address should coincide with the concluding year of the nineteenth century. This century has been without a parallel in the history of human culture, and so far as the art of surgery is concerned has embodied an advance in principle and in practice which has been no other than revolutionary. I do not propose to attempt a review of the progress of surgery during the last 100 years. That work has been already done by abler hands. I would venture rather to deal with the progress of the surgeon himself during this period and with the advancement of the individual as an exponent of a grave profession.

There is little difficulty in fashioning a picture of England as it was 100 years ago. A sympathetic literature has left us with ample records of the men and women of the time and of the scenes they moved among. These records are rich with the littleness of personal affairs and are made living by the very gossip and petty commentaries of those who constituted society when the century was young. The life in England then was largely life spent in the country, in sleepy villages, and in sober self-esteeming county towns. The conditions were yet immature which led men to herd together in ever-extending cities and to swarm around oases of blackened chimneys and restless furnaces. Travelling was a luxury limited to the few. The many were content to live and die within sight of fields and spires which had been familiar from babyhood. They were apparently content to keep to their own stations in life, to take their notions of dignity from the squire and their conceptions of religion from the vicar, and to be satisfied with such excitement as was afforded by harvests and market days, by the movements of the locally great, and by the achievements and misdoings of their neighbours. In many a town it was no little event when the coach from London lumbered through the cobbled streets, or when a gang of pressed men marched by on their way to the sea, or when some soldier home from the wars made the little alehouse lurid with tales of arms and tragic lands. These simple folk were comparatively free from the fever of social ambition, from the almost savage conflict of modern commerce, and from the bewildering hurry of events which compass the peace of later times.

London was then not one-fourth of its present size; the great city ended towards the west at Sloane-street and beyond were quiet fields and meadows intersected by foot-paths, certain of which led to the hamlet of Kensington and the little riverside village of Chelsea. The lover of solitude would have found seclusion in the wide open country through which ran the Edgware-road. Paddington was still in the fields. Game could be shot about Westbourne Green and around the isolated farmhouse which marked the present settlement of St. John's Wood. Few would have cared to venture after dark across the bare fields of Battersea or to traverse the expanse of open land which stretched to the north of Tottenham Court. No railway terminus flaunted its hideous structure in the city's midst, and neither omnibus nor cab nor tram-car invaded the narrow streets. There was no telegraph and no telephone,

The postal system was without form and void. The gayest streets were lit by oil lamps and the gloom by night was only equalled by the dirt by day. It was not until 1829 that the omnipotent policeman appeared upon the scene, and his early experience of the city's traffic was concerned with sedan chairs and cabriolets, with gaudy coaches and creeping wains, with linkboys and running footmen. It was not until 1821 that the English Channel was crossed by steamboats and that the hoys and coasting sloops, the dignified frigates and the stately East Indiamen began to vanish from the sea. Education among the mass of the people was a matter of little account and was to a great extent actually non-existing. The average man of the middle-class was quite content with a degree of learning which would do little more than satisfy the demands of a modern School Board.

As to the surgeon in those days, he was but a sorry element in social life. In the great towns and cities there were esteemed practitioners of surgery who were eminent by reason of their scientific work and their successful practice, but their numbers were few. At the commencement of the period under notice London was the centre of surgical activity, and the prominent exponents of the art at that time were John Abernethy, Henry Cline, Sir William Blizard, Sir Everard Home, Sir Astley Cooper, William Lawrence, and Charles Aston Key. The great John Hunter had died in 1793, having accomplished a work which marks an epoch in British surgery. In the provinces the most conspicuous surgeons were Edward Alanson of Liverpool and William Hey of Leeds, while in Edinburgh the position of the leading operator was held for many years by John Bell. A little later in the century we find among the names of prominent men in England those of Sir Charles Bell, Sir Benjamin Brodie, and the ingenious and learned Benjamin Travers. At the beginning of the century surgery on the continent was represented by such men as Sabatier, Deschamps, Boyer, and Larrey in France, Scarpa in Italy, Langenbeck, Chelius, and Dieffenbach in Germany, and Warren and Physick in America.

The surgeon or common practitioner in the village and town in these early days has been depicted by many writers. Possibly the most precise of these was Smollett who was himself in turn an apprentice, an assistant, a surgeon's mate, a practitioner, and a graduate in medicine. Smollett died in 1771. The account he has furnished of the leech of his time is tolerably discouraging. We find him an ignorant, illiterate, sordid creature, not above the allurements of money-grubbing and not without suspicion of dishonest practices and of a leaning towards the bottle. He was to a large extent a mere retailer of physic and in the public eye he ranked with the quacks and nostrum-sellers with whom he competed. There was probably some excuse for a writer who, in a discourse in the *New Monthly Magazine* for 1828, speaks of the general body of surgeons as a "cringing pulse-feeling race." Smollett's description could not have been true of all his brethren and there is no doubt he wrote with the bitterness of an unfortunate experience. Still, there can be little question that Launcelot Crab represented a type not yet extinct when the century began, and he must be taken as a forerunner of the cultured and esteemed general practitioner of the present day.

I.—THE SURGEON AS AN ADVISER.

In noting the advances made by the surgeon during the century the first matter which may be dealt with concerns his position as an adviser to his patient. In reviewing this subject one cannot fail to be immediately impressed by the paramount influence which exact knowledge—or *a fortiori* the want of exact knowledge—has had upon the attitude of the medical profession.

It is obvious that the progress of any science is to be measured by the amount of absolute truths which may have been accumulated at a given time. The lack of knowlege, the mass of things unknown, represent merely a void to be filled. In the development of the science of medicine the element of the unknown has not remained so negative a factor, but has, on the contrary, proved to be a stimulus for a very luxuriant invention, the products of which have been tabulated as facts. There is no science outside our own in which there has been during the stages of development such an extreme disproportion between the amount of knowledge professed and the amount proved ultimately to be exact and sound. As an example of this may be cited the "humoral" system of pathology which, in spite of its ancient origin and its more or less obvious foolishness, held a position in medicine for centuries and struggled on, as a distorted and dying creed, even into modern times. This system, in its barest features, asserted that four cardinal humours occupied the human body and that practically all diseases, and certainly all tumours, were due to disorders of certain of these fluids. The pathology of this system was precise, dogmatic, elaborately classified, and full of detail. Upon it all treatment was founded and yet the whole of this precious system was a mere daring fiction, an ingenious fancy, the product of an impudent and unscrupulous imagery. The reason for all this lies more with the sick man than with the man of medicine. The sick man requires absolute exact knowledge from his doctor. He will accept neither possibilities nor doubts nor confession of ignorance. He will accept such from his lawyer and from his man of business, but not from the man who attends him in illness. It is no matter of wonder that in the past the physician has made good by fiction what he lacked in fact. The demands of the patient have been hopelessly beyond any powers of supply, and the deficiency has been furnished by the products of invention. It would seem that the less the man of medicine knew the more he invented and the more diligently he hid his little light under the bushel of a ceremonious and mystery-making treatment. The judicial wig, the academic ruffle, the gold-headed cane, the reflective snuff-box, and the Socratic air all made an effective covering for the few poor bones which formed the skeleton of his knowledge. It thus happens that a good deal of the pretence and humbug with which medical practice has been associated in the past has been forced upon the practitioner by the demands of unreasoning people. With such people the surgeon in the early part of the century had more largely to deal than he has to do at the present day, and yet his stock of knowledge could seldom meet the demands even of the reasonable. Hereby it came to pass that the puzzled man of medicine had to repudiate his ignorance, had to concoct such explanations and to construct such pathologies as could meet the sick man's inquisitiveness, and at the same time give a semblance of reason to an empirical and tawdry system of therapeutics. His utterances were tangled and confused by conceits of his own invention. A false attitude towards his patient was unconsciously forced upon him, and the folly of his pretence to an unattainable learning was apparent to all but the simplest. As an adviser, therefore, he spoke not as one having authority, and his position intellectually is well illustrated by the endless lampoons and caricatures to which he was publicly subjected.

The surgeon of the present day, as an adviser, is in a position which is so greatly improved that it could hardly have been imagined by his forbears of 100 years ago. He has, in the first place, to deal with a more enlightened public, with patients whose education to a large extent enables them to appreciate the nature of scientific problems, and with whom it is possible to discuss difficulties and to own to lapses of information. In the second place, the additions made to surgical lore have been so substantial that in many departments surgery has reached to the status of an exact science. There is, indeed, no longer need to call upon invention to supply such gaps as still indicate the unknown. An intelligent patient is satisfied with the assurance that practically nothing at present is known of the nature and causes of cancer. Such assurance is at least as valuable as the information provided at the beginning of the century, when the inquirer would have been told that cancer was "a diseased hardness"[1] or a "scirrhous degeneration."[2]

We have perhaps not quite shaken off the poor vestments of mummery with which ignorance was clad nor rid ourselves of forms of speech which still pass current for sense but which are little more than sounding brass and tinkling cymbal. We speak assuredly of the "constitution" and of "states of the system" and of the "supporting of the system." We sanction such terms as "poverty of blood," "diminished vitality," and "sympathetic inflammation." We profess to believe in "tonics," in medicines the swallowing of which will give strength, in "galactagogues," in "alteratives," in "astringents," and in "cooling physic." We profess, moreover, to "strengthen the lungs" and give "tone to the stomach." The modern surgeon can well afford to dispense with all this empty verbiage, since he can base his opinion upon demonstrated facts and can express it

[1] Samuel Cooper's "First Lines," London, 1807.
[2] South's "Chelius," 1826-46.

in plain words, free from any of the embellishments of a literary masquerade. For many reasons this is well.

II.—THE SURGEON AS A MAN OF LEARNING.

The surgeon at the commencement of the century appears to have lacked most of what we now consider to be the essentials of the art, and we can only view with amazement the scantiness of his learning and the poverty of his equipment. He knew little more of inflammation than that it was represented by swelling, heat, redness, and pain. His knowledge of the causes of inflammation and of those dangers which follow upon open wounds was scarcely in advance of that professed in the days of Hippocrates. He had no glimmer of the possibilities of asepsis. He had no anæsthetics, no hypodermic syringe, no clinical thermometer, and no practical means of investigation in clinical chemistry. The very name "bacteriology" did not exist and the treatment of disease by prepared serums would have appeared to him as wild as the wildest therapeutic dream of ancient days. Although vaccination had been introduced in the last year of the eighteenth century the magnitude and nature of the principle it involved had not been appreciated. The microscope as an aid to diagnosis played no part in the equipment of the surgeon. He had neither laryngoscope nor ophthalmoscope and his acquaintance with otology, skin affections, and the diseases of women was at the best rudimentary and indistinct. He had only rude mediæval orthopædic appliances and he knew nothing of the lithotrite or of the array of instruments which are now in daily use in connexion with ophthalmic, laryngeal, cranial, and abdominal surgery. It would seem, indeed, that there was little for him to do but to open abscesses and sow the seeds of chronic septicæmia, to excise tumours of the structure of which he talked much and knew little, to amputate limbs for diseases he could not mend, and to draw blood whenever doubt existed as to what was best to be done. Conservative surgery was not understood and was certainly not practised, and plastic methods of operation had no place in treatment. Lord Thurlow, in speaking against the Surgeons Bill in the House of Lords in 1797, declared, with some basis of truth, that "surgeons in this country are not respectable men, their pretensions are unjust and illegal because they are not a scientific body."

In 1800 a man could practice as a doctor without passing an examination of any kind. Indeed, one itinerant practitioner is reported to have assumed the title of assistant surgeon on the ground that he had served an apprenticeship to the crutchmaker of a hospital. The examination for the diploma of the Royal College of Surgeons was by *vivâ voce* only. There was no examination of patients and no dissection of the subject. Candidates were required to produce evidences of apprenticeship, of attendance upon anatomical and chirurgical lectures, of having performed dissections, and of having attended the practice of a recognised hospital for a period of six months. In 1813 the period of compulsory attendance at a hospital was raised to one year. The standard of knowledge, however, does not appear to have risen in corresponding proportion, for in 1822 the then President, Sir William Blizard, felt called upon to address the Court of Examiners on certain "tokens of remissness in teachers and of inattention in students" which had been forced upon his notice. He regrets that candidates are commonly ignorant of the situation of nerves and blood-vessels, of the disposition of the muscular fibres of the heart, gullet, and stomach, and of the diameters of the intestine. He further adds that "the deficiency of candidates in physiological information is far more remarkable" and enters into such detail as the following: "Often do we find them," says the President, "ignorant of the reasons why the ribs in inspiration are, from their figure and muscular connexion, moved upwards and outwards, of the systole and diastole of the heart, of the process and intention of respiration, of the nature and distinction of the pulse, of the distinct offices of divers muscles, of the figure of the lens and uses of the humours of the eye in vision." He concludes by deploring that there is a "correspondent darkness of mind relating to the symptoms, seat, causes, and rational treatment of diseases and injuries," and furnishes a catalogue of items with which candidates do not appear to have been commonly conversant, although the list presents such matters as the signs of fractures and dislocations, the symptoms of compression and of inflammation of the brain, the consequences of fractured rib, and the *rationale* of the symptoms of hernia.

At the commencement of the century there was, indeed, no systematised medical education. The training of the surgeon was paltry, casual, and inefficient. His preliminary education was miserably meagre. It was necessary that he should be able to read and write and pretend to some smattering of Latin. He became an apprentice, and in that menial capacity gleaned what he might from his master and from attendance upon sundry lectures. So far as hospital practice was concerned, his attitude as a learner was well expressed by the phrase, "He walked the hospital." The institutions which he thus attended for a period of six months were in a state of rude squalor as regards administration, sanitary arrangements, and nursing, and well deserved the abuse which was lavished upon them.

III.—THE SURGEON AS AN OPERATOR.

During the nineteenth century the surgeon as an operator passed through a rapid metamorphosis and has now reached at least the level of the unexpected. It may have been supposed that there is little to be learnt in the way of using a knife which had not been learnt during a period of over 1800 years, for there were surgeons before the Christian era. Yet time has shown that even in 1800 there was a technic in operating which was as little like the technic of to-day as are the slashes of a cutlass when compared with the studied movements of a foil. It may have been surmised that 20 centuries would have exhausted the methods by which a limb could be cut off. Yet in 1800 modes of amputation were in vogue which are now regarded as uncouth. It cannot even be said that the commencement of the century saw in use a ready and efficient means of checking bleeding, although that measure represents the most elementary of the surgeon's duties.

The operator of olden times certainly possessed many qualities which are now falling into abeyance and which cannot pass away quite unregretted. The success of his craft depended largely upon his daring, upon the alertness of his eye, the steadiness of his nerve, and the rapidity of his movements. He stepped into the arena of the operating theatre as a matador strides into the ring. Around him was a gaping audience and before him a conscious victim, quivering, terror-stricken, and palsied with expectation. His knife was thrust through living flesh and acutely-feeling tissues, and the sole kindness of his mission was to be quick. In spite of moans for mercy from gagged lips the knife had to move on its way steadily and, undeterred by struggles and bursts of hæmorrhage, the blade must needs pass without faltering or sign of hesitancy. There is less need for such qualities now. The dramatic element in surgery has gone with the men who unconsciously fostered it. The operating theatre of the present day has lost its horrors and has changed from a shambles to a chamber of sleep. The surgeon's hand can move with leisurely precision and theatrical passes of the knife are favoured only by those who have not yet learnt that mere brilliancy is no measure of success. It may be that the present-day surgeon is a loser in that he has less need for those dashing qualities which were essential to the operator before the days of anæsthetics; but, on the other hand, he has gained much in the direction of the sympathetic handling of his patient and in the culture of gentleness. It is little wonder if the older surgeon became rough and stern, if his sense of feeling became dulled, and if the sympathetic side of his nature suffered some suppression. Indeed, contemporary accounts are apt to represent the operator of pre-anæsthetic times as rough almost to brutality and as coarse both in his conduct and in his utterances. His language, it would appear, savoured of the cockpit, and the hasty flourishing of his knife led occasionally to unintended mutilations.

Within the compass of some thirty years the whole state of affairs has changed. Consideration for the patient and for the patient's sensibilities have become a matter of the first moment and the operator has learnt that his work is best done if done with gentleness and tact, and that haste and bluster, coarseness and coarse handling are out of place around the operating table. A striving after effect at any cost has ceased to be an element in the surgeon's work. Success is no longer to be measured by the number of minutes occupied in the amputation of a limb, but by the state of the patient many days after the measure has been completed. The triumph of the older surgeon was immediate and scarcely reached beyond the arena of the theatre. The triumph of the modern surgeon is deferred and is found in the operation ward and in the convalescent home. Still, the

fact remains that it is easier to be a surgeon of some degree at the end of the century than it was at the commencement, since in the earlier days the qualities needed for success in operating were rare and of a kind not readily to be acquired.

On passing more into detail one notices that beyond these general changes in the attitude of the operator there have been others which owe their existence to special advances in the surgeon's art. Prominent among these may be named: (1) an improved knowledge of anatomy; (2) a readier method of arresting hæmorrhage; (3) the employment of anæsthetics; and (4) the introduction of antiseptic measures.

1. *An improved knowledge of anatomy.*—Among the surgeons of the early part of the century there were many competent anatomists and not a few who could lay claim to be deeply versed in that science. Among the latter were such men as Astley Cooper and William Lawrence. Still, in the education of the average surgeon the study of anatomy did not play a prominent part. Anatomy was largely taught by means of public demonstrations. The teacher dissected and the student looked on, much as he did in the days when Rembrandt's great picture of Nicolaus Tulp and his pupils was painted. The knowledge required was scant and superficial and had little practical basis, and no methods of teaching existed which can in any way compare with those in vogue at the present day. The science of anatomy was well advanced at the commencement of the century, but it was not taught to the common student. Quain's "Anatomy," first published in 1828, contained a very sound account of the human body, although the whole work was then represented by a single small volume of 700 pages which was without illustrations. The facilities for acquiring a practical knowledge of anatomy were not only few but were hampered by many sordid difficulties. Anatomical schools were regarded with disfavour and were actively discouraged. They were viewed with unconcealed suspicion by the public and were surrounded by a ghoulish romance in which rifled graves and unseemly dealings with the hangman played a pungent part. Indeed, the teacher in an anatomical school found himself involved in a squalid and disreputable traffic, very uncongenial to any earnest man of science. Among the many qualifications needed for success in operating, a practical knowledge of anatomy as acquired by repeated dissection is conspicuous. Such knowledge as the surgeon needs is to be learnt not from books but from the patient use of the scalpel and forceps. The dissecting room is the surgeon's nursery. The tissues of the body are the material with which he works, and he must needs know them as the sculptor knows the marble he chisels and the potter the clay he moulds. It is no matter of surprise that the older surgeon often lacked confidence in operating, that he failed in initiative, and clung only to formulated methods, and that a departure from accepted lines was attended with fear and hesitancy. Ignorance encouraged in the rash heroic passages of the knife and in the timid an over-cautious and dangerous fumbling. And as to this it is probable that in pre-antiseptic days as much ill attended the nervous fingers which were creeping clumsily into the unknown as followed the reckless operator who essayed to draw his bow at a venture.

2. *A readier method of arresting hæmorrhage.*—At the commencement of the century the means employed for the control of bleeding were numerous and were represented by such familiar measures as the ligature, the sutures, styptics of many kinds, and the actual cautery. In applying the ligature the vessel was picked up by forceps and tied as at the present day. The instruments used were those of Dieffenbach, Assilini, and Liston. The older types of instruments were not readily applied, or at least required time in their adjustment. The bleeding from the vessel was not necessarily controlled by the forceps when in position. The general rule in amputation was to apply a tourniquet and to ligature the individual arteries after the limb had been removed. In the excision of tumours the practice was recommended of securing each vessel as it was divided. When it is remembered that operations were carried out without anæsthetics it will be understood that the older surgeon had an absolute terror of bleeding and was driven to undesirable shifts to avoid the need of facing it. He was indeed a coward where hæmorrhage was concerned, and there was reason for alarm when a conscious patient was struggling and showing signs of exhaustion and when the means for staying the stream of blood were slow of application. We find, then, that hæmorrhage was expected and that a liberal loss of blood was considered to be a necessary adjunct to every major operation. Tourniquets were employed freely and with considerable harshness. Raw surfaces were bathed with styptic solutions which were often destructive in their action or at least opposed to primary healing. The actual cautery with which to sear the bleeding area was in some request, and every well-equipped operating theatre kept its stove and its cautery irons in constant readiness. The least pleasant evidence of the surgeon's dread of hæmorrhage and of his inability to deal with it was afforded by the treatment of certain nævi in infants and children. These growths were strangled by ligatures which slowly cut their way through the skin and neoplasm assisted by a benevolent process of suppuration. A painful ingenuity was expended upon amplifications of this measure, the cruelty of which was but little mitigated by the introduction of chloroform. Allied to this procedure was the *écraseur* of later date. Its invention was due to Chassaignac, and it was freely used in England until quite recent times. It was employed for the removal of growths of various kinds, but its most baneful employment was as a means for excising the tongue. It is scarcely to be believed that within the period of the introduction of anæsthetics the tongue has been torn out of the mouth by means of a loop of hemp or wire which strangled it at its root. The *écraseur* will remain in the archives of surgery as the insignium of the incompetent and the timorous and will stand out as a blot in an otherwise bright period of progress and enlightenment. The shadow of this mediæval instrument has been slow to fade and as the ovarian clamp and the serre-nœud it clung about the confines of reasonable surgery and hindered the development of the operations of ovariotomy and excision of the uterus. At the present day the surgeon has little dread of hæmorrhage and the confidence he possesses is based upon good grounds. In the first place he makes larger use of the precautionary ligature of vessels. It has become a commoner practice to apply a temporary or permanent ligature to a main artery before a part supplied by that vessel is excised. This is carried out frequently in dealing with large and vascular tumours. In removal of the tongue, moreover, an excellent method is that in which a preliminary ligature of both linguals in the neck is carried out. In removing the uterus through an abdominal incision the question of hæmorrhage is disposed of by an early ligature of the ovarian and uterine vessels. A further example of this mode of anticipating bleeding is afforded by that method of hip amputation which is known as the anterior racket. Here the main vessels and even the main branches are secured before the flaps are cut, whereas by the older plan the vessels were severed with the flaps and were tied after the limb had been removed. In the second place the latter-day surgeon is operating upon an anæsthetised patient and can proceed with slowness and deliberation. The importance of this fact in connexion with the present subject cannot be over-stated. In the instances which have been just cited an excision of the tongue in a conscious patient would be greatly extended by the twofold operation in the neck, and whereas the amputation of the hip by transfixion occupied in able hands but a minute or so, the operation by the anterior racket is tedious and involves relatively much expenditure of time. Thirdly, the treatment of hæmorrhage has been to a remarkable extent simplified, if not indeed rendered complete, by the introduction of the pressure forceps of Sir Spencer Wells. These little instruments represent the most valuable addition which has ever been made to the surgeon's appliances. It is not uncommon in operations of a certain type to have 20 or more pairs of pressure forceps applied to the surface of the wound at one time. This represents a degree of possible bleeding which in the old days, when every vessel had to be separately tied, would have been replaced by actual bleeding of a fatal type. No instrument has brought with it so great an assurance of security or has done more to extend the area of safe operation.

3. *The employment of anæsthetics.*—The value of the anæsthetic and the radical and beneficent transformation it has effected in surgical practice call for no comment in this place. The changes that the discovery has wrought in the personality of the surgeon, in his bearing, in his methods, and in his capability are as wondrous as the discovery itself. The operator is undisturbed by the harass of alarms and the misery of giving pain. He can afford to be leisurely without fear of being regarded as timorous. To the older surgeon every tick of the clock upon the wall was a mandate for haste, every groan of the patient a call for hurried action, and he alone did best who had the quickest fingers and the

hardest heart. Time now counts for little and success is no longer to be measured by the beatings of a watch. The mask of the anæsthetist has blotted out the anguished face of the patient and the horror of a vivisection on a fellow-man has passed away. Thus it happens that the surgeon has gained dignity, calmness, confidence, and, not least of all, the gentle hand. Anæsthetics have, moreover, greatly extended the domain of surgery by rendering possible operations which before could have been only dreamt about, and by allowing elaborate measures to be carried out step by step. The introduction of anæsthetics has not only developed surgery but it has engendered surgeons. It has opened up the craft to the many, for in the pre-anæsthetic days the qualities required for success in operating were qualities to be expected only in the few. In the technique of established operations chloroform and its allies have led to advantageous changes. This is well seen in the case of amputations. In the olden days that method of removing a limb was best which was the most speedy. A prominent position was on this account given to the cutting of flaps by transfixion, a long narrow blade being used for the purpose. This rapier-like instrument required great skill in handling and in the grasp of the feeble it was a fearsome weapon. Muscles were sliced through in such a way that the widest possible section of their substance was often made. Vessels and nerves were, in like manner, cut almost in the direction of their long axes, and the resulting incision gave the maximum area of wounding. At the present day transfixion is abandoned and the murderous amputating knife has found its way into the museums of the curious. Muscles can now be severed at right angles to their length or in such a way as to secure the smallest possible surface of section. Vessels and nerves are cleanly divided in the same manner and the resulting area of the wound is reduced to a minimum. This difference in methods is vividly illustrated by amputation at the hip-joint.

4. *The introduction of antiseptic measures.*—Of the great work of Lister and of the introducing of the antiseptic treatment there is no call to speak at this time. When the century was young the touch of the operator was the touch of a tainted hand; the balm he poured into the wound was poisoned and he himself undid the good his science strained to effect. It is sad to think that behind the earnest man with the ready knife there stood a shadow which rendered hopeless his kindliest effort and which only too often proved to be the veritable shadow of death. The change has been great, and its greatness lies in its littleness, for it is bound up with no more than this: that the surgeon has learnt to be clean. The operator of days gone by would have turned with some petulance from the grand simplicity of the counsel to be clean. He ever sought some means of mighty bearing to rid him of the incubus of failure, and, like Naaman of old, he would have hesitated to dip in the Jordan of antisepticism to be free of his leprosy. The surgeon has not only learnt to be clean but he has become aware of the potency of little things. The demands of the antiseptic treatment have made him minutely careful, distrustful of any aid that he cannot control, and suspicious of any semblance of error. It is possible that the abandonment of the old easy order of things has been followed by a too slavish devotion to mere ceremonial. The remarkable and extravagant preparations with which some surgeons now approach an operation, the cleansings and the washings which precede the laying on of hands, smack a little of fetich worship and foster the cult of the surgical Pharisee. On the other hand, these performances, this "making clean of the outside of the cup and platter," seem to give assurance and to render the devotee thankful that he is not as other men.

IV.—THE SURGEON IN THE FUTURE.

Circumstances in the tendencies of to-day foreshadow to some extent what may lie buried in the future. The changes which have swept over the world of surgery have extended the possibilities of the art and have, at the same time, added a host to the ranks of those who practise it. Some 30 years ago the roll of such as could claim to be accomplished operators was very small. The greater deeds of surgery were limited to cities and the larger towns. The general practitioner seldom took up the scalpel except in minor necessities. Even in London the list of consulting surgeons was meagre. In the hospitals of the metropolis the number of operations performed in the year would be less than is now the quotum for a month.

But here at the close of the century the disposition of affairs is wholly altered. Where there was one surgeon there are now ten, and throughout the breadth of the land and to its utmost limits the work of the operator has extended. The more ambitious performances of surgery are no longer restricted to great centres but are carried out in the little town, in the cottage hospital, and even in the cottage itself. The general practitioner is laying claim to operate upon his own patients and is carrying out his intention in no hesitating manner. The days of the great operator, of the one man to whom all came who could, are rapidly passing away. Indeed, the practice of pure surgery, which was at one time limited to the prominent few, is now becoming common to the many. The man who excels conspicuously as an operator will always attain such eminence as his ability deserves, but the exclusiveness of the practice of operative surgery is quietly vanishing with the century. This change is well. It is a change that is inevitable. The democratic movement is the active power of the day, and that an oligarchy in the community of surgeons should be replaced by an earnest democracy is precisely in accord with the spirit of the times. In every great change there must—at first at least—be some undesirable developments, and it is impossible to deny that the wider distribution of the practice of operative surgery may lead to the occasional performance of major operations by men who are not justified, either by experience or by training, in undertaking them. Furthermore, there is, among the signs of the times, some evidence that the reaction in the matter of operative surgery is to some degree extreme and that we are in danger of passing from the policy of doing too little to the policy of doing too much. Operations we know were too few in the past, but there is some foundation for the impression that they are occasionally too frequent in the present.

One other matter which looms out of the future will suffice to bring this subject to a close. So many have been the artificial aids to clinical investigation which recent science has introduced that it comes to be a question whether the natural acumen of the surgeon will not deteriorate in proportion as he fails to encourage that particular learning which clings to the finger tips of all great diagnosticians. That there will be such a decadence is beyond doubt. The loss is to be deplored, for if there be one point of excellence which stands before all in the qualifications of the perfect surgeon, it is bound up in that refined sensibility, that critical perception, that inestimable cunning, which lies in the surgeon's touch.

Examples of the directions in which this loss will be felt come readily to mind. A considerable amount of skill, for example, is demanded in the examination of complex fractures, of lesions of deep-seated bones, and of injuries about joints. What was to be learnt of these troubles had to be acquired by a tedious manipulation demanding considerable refinement. The surgeon who has now to deal with such conditions can afford to dispense with a prolix examination and can submit the inquiry to a demonstrator of the Roentgen rays. The skiagraph, although its value is much exaggerated, embodies a substantial gain, but it is to be discounted by the loss of the great element in education which it is slowly replacing. An obscure tumour—to take another instance—presents itself and no longer is the surgeon compelled to trust to the acuteness of his inquiry and his patient review of all the physical details of the mass. For what his ready fingers may have learnt can be substituted the findings of the exploratory incision, the trocar, and the aspirator. Here once more an advantage is minimised by a loss. Or, again, an abdominal swelling is brought under notice. Its features are obscure, but much of the uncertainty of outline can be dissipated by a cultured hand which, with infinite patience and repetition, has learnt to construct a reality out of a shadow. It may be said that it is needless to persist in bringing this much elaborated means of inquiry to further perfection since the problem is at once to be solved by an exploratory laparotomy. By such little operation a great advantage is gained but an opportunity to add to one of the most refined forms of learning is lost. The value of the exploratory incision is beyond question, but among the signs of the times it is impossible not to notice a tendency to resort too readily to this means of solution. The Gordian knot, according to the legend, was ultimately cut, and it is a question whether the sum of human ingenuity would not have been substantially increased if attempts to untie the noose had been more diligently persisted in. In another example let it be supposed that a suspicious ulcer presents itself for diagnosis. In such case is it well to devote time

to a precise and tedious inspection of its edges and to a careful tactile examination of its base and to check what is discovered by results laboriously gained from like inquiries? Is it not simpler to take a scraping of the affected surface and to submit it to a microscopist, and thus to be spared a method of examination which, although it may not give final results, yet represents an opportunity of furthering a priceless accomplishment?

Finally, there are cases which present symptoms hard to interpret at any superficial inquiry. Is it worth while in such to undertake an exhaustive critical research and to submit the whole to a trained judgment? The quest would no doubt develop habits of observation and powers of weighing evidence; but the process is slow, and an inquiry carried out in a bacteriological laboratory will clear up all doubts and at the same time dispense with the efforts of a cultured sense. Those, therefore, who are concerned with the education of the surgeon of the future would do well to cherish still this ancient power and to foster a memory of the fact that surgery is, in its very essence, a handicraft, and that in all that he does the surgeon's great endeavour should be to make his own hands self-sufficing.

It is sad to think that this hardly-acquired faculty dies with the possessor of it, and never was this more vividly presented than it has been by the loss which surgery has sustained in the death of Sir James Paget. One can picture the great surgeon composed in his last sleep, and can see the once busy fingers lying lifeless on the white sheet, and then comes the wonder of the wealth of learning, at the exquisite cunning, at the refined sense which lay dead in the dead hand. No written book can hold a tithe of the dainty knowledge which had been mastered by those subtle fingers, and no record, however laboured or however loving, can tell of the power which once rested in that magic touch. An individual loss does not, however, hinder the general tide of progress. Advance in such a work as ours depends upon the uneventful work of the whole body and is only accentuated by the achievements of the prominent few. The movement is the movement of a multitude in which individuality is, at a distance of time, little to be distinguished and in which personal eminence contributes a smaller factor than the present is ready to acknowledge. Those who stand forth as the leaders of the advance are merely the elect of the common body and the representatives of a wide intellectual franchise. Even he who startles the world as a discoverer has often done little more than give expression to what was already nascent in the multitude. So as one great surgeon after another drops out of the ranks his place is rapidly and imperceptibly filled, and the advancing line moves on with still the same solid and unbroken front. The continuity of progress is undisturbed by the uncertainties of human life, and, as one writer has well expressed it—

"No work begun shall ever pause for death."

A CASE OF MENINGO-MYELITIS WITH BACTERIOLOGICAL EXAMINATION OF THE SPINAL CORD.

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THE acute onset and rapid course of many cases of meningo-myelitis are very strong indications of the infective nature of the disease. Several cases have been recorded in which a bacteriological examination of the spinal cord and meninges has revealed the presence of a micro-organism endowed with pathogenic properties. The total number of such cases is small and so we consider that the following case is worthy of being published in spite of the incompleteness of both the clinical record and the bacteriological examination.

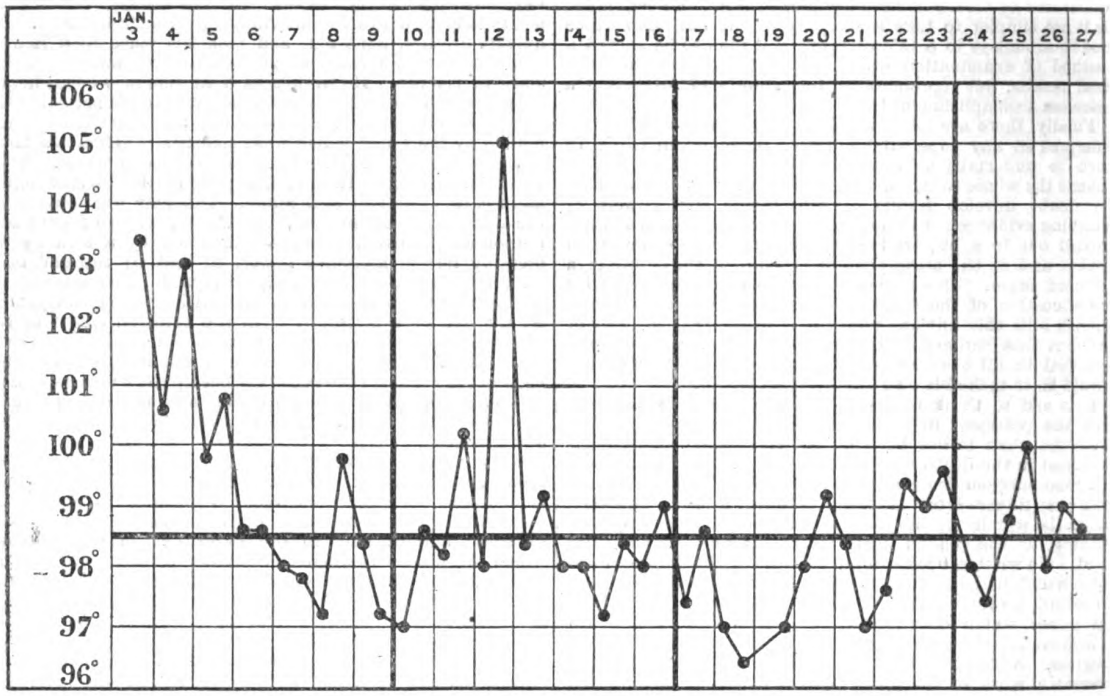
A single man, aged 29 years, was admitted into the Newcastle Royal Infirmary on Jan. 3rd, 1899, on account of complete loss of power and sensation in both lower limbs. A month previously when in his ordinary good health he was wakened in the middle of the night and called out to help at a fire in the village in which he lived. He quickly dressed, went out, and took his place in a line of men which was formed to pass buckets of water up to the scene of the fire. He worked hard at this for several hours, during which he got hot and exhausted in his arms and the upper part of his body, while his feet and legs were wet and chilled by the water which was accidentally spilled on them in rapidly passing on the buckets filled with water. After this he was seized with a severe pain in the lumbar region and the legs felt cold and numb. The pain was relieved by the application of blisters, but the sensation of cold and numbness persisted, being accompanied by a steadily increasing loss of muscular power, so that by the end of a week both legs were completely paralysed. This was shortly followed by some difficulty in micturition with constipation. At the end of a fortnight from the commencement of the illness there was retention of urine with loss of control over the rectum. Since then the regular use of a catheter had been necessary and the fæces had been passed unconsciously. The family history was unimportant and the only previous illnesses from which the patient had suffered were pleurisy and influenza.

On admission into the Infirmary a month after the beginning of his illness the patient lay on his back in bed complaining of a sensation as if a girdle were tied round him midway between the ensiform cartilage and the unbilicus and of pain in the lower part of the abdomen which was increased when the bladder became full. There was complete paralysis of both lower limbs and of the abdominal muscles as high as the umbilicus, combined with loss of all forms of sensation up to the same level. There was no control of the bladder, which if not emptied by means of a catheter filled and then overflowed. The control of the rectum was also lost, the fæces being passed unconsciously into the bed. The motor power of the muscles of the arms and neck and of the trunk above the level of the umbilicus was retained and the sensation of the skin covering these parts was not affected. The plantar and superficial abdominal reflexes up to the level of the umbilicus were absent, but the cremasteric reflex was still present. There was no ankle clonus; the knee-jerks were still present but the response was very slight and feeble. There was a large bed-sore over the sacrum. The urine was acid in reaction, but had a very foul smell and contained both blood and pus. The temperature on admission was 103·4° F.

During the first few days that the patient was in the Infirmary the condition remained much as above and the temperature fell to normal (*vide* Fig. 1). On the evening of the 11th there was a severe rigor, the temperature rapidly rising to 105° at 8.30 P.M. On the following morning the temperature was normal again, the pulse was 150, and the respirations were 28. The patient complained of difficulty in breathing and of pain in the lower part of the left side of the chest and at the epigastrium. The upper part of the chest expanded freely, but the expansion of the lower part was deficient. There was general tenderness on pressure all over the abdomen, which was most marked over the kidneys. The knee-jerks were still present and a slight plantar reflex could be obtained on the left side but not on the right. On Jan. 15th the patient began to hiccough and this continued for a week. On some days the hiccough only ceased for one hour out of every three or four and the hypodermic injection of the fifth of a grain of morphia only controlled it for a couple of hours at a time. On the 17th the upper limit of anæsthesia was found to run midway between the umbilicus and the centre of Poupart's ligament, at which level it subsequently remained. The pulse was 82. The abdomen was distended but resonant all over. The left plantar, the cremasteric, and the patellar reflexes could still be obtained, but the response was very feeble. The patient gradually got worse and on Jan. 24th the muscles of both legs were found to be much wasted, soft, and toneless. The plantar reflexes had disappeared and no knee-jerks could be obtained. After this the patient gradually sank and died at 11.30 A.M. on Jan. 27th, seven and a half weeks after the commencement of the illness.

Necropsy.—Unfortunately, no full post-mortem examination was allowed and leave could only be obtained to open the spinal canal and remove the spinal cord. This was done on Jan. 27th at 5.30 P.M., six hours after death. As soon as the spinal canal had been opened some of the lymph which was

FIG. 1.



Temperature chart of a case of meningo-myelitis.

lying on the surface of the dura mater in the upper dorsal region was raised from the dura mater by means of a pair of sterilised forceps, a platinum wire was pushed up between the two, and stroke cultures made on agar-agar and on serum-agar tubes. In this manner inoculations were made direct from the under surface of the layer of lymph, where it lay in contact with the dura mater. The dura mater was then opened with sterilised instruments and stroke cultures on agar were made in the same way from the surface of the pia mater in the mid-dorsal regions. Transverse cuts were then made across the cord with a sterilised knife in the dorsal region on a level with the roots of the fourth and fifth dorsal nerves, and also in the lumbar enlargement. A sterilised platinum loop was then pushed into the substance of the cord itself from the freshly-cut surface in each of these situations, and stroke cultures were made on agar-agar and on serum-agar tubes. After the spinal cord had been removed it was found that there was a communication between the spinal canal and the large bed-sore over the sacrum. This communication may, however, have been accidentally made at the time of the necropsy.

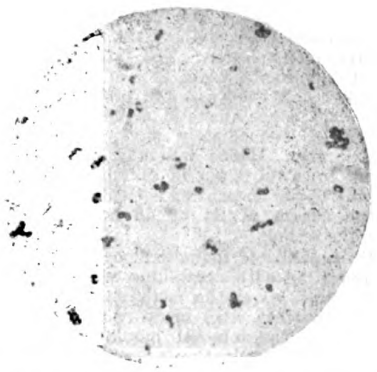
All the tubes were placed in the warm incubator at 37° C. on the same evening. After hardening, sections of the spinal cord from the dorsal region were cut and stained with picro-carmine and then by Weigert's modification of Gram's method. It was found that if the washing with aniline oil was carried on until all the violet colour had disappeared from the substance of the cord and pia mater the micro-organisms were also decolourised, but when the aniline oil was removed while the violet colour was still distinguishable to the naked eye in the pia mater the micro-organisms were well stained. In sections thus prepared large numbers of a small oval bacillus were seen in the pia mater. In some places the bacilli were stained at the extremities and clear in the centre, closely resembling diplococci. The bacilli were lying singly or in irregular chains. One or two longer rod-shaped forms were seen, but with this exception no other forms were found. The oval bacilli were also seen in small groups here and there in the white substance of the cord itself and separated from the pia mater, but the further from the surface of the cord the fewer the groups became.

Cultures.—The tubes were inoculated and placed in the incubator at 37° C., as already mentioned, on the evening of Jan. 27th. No visible growth had appeared on the 28th, but on the morning of the 29th, after the tubes had been about 40 hours in the incubator, colonies had appeared in all the tubes except in one tube of serum-agar inoculated from the substance of the lumbar enlargement. In this tube, however, a growth had also developed by Feb. 1st. Ten tubes in all had been inoculated from the meninges and from the cord itself. In eight of these the growth proved on microscopical examination to be a pure culture of a short oval bacillus. The other two showed similar growths, but in one of them it was mixed with a few larger and longer bacilli, and in the other with some chains of streptococci. As far as naked-eye appearances went the growth in each of the pure cultures had the same appearance. On microscopical examination slight differences in appearance were found in the different cultures. In all the bacillus was short, the length not being more than double the breadth, though there was some difference in the actual size in different specimens. Slight differences were also due to different degrees of staining; in some cases the oval bacilli were stained all through, in others the ends only were stained and the centre clear, so that they resembled diplococci. We consider, however, that they are rightly described as short oval bacilli with polar staining. The appearance is well shown in Figs. 2 and 3, micro-photographs which were kindly taken for us by Mr. H. R. Spitta. Fig. 2 was taken from a film prepared from a pure culture obtained directly from the substance of the spinal cord on a level with the roots of the fourth dorsal nerve. Fig. 3 was taken from a film preparation from a pure culture obtained from a guinea-pig's blood after subcutaneous inoculation with a broth sub-culture obtained from the growth shown in Fig. 2. In the hanging drop the bacillus was seen to be motile. It grew readily at 37° C. on nutrient agar. Isolated colonies on agar at the end of 40 hours in the incubator were small and translucent and resembled minute droplets of condensed moisture. They became rather milky in appearance when older. In a uniform stroke culture a translucent slightly opalescent layer was found at the end of 48 hours. At ordinary temperatures it grew in gelatin which it liquefied.

Inoculations.—The pathogenic properties of the bacillus were tested in a guinea-pig and in a rabbit. For this purpose a tube of nutrient broth was inoculated from the agar

culture obtained from the substance of the spinal cord in the upper dorsal region and incubated at 37°C. for 24 hours. At the end of this time an abundant growth of bacilli had taken place in the broth. One cubic centimetre of this broth culture was injected with the usual antiseptic precautions beneath the skin of the inner side of the thigh of a brown male rabbit, and a similar quantity of the same culture was also injected into a red-and-white male guinea-pig in the same situation. On the following day the guinea-pig looked ill, the temperature in the morning being 100·6°F., and in the evening 99·4°. On the next morning it was found dead in

FIG. 2.



Film preparation of culture obtained from substance of spinal cord.

the cage. No naked-eye changes were found at the post mortem examination. Films were prepared from the blood from the heart and stained. Agar tubes were inoculated from the blood in the heart, and films were prepared from the cultures which developed. On microscopical examination of the blood a few widely-scattered micro-organisms which resembled diplococci without any capsule were found. In the hot incubator a pure culture of the original bacillus developed on agar, so that the micro-organisms in the blood were really bacilli with polar staining and not diplococci, the actual form being more easily seen in pure cultures than in the blood itself.

FIG. 3.



Film preparation of culture obtained from blood of guinea-pig after inoculation.

Fig. 3 shows the specimen prepared from the agar culture obtained from the blood of the guinea-pig. In the case of the rabbit, on the day after the inoculation the temperature in the morning was 102° and in the evening 104°. The animal was very quiet and the respiration was rapid and laboured. The following morning the temperature had fallen to 100·2° and a swelling had formed at the seat of the inoculation. After this the temperature only varied between 100° and 101°. On the fourth day after the inoculation the right side of the scrotum was swollen and the rabbit was killed. The right tunica vaginalis was distended with thin serous fluid and the right testicle was swollen. A slough had formed at the seat of inoculation. Tubes were inoculated from the heart blood and from the tunica vaginalis. No colonies developed from the blood but an abundant pure growth of the original bacillus developed in the tube inoculated from the tunica vaginalis. In the guinea-pig, therefore, the subcutaneous inoculation of a pure culture of the bacilli produced a rapidly fatal general infection without local reaction, whereas in the rabbit there was no general infection, but a local reaction, with sharp rise of temperature, limited to the neighbourhood of the inoculation. No nervous symptoms were observed in either of the animals.

The characters of the micro-organisms may be shortly summarised as follows. A short oval motile bacillus which stains readily by aniline dyes, the stain in many cases showing a much stronger affinity for the ends than for the centre of the bacillus. It can with care be stained by Gram's method and was found in large numbers in the pia mater and also in lesser numbers in the substance of the cord. Pure cultures of the bacillus were obtained both from the meninges and also from the substance of the cord itself. Subcutaneous inoculation caused rapid general infection in the guinea-pig and a local infection in the rabbit. The bacillus grows readily on the ordinary nutrient media in both the hot and cool incubators. It liquefies gelatin.

In this case we have a clear history of an acute onset of the meningo-myelitis following an exposure to cold and wet combined with fatigue. The similarity to the sequence of events often observed in the development of an attack of acute lobar pneumonia is striking, so that it seems very probable that the myelitis, like a pneumonia, was the result of an infection occurring as a result of a temporary lowering of resistance. This view is strongly supported by the presence of a micro-organism in the meninges and spinal cord, which we have shown was undoubtedly possessed of pathogenic properties.

Micro-organisms have been found and cultivated in several cases of acute meningo-myelitis, notably in the case so well recorded by Dr. T. Buzzard and Dr. Risien Russell.[1] They obtained a culture of a diplococcus in one tube which was inoculated from the meninges in the lumbar region, the other tubes showing no growth. The organisms seem to have been less numerous than in our case, as growth developed in all the tubes we inoculated. Similar diplococci were seen in stained sections in the exudation, in the meninges, and in the substance of the cord, just as in our case. The organism in our case differs from that found by Buzzard and Russell in that it more nearly resembled a bacillus with polar staining than a diplococcus—a difference that is perhaps more apparent than real—it liquefies gelatin, and can be stained in sections by Gram's method. It differs from Weichselbaum's diplococcus intracellularis in appearance and, unlike it, grows in the cool incubator and does not appear within the cells of the exudate.

In Dr. E. F. Trevelyan's case[2] a diplococcus was obtained from the pus outside the dura mater and also from a softened patch in the cord; the bacteriological examination was, however, not carried further as the micro-organisms died in a few days.

The value of the bacteriological examination in our case is, of course, much diminished by the fact that the bed-sore was in such close proximity to, if not in actual communication with, the spinal canal, but we consider that if the infection of the cord had been secondary to the foul bed-sore the cultures would have been mixed and not pure in all except two tubes, as was the case. The evidence we at present possess goes a long way to show that acute meningo-myelitis is probably an infective disease, and although it cannot as yet be attributed to any single organism the bacteria which have been found in the recorded cases appear to have certain characters in common.

Newcastle.

[1] Transactions of the Clinical Society of London, vol. xxxi., p. 185.
[2] Brain, Part lxxxviii., 1899, p. 607.

LOCAL SANITARY AUTHORITIES AND THE MILK-SUPPLY.—The bacteriological examinations conducted by the St. Pancras Vestry have proved that out of 50 samples only 16 were normal, five contained tubercle bacilli, and the remainder from various causes were not fit for human consumption.

A BLOOD REACTION IN DIABETES MELLITUS; ITS CAUSE AND DIAGNOSTIC VALUE.

BY R. T. WILLIAMSON, M.D., F.R.C.P. LOND.,
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IN 1896 I recorded[1] a reaction which I believe to be peculiar to the blood of patients suffering from diabetes mellitus. A drop of blood taken from the finger of a diabetic patient decolourises a warm alkaline solution of methylene blue, when mixed in certain proportions, whilst blood from healthy persons or from individuals suffering from other diseases has no such action when mixed in the same proportion. The reaction is due to the greater reducing power of diabetic blood and is obtained as follows. At the bottom of a small, narrow test-tube is placed a drop of water—40 cubic millimetres. To this are added 20 cubic millimetres of blood taken from the finger of the diabetic patient. Then 1000 cubic millimetres (one cubic centimetre) of a watery solution of methylene blue (1 in 6000), and finally 40 cubic millimetres of liquor potassæ (B. P.) are added. Into a similar tube are placed 20 cubic millimetres of normal blood with the same proportions of methylene blue and liquor potassæ. The mixed fluids in each tube will have a fairly deep blue or bluish-green colour. Both small test-tubes are placed in a beaker or very large wide test-tube containing water and the water is heated and kept boiling for four minutes. At the end of this time the fluid in the small test-tube containing the diabetic blood will have lost its blue colour and become dirty yellow, whilst that in the tube containing non-diabetic blood will remain blue or bluish-green. (The exact quantities of the fluid used may be measured by the small tubes supplied with the hæmocytometer and hæmoglobinometer of Gowers.)

I have examined the blood in 43 cases of diabetes mellitus and have always obtained the reaction mentioned. I have examined the blood in 100 cases of other diseases of the most varied forms and also the blood of healthy persons on innumerable occasions, but, when the fluids have been mixed in the proportion above stated, have never obtained the reaction. My results have been confirmed in Germany by Loewy,[2] Goldscheider,[3] and R. Müller[4]; in France by Le Goff,[5] P. Marie, Lyonnet,[6] and Lépine; in Italy by Baduel and Castellani,[7] Ferrannini,[8] and Lucibelli[9]; and in America by Futscher[10] (in Professor Osler's clinic). Further observations which I have made indicate the cause and diagnostic value of the reaction.

CAUSE OF THE REACTION.

1. This reaction, peculiar to diabetic blood, is evidently due to the presence of some substance in solution in the blood serum. Large quantities of blood obtained post mortem from the internal jugular vein of three cases of diabetes mellitus were allowed to stand until the serum separated on the surface and the red corpuscles sank to the bottom of the vessel. In each case the blood serum, free from red corpuscles, gave the reaction—i.e., decolourised methylene blue in the proportion given above—whilst the serum obtained in a similar manner from non-diabetic blood gave no reaction (in the proportions mentioned).

2. Blood serum from a diabetic subject loses the power of giving the reaction after it is submitted to the action of yeast. In three cases of diabetes mellitus large quantities of blood were taken post mortem from the internal jugular vein and allowed to stand for 24 hours until the serum had separated. In each case two test-tubes of the usual size were half filled with the diabetic blood serum. To one test-tube ordinary German yeast was added, to the other no yeast was added. Both were kept in a warm place, side by side, for 48 hours, the mouth of each tube being plugged by cotton-wool. At the end of 48 hours the serum in the test-tube containing the yeast gave no reaction with methylene blue (according to the method above described), whilst 20 cubic millimetres of the serum in the tube which contained no yeast gave the reaction readily. The same results were obtained by the blood serum in all of the three cases of diabetes. The diabetic serum which had been submitted to the action of yeast and which did not decolourise methylene blue gave no reaction for sugar with Fehling's solution; whilst the diabetic serum to which no yeast had been added and which continued to give the reaction with methylene blue above described, gave a slight but distinct reaction for sugar with Fehling's solution. The failure of the diabetic serum, after the action of yeast, to give the methylene-blue reaction was not due simply to the presence of the yeast-cells in the fluid, since diabetic serum when mixed with yeast and tested immediately gave the methylene-blue reaction distinctly. Hence we may conclude that the diabetic serum loses its power of giving the methylene-blue reaction, owing to the fermenting action of the yeast fungus, which in the course of 24 or 48 hours destroys some substance in the serum.

3. After the proteids of diabetic blood or serum have been separated, by boiling with crystalline sulphate of soda and filtering, the filtrate gives the methylene-blue reaction. A number of observations were made on the blood obtained post mortem from the internal jugular vein in a case of diabetes. In each examination an ounce or more of the blood or serum was mixed with an equal quantity of crystalline sulphate of soda and the mixture was boiled until the froth above the clot became white and all red specks disappeared. In every examination 20 cubic millimetres of the clear filtrate gave the methylene-blue reaction above described. When non-diabetic blood was treated with sodium sulphate in the same way the filtrate failed to give the methylene-blue reaction.

4. After the separation of the proteids of diabetic blood the power of giving the methylene-blue reaction is destroyed by the action of yeast. In another experiment, two test-tubes were half filled with the clear filtrate, obtained after separating the proteids of diabetic blood by boiling with sodium sulphate, as just described. To the fluid in one test-tube a little German yeast was added, while to that in the other tube no yeast was added. The mouth of each tube was plugged with cotton-wool and the tubes were kept in a warm place for 48 hours. Then the fluid in each tube was examined for the methylene-blue reaction above described. 20 cubic millimetres of the fluid from the test-tube of filtrate to which yeast had been added gave no reaction; 20 cubic millimetres of the fluid from the test-tube to which no yeast had been added gave the reaction markedly. The fluid in the test-tube to which yeast had been added gave no reaction for sugar either with Fehling's solution or phenyl-hydrazin, whilst the fluid in the other test-tube, to which no yeast had been added, gave a reaction for sugar both with Fehling's solution and phenyl-hydrazin.

5. It is well known that glucose has the power of reducing a warm alkaline solution of methylene blue. 20 cubic millimetres of a watery solution of glucose (5 in 1000) gave a distinct reaction with the methylene-blue test; but 20 cubic millimetres of a 2·5 in 1000 solution did not. When 20 cubic millimetres of the 2·5 in 1000 solution of glucose were added to 20 cubic millimetres of normal blood, the mixture decolourised the alkaline methylene blue like diabetic blood, but 20 cubic millimetres of the blood alone, or of the 2·5 in 1000 glucose solution alone, failed to give the methylene-blue reaction.

6. Though non-diabetic blood does not give the methylene-blue reaction in the proportions stated at the commencement of this article, it has nevertheless some reducing action in larger quantities. In performing the methylene-blue blood test it is always necessary to measure accurately the quantity of blood employed (20 cubic millimetres), since the diabetic reaction depends on the greater reducing power of the diabetic blood. As already stated, I have never obtained the reaction when 20 cubic millimetres of blood were employed, in any condition except diabetes mellitus. But with normal blood a reaction may be obtained when 60 cubic millimetres of blood are employed in performing the test; also

[1] Brit. Med. Jour., Sept. 19th, 1896.
[2] Berliner Klinische Wochenschrift, 1897, No. 46, and Fortschritte der Medicin, 1898.
[3] Deutsche Medicinische Zeitung, 1898.
[4] Münchener Medicinische Wochenschrift, 1899, No. 25.
[5] Bulletin et Mémoire de la Société Médicale des Hôpitaux de Paris, 1897, No. 16 and No. 17; Sur certaines Réactions Chromatiques du Sang dans le Diabète Sucré, Paris, 1897, pp. 44 to 81.
[6] Lyon Médical, 1896, tome lxxxiii., p. 187.
[7] Centralblatt für Innere Medicin, 1898, No. 28, and Settimana Medica, 1898 No. 10.
[8] Riforma Medica, 1897, No. 248 and No. 249; Centralblatt für Innere Medicin, 1898, No. 28.
[9] Gazzetta degli Ospedali, 1899; and Brit. Med. Jour., Epitome Jan. 27th, 1900.
[10] Philadelphia Medical Journal, 1898, No. 7

60 cubic millimetres of normal blood serum decolourise the methylene-blue solution. (20 cubic millimetres of serum have no action, just as in the case of 20 cubic millimetres of blood.) Hence there is also some substance in normal blood that has a reducing action when a sufficient quantity of blood is employed. This substance is in solution in the serum. But it is not simply the minute quantity of glucose, of normal or non-diabetic blood, since this reducing power is not destroyed by the action of yeast. Thus, two test-tubes of ordinary size were half filled with blood obtained post mortem from a case of aneurysm. To one test-tube yeast was added; to the other no yeast was added. Both were kept in a warm place for 48 hours. At the end of that time 60 cubic millimetres of blood from *each* tube reduced the methylene-blue solution readily. Hence there is a substance in non-diabetic blood, beside the minute quantity of sugar, which has some slight reducing action on methylene blue.

7. It is interesting to note that 20 cubic millimetres of diabetic urine gave the methylene-blue reaction markedly, whilst 20 cubic millimetres of the same diabetic urine in which the sugar had been decomposed by the action of yeast no longer gave the methylene-blue reaction; also 20 cubic millimetres of normal urine did not give the methylene-blue reaction.

Briefly summarised the results of the observations recorded may be stated as follows. The methylene-blue reaction, carried out with the proportions of fluid stated at the commencement of this article, may be obtained with a solution of glucose; it is obtained with diabetic urine, with diabetic blood, with diabetic blood serum, and with the filtrate from diabetic blood when the proteids have been separated by boiling with crystalline sodium sulphate. All of these fluids after the action of yeast fail to give the reaction. As already mentioned, when a dilute solution of glucose is added to normal blood the methylene-blue reaction is obtained. All these facts indicate that the methylene-blue reaction given by diabetic blood is due to the excess of glucose which it contains.

CLINICAL AND PATHOLOGICAL VALUE OF THE REACTION.

The methylene-blue reaction of diabetic blood is exceedingly delicate and may be obtained even when the urine contains only a very small quantity of sugar. Usually there is no difficulty, however, in diagnosing diabetes mellitus clinically. The examination of the urine is generally sufficient. The methylene-blue reaction of the blood is present in diabetic coma, and in this condition if the urine could not be obtained for examination (i.e., if the bladder should be empty) the blood reaction would be diagnostic. R. Müller[11] has recorded a case of diabetic coma in which the diagnosis was definitely made by the blood reaction which I have described, the bladder being empty and no urine being obtainable.

In the post-mortem appearances of persons dying from diabetes there is nothing characteristic. In the case of an individual dying from diabetic coma, if no history of the diabetic symptoms before the onset of coma could be obtained and if no urine could be found in the bladder nor any obtained which had been passed before death, a pathologist would not be able to diagnose the disease from the post-mortem appearances. Such cases, no doubt, have sometimes remained unrecognised in the past, and probably some of the obscure cases in which post-mortem examination made for the coroner has failed to reveal a satisfactory cause of death have been due to diabetic coma. The methylene-blue blood reaction in such cases would be diagnostic.

In five cases of diabetes mellitus I have removed blood from the internal jugular vein post mortem, and in every case 20 cubic millimetres of the blood gave the methylene-blue reaction markedly. Further, it is an interesting practical point that the reaction is obtained many hours after death. Thus in a case of diabetic coma in which the post-mortem examination was made 16 hours after death three ounces of the blood were placed in a bottle. Three days later the methylene-blue reaction was obtained markedly. In another case, blood removed from the internal jugular vein 10 hours after death gave the methylene-blue reaction after it had been kept in a bottle for a week. The reaction, of course, is obtained early as well as later. I obtained it in one case in the blood taken from the internal jugular vein three hours after death. I have examined the blood taken post mortem from the internal jugular vein of 20 individuals dying from various other diseases but have never obtained the reaction.

Hence this reaction may be of practical diagnostic value, pathologically and medico-legally, in certain cases. I think it is advisable, when the blood is examined post mortem, to always take it from the internal jugular vein. Blood from this vein is not liable to be contaminated by other fluids during the necropsy. It is possible, also, that this delicate reaction may be made the basis of an easy method of estimating the amount of sugar in the blood. Two methods have already been worked out by Lyonnet and Le Goff, but it remains for future observations to show whether these methods are more delicate and reliable than those commonly employed.

Manchester.

[11] Münchener Medicinische Wochenschrift, 1897, No. 25.

THE ETIOLOGY OF SCURVY.

BY W. E. HOME, B.SC., M.D. EDIN.,
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I SHOULD like to offer some remarks on the very interesting paper of Mr. F. G. Jackson and Dr. V. Harley on Scurvy which appeared in THE LANCET of April 28th and to submit a suggestion as to the etiology of this important disease which has become so rare that I cannot be quite certain that I have ever seen a case. The orthodox view is that it occurs in people who live on a diet deprived of green vegetables or potatoes, its onset being accelerated by preceding hardships, while it is prevented by a daily ration of lime-juice and cured by lime-juice or fresh vegetables. Torup and Nansen suggested that it might arise from ptomaine posioning, which was noted in THE LANCET of Feb. 13th, 1897, as a new departure, and this suggestion Mr. Jackson and Dr. Harley endeavour to support by their research reported in THE LANCET of April 28th. They fed six monkeys on sound meat and 13 on tainted meat and in these last found evidences of scurvy—namely, as they say, bloody mucus in the stools, spongy gums, and characteristic anæmia; also there were post-mortem appearances of irritation in the mouth (spongy gums—that is to say, I suppose, inflammation of the gums—going on to ulceration) and irritation of the large intestine. They consider their observations support the theory that "scurvy is essentially due to poisoning by the ptomaines of tainted animal food." In their experiments, however, they did not take care to administer ptomaines only, but as the "sour-smelling meat" on which the second lot of monkeys were fed had not been sterilised, only as they say "gently heated," the monkeys got not only ptomaines but also the living bacteria which produced the ptomaines. What is there, then, in these experiments to prevent us from believing that the bacteria of putrefaction were taken alive into the mouths of the monkeys, there infecting the sordes round the teeth and setting up gingivitis, going on to ulceration, infecting also the gastro-intestinal canal later, these parasitic infections setting up the anæmia on which all the other symptoms of scurvy depend? Anæmia is generally the effect of the struggle of the organism against some infection. How pale a person becomes after suffering for a couple of days from a large boil, and think of Hunter's most valuable researches into the etiology of pernicious anæmia and Sir Andrew Clark's explanation of chlorosis. Clearly the anæmia will develop all the faster if the victims are, as so often happens in epidemics of scurvy, on short rations, particularly if they are taking in fresh doses of the poison with each scanty meal, and they probably were taking in fresh doses with each mouthful, for Lind describes their beef as rotten, their pork as rancid, their flour as mouldy, and their water as unwholesome. And Gillespie describes the beef the men had to eat in the Persian Gulf as so rotten that it could not properly be boiled. They tied it up with strings but it fell out of them, wherefore their Arab pilot greatly pitied them and preferred rather to go ashore where there was a great epidemic of plague than to remain in their ship where he could get no other food.

It is curious that in the same number of THE LANCET (April 28th) there should be an account of a case of pernicious anæmia associated with, and in the opinion of Dr. W. Elder mainly due to, neglected state of the teeth, cured by buccal antisepsis, anti-streptococcic serum (the

most evidently beneficial treatment), and salicylate of bismuth. We have all heard stories of leading consulting physicians who have refused to advise patients suffering from dyspepsia till their teeth were put in order. Have we not now a scientific reason for this seemingly arbitrary action by the practical man?

I am greatly interested to have this suggestion that the initial lesion of scurvy is an affection of the gums; it harmonises much of the contradiction which exists in the historical pathology of this disease. I would submit as a nearer approximation than we have yet had to the true etiology that scurvy is caused by micro-organisms "as yet unknown" which infect the alimentary canal, setting up primarily a gingivitis and later an anæmia which leads to hæmorrhages and predisposes to ulcerations, more frequently threatened as these last were in ships where long cruises with their scarcity of provisions and of water made cleanliness much more difficult. These micro-organisms may be destroyed by antiseptics. (Osler recommends permanganate of potash and dilute carbolic acid for the stomatitis and solution of nitrate of silver for the ulceration of the gums.) Lime-juice cures scurvy either specifically (as quinine antagonises the malarial organism or as mercury resists syphilis) or it may act as an antiseptic which can be taken into the mouth and swallowed strong enough to do the mouth good and destroy the parasite without doing the rest of the body harm. That it is useful I suppose no one will deny, but as many people have forgotten why we think so I may narrate Dr. Galleraud's experiences. In the *Psyché*, in the White Sea, in 1854, he had a severe epidemic which only ceased when the vessel returned to France. Next year in the *Cléopâtre* he was threatened with a more serious epidemic, but Dr. Murray of the *Meander* told him about our lime-juice and got for him 11 gallons from the *Meander* and *Phœnix*, by the help of which he put a stop to the epidemic in the *Cléopâtre*, and the French Admiralty was so convinced by his experiences of the usefulness of lime-juice that they made it a general issue to their fleet.

But why should lime-juice be so beneficial? It is not only an acid but also contains aromatic principles, and each of these classes of substances has been used to cure scurvy. Cook (1772) preserved his crew with sauerkraut; Lind (1779) besides lime-juice recommended vinegar; Blane (1785) (like Lind, an M.D. of Edinburgh) mentions sowens as anti-scorbutic. (There was scurvy in Ladysmith; was there any or as much in Mafeking?) So much for the acids. As to aromatics, the anti-scorbutic plants mentioned are generally cruciferæ. Lind recommends the surgeon to grow mustard and cress on blankets and to give a daily ration of these plants. Cochleariæ are often mentioned; they include not only the various scurvy grasses, as they were called of old, but the nowadays better-known horseradish, and, as we have seen, Osler recommends antiseptics for the treatment of the gums. It may well be that both classes are required. I find that ulcers heal up more quickly when one is not too devoted to a single antiseptic, however potent; most ulcerations result from a mixed infection or symbiosis and are best cured by different antiseptics used alternately, and lime-juice may be the best anti-scorbutic because of its double nature and varied antiseptic effect. Employed as a mouthwash at bedtime it certainly is useful—I suppose as an antiseptic in the prevention of the buccal catarrh commonly ascribed to over-smoking, and very apt to follow late and prolonged dinner-parties. Easton's syrup diluted I have found more effectual, but it is more difficult to insure that your patient shall use it.

In relation to the antiseptic effect of the oils of the cruciferæ I may say that in a small prison in which I once worked we recognised, we thought, an epidemic gastro-intestinal catarrh in the treatment of which we were using up all our peppermint and bitter stomachics until the prisoners got mustard added as a condiment to their daily allowance of three-quarters of a pound of cooked beef, when the fermentative dyspepsia was, as we had expected, checked without drugs. The dyspepsia-causing germ, which thrives best in beef-chyme, grows strongly in the stomachs of people who eat no meat but beef; to depress it we have learnt by experience to take mustard or to vary our diet. I suppose that the germ that thrives best in mutton-chyme is less well antagonised by mustard and that therefore it is we do not eat mustard with mutton. So the old gibe: "Mustard with mutton! Naval officer, I presume," dates back to a day when naval officers, always at sea blockading and living on beef and pork, had not enough experience of mutton to know that mustard was not its appropriate antiseptic condiment. I suppose, too, that the principle of the varying of diet which I mentioned above explains why children, dyspeptic while living exclusively on milk, are often cured by raw meat juice. The infecting organism, which probably entered the stomach with milk and has been living in milk-chyme, finds the environment less favourable when raw meat juice replaces milk, is weakened and now more easily destroyed by the remedies formerly powerless against it.

Since I have read William Hunter's papers on pernicious anæmia I have realised more clearly than even before how important a factor in the causation of tropical anæmia and debility is the infection of our alimentary canals by the saprophytes which so plentifully surround us in those regions of luxuriant vegetation. From these infections the natives strive to save themselves by eating curries and chewing peppers and other "hot things"—that is, aromatic antiseptics. The diarrhœa of Hong-Kong is a proverb—a tradition I myself believe of the time before 1888, when the gravitation supply of upland surface-water was brought in. Still, there is a good deal of diarrhœa which is best treated antiseptically with carbolic acid on Colonel Quill's plan, or with boric acid for the stomach, salol for the small intestine, and enemata of copper sulphate or boric acid for the colon and rectum. It is also worthy of note that many of the Eastern races of greatest vitality, as the Chinese and the Indian, are, as I have seen them, most careful about the morning cleaning of their teeth; the Chinese in addition scrape their tongues with a "strigil," generally attached to the tooth-brush by a chain. The Indians at Zanzibar sit at their doors in the early morning and chew tooth-sticks, with which they poke and rub out all the sordes. In their slow, methodical, and thorough operations they greatly remind me of a former shipmate, the most minutely clean person I have ever known, who used always after breakfast to sit himself down in his cabin for five minutes with a strong toothpick, allowing nothing at this important period to distract his attention from an essential duty. He was certainly more healthy than were most of us.

The only well-known fact about scurvy which I am quite unable to explain by the theory of primary infection of the gums cured by antisepsis is the value of the potato as an anti-scorbutic. Raw or cooked it seems almost as efficient as lime-juice, yet it is not, so far as I know, an antiseptic.

In conclusion, I may recapitulate and say that I suggest that scurvy is essentially an infection of the mouth with micro-organisms out of decayed food, antagonised by lime-juice and fresh vegetables which act as antiseptics, this infection of the mouth being most apt to occur in times of hardship when cleanliness is least within our reach.

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ON THE LIMITATION OF PHYSICAL METHODS IN THE INVESTIGATION OF THE PHYSIOLOGICAL AND PSYCHICAL PHENOMENA OF SIGHT.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.

IN a paper published in THE LANCET of May 26th (p. 1511) I showed how difficult it was to correctly ascertain the colour perception of any person if we ignored colour names. In this paper I wish to show that in investigating physiological, psychical, and pathological phenomena we must employ methods which are suited to the case in hand and not those which are so admirably adapted to the study of the physical phenomena themselves. We talk of light and heat as if they were two different things, but the difference exists in us, not in the physical stimuli giving rise to the sensation. The physical stimulus is that force which, acting upon the body, gives rise to a sensation. For instance, the force which, acting upon the eye, gives rise to the sensation of light when falling upon the back of the hand gives rise to the sensation of heat, and may when falling upon the back of the head covered by hair give rise to no sensation whatever. Again, different physical stimuli

may cause the same sensation as a blow on the eye causing the sensation of light. Many years ago a well-known physicist who was discussing my views on colour-vision remarked: "I explain the Young-Helmholtz theory in the following way to show how by the admixture of three constituents we can form all colours. If we take whisky, sugar, and water we can by mixing them in varying proportions obtain mixtures of an unlimited number, each differing from the other." But he was entirely overlooking the man who had to taste the whisky. The mixtures which could be made are innumerable, but the number of distinct mixtures which could be recognised by any person are very limited. In the case of a man who has been accustomed to take a glass of whisky every day for 20 years it is improbable that the constituents were twice alike, viewed from a physical standpoint, but to him they have appeared exactly alike. If my view be correct, that colour is a point of difference perceived by a perceptive centre in the brain, a method which aims at ascertaining the colour perception of an individual by measuring the apparent luminosity of the colours he perceives is as likely to achieve the desired result as it would be if applied to ascertain any other idea of the mind.

I will now give an example showing how inefficient these physical methods are to elucidate the phenomena of colour perception. I was the first to point out that intermediate between normal and dichromic colour vision there are those whose vision is pentachromic, tetrachromic, and trichromic. Let us consider those whom I have designated as having trichromic vision, because it has been asserted by so many physicists that normal colour vision is trichromic. A person whose colour vision is trichromic may see a spectrum of the same length as the normal-sighted, but he sees only three colours—red, green, and violet. He sees no orange, yellow, or blue in the spectrum. In fact, many have remarked to me that red-green would be a far better name than yellow and violet-green than blue, and they frequently used these terms. Yellow and orange do not appear to them as definite colours, but as transition colours between red and green. Tested in every possible way it is found that their vision is trichromic; they never mistake red and green for each other and laugh at the possibility of making this mistake, but are always in difficulty over orange, yellow, and blue. In a classification of colours the same mistakes are made: some yellows are put with red, others with green; some blues are put with violet, others with green. Yet examined by physical methods these persons may appear normal-sighted, and I may mention that several colour-blind persons of this class have been passed by a physicist as normal-sighted. It is obvious that a method of colour-matching which has for its theory that normal vision is trichromic will show that these persons are normal-sighted. They usually pass the Holmgren test with ease. They are, however, most dangerous persons at sea, as they are never certain about a yellow light and continually confuse it with red and green. When I was appointed by the Board of Trade to advise that body on the subject of colour-blindness one of the first cases that was referred to me was of this kind. The man could always distinguish between red and green, but was continually in doubt about yellow. It must be perfectly obvious to the reader that a man who cannot see any yellow in the spectrum and who thinks that red-green would be a better name for yellow cannot have normal colour vision. To me, the yellow of the spectrum or a yellow flower appears an absolutely distinct colour, in which it is not possible to distinguish either red or green. Blue and orange are also absolutely distinct colours to me.

I will now give a bare outline of my views on the perception of colour[1] as it will make the points which I wish to discuss more intelligible. I believe that light acting upon the retina liberates the visual purple from the rods and a photograph is formed, the cones and optic nerve-fibres conveying the impression to the brain. Kühne stated that the visual purple cannot be essential to vision as it is absent from the cones and only cones are to be found in the fovea centralis, the region of most distinct vision. This fact, however, furnished me with a ready means of testing the truth of my theory. I have made numerous experiments which prove that unless light falls as well on a portion of the retina containing rods it may fall on the fovea centralis without producing any sensation. The reader may convince himself of this by a very simple experiment. Fasten a piece of black velvet about three feet square on a door, and in the centre of the velvet put a pin so that the head is directed towards the observer. If the source of light be behind the observer the pin will be brightly illuminated, but on looking at it and keeping the eyes quite still the pin will disappear, the visual substance diffused into the fovea centralis being used up and not renewed. When viewed by indirect vision it is impossible to make it disappear in this way. Single isolated stars when not too bright may be made to disappear in a similar manner. In a dim light and with one eye shut a large portion, and sometimes the whole, of the field of vision will become totally black from the centre outwards. In this experiment the whole of the visual substance is used up and not re-secreted. It is easy to suppose that the visual substance becomes liquefied and diffused into the fovea centralis. This theory is supported by some hundreds of experiments, for instance that the area of greatest luminosity of the retina is at the point where the rods are most abundant, &c. This view occurred to me when I had not one-twentieth part of the evidence in favour of it which I have now. But during the last 10 years I have collected evidence that proves not only that there is a visual substance but that that substance is purple—namely, the complementary of pure green. It is probably only seen as purple when in excess. Under certain conditions a purple after-image can be obtained after white light and every spectral colour. If we rub one of our eyes in a dark room a purple light appears. It will be noticed that the visual purple is in every way suitable for the visual substance. It gives a continuous spectrum. It is easy to suppose that light might liberate the visual substance just as heat melts an ointment, but we have evidence that the cones themselves help. Engelmann and Van Genderen Stort have shown that there is a shortening of the inner segments of the cones under light, but this cannot convey any light sensation, as the same action has been found to take place when the light falls on another part of the body. This action would cause a vacuum. In my experiments, in which I have caused lights to apparently disappear, I find that the experiment succeeds best if only one eye be used and the greatest care be taken that no light falls on the face or any other part of the body. I believe that shortening of the spectrum is due to some defect in this visual substance as there is light as well as colour loss, which is not the case with colour-blindness due to defective psycho-physical perception. The visual substance being decomposed by light sets up by chemical, mechanical, electrical, or some other physical action, impulses which are conveyed to the brain through the cones and optic nerve-fibres, the cones being the terminations of the perceptive fibres in the retina. The whole impression being brought to the centre of memory, different portions of the impression—colour, form, size, luminosity, &c.—are conveyed to the mind through definite perceptive centres. In the case of colour, this perceptive centre is only able to distinguish six definite points of difference (colours) in the spectrum which really presents millions. We, therefore, for the normal-sighted have a hexachromic theory of colour-vision which is independent of light and shade. A hexachromic theory will obviously explain all that can be explained by a trichromic theory. It also agrees with the fact that both blue and violet have been demonstrated to be primary. I may say that I totally disagree with the theory that normal colour vision is trichromic, and am of opinion that the curves and equations which have been constructed to prove that vision is trichromic are mathematically incorrect. I have raised this point as an objection to the Young-Helmholtz theory in a paper recently read before the Royal Society. Equal stimulation of the three sets of fibres is supposed to cause the sensation of white light. Red and green when mixed make yellow. Violet and green when mixed make blue. But yellow and blue when mixed make white, which makes one portion of green too many, thus:—$R + G = Y$, and $G + V = B$, but $Y + B$ = white, therefore, $R + G + G + V$ should equal white, but $R + G + V$ = white.

The degrees and varieties of colour-blindness are perfectly explained by the theory of psycho-physical perception. Assuming that the perceptive centre is smaller fewer points of difference are seen. The phenomena of contrasts are explained on the view that colour being a point of difference this becomes more marked on comparison. If we contrast a yellow with a greenish-yellow the yellow inclines to orange

[1] Colour Blindness and Colour Perception, International Scientific Series.

and the greenish-yellow to yellow-green. This could not be explained by assuming that the colours differ by the addition of the complementary to each, as the complementary of yellow is blue and this mixed with yellow would make white instead of orange-yellow.

In addition to the points which I have already raised the following appear to me as serious objections against the ordinary physical methods of ascertaining the colour perception of an individual.

Absorption of light by the media of the eye.—It is obvious that the media of the eye vary slightly in colour in different persons. This produces a variation of the colour curve in each case without in any way affecting the real colour perception of an individual. For instance, a normal-sighted person's vision is still hexachromic when he looks through a pale yellow glass.

Hyperæsthesia to certain colours.—Another source of error in matching colours with white light is that persons differ as to their sensibility to all colours or to certain of them just as they differ in their physiological actions in other parts of the body. One person can read in a very feeble light but is dazzled by a light which to another person is quite comfortable. A person of this kind matches a red with a grey which is much darker than that chosen by another person, though both may have equally good colour perception. Again, men vary as to their sensibility to certain colours; one is more affected by red, another by green, and another by yellow. We can also have temporary hyperæsthesia, an exaggerated example of which is found in photophobia.

Idea as to comparative luminosity.—In matching colours with white light or with each other much depends upon the observer's idea of the colour. If I make a match of red and grey with the idea that red is a very bright colour I shall make a match with a much lighter grey than I should if I had the idea that red was a very dark colour.

If the theory as to a photo-chemical substance be admitted then the action of light on the substance may produce an excessive reaction with one person and very little with another; the apparent luminosity would be much greater in the first case. The secretion of fresh photo-chemical substance may be quicker in one person than in another. We know that the visual purple may be bleached by monochromatic as well as by mixed light. If we suppose the visual substance of the eye to be decomposed in the same manner it would be possible to understand that we might get similar curves of luminosity by different colours though the visual impulses sent to the brain might in each case be different. If there be, and all recent research points to the fact that there are, different centres in the brain for the perception of luminosity and colour, it is obvious that ascertaining the luminosity of a colour will not give us any information concerning that colour because the two are absolutely and totally distinct. In order to make my meaning clearer I will make a comparison with the organ of hearing. The perception of pitch is in every respect analogous to the perception of colour and yet no one would dream of endeavouring to obtain any information concerning the pitch of a note by observations on the intensity with which it is struck.

In conclusion, I will point out that we must always be careful in examining a person by physical methods that we do not obtain results which are only physical, chemical, and electrical phenomena. When the phenomena are psychical they can not be measured by the balance and the rule but must be gained by direct evidence from the mind itself.

Hendon.

SOME REMARKS UPON THE TECHNIQUE OF OPERATIONS DESIGNED TO CURE RADICALLY OBLIQUE INGUINAL HERNIA.

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THE introduction of Bassini's method of operating for the radical cure of inguinal hernia, whatever opinion we may have of its efficiency, undoubtedly gave a great impetus to the study of the subject. Several modifications in the direction of further elaboration soon appeared, and some of these—notably, the diminishing of the size of the spermatic cord by removal of an excess of veins—are of undoubted utility in certain cases. Whilst a strong adherent of Bassini's procedure, it has always struck me as unsurgical to follow all its details in every case. Our object in attempting a radical cure of hernia is to attain a certain security and not to perform any particular method of operating, no matter how good that may be. We desire to obtain future immunity against hernial protrusion by means as simple as possible, by means which damage and disturb the tissues as little as possible, and by means which leave the part as nearly as possible in the condition which obtains when there is no hernia.

The operation for radical cure of an inguinal hernia must be looked upon as essentially an abdominal incision. The main principles which guide and restrain our technique in opening the abdomen must be allowed full weight in our hernial operations. Thus the smallest incision which allows our free working is the best; a good inch or more of the skin incision, generally made on towards the pubes, is, as a rule, unnecessary. I often find now that it is not requisite to incise the skin internally as far even as the external ring. The tissue in this region carries a good deal of fat, much more than further out, and it is easily split into planes, which fact allows of ready infiltration of blood, and as it is furnished with one or two fair-sized arteries and two or more fair-sized veins the leaving of it intact is a matter of some importance in the saving of time and keeping the operation area dry from blood. If the incision through the skin and subcutaneous tissue is made well above the level of Poupart's ligament a region is entered which allows of marked mobility, so that if the operator wants it he can lift the skin and subcutaneous fat with the vessels in one piece on the forefinger and thus expose the external ring. On the other hand, I extend the skin incision well beyond the site of the internal ring.

From an incisional point of view Poupart's ligament in the operation partakes largely of the nature of a bony margin, therefore the further away from it we can keep the better for the future integrity of our scar. Thus the best skin incision, in my opinion, is one which is a full inch above Poupart's ligament and which does not invade more than slightly the pubic thickening of subcutaneous fat and which ends internally, of course, far from the commencement of the scrotum. Our objective, no matter how large the hernia, is, in the operation for the radical cure, as in the operation for the relief of strangulation, the point of exit of the hernia from the abdomen, and this in inguinal hernia is, in the vast majority of cases, the internal ring. Again a well-healed scar on the abdomen is of no moment, whilst the scar intruding on the flexure of the groin may be inconvenient. The deep layer of the superficial fascia next claims our attention. In recent hernia, and especially in the congenital variety, except in so far as it to some extent guarantees the blood-supply of the aponeurosis beneath, this structure is of small importance in the surgeon's eye, but in herniæ of years' standing, and particularly in the herniæ of old men, it becomes a tissue of considerable strength and definite utility in helping to make the best of a bad job. There is no occasion in a young hernia to strip it from the aponeurosis as far down as the ligament; its incision in the same line as the division of the aponeurosis with which it has vascular connexions is sufficient. In older and large herniæ where it has attained greater strength and substance it may be incised nearer Poupart's ligament than is the aponeurosis and by judicious trimming may be used as an accessory layer of moderate but undoubted restraining power and this in cases where the more definitely fibrous structures in great degree fail the surgeon. In old cases all the other fibrous coverings and structures lose in tone and texture whilst this deep layer of the superficial fascia alone gains in strength and importance.

It is, however, often necessary to dissect up a little of this deep layer in order to choose a line in the aponeurosis of the external oblique which seems to invite separation. The aponeurosis should be separated or divided half an inch at least above Poupart's ligament—i.e., away from what is more or less a fixed margin. This leaves a good fringe of fibrous tissue attached to Poupart's ligament which enables the deep sutures to be more easily inserted into that ligament and removes them from the immediate line of the superficial stitches in the aponeurosis. It must be wrong to cut fibrous structures if we can possibly avoid it and a small linear hiatus in the spread-out aponeurosis can generally be found which lends itself to the exposure of the underlying muscle

with a minimum of actual cutting of aponeurotic fibres. The grain of the flat tendon of the external oblique ring generally travels in the direction in which we wish to divide it, so that even if a hiatus is not present the linear fibres can be separated with care in such a way as to produce very little real damage. I say very generally because whilst this obtains in young herniæ the line of the fibres is in old herniæ often curved by the bulging and not in consonance with our line of incision. This is one of many reasons why our attempts at radical cure in old herniæ are not comparable with our results in recent ruptures. In addition to this the lower fibres of the external oblique aponeurosis are more curved in some young cases than in others presumably with the less or greater obliquity of Poupart's ligaments, which is, after all, only their thickened and reinforced edge. Thus it is in a few young cases necessary to cut across fibrous tissue in exposing the internal oblique quite apart from those discrete transverse or intercolumnar fibres or bundles of fibres which may be met with far away from the pillars of the ring. We cannot but divide these cross fibres when we meet with them running more or less at right angles to the line of our incision or separation, but can we save the most important of them all, the external ring itself? If we divide the ring no suture, however deft, will make it nearly so strong as before. We divide fibres the integrity of which we can never replace. Up to this point we have been as careful of the parietes as we are in the operation of the removal of the appendix, and the structures to be dealt with, even the occasional cross fibres, are the same, but the ring introduces a new element altogether. It can, however, be ignored in two ways, each of which may be used in a certain number of cases. The division of the aponeurosis can be taken outward an inch or two inches or more beyond the internal ring. This does hardly any damage to the wall (as we follow up the hiatus or fissure and the cross fibres are fewer the further out we go) and it gives us much more room to manipulate the cord, so much so as to enable us to free the sac, even when scrotal, without division of the ring. So desirable a conservation is not to be attained in every case, but it may be in a very considerable number of cases. It is easily accomplished in large old herniæ, in which it is of great value. Even in cases of old men where the testicle is sacrificed in the hopes of patching up the abdominal wall sufficiently to make their lives endurable the ring is a valuable collection of fibres in a region where all the fibrous structures have given and sagged. In young subjects where all the tendinous material is tauter we may occasionally have to divide the ring to give us room to carry out our manipulations in the canal, but it is a sorry spectacle in a plastic operation to see fibres of such consequence divided and the awkward flap which results.

In strangulated cases it is now my practice, unless the patient's condition is very bad, to open up the canal at once after incising the skin in the position described for the radical cure. Our objective is the same in strangulated as in non-strangulated cases, so that there is no need for a different incision. When the field of our efforts—viz., the inguinal canal—is open by dividing or separating the aponeurosis, it does not matter how large the hernia below is, as everything can be pulled up into the opened canal immediately beneath the surgeon's eye and finger. By opening the canal in strangulated cases at once the surgeon is in complete command of everything which concerns the operation. The distended sac at once bulges into the division of the aponeurosis and can be easily opened, the contents in most cases can be gently disengaged and brought up from the lowest parts of the sac, the whole field washed from any fluid which ought not to go back into the abdomen and all without dividing the most important cross fibres of the part of the aponeurosis which we are dealing with—namely, the external ring. Before we divide the aponeurosis the ring is grossly stretched but directly the pressure of the aponeurosis and the sac is removed all tension on the ring is gone. Even when the external ring is the seat of constriction the bowel can be disengaged from it by working from above in the opened canal. Our division of the external oblique aponeurosis is in the direct line of its action, so that when the muscle acts the slit in the tendon is still more closely approximated, but if the ring has been divided the lower *point d'appui* of a number of muscular fibres (and these attached to the tendinous fibres nearest Poupart's ligament and therefore the most important in a hernial sense) is lost. The division in the line of action of the tendinous fibres even up to the muscular edge in no way interferes with the mechanics of the part, but the destruction of the ring throws out of restraining action a number of fibres and renders them divulsive. The care with which nature has reinforced and attached the margins of the ring shows us the light in which it may be regarded as an antagonist of intra-abdominal pressure. We also know that when our operation fails to be a radical cure the protrusion in most cases comes directly out of the abdomen in the vicinity of the damaged external ring. Thus an effort, I believe, should be made to spare the ring, a consummation I find much easier and more often accomplished now than when I first essayed it. In this my technique has been much helped by separating the external oblique aponeurotic fibres far out and by a recognition of the way of dealing with the cord and sac in the least disturbing and damaging way.

We may obviate the necessity of opening up the ring by taking our incision in the aponeurosis above it so that it is displaced downwards with what we may call the lower flap. In this, however, we cut through some valuable fibres lying across our path, which injury is to some extent remedied by the good raw surface left allowing of excellent apposition. Very satisfactory results have been got in the cases in which I have used this detail, but it is not to be thought of if we can do what is necessary by separating the aponeurotic fibres outwards for a considerable distance and sparing the ring. This is undoubtedly to my mind the ideal way of treating a hernial case and is strictly comparable with the ideal operation for gaining access to the appendix where only skin, a deep layer of superficial fascia, and peritoneum are incised. Having separated the long fissure in the aponeurosis the forefinger is passed inside the lower part and gently pushed along as low as Poupart's ligament. In some cases where the hernia has been in existence for some years and the other parts are becoming lax, the ilio-inguinal nerve may be pushed downwards by the finger rather than remain in contact with the cord. The internal oblique is now inspected critically, the assistant raising the upper edge of the external oblique, for upon its condition depends much of the further steps of the operation. The muscle dominates the situation entirely. Its variations are most remarkable. In the cases which lend themselves most perfectly to a radical cure—viz., those of adolescents and young adults with sacs which have been but little used—it is hard to see where a hernia can come down, so closely aggregated are the fibres arising from Poupart's ligament. In these cases we have to make a deep dive with the forefinger to get under the fibres arching over the cord and lift it into view. The internal oblique here, in fact, presents a complete muscular curtain continued and carried out of sight by the cremaster. In a less ideal case, yet one very adaptable, the curved fibres are seen arching across the cord with a very well-defined lower edge. From such as these cases descend in degree of eligibility till we find them where hardly any muscular fibres are arising from Poupart's ligament at all, where there is no lower edge demonstrable in the position where the arciform fibres should be and where the muscle present is definitely cremasteric. A case is thus eligible for radical cure in proportion to the abundance of muscular fibres arising from Poupart's ligament. A muscular curtain forms a live barrier to the intra-abdominal pressure while fibrous tissue is but mechanical. Nature has given us a happy combination of both. The mechanical always remains with some degree of tension, but the live barrier may have entirely disappeared, and in such a radical cure operation is but a patched up stop-gap proceeding at the best. On the other hand, where the living curtain is in good order and of decent size the surgeon can leave his patient with an abdominal wall almost without a blemish and practically as good as in an individual with no rupture or any tendency to it.

Having demonstrated the inner aspect of the external oblique aponeurosis (as far as it is in connexion with the canal area) by sweeping away the scanty areolar tissue with the forefinger the next step is to lift the cord partly out of its bed. It is unnecessary to separate the fibres of the cremaster or to open the infundibuliform fascia, and by so doing the nerve is in much danger of being divided. The left forefinger is dipped beneath the cord to the inner side of the centre of the canal and at the same time the edge of the arciform fibres is lifted gently upwards and outwards by a blunt hook in the hands of an assistant. Any cutting of the fibres of the internal oblique is, to my mind, a most mischievous proceeding, quite opposed to the principles which

should govern the operation of opening the abdominal wall. The forefinger pushed below the cord and then upwards thins and spreads this out so as to bring into view the denser tissues of the sac. It now shows in the same position as does the tense sac in a strangulated hernia. It is quite unnecessary, at this stage at all events, to push the finger right through; all that is wanted is sufficient pressure to enable the sac to be demonstrated and seized with forceps. The infundibuliform fascia can be torn through with two pairs of dissecting forceps and the sac gently eliminated without the cord (which has undergone a minimum of disturbance) having been entirely dislocated from its bed. This attacking of the sac above and behind is of importance. It guarantees the integrity of the nerves in front, it does not fray out the cremaster, and it enables veins to be lifted by dissecting forceps off the sac which is plainly shown and can be disengaged from the surrounding parts without damage to the veins. There is less inclination to strip the veins and other structures from the sac instead of loosening the sac from them. With the acquired sac and with a funicular sac which has closed somewhere in the canal the sac may be picked up anywhere by the manœuvre just described, though of course the lower margin of it is the easiest to pick up, but when dealing with a congenital sac—namely, a sac extending to the testicle (the curved lower extremity will, of course, not be seen) by far the readiest and best way of eliminating the sac from the cord is to begin high up near the deep epigastric artery. There the serous membrane is not so intimately associated with the cord and the vas deferens will allow the sac to be much more easily dissociated from it than lower down. If it is attempted to separate the congenital sac low down in the canal the surgeon will generally find himself after a time with shreds and streamers of serous membrane instead of the tube of sac which he will preserve if the elimination is started up above as near the point of divergence of the constituents of the cord as possible. In any case the sac must be cleared up to the level of the artery. A small pad of fat is very generally met with (even when there is but little in the cord lower down) just below the level of the epigastric artery. It runs up between the artery and the sac and may be continuous with the fatty covering of the bladder. It has a peculiar consistence and is, I believe, as a rule not at all closely attached to the sac. I have come to look for it in every case. It should be inspected carefully, as there are always possibilities of the bladder itself being in close juxtaposition. I like to see or feel the deep epigastric artery, but this aforesaid pad of fat is a very good landmark when it is small and quite differentiated from any fat in the cord. Some traction is made upon the sac when its elimination from the cord is completed, the pad of fat is gently disengaged, and the sac is tied with catgut just below the point where it is becoming parietal peritoneum. When the sac is thin and of little volume, the internal ring small and in proper position, and the muscular curtain of internal oblique sufficient the ligature need only encircle the small calibre of the sac and not transfix it. The part to be removed is cut short and with the release of tension the butt-end retreats rapidly behind the deep epigastric and disappears under cover of the muscular wall. This elasticity shown by the peritoneum is always encouraging, as it ensures that the previous point of exit of the hernia is well out of the way of the internal ring and that it has in front of it the vital force of the muscular curtain and not fresh scar tissue induced by the operation. Any small puckering, any slight inclination to pouching, does not matter if the pucker is supported by a sufficiency of muscle which when acting shuts down on the only possible place where pouching can become actually hernial. When a satisfactory muscular curtain exists deep Bassini sutures must be not only unnecessary but actually harmful, throwing the muscle in action out of gear and preventing it from forming an evenly-resisting barrier to the internal pressure. Thus in cases where the anatomical conditions lend themselves to a radical cure the surgeon may perform an operation which, while destroying no structures in the attainment of its end, removes that which is useless and harmful and leaves the part in the normal condition without any artificial additions.

In this operation, which can often be performed in adolescents and young adults, the skin is cut, which is harmless, and the sac is removed, which is needful. Nothing else is interfered with more than very slightly and temporarily. The points which I would urge are the skin incision well above Poupart's ligament and well away from the pubes, the separation of the fibres of the external oblique aponeurosis at a suitable spot, the separation being carried well towards the muscular portion, the sparing of the external ring, the dislocation but partial of the cord from its bed, and the elimination of the sac from above and therefore the preservation of the nerves, the whole to be accomplished with little or no bleeding—an advantage to be attained with great gentleness and the use of dissecting forceps. Apart from the unworkmanlike appearance of a sloppy operation area, bleeding much inconveniences the surgeon and damages the tissues. It obscures the view, necessitates constant sponging, and irritates the delicate areolar planes, which become more or less loaded with blood not capable of being removed. The serous exudation is much greater and the tissues are much weaker and sodden. In addition to these immediate disadvantages there is the grave though unlikely occurrence of thrombosis in the veins of the cord with its possibilities of pneumonia and other distant disasters. The absence of the deep sutures is a gain in two directions: the unimpeded muscle acts as nature meant it to, and there is no foreign body at all in the depths of the wound, no silk with tension on it, and no over-chemicalised catgut.

Unfortunately not all herniæ are susceptible of these innocent measures, but those which are, and they are an increasing number since subjects present themselves so early in life now, allow the surgeon to consummate an operation which in its aim, in its method, and in its results is practically perfect.

Melbourne, Victoria.

IMPERIAL BRITISH PHARMACOPŒIA: NOTES ON SOME INDIAN DRUGS.[1]

BY WILLIAM MAIR, F.C.S.

IN response to an invitation from the distinguished President of the British Pharmaceutical Conference to indicate which of the more important unofficial drugs indigenous to British India and in actual use by native and European physicians would be likely to present features of practical interest and utility to pharmacists in this country and to pharmacists generally the following brief details are submitted. I should add that my experience is limited to Calcutta, which may be taken to be fairly representative of the Bengal Presidency, and the drugs which I propose to deal with are well known throughout India. The promised early publication by the General Medical Council of an Indian and Colonial Addendum to the British Pharmacopœia of 1898 (which is expected to be authorised for issue by the end of the present year) and the consequent completion of Professor Attfield's worthy ideal of the expansion of that volume into an Imperial British Pharmacopœia suggest the desirability for some acquaintance with such of its probable contents as may be useful to pharmacists outside those portions of the empire for the special use of which products and preparations are to be officially recognised. Of the 40 or 50 medicinal substances and the practically corresponding number of pharmaceutical preparations the greater part (about 30) represents those requested by India and incorporated in Professor Attfield's Draft Addendum, now proceeding to a final draft through the hands of influential experts in India.

The question that has presented itself to some practical pharmacists is whether any or all of these drugs are likely to come into use in medicine in this country and which are likely to be worthy of attention that have been proved to be good for specific purposes in the land of their origin. It is not unnatural to expect that the great British dependancy which has given us nux vomica, cannabis indica, sandal wood, and kino and chiretta should still possess the secret of others of equal individuality. Whether that is so or not, whether there are lurking in the bazaars drugs of subtle action or potent virtue calling for a wider sphere of influence, it may not be for me to express an opinion. There are drugs in everyday use in the districts, as distinguished from the Presidency cities, the names of which even are not known to Europeans, but it is hardly possible that any of

[1] A paper read before the British Pharmaceutical Conference on July 25th, 1900.

equal value to those which I have indicated or any drug of therapeutic interest not already represented in the Pharmacopœia could have escaped the notice of observers and investigators.

To proceed to the analysis of the 30 medicinal products of India likely to be included in the forthcoming Addendum as a selection bearing the stamp of official approval there fall to be eliminated those that are intended for use in India only as local substitutes for, and alternatives of, the official imported products. It does not directly concern us how far calumba could be replaced by coscinium, its former arch adulterant; whether the wood of samadera would equal that of quassia, unless the latter were becoming scarce and dear; how far the root bark of toddalia may represent casparia or cissampelos would pareira; to what extent the leaves of datura alba are equivalent to those of belladonna in terms of the relationship of daturine to atropine and hyoscyamine; whether also cotton-root bark will make an infallible substitute for ergot; or whether the telini fly will not yield more cantharidin than the true cantharides, or the very doubtful tylophora leaves or the root bark of calotropis (mudar), both advocated for many years but never used, supersede the indispensable ipecacuanha which, unhappily, has not yet been successfully cultivated on a commercial scale in India. Few of these alternatives are likely to acquire much significance to pharmacists outside of India or to importers. Butea gum may come to be recognised in this country as in some measure, though very imperfectly, representing the official kind, in which case the question presents itself whether the use of the Addendum may not be reciprocal and whether those country medicines to be recognised for use in India instead of the imported drug may not be officialised for use in this country in time of scarcity. There are others, however, of more strictly commercial importance which would be better considered from that point of view, but for which recognition is desirable for the adjustment of official standards. These are gummi indicum (dhaura gum), when clean and good quite equal to gum acacia; the oil of gingeli seed (sesame oil), exported from India in oil and seed to the value of nearly £1,000,000 sterling per annum, approximating to olive oil; and oleum arachidis (nut oil), proposed to be "employed in Indian pharmacy whenever olive oil is ordered in official preparations," to quote the words of the Draft Addendum. Wherein the question of reciprocity would again arise. It is fortunate that many important points of chemical, physiological, and therapeutical detail in reference to these articles will now be finally settled by the committees entrusted with their pharmacological investigation, but it has to be said that some of the alternatives proposed which have most probably, however, been subsequently reconsidered are not known in actual use, and it is difficult to understand why, for instance, crinum bulbs should have been recommended for use instead of squill, while no mention has been made, so far, in any of the published reports of the bulbs of either urginea indica or of ledebouria hyacinthoides, the squill of the bazaars, largely and regularly used in Government dispensary practice. I omit also from consideration at this time betel leaves and jasmine flowers, both used in the fresh state for purely domestic purposes.

The following may be found to be worthy of a more definite place in medicine in this country; some are old friends seeking re-introduction. They would repay attention and trial in the conditions indicated. I ought to state here that it was my intention to have accompanied this paper with formulæ and processes for the preparation of each drug which I would consider most suitable. It has not been found possible, however, to complete the long series of experiments necessary to arrive at reliable data. The details of these processes will appear in full, however, in this paper as published in the Year Book of Pharmacy.

Andrographis paniculata (the kreat, the dried herb; shown).—Perhaps this is the most worthy of recognition of the many simple bitters of India, in addition to chiretta, not as a substitute for it. One of its vernacular names implies "king of bitters." It contains a neutral non-alkaloidal bitter principle as yet unnamed and has febrifuge properties which chiretta does not possess. For that reason it is appreciated in India and is frequently prescribed in convalescence after fevers; it has been employed successfully in influenza. Fluid extract. (A formula will appear in the extended paper as published in the Year Book.)

Belæ fructus.—Although tried in this country and found wanting the sacred bael is, as it has always been, the most trusted of Indian indigenous medicines. It is constantly prescribed by European physicians and is of unquestionable value in diarrhœa, avoiding, especially in children, the constipation attending the use of astringents. An aqueous fluid extract from the pulp of the fresh half-ripe fruit, instead of that "imported in dried slices" will redeem its character. Another preparation in great favour in India is a confection of bael, sometimes aromatised, a valuable dietetic in teaspoonful doses in chronic diarrhœa, made from the pulp of the fresh just ripe fruit freed from the seeds by passing through a coarse sieve and preserved with sugar. For the extract the fruits, freshly imported whole, would require to be used; the confection would be best prepared on the spot and imported after the manner of tamarinds and chutnies.

Ispaghula (seeds of Plantago ovata; shown).—These minute boat-shaped seeds are imported from Persia. They contain no medicinal principle whatever but are peculiarly successful as a remedy in diarrhœa and dysentery and as an intestinal emollient in gastric catarrh. The simplicity of their action is such that no preparation can be suggested. One drachm of the cleaned seeds is infused for 20 minutes in five ounces of cold water, sweetened with sugar, and the resulting mucilaginous mass is swallowed unstrained. The action is purely mechanical, the abundant, bland, adherent mucilage allaying the intestinal irritation. They are employed in the manner indicated by distinguished officers of the Indian Medical Service.

While this paper is in no sense a criticism of the published material proposed for the Addendum, the limit of time for the presentation of comments and suggestions as invited by the editor (significant of a new era in Pharmacopœia-making) having passed, I cannot refrain from expressing the hope that some of the following may have been deemed equally worthy of recognition with the foregoing.

Holarrhena antidysenterica (kurchi, root-bark; shown).—This, perhaps, comes next to the bael in the estimation of European prescribers in India among indigenous medicines. The active principle is the alkaloid kurcheine and the properties are mildly astringent, anti-dysenteric, and febrifuge. Both a solid and liquid extract are used in India, the latter being the more desirable. (A formula and process will be presented in the Year Book.)

Garcinia Mangostana (mangosteen rind; shown; imported from Singapore).—This drug contains tannin, resin, and a yellow crystallisable principle, mangostin, and is used popularly like kino or catechu, but not much prescribed, in the form of a syrup made by boiling the rind in water and adding sugar to the strained decoction. A better process is to make the syrup from a fluid extract from 20 per cent. alcohol.

Carica Papaya.—The importance of the papaya fruit [shown] cannot be over-estimated, and it may be found to have been given a place in the ultimate Addendum for the sake of the well-known papain, as an alternative to pepsin, if only on the ground of caste prejudice. An elegant liquor papain which is made from the fresh milky juice and preserved with glycerine is also in vogue as a successful "vegetable pepsin." Its action is, of course, distinct from that of pepsin.

Eugenia Jambolana (jambul seeds; shown).—If this drug has not fulfilled all that was expected of it as a remedy in diabetes it remains to be disproved whether it is not of use in the treatment of diabetes. All that need be said is that it is used by the people and prescribed by distinguished native physicians. The secret may perhaps lie in making the aqueous liquid extract from fresh seeds from ripe fruit.

Gynocardia odorata (chaulmugra seeds; shown).—The value of the expressed oil in eczema, psoriasis, and allied skin affections is too well known to call for comment. It is regularly and largely prescribed for external use and in the style of a cream with equal parts of the oil, lanolin, and lime water.

Adhatoda vasica (leaves shown).—This drug is used in pulmonary affections and is regarded as an internal antiseptic in phthisis. It contains a white crystalline alkaloid-vasicine, sparingly soluble in water but soluble in alcohol. The drug is strongly alkaline, due to the presence of potassium chloride. The only preparation which I have seen prescribed is syrup vasak, which is best made from a liquid extract.

I have the honour to acknowledge my indebtedness to Professor Wyndham R. Dunstan, F.R.S., for authentic specimens from the Imperial Institute collection; to Mr. E. M. Holmes, F.L.S., for other specimens; and to my friend Mr. Frederick Bascombe, F.I.C., for undertaking and

carrying through the pharmaceutical work involved in the laboratories of Messrs. Fletcher, Fletcher, and Co., Limited, to whom also my thanks are due.

Edinburgh.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON THE SAFEST METHOD OF REMOVAL OF THE APPENDIX.

BY A. A. WARDEN, M.D. GLASG. AND PARIS,
ASSISTANT, DR. DOYEN'S SURGICAL CLINIQUE, PARIS.

APPENDICITIS has become so frequent an alarm in daily practice and is so treacherous in its behaviour that surgeons would do well to be agreed upon the method to be followed when removal of the appendix is decided upon. There are at present three methods in use which I venture to term (1) the continental method; (2) the English method; and (3) Doyen's method, which is best because it is the simplest and safest, and which I call Doyen's because I believe Doyen to be the first surgeon who has described and used it.

1. The continental method—that commonly followed by Terrier, Hartman, and most Paris surgeons—is simply to ligature the inflamed and diseased appendix near its base, resect it with the thermo-cautery, cauterise the stump, and then let it fall back into the abdomen. This method must be admitted to be faulty because it leaves loose and open in the abdomen the cauterised lumen of the appendix which, even if effectively cleansed, is almost certain to adhere to neighbouring abdominal contents. If ineffectively cleansed pus and a peritoneal abscess (and perhaps generalised peritonitis) are inevitable.

2. The English method, associated with the names of several surgeons, is to dissect back a collarette of peritoneum which is finally stitched over the ligated stump of the appendix. This method is an improvement on the former one but is also faulty in being more difficult and in exposing the field of operation to a leakage of the bowel contents in the event of an accidental puncture or opening of the appendix. In the case of an inflamed and diseased appendix this accident is difficult to avoid if attempts are made to strip off the serous covering.

3. Doyen's method I consider to be the best because I see no valid objections to be urged against it. It is simple and rapid; the appendix is not opened, so there is no possibility of infection of the peritoneum by escape of bowel contents; and lastly, by invagination of the stump, in the event of further infection and suppuration the pus is bound to discharge into the lumen of the bowel and to be evacuated naturally per anum. I will describe the little operation briefly, step by step. The little mesentery of the appendix is first ligatured with a small silk ligature to free the appendix laterally. Then (1) the base of the appendix is gently crushed with Doyen's small clamp. Almost any forceps suffices for this purpose if strong enough and broad enough to completely occlude the appendix for a breadth of, say, a quarter of an inch; (2) a fine silk ligature is thrown round the base of the appendix in the furrow left by the clamp; (3) the appendix is then removed by the thermo-cautery cutting close to the ligature; (4) a purse suture is then made in the serous covering of the cæcum close round the base of the appendix (as this purse stitch is drawn tight the little stump is invaginated so that all is completely closed); and (5) for safety a second fine silk purse stitch is made and the little pucker of the first stitch is similarly invaginated and the ligature is gently tightened. The result technically is perfect and certainly this is the most aseptic method of removing the appendix.

Mr. C. B. Lockwood in a recent article[1] entitled "The Organisation of Aseptic Operations and Some of the Causes of Failure" refers to 10 cases of operation for appendicitis in which no pus was found and yet in which the abdominal wound suppurated in three cases with extrusion of some, if not all, of the sutures. He came to the conclusion that some of these failures were due to the nature of the operation and that, as a matter of fact, the wounds became infected during the removal of the appendix. Mr. Lockwood adds that he has histological evidence that even in non-suppurating cases the inflamed tissues round the diseased appendix are often infected with bacteria and that, therefore, it is not to be wondered at that, after appendix operations, buried silk sutures are apt to be extruded. "I have not abandoned hope," he says, "that we shall learn how to bury silk in the abdominal wall in appendix operations." I venture to express the belief that this hope would be more speedily realised by the general adoption of this aseptic method of removing the appendix.

Paris.

[1] Brit. Med. Jour., Feb. 24th, 1900.

NOTES OF TWO CASES OF PERNICIOUS ANÆMIA TREATED WITH HOMMEL'S HÆMATOGEN.

BY HERBERT MEGGITT, L.R.C.P., L.R.C.S. EDIN.

CASE 1.—A man, aged 35 years, came to me in February, 1899, complaining of giddiness, shortness of breath on exertion, and general languor. His skin was of the peculiar lemon tinge so often seen in these cases. The patient had not lost flesh and in fact he thought that he was stouter than formerly. Inquiry elicited the fact that he had had a family worry some time previously and that he had never felt the same man since. He had begun to feel weak and unable to exert himself and his friends at the same time began to notice his increasing pallor. The urine was high-coloured but free from albumin. The ordinary causes of anæmia were carefully eliminated and the case was diagnosed as one of pernicious anæmia. An examination of the blood resulted in the discovery that its specific gravity was reduced 1040. The corpuscles did not adhere in rouleaux and their number was greatly reduced, but what was most noticeable was their great variation in form and size; nucleated red corpuscles were also present. Arsenic in gradually increasing doses, in the form of Fowler's solution, was given and continued for some time, but with absolutely no good effect. At the commencement of this treatment the patient was kept in bed. The diet ordered was chiefly farinaceous. Iron was then administered, but with like results. The patient was evidently getting weaker. Happening to mention the case to a friend he advised me to try Hommel's hæmatogen. It was given daily with the best results for four and a half months. A further examination of the blood showed that the corpuscles were assuming their natural shape and their number had increased, but the more tangible and satisfactory result was the condition of the patient who was able to resume his work with a freedom from all his previous symptoms.

CASE 2.—This case was interesting from the fact that the patient had been treated with salol after the failure of arsenic with marked improvement, but unfortunately with a relapse. The patient was a woman, aged 38 years, who complained of faintness, palpitation, loss of appetite, extreme debility, and constant vomiting. The pallor of the skin was striking. The mucous membranes were pale, there was œdema over the malleoli, and there were some petechial hæmorrhages on the lower limbs. It happened that the patient when residing elsewhere had been under treatment for the same condition and she thought that she had been cured, but after a period of four months the old symptoms returned. Correspondence with her previous medical man revealed the fact that she had been treated with arsenic and later with salol with apparent benefit. I therefore determined to commence the treatment with the administration of Hommel's hæmatogen. This was continued on and off for a period of six months, during which time repeated examination of the blood was made, marked improvement being noted.

Tottenham, N.

A CASE OF SUDDEN DEATH SHORTLY AFTER OPERATION.

BY W. BOLTON TOMSON, M.D. DURH.

A SOMEWHAT delicate overgrown child, aged 12 years, was operated on for adenoids and enlarged tonsils at the Children's Hospital, Luton, on July 7th, at 3.20 P.M. Chloroform was administered through a Krohne's inhaler to start with, and later from the ordinary flannel facepiece.

The child was very nervous, and from the first did not breathe well, the colour and pulse, however, still keeping good. Chloroform was therefore purposely not pushed to complete anæsthesia, but the gag was introduced when voluntary movements ceased, there being still a slight corneal reflex. The tonsils were first removed, but as there was considerable struggling the head was drawn well over the edge of the bed, and a little more of the anæsthetic was given. The adenoids were then removed in the usual manner, the operation being followed by, if anything, less bleeding than usual. The child was at this time breathing well, and had to be held down, having partly recovered from the anæsthetic but not yet being conscious. Shortly afterwards the colour suddenly changed, the respiratory movements became feeble and the pupils dilated, and the pulse grew very weak. Artificial respiration was immediately commenced by the Silvester method, the tongue was caught in tongue forceps and drawn well forward, injections of ether and strychnia were given, and hot-water bottles were applied between the thighs and to the soles. At first there was slight improvement, but spontaneous breathing never completely returned, though faint respiratory movement was perceptible for nearly three-quarters of an hour. The heart sounds grew fainter and fainter and finally ceased. Rhythmic traction on the tongue had meanwhile been steadily practised (as advocated by Laborde) and as a last resort, to obviate any possibility of laryngeal obstruction, tracheotomy was hurriedly performed. There was, however, no attempt at rallying and the heart sounds and breathing having ceased for some time artificial respiration was abandoned after about one and a half hours.

The immediate cause of death is not easy to state. As far as the anæsthetic was concerned it was Messrs. Duncan and Flockhart's best, and a remarkably small dose was given, only one and a half drachms (measured). Anæsthesia was, moreover, at no time complete. Further, after the operation had been concluded and the administration of the anæsthetic had ceased for some minutes, there was partial recovery, as evidenced by the struggling. The heart was carefully auscultated before the operation and no abnormality was detected. Of obstruction to the respiratory passages, such as might have been caused by spasm of the glottis, or accidental sucking in of blood there was at no time any evidence. Air entered and left the chest during artificial respiration with an audible noise, and there was no stridor. There was no intense cyanosis or venous engorgement, such as one might expect were asphyxia the cause of death, but only a lividity of the face and blueness of the eyelids, which varied with the success of the artificial respiration. There was no vomiting during the operation or subsequently. Under these circumstances, therefore, it seems to me to be probable that death was due to gradual cardiac paralysis.

Luton.

DEATH OF A CENTENARIAN.—The death occurred recently at Lapford, Devonshire, of Mildred Jerrett, who, according to the register at the parish church, was baptized in February, 1800.

THE LEAGUE OF MERCY: PRESENTATION OF THE ORDER OF MERCY.—Their Royal Highnesses the Prince and Princess of Wales, as Grand President and Lady Grand President of the League of Mercy, entertained the presidents and vice-presidents of the league at Marlborough House on July 27th. The guests assembled in the garden and on the arrival of the Prince and Princess were presented to their Royal Highnesses. During the course of the afternoon the Prince and Princess of Wales in accordance with the statutes of the league presented the Order of Mercy for services to the league, and also for services in connexion with the London hospitals, to the following: Sir Whittaker and Lady Ellis, Mr. E. A. Hambro, and Mrs. Herbert Allingham.

UNIVERSITY COLLEGE, BRISTOL.—A further addition has just been made to the structure of University College, Bristol. The new building, which closely adjoins the medical school, has been erected at a cost of about £6000. It contains on the ground floor a library about 46 feet square, also several class-rooms and preparation rooms for biological work. On the upper floor is an examination hall 88 feet long by 46 feet high and a gallery has been arranged at one end. The building is approached by an entrance in the front and lavatories and cloakrooms have been provided.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

SALISBURY INFIRMARY.

A CASE OF CEREBELLAR TUMOUR IN WHICH THE RESPIRATION WAS ENTIRELY SUSPENDED FOR FOUR HOURS BEFORE CESSATION OF THE CIRCULATION.

(Under the care of Dr. E. T. FISON and Mr. L. S. LUCKHAM.)

A YOUTH, aged 16 years, was admitted into the Salisbury Infirmary on Feb. 3rd, 1900. He complained of great pain in the head, back, and heart, and of vomiting. He had been in bed for the past three weeks, and had been sick after all solid food. His sister stated that during the paroxysms of pain he became quite rigid, but that he was not convulsed. For some time previously to this he had suffered from constipation and headache. The appearance of the patient was dull and apathetic, and he was of a dusky leaden hue, and looked markedly the subject of cerebral disease; at times he appeared to be in pain, when he called out and complained of his head. The tongue was thickly coated. The temperature was only 97° F. and remained subnormal throughout, the respirations were 16, and the pulse was 70. His attitude was one of general flexion and he kept in a lateral position; the head was much retracted and on extension of the neck he called out with pain. He was very irritable and objected to be roused, and at times feigned to be asleep. There was no strabismus, but the mouth was drawn up slightly to the right as though the left buccinator was a little paralysed. The tongue was protruded straight. The abdomen was retracted. The hand-grasps were equal and there was no paralysis of any other muscle; the knee-jerks were at times present and at others were absent. Kernig's sign was absent. Sensation was normal. The bowels were obstinately constipated. The urine contained no albumin or sugar. There was nothing abnormal seen in either ear. The ophthalmoscope showed marked papillitis with considerable swelling, estimated to be about 4 D. There were also some hæmorrhages. The left optic disc seemed more inflamed than the right. The vision was $\frac{6}{9}$ in both eyes. There was nothing distinctive about his gait as he was so weak that he could hardly stand alone.

For a few days after admission he kept his back arched and at times he had pleurosthotonos with the concavity to the left, but his general position was on the right side. He was only occasionally sick. He often called out with the pain in his head, but it was more of a moan than the piercing cry of meningitis. He generally located the seat of the pain to the left side of the back of the head. On Feb. 8th he had an attack of rigidity of the limbs and trunk lasting for three or four minutes. At times he was more drowsy than at others and the facial paralysis varied also considerably, sometimes being absent. On the 12th a consultation of the staff was held and the general opinion expressed was that the patient had a cerebellar tumour, and Dr. Fison ventured to locate it in the left lobe of the cerebellum and thought that it was probably a tuberculous tumour. An operation was decided upon, but before it was done it was decided to increase the iodide of potassium to 15 grains, it having previously been given in smaller doses. This delay was unfortunate, as instead of improving the patient steadily got worse. The pain increased, he lost control of the sphincter vesicæ and the sphincter ani, and an operation was definitely decided upon for Feb. 22nd.

At 9.30 A.M. on that date chloroform was given by the open method. There was no corneal reflex, the pupils were contracted, and he appeared to be semi-conscious before the administration of the anæsthetic was commenced. At 9.50 A.M., Mr. Luckham operating, a crescentic skin incision was made behind the ear, having for its centre a point one and a half inches behind the centre of the external auditory meatus and a quarter of an inch below, when the patient was noticed

be turning very livid. About one and a half drachms of chloroform had been used, but the anæsthetic had been discontinued for some minutes previously. As the lividity was increasing the tongue was drawn out and artificial respiration was begun, and during the next four hours till his death at 1.40 P.M. he was kept alive by artificial respiration, on cessation of which he at once became livid again and the pulse became imperceptible. During the whole period the pulse varied considerably, at times being imperceptible, at others 80 per minute and of good volume, and at others 140; of true respiratory action there was none, the only approach to it being an occasional reflex action of the pharyngeal muscles. The battery was applied to the præcordium and to the phrenics and diaphragm. Strychnine and brandy were injected and the external jugular vein was opened.

Necropsy.—At the post-mortem examination on the next day, on taking off the skull-cap there was found to be great tension of the dura mater; on removal of the brain a large amount of cerebro-spinal fluid was seen at the base of the brain, at least five ounces together with what was in the ventricles. In the left lobe and at the edge of the cerebellum a hard mass was felt. This mass on section was of about the size of a penny, fairly circular, firm to the knife, and yellowish-grey in appearance; around the tumour there was a fibrous capsule, and exterior to this there was a ring of red softening, so much so that it was possible easily to lift the growth from its bed. It was not made out definitely that it pressed upon the seventh nerve, but doubtless it could have done so in that position. The lateral ventricles were very much dilated and the foramen of Monro was large and the veins of the choroid plexuses were much engorged. In the chest there were many old adhesions of the pleura, especially on the left side. Nothing else abnormal was found in the body but a few large mesenteric glands. Dr. C. Slater of St. George's Hospital kindly examined the growth microscopically, and reported: "I think the tumour is undoubtedly tubercular, and I have found bacilli unmistakeable but very scanty—one or two per section."

Remarks by Dr. FISON.—The diagnosis of the above case presented no marked difficulties if the signs and symptoms could be definitely relied upon. The first question arose, Was it meningitis or tumour? This seemed to be easily answered, as the case had been of too long duration for a tuberculous meningitis; still, there are rare cases of chronic hydrocephalus which come on as a result of posterior meningitis and which present the same signs as tumour. Passing to the more difficult matter of its localisation the signs seemed to point to a tumour in the cerebellum; this was shown by the retraction of the head, the attacks of bilateral rigidity and persistent posterior pain, and also by the great swelling of the optic discs, cerebellar tumours causing more intense papillitis than tumours in the hemispheres. Having located it in the cerebellum, which of the three lobes was it in? There was no vertigo or reeling in walking which is associated with growths in the middle lobe, and the fact that the left facial nerve was involved seemed to point to the left lobe, this nerve presumably being involved in its course to the internal auditory meatus. Facial paralysis also is generally on the same side as the lesion in the case of tumour. It did not seem probable that the nucleus was involved, as it would be difficult then to understand that one cranial nerve should alone be involved. It would seem strange that the auditory nerve should be unaffected, but it is an observed fact that sensory nerves are capable of withstanding more pressure than motor (e.g., crutch palsy—paralysis in Pott's spinal disease). Besides this the boy complained constantly of pain in the left side of the back of his head. As to its nature this could only be surmised; there was no history or sign of syphilis, and no improvement took place under iodide of potassium. But considering that tuberculous masses form the bulk of cerebellar tumours in the young, it seemed probable that this was a tuberculous growth. Thus Allen Starr, out of 299 cases of tumour in patients under 19 years of age, found that 152 were tuberculous.

This mode of death in tumour of the brain receives but little notice in the text-books on medicine. Thus Byrom Bramwell in Allbutt's System of Medicine makes no mention of it; he says, however, that Cheyne-Stokes breathing occasionally occurs, particularly when the tumour is near the respiratory centre. Hilton Fagge says that death is often caused by cessation of the respiration, and in one instance the pulse went on for 35 minutes after the respiration had ceased. The other works on medicine which I have been able to consult make no mention of it at all. I know, however, of a case that occurred in the Hospital for Sick Children, Great Ormond-street, where respiration failed 30 hours before death ensued, artificial respiration being kept up for the period. I am told, also, that at the National Hospital for the Paralysed and Epileptic, Queen-square, this condition is by no means rare.

I have been able to come across only one paper in literature relating cases; this is by Sir Dyce Duckworth.[1] He reports four cases of cerebral disease in which the respiration ceased for some hours before the circulation. The first two cases were the subjects of abscess, one in the cerebellum and one in the temporo-sphenoidal lobe. Both were trephined, and in neither was the abscess opened; in neither did the trephining restore the respiration which ceased three and three-quarter hours and four and three-quarter hours respectively before the circulation. In the third case, one of abscess in the temporo-sphenoidal lobe, at midday artificial respiration had to be resorted to, and as the patient improved an anæsthetic was given and trephining was done; the abscess was found and opened and the respiration much improved, death, however, occurred at 6 P.M. on the same day. The fourth case of the series is one of hæmorrhage into the brain and ventricles of slow onset; trephining was done, and about half an ounce of blood was withdrawn from the right ventricle without any effect on the respiration. The heart ceased five hours after the respiration. Professor W. Macewen operated upon and opened a cerebellar abscess in a subject whilst artificial respiration was being performed. The respiration soon afterwards became voluntary. Nicoll[2] reports a case of supposed temporo-sphenoidal abscess in which during the preliminary stage of trephining the respiration ceased and artificial respiration had to be resorted to. It was determined, however, to open the skull; this was done and the patient began to breathe. A large malignant tumour was found growing from the petrous bone. The patient lived for two and half months afterwards. Every experimenter[3] upon this subject has proved that increase of intracranial pressure manifests itself more upon the respiratory centre. This centre appears to be more sensitive and vulnerable to pressure, but not so vital as the vaso-motor centre. Thus, by pressing upon a meningocele children can be put to sleep and the respiration is slowed. In animals, intracranial tension experimentally produced slows, and then abolishes, respiratory movement before the heart ceases action.

It seemed possible at first that the patient was suffering from chloroform poisoning. This, however, on second thoughts seemed to be unlikely, as, though in death from chloroform respiration at times ceases before the circulation, yet there is no great interval between the two events. Chloroform poisoning in its later stages produces a fall of the venous cerebral pressure, this being due to a general fall in the arterial pressure, and also due to inhibition of the vasomotor splanchnic mechanism, so that the patient bleeds to death into the veins of the splanchnic area.[4] In this case the arterial pressure kept good so long as artificial respiration was kept up. From the cases quoted above it would seem far more likely that relief to the respiratory centre will follow if the abscess be evacuated or the tumour removed, it not being sufficient to remove only a crown of bone. The explanation is that in greatly increased intracranial pressure the bulb blocks up the spinal canal and no cerebro-spinal fluid can be forced out by the atmospheric pressure into the subdural space in the cord. What one certainly has learnt is that even though the respiration ceases the operation ought to be continued at all hazards, for there is certainly a chance of voluntary respiration returning if the growth be removed. I certainly regret that this was not done in this case, especially as the growth was exactly situated under what would have been the trephine hole, and it would easily have been shelled out. Whether this condition is more common in connexion with tumours of the cerebellum than of the hemispheres I do not know. At any rate it seems likely that respiratory failure would occur in an earlier stage of the growth or abscess, for, shut off as it is by the tentorium cerebelli from the fore brain in a small space, the effects of pressure must exert themselves sooner than in the case of growth in the larger space occupied by the hemispheres.

[1] Edinburgh Medical Journal, New Series, 3, 1898.
[2] THE LANCET, Oct. 29th, 1898, p. 1114.
[3] Hill: Allbutt's System of Medicine, vol. vii., and Journal of Physiology, vol. xviii., Nos. 1, 2, and 4, and vol. xxi., Nos. 4 and 5.
[4] Ibid.

THE LANCET.

LONDON: SATURDAY, AUGUST 4, 1900.

WE publish in this issue three of the addresses delivered before the British Medical Association at Ipswich in plenary congress—namely, the Presidential Address of Dr. ELLISTON, Dr. PYE-SMITH'S Address in Medicine, and Mr. TREVES'S Address in Surgery. Dr. ELLISTON'S address was one to which he had evidently given time, thought, and knowledge, and with very happy results. In particular we are obliged to him for giving us in his brief review of the progress of medicine during the last two centuries the individual exploits of eastern county practitioners and savants. It is not the first time that Presidents of the British Medical Association have in their presidential addresses recorded the medical history of the locality where the congress is meeting, and we think that it is an example which other Presidents might well follow. The difficulty of finding themes upon medical and allied topics is now very acute, while the fact that we are at the close of the century has brought upon the medical world during the past 12 months an enormous mass of *résumés* of the progress of medicine viewed from general and all sorts of special standpoints—and as the century is not yet complete we may expect to meet with more addresses of similar scope and aim. Such summaries of medical and surgical knowledge, if only approximately exhaustive, make orations which are far too scrappy to be interesting to any audience, as those of us who have heard them and read them know. If Presidents of the British Medical Association will desist from attempting so large a programme as a general review of the progress of medical science, and will year by year address us from the standpoint of residents in the different medical centres of England, their contributions to our knowledge will be exceedingly welcome. In this way a complete history of the prominent members of the medical profession in the country will be formed and a hero-worship of the most practical sort will be promoted. For whereas a young man may feel that the fame of WATSON, GULL, or HUMPHRY—to mention three distinguished East Anglians—can never be his while he hears of their proud position in an enormous scientific hierarchy, he is not so certain that his own good work will of necessity go unrecognised when he learns the identity of his early environment with that of many medical heroes.

Dr. PYE-SMITH in his address deals with the well-known question as to whether medicine should be regarded as a science or an art, and we need hardly say that his contribution to the controversy is thoroughly interesting. "If," says Dr. PYE-SMITH, "medical science without art is inefficient, medical art without science is not only unprogressive but almost inevitably becomes quackery." In this sentence he seems to us to sum up the points at issue. Not that we would have had him briefer, for a good thesis loses nothing by being proved. Medicine, especially practical therapeutics, cannot be regarded as a matter of cold science. General rules cannot be laid down to guide us in treatment, except with a saving clause that the rules are so general that they must be freely departed from when sick individuals will not conform to the rules. The most logical deductions from chemistry and physics when applied to the mechanism of physiology, the most ingenious explanations of symptoms and sequelæ based upon what we regard as flawless pathology, have often failed to save life and will often again fail. For while one test-tube is the fellow of another, and one dead man behaves remarkably like another, every living individual is a bundle of complexes who refuses to be classified wholly and satisfactorily as a patient of a certain type, suffering from a certain condition, and bound to be relieved by a certain remedy. That many departments of medicine which were treated by older physicans as provinces of art have now become provinces of science is undoubtedly true; the etiology of much disease is clearer to us than it was to our forefathers, and the rational methods of prevention or cure have consequently followed. But there is still an enormous amount of work to be done and boundless experience to be tabulated and digested before the origin of many common pathological states becomes apparent and the treatment deliberately scientific. Here is where genius comes in, although Mr. TREVES is reported to have said that a medical man has no business with genius. It is genius which now and again shows us a short cut from art to science, cutting by intuition the knot that others, working according to routine, have failed to untie.

Mr. TREVES, who delivered the address in Surgery, took as his subject the contrast between the science and art of surgery in 1800 and the condition to which that science and art have attained at the present day and made somewhat dry bones speak by dint of a clear and breezy style. Mr. TREVES attributed the difference between surgery at the end of the eighteenth century and surgery at the end of the nineteenth century to four causes: an improved knowledge of anatomy, a readier method of arresting hæmorrhage, the employment of anæsthetics, and asepsis. There is no need to follow Mr. TREVES in detail while he asserts that the essential reasons of the modern extension of the fields of surgery are to be found in the employment of anæsthetics and antiseptic measures. The former has made the patient willing to undergo operations which would have been almost unendurable if he had retained his full senses, and has induced many to consent to operations who would have been unable otherwise to screw their courage to the sticking point. But, while the 40 years which intervened between the discovery of anæsthetics and the introduction of antiseptics witnessed great advances in surgical practice, the septic complications of all operations of every variety were so many and so serious that surgeons hesitated to perform operations which they knew would prove of great benefit if they should be successful, but which might end rapidly in death. The practical certainty given by the antiseptic treatment that no pyæmia or septicæmia would carry off the patient completed the value of the discovery of anæsthetics and revolutionised the practice of surgery. With regard to the value of the other two factors in the modern progress of surgery we are not so certain. The improvement in the knowledge of anatomy among the whole

body of the profession if great is only partial. It is probable that the average hospital surgeon in 1800 knew very little less of the anatomy which concerned his practice than the average hospital surgeon of the present day. No small portion of the anatomy that is now taught is perfectly useless from the point of view of the practical surgeon. The more ready methods we possess of arresting hæmorrhage make also a factor in the progress of surgery during the century which is of but little importance. The surgeons of 1800 stood in no great fear of hæmorrhage during an operation—we refer to primary hæmorrhage, of course. They applied the ligature freely, as may be seen in BENJAMIN BELL'S Surgery, the seventh edition of which was published in 1801. But they did fear secondary hæmorrhage, and rightly so, for all the ligatures or arteries were left long in order that they might come away when suppuration was fully established, and then it was that hæmorrhage often took place. The easily applied pressure-forceps of SPENCER WELLS and PÉAN are valuable assistants in a modern operation; and the much greater frequency of operations has perfected hospital surgeons in operative procedure. But for the rest, the progress of modern surgery is due to the discovery of anæsthetics and the introduction of antiseptics.

THRICE within his reign of not quite 22 years has King HUMBERT been marked down by political vendetta. In Naples, in the late autumn of 1878, when, with Queen MARGARET and the Crown Prince, he was making a Royal progress through the streets his life was attempted by PASSANANTE, but the blow fell not on His Majesty but on his faithful Minister CAIROLI, fortunately without fatal result. Again, in Rome, during the race meetings in the spring of 1897, he was assaulted on his way to the course by ACCIARITO, and again the assassin missed his aim. For the third attempt, at Monza, on the evening of July 29th, a change of weapon was tried, and the stiletto, the favoured instrument of the Italian regicide, was replaced by the hitherto untried revolver—this time with all too deadly effect. He was shot through the heart and died almost instantaneously.

Life is cheap in Italy, but King HUMBERT'S was, perhaps, the one she could least of all spare. An exemplary monarch, he inherited all his father's courage, though certainly not his father's centripetal insight into character or the conduct of affairs. His baptism of fire at Custoza in 1866 was followed up by many an act of public duty as devoted and as fearless. He seemed, indeed, to court danger and death itself in behalf of his subjects. In the appalling earthquakes in the island of Ischia in 1881 and 1883 he was conspicuous beyond even the most reckless of the relieving force in extricating man, woman, and child from under tottering edifices, the collapse of some of which had already proved fatal. In the destructive cholera epidemic in September, 1884, his absolute disregard of self is among the most beautiful passages of history. It was in Naples that the malady exploded with deadliest effect, and the KING was at the time at Pordenone in the Venetian territory, about to open a racecourse. Barely had the news come that in one night 2000 Neapolitans had been stricken down, and that of these 1000 had succumbed as much from panic as from the disease, when he addressed the Mayor of Pordenone: "A Pordenone si fa festa. A Napoli si muore. Vado a Napoli." ("At Pordenone there is merry-making. At Naples people are dying. I go to Naples.") And to Naples he went, and for more than a week he spent many hours of each day at the bedsides of the worst cases—so near to them, in fact, that several times within the 24 hours he had to retire and substitute fresh clothes for those which had to be burnt. Again and again the Ministers and even the professional men who formed his suite implored him to "think of his dynasty and the interests of his people," and his reply, as he entered another and ghastlier ward, was always the same: "I am true to my dynasty and I am thinking of my people." And this noble progress—surely as "royal" as any history records—he maintained from day to day till the panic was allayed and the disease was in full defervescence; and he returned to Rome—whence, by the way, though without his knowledge, his food and drink had been supplied—and encountered a reception as grandly impressive as ever fell to the lot of consul or emperor on the Sacred Way—alone, in a modest pony-carriage, without retinue, with difficulty making his way to the Quirinal through the dense masses of the population whose hearts were too full to cheer.

And this is the man whom Italy, who owes her unity and independence in great measure to his House, has just seen visited by the vendetta of a faction among her sons. True, it is more than probable that that faction is in collusion with the international organisation which is in perennial conflict with the prevailing social order and that this latest "example" for the "benefit" of crowned heads or constituted authorities is the result of a drawing by lot—which might have had for its object an even more conspicuous victim than King HUMBERT. But such complicity cannot absolve Italy from her pre-eminence as the instrument of such crimes—cannot blind the world to the fact that the pet, the spoiled child of modern liberalism, has made herself the recruiting sergeant of the political assassin—the source whence anarchy draws its most numerous, its most reckless, its most effective agents, whose deeds of blood have within the last four or five years been wrought on Frenchman, Spaniard, and Austrian alike—on victims absolutely unknown to their murderers, who had become the willing tools of a junto of conspirators sitting securely in congenial darkness. More than once—notably after LUCCHENI'S murder of the Empress ELIZABETH about two years ago at Geneva—THE LANCET has dwelt on the conditions, political and social, which give Italy her sinister priority in lethal crime. There is her "southern blood," all too imperfectly mitigated by education, by opportunities of honest bread-winning, by respect for the administration of justice. There is nearly half of her 30,000,000 of inhabitants almost wholly "analfabeti" (unlettered), starved not more physically than mentally; by temperament and by tradition peculiarly responsive to the sonorous rhetoric of the self-constituted vindicator of social wrong—himself again the product of Italy's bad educational and academic system, which multiplies the agitator at the expense of the artisan, the tradesman, even the husbandman. In his great scheme of university reform Dr. BACCELLI during his recent tenure of the portfolio of

Public Instruction pointed to the disastrous effects wrought on Italy by her 30 seats of learning granting degrees in many cases after the most superficial examinations, and inundating the country with unemployed professional men who, disdaining the prosaic life of the industrial bread-winner, find on the platform and in the press the channels through which their personality can make itself felt. "An academic proletariat." Such, in BACCELLI'S significant phrase, is the rank, unwholesome growth which is overrunning Italian public life; 500 "avvocati" and nearly as many "sanitari" and "ingegneri" in excess every year of the number that can make a modest livelihood out of these professions—a rapidly increasing force of the "hungry Greeklings" of Juvenal—"Graeculi" whose chosen career is that of "Gracchuli" or diminutive imitators of the heroes of Rome's præ-Sullan period. These glib orators and scribes are always in the political foreground, never more so than in Italy's latest general elections, the result of which was greatly to strengthen the socialist and anarchist vote and to intensify the feeling of discontent and unrest, with a corresponding belief in root-and-branch subversion of the prevailing order. We have no wish—it is certainly outside our province—to court political discussion; but, like every other public manifestation, politics are largely conditioned by forces physical and material, forces which in Italy have acquired a deteriorating power by neglect of laws in which all professions—none more than the medical—are interested. Bad economic and fiscal regulations, the tax on food, the enormous increase of adulteration, these and such like abuses coöperate with intellectual and moral anæmia to create a community well-nigh desperate with hardness of living and hopelessness of outlook. For the "academic proletariat" this is welcome, congenial soil to cultivate, and its products are the PASSANANTES, the CASERIOS, the ANGIOLLILLIS, the ACCIARITOS, the LUCCHENIS, and the BRESCIS, the ready instruments of the "International" who think that they are vindicating society and hastening the new heaven and the new earth of the socialist ideal. Italy has made several attempts to nip such products in the bud. She has organised a series of committees "Contro il Coltello" (against the knife); she convened a congress early in 1899 to counteract anarchists. Both proved abortive. Both were addressed to symptoms, not to disease at its source. It remains for her to effect economic, educational, and sanitary reforms, thorough and far-reaching, if she is to clear herself of the imputation of committing more homicides than all Europe (minus Spain and Portugal) put together and of crowning her priority in lethal crime by the assassination of a monarch of whom the world is already saying that she was not worthy.

THE letter from the honorary medical and surgical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, which we print in another column gives an account of the differences which have arisen between the staff of this hospital and its board of management. These differences have now become so acute that the distribution committee of the Metropolitan Hospital Sunday Fund a few weeks ago recommended that the grant from the Hospital Sunday Fund should be withheld from the hospital until they are settled—a recommendation adopted by the council of the Fund a few days ago.

It is notorious that for some years the medical staff have experienced difficulties in communicating directly with the board and have more than once suggested as a means of obviating such difficulties that they should have representatives on the board. About a year ago, in consequence of the conditions under which matters affecting the staff were discussed by means of delegates to the board, the request for direct representation on the board was renewed. The staff, however, failed to convert the board to their view, and as a consequence were forced to address themselves to the governors of the hospital. This they did, urging weighty reasons for the granting of such representation and fortifying those reasons by describing a state of affairs at the hospital as regards diet, nursing, and administration generally by no means creditable to the institution. The board resented the fact that such charges were not first made to them, but considering the manner in which the board had received representations from the staff in the past and the apparent inefficacy of such appeals, the staff can scarcely be blamed for taking on the present occasion what promises to be a more effective way of dealing with abuses. It can scarcely be said that the means adopted by the board of investigating these charges were such as to command implicit confidence or carry much weight. They appointed a sub-committee of three from their own body, and abstained from invoking some independent and impartial authority which could have examined both the board and the medical staff. But even from the report of this sub-committee, read in the most favourable light, it is evident that a condition of affairs existed by no means creditable to the administration of the hospital and such as the board should have been acquainted with.

The board have recently issued to the governors a statement in reply to that of the medical staff embodying, amongst other things, the report of the sub-committee just alluded to, and purporting to give the reasons for their refusal to allow the staff any representation. To our readers it will appear strange that a medical staff, perhaps as a body the most widely known hospital staff in the world, should have even to ask for such representation; and we cannot help thinking that a board which refuses such a modest request is dangerously out of sympathy with medical requirements and culpably ignorant of the eminence and high position of the men whom it treats so cavalierly. But it is instructive to consider briefly the board's reason for refusal. Such representation, it is alleged, would endanger the independence of the board, whatever that may mean. It does not seem to occur to the board that the medical staff whose names are so closely identified with the hospital have at least an equal interest with members of the board in maintaining the efficiency and enhancing the reputation of the hospital. It is also alleged that with two medical representatives on its board of management the hospital would be "in danger of having the philanthropic aspect of its work subordinated to that which is merely scientific and investigatory." We cannot help asking whether such a statement is really made seriously by a body of

men controlling a large hospital and presumably at least slightly acquainted with hospital matters? Are we to assume that every hospital in London with two or more medical members on its board of management—and this means a great majority of London hospitals—has the "philanthropic aspect of its work subordinated to that which is merely scientific and investigatory"? The childishness of such a statement alone saves it from being libellous, and we doubt whether it will carry weight even amongst the prejudiced and bigoted few for whom apparently it is meant. It is evident that under the special circumstances this question of representation is one of the highest importance. We shall return to this subject, but in the meantime it is to be hoped that the matter will be referred to some independent but competent body, in order that a grave danger may be averted from an institution which not only in England but throughout Europe and America has become, in virtue of its medical and surgical staff, identified with the most advanced neurological science, the most effective therapeutics, and the highest teaching.

WE would call our readers' attention to two recent publications which have important bearings upon the subject of the deplorable amount of enteric fever that has been prevalent among our troops in South Africa. The first is the correspondence, which has been issued as a Parliamentary paper, between Sir WALTER FOSTER, M.P., and Mr. WYNDHAM, M.P.; the second is an article by Mr. SAMUEL OSBORN, F.R.C.S., on "A Sanitary Corps for the British Army," published in the *Journal of Tropical Medicine* for July. The subject is one of immense importance seeing that it deals with the sanitary precautions which should be undertaken in future wars and as to how and on what scale they should be organised and adopted in order to be efficient. We cannot do better than take these publications as the text for a few observations, it being understood, however, that the matter is of such proportions that it cannot be at all exhaustively treated and threshed out within the limits of a short article. Army hygiene is but the application of the laws of health to the varying conditions of war. The conditions may be inflexible or the reverse, but they will rarely be so elastic and advantageously modifiable under the circumstances of war as under those of ordinary life. Where an enemy, for example, has captured the waterworks of a place or fouled the sources of supply and the troops are compelled to have recourse to a contaminated water-supply the mischief is soon done and it is irretrievable. Writing on Oct. 31st of last year Sir WALTER FOSTER pointed out that "in all human probability there will be great loss of life from fever and other maladies more or less preventable by careful sanitary work," and suggested the sending out of a small sanitary commission or a commissioner with assistants. Sir WALTER FOSTER placed his services at the disposal of the War Office, offering to go out in an unpaid capacity. Mr. WYNDHAM, after having consulted Lord LANSDOWNE and the medical authorities at the War Office, thought that the "need of special assistance is not the same in sanitary matters as in surgical operations." The Director-General and Lord LANSDOWNE therefore did not see the necessity for a commission such as was suggested. Mr. WYNDHAM consequently declined, with thanks, Sir WALTER FOSTER'S offer of service.

We fully recognise the patriotic spirit which animated Sir WALTER FOSTER in making this offer. Let us consider his suggestion in its practical bearings and assume by way of argument that, in addition to the presence of Sir WALTER FOSTER on the small sanitary commission, he was aided by some of the ablest and best sanitary authorities and that their advice and recommendations were of the wisest and soundest. Still, having regard to the immense area covered by the theatre of war in South Africa, it seems to us that there would be no guarantee that the sanitary commission, unless it were ubiquitous, would have been present when and where its recommendations were most needed; we do not see how their recommendations could have been carried out except through the instrumentality of a large sanitary executive body, or how this body could have got to work until a place had been captured. Moreover, it is difficult to understand what a commission could have effected practically where a large advancing force had outmarched its supplies and the amount of available transport was altogether inadequate to its requirements. Under such circumstances the military authorities would obviously have been powerless for the time being to have given effect to the recommendations of any small sanitary commission. It must be admitted that it occasionally happens in war that the military requirements override all other considerations and that this could only be prevented or overcome by getting the enemy to forbear fighting until his opponents were ready. The fighting material has to be present first in order to capture and hold a position and protect any non-combatant labour in the execution of any necessary sanitary work.

The proposals contained in Mr. OSBORN'S paper are, it strikes us, of a much more practical character seeing that he advocates the formation of a "*corps sanitaire*" in the British army like those found in continental armies. This is no new idea. It will be remembered that in effect this question was a good deal discussed in the report of the Army Hospital Services Inquiry Committee after the Egyptian expedition of 1882, and that General Sir JOHN ADYE (who was Chief of the Staff in that war), Sir JAMES HANBURY (who was the principal medical officer), and others gave evidence bearing on this subject. It is a question, however, of much greater difficulty than is commonly supposed. It is often not practicable to employ unarmed civilian labourers on just effecting a landing on an enemy's soil or soon after attacking and capturing an enemy's position. The trend of military opinion seems to be against the increase of non-combatant establishments so as to overweigh the real fighting element and lessen the mobility of the army; the very restricted sphere of labour of a sanitary executive in any campaign, where rapidly executed movements are made, has to be taken into account, although the great utility of such an organisation in the case of sieges or where what may be termed sedentary camps and armies are concerned, and when time is not a pressing element, is fully recognised. In war we usually find that the staff of an army is overwhelmed with work and responsibility, that

transport is *the* difficulty in almost every campaign, and that the question is not so much as to what it is necessary or expedient to do but as to the means of getting it done and that with sufficient promptitude to be efficacious. For our own part, while recognising the force of the reasons that may be urged from a purely military point of view, we hold that there should be with any army in the field, in addition to the officers of the Royal Army Medical Corps, who are not only specially trained in army hygiene but should be fully alive to its great practical importance on field service, some sanitary officers of practical experience, specially selected and told off for that particular purpose, and that there should also be a large and well-organised body for executive sanitary work, such as conservancy and disinfection. It must be a large body to be of any good in a big campaign and possess a staff of directing officials practically acquainted with sanitary work. This might possibly be formed in connexion with the Quartermaster-General's Department, but it should be under the orders and at the disposal of those charged with, and directly responsible for, advising on all matters of army hygiene. Moreover, we have always held that one of the weak points of our present field medical service administration is transport. The medical service should have an independent transport entirely at its disposal which ought not to be diverted to any other purpose, except, as we have previously said, in cases of grave emergency and under the express order of the general in command who should, of course, be prepared to justify his action. These are matters which may most usefully occupy the attention of the South African Commission in the course of its inquiry and may possibly lead to some practical suggestions being made.

THE Centenary Festival of the Royal College of Surgeons of England, which commenced on Wednesday, July 25th, was concluded on Friday evening, July 27th, the final entertainment being a conversazione given at the Mansion House by the Lord Mayor of London. We gave last week some notes of the earlier proceedings and published an abstract of the Address of Welcome by the President; we now conclude our account of the Festival with reports of the meeting held at Burlington Gardens on Thursday afternoon, July 26th, when the Honorary Fellowships were bestowed, and of the Centenary Dinner held on the evening of the same day at Lincoln's Inn Hall (vide p. 339). Each of these meetings may without exaggeration be described as a brilliant success, and the President and Council must feel gratified that their strenuous endeavours fittingly to commemorate the Centenary of the College have by no means been in vain. That the PRINCE OF WALES has received a "qualification" in Surgery to add to that which he already possessed in Medicine is a fact which will be hailed with acclamation by every member of our profession, and it is, we think, a step in the right direction that is taken when leaders of the State such as the Marquis of SALISBURY and the Earl of ROSEBERY are attached to us, lightly though it be, by the link of an Honorary Fellowship. The outside world would perhaps learn to understand and appreciate us better if the calls of our daily duties left us leisure to mingle with them more freely than we do. The gathering at Burlington-gardens was a most remarkable one—noteworthy not only for its brilliance as a ceremonial but for the tribute paid to British surgery as represented by the Royal College of Surgeons of England by most distinguished foreign surgeons from all parts of the world, representative men occupying the highest professional positions in their respective countries, who showed their appreciation of the honour offered to them by travelling long distances to accept it, for it was laid down as essential that he to whom the Honorary Fellowship was offered should on this occasion be present to receive it *in propriâ personâ*. This is, we think, emphatic testimony of the estimation in which British surgery in general, and the Royal College of Surgeons of England in particular, are held. We are glad to know that our *confrères* from abroad were impressed and pleased with their reception; that they valued the distinction which was bestowed upon them is, as we have already said, evident by their acceptance of it. Our readers will find in another column the graceful words of appreciation in which certain of them expressed their thanks to the College.

Annotations.

"Ne quid nimis."

THE LATE DUKE OF SAXE-COBURG AND GOTHA.

THE death of the Duke of Saxe-Coburg and Gotha, more familiarly known in England under his title of Duke of Edinburgh, though sudden at the end was not unexpected, for he was smitten with a mortal disease. The late Prince, a reserved and quiet man, was an excellent practical sailor and rose to a very high grade in the navy. It must have been a considerable wrench to him to leave his place in English society to become a German ruler, but having decided to carry out the trust extended to him he finished his life as a loyal supporter of his nephew the Emperor William and of United Germany. His only son having died under sad circumstances and the Duke of Connaught having waived for himself and his family the succession to the dukedom, the Duke of Albany becomes reigning Duke of Saxe-Coburg and Gotha.

EPSOM COLLEGE.

"FOUNDER'S DAY" took place on Saturday, July 28th, when a large company assembled to assist at the distribution of prizes in the big schoolroom of the College. The headmaster, the Rev. T. N. Hart-Smith, M.A., was able to make a very satisfactory announcement as to the general state of the College and the progress of the boys; to give one instance, he said that two whole forms, without any selection whatever, were sent up for the London Matriculation, and that of these 20 boys 16 passed. He also referred to various honours that had been won by old Epsomians. As has already been stated in our columns,[1] the "Wakley Prize," which was established as a memorial of the Founder of THE LANCET, and which is awarded biennially by the votes of his schoolfellows and the approval of his masters to the most popular boy, was gained by an unusually large majority by Colin Giffard (a son of Mr. D. W. Giffard, M.R.C.S., of Brighton), to whom the eldest grandson of Thomas Wakley had the pleasure of presenting it. Dr. Propert, in presenting the

[1] THE LANCET, June 23rd, p. 1816.

"Propert Prize" for the highest honour won during the year to C. Lawton, alluded all too briefly to the splendid work of his father, the Founder of the College, and Sir Joseph Fayrer, the chairman, in presenting the "Martin" Prizes for classics and mathematics took occasion to insist on the value of a preliminary classical education not only for medical but for all other studies. After the distribution of prizes the company adjourned to the beautiful grounds of the College, which, refreshed by the welcome rain of the preceding day, were seen to the best advantage. An organ recital given in the chapel by the organist, the Rev. Dr. Rowton, concluded the proceedings. The boys seemed well and happy, and the College, which is, if we may use such a phrase in the columns of THE LANCET, not *too* (i.e., exclusively) medical, is certainly doing excellent work. So, to borrow a sentiment from Westminster and Eton, we say "Floreat."

THE EARLIEST SIGNS OF TUBERCULOSIS.

PROFESSOR BOZZALO of Turin in a paper read at the recent International Congress of Tuberculosis at Naples has conveniently summarised the following 11 important points which are of assistance in forming a diagnosis of pulmonary phthisis in its earliest stages. They are as follows:—1. Albuminuria alternating with phosphaturia. 2. A pseudo-chlorosis distinguishable from true chlorosis by the slighter degree of reduction of the hæmoglobin and by the less-marked vascular and cardiac disturbances (palpitation, soft pulse, pulsating arteries, &c.). 3. The presence of gastric disturbances like gastralgia, anorexia, nausea, and vomiting. 4. Tachycardia in the absence of fever. 5. Diminution of blood-pressure. 6. A rise of temperature following bodily or mental exertion above the slight rise proper to health. In women a rise of from 0·3° to 0·4° C. is observable before the onset of each menstrual period. 7. An undue tendency to sweat after exertion, mental or bodily; also night sweats. 8. Pain in the supra-orbital regions and in the neck. 9. A slight inequality of the pupils with a tendency to dilatation (mydriasis). 10. The occurrence of herpes zoster. 11. Enlargement of the spleen. Of these the first seven symptoms are the most frequently met with and possess considerable diagnostic value.

AGORAPHOBIA AND HYPNOTIC SUGGESTION.

IN the *Edinburgh Medical Journal* for July Dr. C. Lloyd Tuckey has published two interesting cases of agoraphobia treated by hypnotic suggestion. They are as follows:—Case 1. A young lady, aged 26 years, who was strong and healthy and of robust physique, had noticed for about two years that she felt nervous in church and uncomfortable in shops. This feeling increased until she became unable to enter any crowded building and very averse to going out alone. Her family history showed a freedom from mental disease and she had personally never had a serious illness. She was not on good terms with the head master of her school and this preyed on her mind, but otherwise she had no trouble. She consulted her medical man who prescribed bromides and tonics and ordered rest from work. These measures not being successful and the symptoms growing steadily worse she was subjected to hypnotic treatment. The Nancy method of hypnotising was adopted, she passed into the somnambulic stage at the second sitting, and suggestions were then made to combat her morbid fears. She was strongly assured that she would gain confidence and be able to go about as before and attend church on Sundays. She began to show improvement after this, and on the following Sunday of her own accord she expressed a wish to attend a short children's service at a neighbouring church. "She did this without discomfort, and during the following week went to concerts and theatres without fear." She was also able now to go out shopping, and after two weeks' treatment returned to her school-work and continues well. The symptoms (constituting agoraphobia) which she had experienced before when in a crowded building—such as faintness, giddiness, palpitation of the heart, and a stifling sensation at the chest, with a vague terror which she could not control—have disappeared. Case 2 was that of a man, aged 37 years, strong, healthy-looking, married, and with a family. He led a healthy life and was a first-rate golfer. He had influenza badly in October, 1899, but made a good recovery. He was perfectly well, he said, except for his "nerves," and he felt thoroughly ashamed and disquieted at their condition. He was unable to go about alone and had to be accompanied to and from his office. "He could not enter a church or theatre without feeling such depression and terror that he was forced to retire." The symptoms were beginning to affect his spirits and to keep him awake at night so that his health was failing. Under the influence of hypnotism he passed into the cataleptic stage and was very susceptible to suggestion. He was assured that he would gradually regain self-confidence and self-control, and that in a week's time he would be able to go to a theatre without discomfort. He was hypnotised daily for a week and twice afterwards. On the day named he attended a matinée performance at a theatre without difficulty. He has since resumed his ordinary life and is completely cured. At golf he was as good before as during his illness, his morbid symptoms and troubles (nervousness and feeling of fear) only occurring while in enclosed places or amidst crowds. Dr. Tuckey points out the value of hypnotic treatment in this class of case. Both agoraphobia and its opposite, claustrophobia, are favourably influenced by hypnotic suggestion if the patient is at all hypnotisable. He, however, records two instances where the patients failed to be hypnotised, though every method he could think of was tried.

GANGRENE FROM THE APPLICATION OF DILUTE SOLUTIONS OF CARBOLIC ACID.

THE *American Journal of the Medical Sciences* for July contains a very complete and important paper on this subject by Dr. F. B. Harrington. In the United States carbolic acid has become a general household remedy for the treatment of slight wounds and bruises and it is used as a moist dressing. The application of dilute carbolic acid for hours to the extremities may produce gangrene—a fact which is not generally known. Dr. Harrington has seen during the last five years at the Massachusetts General Hospital, either in his own practice or in that of other surgeons, no less than 13 cases of gangrene arising from the use of carbolic acid. From medical literature he has collected a large number of other cases which with his own make 132. The recorded cases appear to be entirely American and continental. The absence of British cases is no doubt due to the fact that a dilute solution of carbolic acid applied in the form of a moist dressing is not a household remedy in this country. However, the possibility of carbolic acid being used in this manner is by no means remote, so that the warning given by these cases is not useless. Dr. Harrington relates the following case. A delicate woman, aged 26 years, cut the tip of her right index finger. Her brother, a strong man, had two weeks before successfully treated a cut on his finger with a solution of carbolic acid. She therefore put on a bandage saturated with the same solution. This was at 6 P.M. On going to bed she moistened the dressing again with the solution. There was some pain in the finger during the night. In the morning when the dressing was removed the skin was grey and the finger was swollen and felt "lifeless and heavy." The colour changed in a few hours to a dark brown and later,

when the finger became dry, to black. The patient was first seen at the end of four weeks. The finger was in different places clay-coloured, dark brown, and black. A line of demarcation had formed near the end of the first phalanx. The remainder of the phalanx was red and swollen. Amputation was performed through the middle. Thrombosis of the vessels, superficial necrosis of the finger, and deeper purulent infiltration and hæmorrhage were found. The history of all the cases is similar. After an injury a finger or a toe is wrapped in a dressing saturated with carbolic solution. If the solution is strong enough and the time of application is sufficiently long the part will be lost. Numerous cases have been reported in which amputation had to be performed for gangrene following the use of 2 per cent. and 3 per cent. carbolic solutions. In a child, aged 10 years, the second and third phalanges of a finger were lost after the application of a 1 per cent. solution for 24 hours. Usually the time of application was from 12 to 24 hours. By a series of experiments Lévai has shown that the gangrene is due to a direct chemical action of the carbolic acid on the tissues and that other dilute chemicals have a similar effect. Five per cent. solutions of muriatic, nitric, sulphuric, and acetic acids, and of caustic potash, produced gangrene when applied to an extremity for from 20 to 24 hours. On the trunk superficial gangrene occurs if the application is sufficiently prolonged. The result is not so injurious as on the extremities because of the greater thickness of the tissues and because the blood supply cannot be shut off in the same manner as in an extremity.

THE USE OF STERILISED MILK.

QUESTIONS are from time to time raised as to how far the use of sterilised milk for the feeding of infants may be desirable in the interests of the public health, and there are those who allege that sundry infantile diseases are accentuated by the exhibition of milk thus prepared. Although some of the considerations upon which objections to this sterilisation of milk are based are somewhat theoretical in nature it is important that all experiments in this direction shall be closely watched. The subject is one of no little importance to the public health, and more especially at a time like the present, when there is considerable difficulty—at any rate without the use of preservatives of one or another description—in supplying fresh milk. Under these circumstances the progress of the Infant Milk Depôt at St. Helens is not without interest. The health committee of that borough has taken seriously to heart the raid which death makes yearly in its infantile population, and it determined to study by means of a sub-committee the work which is being done in England and in France in the direction of "sterilised humanised milk." In London it was found that considerable progress was being made and that a large portion of the public were quite willing to pay the small extra charge which is being made for such milk. At Fécamp in Normandy it is claimed that the infantile mortality has been reduced from 243 to 140 per 1000 births by the use of this milk which is sterilised and humanised under medical supervision. The bottles, which are arranged in sets of nine are, after being sterilised, placed upon numbered shelves, the numbers corresponding to the number of the child for whom the bottles are intended. The parent calls for the bottles and replaces on the shelf the empty nine bottles which were taken the previous day. The nine bottles represent nine feeds per day in such quantities as the age of the babe necessitates, the children being brought weekly for inspection and weighing. At Havre there is a similar society at work. The movement is essentially philanthropic in character but the municipal authorities have been so impressed with its work that they are about to subscribe to the funds of the society. The St. Helens sub-committee were evidently edified by the results attained and they consequently recommended the town council to inaugurate a similar system in St. Helens. In August, 1899, a depôt was opened much on the Fécamp lines and by the end of the month 80 children were being daily fed from it. In consequence of the praiseworthy and public-spirited efforts of the council in this sense there has, Dr. Drew Harris, the medical officer of health, reports, been a great reduction in the infantile mortality of the borough. A large number of children already suffering from diarrhœa were brought to the depôt during August and September, a remarkable improvement having in many cases resulted. Dr. Harris speaks hopefully of the venture and all those working for the reduction of infantile mortality will watch the progress of the scheme with much interest.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

THE Society for the Study of Disease in Children was inaugurated at a meeting held on July 24th at the rooms of the Royal Medical and Chirurgical Society in Hanover-square. The chair was taken by Dr. A. E. Sansom. There was a fair attendance of those interested in the movement. The rules, as drafted by the provisional committee, were adopted with some slight alterations. The officers and council of the new society are as follows. Honorary treasurer: Mr. Clement Lucas (London). Council: Mr. H. G. Armstrong (Wellington College), Dr. Henry Ashby (Manchester), Dr. Fletcher Beach (London), Dr. George Carpenter (London), Dr. Edmund Cautley (London), Dr. Wayland C. Chaffey (Brighton), Dr. Arthur Downes (Local Government Board), Mr. Walter Edmunds (London), Dr. Theodore Fisher (Bristol), Dr. Leonard Guthrie (London), Mr. Robert Jones (Liverpool), Dr. David B. Lees (London), Dr. Lewis Marshall (Nottingham), Dr. John McCaw (Belfast), Mr. D'Arcy Power (London), Dr. Humphry D. Rolleston (London), Dr. A. E. Sansom (London), Dr. George E. Shuttleworth (Richmond), Mr. Harold J. Stiles (Edinburgh), Dr. George A. Sutherland (London), Dr. James Taylor (London), Mr. Alfred H. Tubby (London), Mr. William H. Vickery (Newcastle-on-Tyne), and Dr. Dawson Williams (London). Honorary secretaries: Mr. Sydney Stephenson (London) and Dr. Charles H. Willey (Provincial). The society already numbers upwards of 80 original members.

PREPUTIAL CALCULI.

IN the *Boston Medical and Surgical Journal* of June 21st Dr. A. N. Blodgett has described a case of this very rare condition. The patient was a man, aged 22 years, who was of neurotic antecedents and at puberty had been in an asylum for *folie de doute*. He recovered in a few months and since that time had been engaged in business. There was extreme phimosis of a greatly elongated prepuce. No part of the glans could be exposed. The penis as a whole was small, but the distal portion was greatly enlarged, elongated, and pendulous, presenting somewhat the appearance of a small pear over which the prepuce was tightly extended. The orifice was directed to one side. On micturition the stream was discharged at an angle to the penis. The swelling was very hard, unyielding, and tender. A greenish, purulent, ammoniacal, and offensive discharge constantly issued from the orifice which was excoriated and painful. The effect on the patient was most depressing and mental symptoms similar to those which he had suffered from before were being induced. The prepuce was laid open on a director, disclosing a perfect calcareous collar around the base of the glans, filling the sulcus and prolonged upon the glans towards the meatus. The collar was broken in removal. A portion of the redundant prepuce was removed and the flaps were sutured.

Healing was uneventful. Dr. Blodgett refers to another case published in *La Grèce Médicale*, No. 7, 1899, by Dr. A. Louis of Velessa, Macedonia. The patient was a man, aged 45 years, the father of three children, who from feelings of modesty concealed his condition for seven years until he was forced to seek advice. At first pain was slight, but later it increased. The penis resembled in shape the pendulum of a clock. The prepuce was of the form of a pear and was 25 centimetres in circumference and felt like a bag full of sand. From the preputial orifice a muco-purulent, fœtid, and ammoniacal fluid constantly flowed. On incision 110 calculi and some sandy detritus were removed. 30 of the calculi reached the size of a pea, the others diminished to that of a grape seed. During the whole period, except towards the end, when the pain became too great, coitus was performed. It is to be regretted that an analysis of the calculi was not made apparently in either case.

THE STANDARDISING OF DRUGS.

THE Secretary of State for the Home Department a short time ago requested the Royal College of Physicians of London and the Royal College of Surgeons of England to advise him in reference to an application from a firm of manufacturing chemists for the performance at their laboratories of experiments on living animals for the purpose of standardising drugs. Three questions were submitted for answer, and the matter was referred to the Laboratories Committee of the Colleges for consideration and report. The Committee have issued a report answering the questions above referred to. The first was: "Is the standardising of drugs by means of experiments on animals indispensable in the public interest?" The reply is to the effect that the standardising of some remedies is a chemical process and does not involve experiments upon animals. With certain other remedies, however, containing active agents which cannot be estimated by any known chemical process, experiments on animals are absolutely necessary in order that the therapeutical strength of the drugs may be estimated. This applies more particularly to the groups of remedial agents, antisera, which have been introduced for the treatment of infective disease. An unstandardised antitoxin is, of course, a source of danger. The second question ran thus: "If so, is it desirable that, in proper cases, duly qualified experimenters working in the premises of manufacturing chemists should be empowered to perform the necessary experiments on animals for this purpose?" The reply of the Committee is a decided negative. The members "regard the authorisation of the necessary experiments in the premises of manufacturing chemists as highly undesirable." The arguments adduced in favour of this view are sound and clearly expressed, but we have not space to state them in detail. The last question for consideration was: "If it is not thought desirable that manufacturing chemists should be entrusted with this power, what other provision is it advisable and practicable to make for the purpose?" The reply to this could not have been easy to formulate but we believe the suggestions of the Committee will meet with the approval of all medical men and of those who are interested in the health of the community at large and unbiased by the sentimental objections put forward by the anti-vivisectionists. While the Committee think that it is undesirable for a licence to be given to any firm of manufacturing chemists they are strongly of opinion that it is essential for the public welfare that in the case of the antisera the antitoxic strength of the remedies should be tested and certified by some responsible authority. They suggest that the standardisation might be carried out either by the Government directly in a State laboratory or by some public body or bodies with the sanction of the Government. In Germany the standardisation is carried out in a State laboratory under the direction of a Minister; in France it is undertaken by the Pasteur Institute; while in New York the State is responsible for the work. Reference is then made to the excellent work undertaken by the Royal College of Physicians of London and the Royal College of Surgeons of England in the public interest and without pecuniary advantage. It is to be hoped that the Home Secretary will act upon the suggestions of the Committee, the weight of whose authority is unquestionable, and that laboratories will be authorised for the standardisation of the antisera.

IN our last issue, p. 242, we published the presidential address delivered at the British Pharmaceutical Conference by Mr. E. M. Holmes who was inadvertently described as President of the Pharmaceutical Society. Mr. Holmes is President of the British Pharmaceutical Conference, the President of the Pharmaceutical Society for the current year being Mr. G. W. T. Newsholme.

A TELEGRAM has been received at the Colonial Office from Sir H. A. Blake, the Governor of Hong-Kong, dated July 30th, and recording 33 cases of bubonic plague with 34 deaths during the last week.

THE Library of the Royal Medical and Chirurgical Society is now closed for cleaning, &c., and will be re-opened on Monday, Sept. 3rd, at 11 A.M.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS AT PARIS, AUGUST, 1900.

(BY TELEGRAM.)

THE Thirteenth International Medical Congress was opened yesterday (Thursday) in Paris. President LOUBET received the international delegates in the morning at the Elysée and M. Monis, Minister of Justice, presided at the first general meeting in La Salle des Fêtes. Professor LANNELONGUE, President of the Congress, thanked M. Monis for his welcome to the Congress, and in his address suggested the adoption of a universal nomenclature for, and a natural classification of, morbid phenomena. Over 1200 communications have been received from contributors to the proceedings of the Congress. Upwards of 5000 medical men have registered as members of the Congress, 757 being Russian, 554 German, 369 American, 316 Italian, 217 British, and the rest for the most part French.

POISONING BY BENZOLINE.—Mr. S. Craddock held an inquest at Burnham, Somerset, on July 23rd upon a little boy who had swallowed some ounces of benzoline instead of water. The child became unconscious and died within 30 minutes. A verdict to the effect that death was caused by drinking benzoline in mistake for water was returned.

ACTION AGAINST A WATER COMPANY.—At the Swansea County-court on July 25th a barrister summoned the Oystermouth Waterworks Company for neglecting to supply him with water for domestic use at his house, Caehir, Westcross. The magistrates imposed a penalty of £10 and £2 for every day since July 18th on which water had not been supplied.

PUBLIC BATHS AT ISLINGTON.—The Islington Vestry and Sanitary Authority have just completed extensive additions to the public baths in the Hornsey-road. There are now provided a new first-class swimming bath for women, 37 additional private baths, and a new laundry, with necessary accessories thereto. The total outlay of these additions is estimated at about £61,000.

THE CENTENARY FESTIVAL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

(*Continued from p. 284.*)

ADMISSION OF HONORARY FELLOWS.

AS we briefly announced last week the centenary meeting was held in the theatre lately used by the University of London at Burlington-gardens on Thursday afternoon, July 26th. The President, Sir WILLIAM MAC CORMAC, having delivered an Address of Welcome (*vide* THE LANCET, July 28th, 1900, p. 281), the following Honorary Fellows who had been elected on the previous day were admitted:—

ALBERT, EDUARD, M.D., Professor of Clinical Surgery, University of Vienna; Member of the Austrian House of Lords and of the Supreme Sanitary Council; Royal Imperial Councillor of State.

BALL, CHARLES BENT M.D., M.Ch., Regius Professor of Surgery, University of Dublin; Surgeon to Sir Patrick Dun's Hospital; Consulting Surgeon to Steevens' Hospital, Dublin.

BASSINI, EDOARDO, M.D., Professor of Clinical Surgery, Royal University of Padua; Commander of the Order of the Corona d'Italia.

BENNETT, EDWARD HALLARAN, M.D., M.Ch., Professor of Surgery, Trinity College, Dublin; President of the Royal Academy of Medicine in Ireland.

BERG, JOHN WILHELM, M.D., Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm; Surgeon to the Royal Seraphim Hospital; Member of the Direction of the "Sophiahouse"; Member and Ex-President of the Swedish Medical Society and of the Scandinavian Surgical Association.

VON BERGMANN, S. Exc. Professor Dr. ERNST, Geh. Med. Rath; Royal Prussian Medical Privy Councillor, Imperial Russian Actual Councillor of State, Knight of the Prussian Order of Hohenzollern, the Prussian Kron and Red Eagle Orders; Knight Grand Cross (with Diamonds) Imperial Russian Orders of the Holy Anne, of the Holy Stanislas and the Holy Vladimir. General-Arzt of the Prussian Army with the rank of Major-General. Served in the Franco-German and Russo-Turkish Wars.

BLOCH OSCAR THORVALD, M.D., Professor of Clinical Surgery, University of Copenhagen; Physician in Ordinary to His Royal Highness the Crown Prince of Denmark; Surgeon to the Royal Frederiks Hospital; Member of the Royal Board of Health of Denmark.

CAMERON, IRVING HEWARD, M.B., Professor of Surgery and Clinical Surgery, University of Toronto; Surgeon to the Toronto General Hospital.

CARDENAL FERNANDEZ, SALVADOR, M.D., Vice-President of the Royal Academy of Medicine and Surgery of Barcelona; Director of the "Hospital del Sagrado Corazon" of Barcelona; Commander of the Royal Order of Isabella the Catholic.

D'ANTONA, ANTONINO, M.D., Professor of Surgery, Royal University of Naples; Professor of the Propedeutica Chirurgicale, and of the Institute of Surgical Pathology, of Naples.

DURANTE, FRANCESCO, M.D., Senator; Professor of Clinical Surgery, Royal University of Rome; President of the Royal Medical Academy of Rome; President of the Italian Surgical Society; Knight of the Most Distinguished Order of the "Merito Civile di Savoia"; Knight Grand Cross of the "Corona d'Italia."

HALSTED, WILLIAM STEWART, M.D., Professor of Surgery, Johns Hopkins University, and Surgeon to the Johns Hopkins Hospital, Baltimore.

INGSTON, Hon. Sir WILLIAM HALES, M.D., LL.D., D.C.L., Professor of Clinical Surgery, Laval University, Surgeon-in-Chief, Hotel Dieu Hospital, Montreal; Senator of the Dominion of Canada.

MESON, Surgeon-General JAMES, C.B., M.D., LL.D., Director-General, Army Medical Service; Knight of Grace of the Order of St. John of Jerusalem in England. Served in Canada, West Indies, and Egypt, and in the Franco-German War.

KEEN, WILLIAM WILLIAMS, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; President, American Medical Association; President, College of Physicians of Philadelphia.

KOCHER, THEODOR, M.D., Professor of Clinical Surgery, University of Bern; Colonel, Medical Department of the Swiss Federal Army; President of the Swiss Medical Association.

KÖNIG, FRANZ, M.D., Geh. Med. Rath; Professor of Surgery; Director of Clinical Surgery at the Charité Hospital, Berlin; General-Arzt à la suite of the Army Medical Corps. Served in the Franco-German War as Consulting Surgeon to the Prussian Army.

KÜSTER, ERNST GEORG FERDINAND, M.D., Geh. Med. Rath; Professor of Surgery and Director of Clinical Surgery, Marburg; General-Arzt of I. Class à la suite of the Medical Service of the German Army.

LAMBOTTE, ELIE D. H., M.D., Surgeon of the Hospital "Bon Pasteur," Bruxelles; Professor at the "Institut des Hautes Études."

LANNELONGUE, ODILON MARC, M.D., Professor of Surgical Pathology, Faculty of Medicine, Paris; Member of the Academy of Medicine; Member of the Academy of Sciences; Surgeon, "Hôpital des Enfants Malades."

LENNANDER, KARL GUSTAF, M.D., Professor of Surgery and Obstetrics, University of Upsala.

MACEWEN, WILLIAM, M.D., LL.D., F.R.S., Regius Professor of Surgery, University of Glasgow.

MACLEOD, Colonel KENNETH, M.D., LL.D., Indian Medical Service; Professor of Clinical and Military Medicine, Army Medical School, Netley; late Professor of Anatomy and Clinical Surgery and of Systematic Surgery, Calcutta Medical College.

NICOLAYSEN, JULIUS, M.D., Professor of Surgery, Royal University of Christiania.

NORBURY, Sir HENRY FREDERICK, K.C.B., Director-General, Medical Department of the Royal Navy. Served in the Kaffir and Zulu Wars, 1878 and 1879.

OLLIER, LÉOPOLD, M.D., Professor of Clinical Surgery, University of Lyons.

PACHOUTINE, VICTOR, M.D., Privy Councillor; President and Professor, Imperial Military Academy of Medicine, St. Petersburg; President, Medical Council of the Empire; Knight of the Orders of St. Stanislas, St. Anne, St. Vladimir, and Prince Daniel.

POZZI, SAMUEL, M.D., Professor, Faculty of Medicine of Paris; Surgeon, Hôpital Bichat.

RAYE, Colonel DANIEL CHARLES O'CONNELL, M.D., Indian Medical Service; late Professor of Surgery, Calcutta Medical College, and Senior Surgeon, Calcutta General Hospital.

RODDICK, THOMAS GEORGE, M.D., LL.D., Professor of Surgery, McGill University, Montreal; Consulting Surgeon, Montreal General Hospital and Royal Victoria Hospital, Montreal; Member of the Canadian Parliament; Hon. Surgeon to His Excellency the Governor-General of Canada.

RUBIO Y GALI, FEDERICO, M.D., Medical Councillor; Member of the Royal Academy of Medicine of Madrid; Founder of the Hospital and Surgical Institute, Madrid.

TILLAUX, PAUL, M.D., Professor of Clinical Surgery, Faculty of Medicine, Paris; Member of the Academy of Medicine; Surgeon of the "Hôpital de la Charité."

WARREN, JOHN COLLINS, M.D., LL.D., Professor of Surgery, Harvard University; Surgeon, Massachusetts General Hospital.

WEIR, ROBERT FULTON, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York; Surgeon, New York Hospital and Roosevelt Hospital; President, American Surgical Association.

After the admission certain of the Honorary Fellows made speeches on their own behalf and that of their colleagues:—

Professor E. VON BERGMANN. (*Translation from German.*)

MR. PRESIDENT,—I beg to be allowed to thank you in the language of my country for the high distinction which has just been conferred upon us, the German-speaking surgeons.

The language of one's native land comes direct from the heart, and it is in the language of our mother that we address our dearest on earth. The German-speaking surgeons have always sought their dearest and most cherished model in the constitution, organisation and achievements of the Royal College of Surgeons of England.

Just as John Hunter by his own power founded the greatest and most beautiful anatomical and surgical museum, so have also his successors independently and relying on their own resources understood how to increase their rich inheritance in a wonderful manner, to accomplish great things brilliantly, and always to march with the times.

To be received by *such* men, into *such* a fellowship, is an honour than which no higher can be conceived.

We all wish to express to you, Mr. President, our warmest and most cordial thanks.

Professor DURANTE. (*Translation from Italian.*)

In the name of my Italian colleagues and my own I thank you, Mr. President and the illustrious College which has invited us to this memorable festival.

Our gratitude for the high honour which you have deigned to confer upon us this day is as deep as the traditions of the Royal College of Surgeons of England are able and as profound as its merits in the progress of science and the surgical art are great.

From this temple consecrated to science, of which the priests are always brothers and devoid of all unwholesome political bias, may I be allowed to proffer a respectful salutation to glorious and mighty Britain?

Dr. W. W. KEEN.

MR. PRESIDENT, MY LORDS, LADIES, AND GENTLEMEN,—On behalf of my American colleagues and myself it gives me great pleasure to return our very hearty thanks for the honour just conferred upon us. We regard it as the highest surgical honour we could receive, for "Praise from Sir Hubert is praise indeed."

Though the Royal College of Surgeons of England has attained a venerable age, it is far from decrepitude. No better evidence of this could be found than the many Members and Fellows who at the call of duty so cheerfully went to the front in South Africa. Foremost among them was your distinguished President, who, though he has reached an age when most men seek repose and slippered ease, responded to his country's call with his customary energy and alacrity. Happily the war is now nearing its end. Apart from any political results in South Africa it has had two results in which we may well rejoice. It has bound together Great Britain and her colonies in one solid empire; and through the wise statesmanship of the Most Noble Marquis of Salisbury and His Excellency the American Ambassador has joined Great Britain and America in a firm moral union in which Her Majesty if not monarch of our persons is surely queen of our hearts.

We come to you as representatives of four of our great institutions of learning—from Harvard, heavy with the snows of nearly three centuries, to Johns Hopkins in the lusty youth of less than three decades. As President of the College of Physicians of Philadelphia I represent also the oldest institution in America at all similar to your own, a corporation which includes surgeons as well as physicians, and which was already in its teens when the Royal College of Surgeons was founded. On behalf of these and of all our medical institutions we bring you our heartiest greetings on this festal occasion, in the name of sound learning and accurate scholarship.

It has been my pleasure in Philadelphia to welcome many of your Fellows, including three of your most distinguished Presidents. Some of you have even swept across the continent in luxurious palace cars in but little over 100 hours. To show how swift has been our progress and yet how young we are, I need but recall the fact that this College was nearly 40 years old before the name of Chicago—now a city of nearly 2,000,000 people—even appeared upon the map, and when you were founded, beyond the fringe of civilisation on the Atlantic coast the only inhabitants of the vast region from the Alleghanies to the Golden Gate were the buffalo, the bear, and the savage Indian.

But though so young we come not empty-handed. Three great

medical advances mark the past 100 years—vaccination, anæsthesia, and antisepsis. The first and third of these are yours, but the second—anæsthesia—is the gift, better than Magian gold and frankincense and myrrh, which to-day America lays on the altar of science.

Before that historic date, Oct. 16th, 1846, the poor victims of the knife were bound hand and foot and held in the grasp of sturdy men, but hand and cord could not repress the fearful outcries which filled the air. But at Warren's touch the thongs fell off he spoke and the stormy billows of this Gennesaret of pain were stilled; the peaceful blessed sleep of ether hushed every cry of pain. Then first was modern surgery made possible, and what was made possible by our Warren was made safe and successful by your Lister—no, not *your* Lister, but OUR Lister, for his name belongs to no age and no country, but to humanity.

It is, therefore, with a special fitness that to-day you have conferred your Honorary Fellowship upon the distinguished grandson of him who first demonstrated the blessings of ether to a suffering world. At the very time when this College was founded Warren was a student of Guy's Hospital and his certificate of attendance, signed by Mr. Cline and Sir Astley Cooper, is in the possession of his grandson.

Again, Mr. President, I beg you to accept our sincere thanks for the distinguished honour you have conferred upon us.

Professor LANNELONGUE. (*Translation from French.*)

To praise the Royal College of Surgeons of England, with which we have just become connected, and the centenary of which you are at present celebrating, would be to exalt one's own merits.

The duty of a foreigner on whom such a great honour has been conferred should be that of merely expressing his gratitude. However, there are in your past history as a surgical body during this century such achievements to be chronicled that the very mention of which in a few words may not be displeasing to you.

A journey fraught with interesting consequences which was made to England by a famous French surgeon, Roux, showed what you were in 1814. He returned from this voyage with the friendship of a number of the followers of Hunter's methods, such men as A. Cooper, Ch. Bell, Brodie, Travers, Lawrence, and with a knowledge of the secret of the ligature of great vessels, the resections—which were not practised anywhere else—flap amputations, finally, the reunion by intention, facts which were forced upon them. Roux returned in a state of mind divided between admiration of your audacity and mistrust of it. He proclaimed the brilliant features of your practice in surgery, but also did not conceal its imperfections. Such was the origin of a scientific interchange of ideas and discoveries which has never slackened between you and us. The proof of this was illustrated when on March 8th, 1847, Flourens discovered the anæsthetic action of chloroform, and a few months later, on Nov. 10th, 1847, Simpson of Edinburgh employed this agent on man with admirable results.

As early as 1852 Clover praised ischæmia, which does not detract in any way from the merits of Esmarch, and did not ovariotomy flourish in England when there was nothing but failure elsewhere? Another journey was necessary—the one of Jules Worms and Nélaton in 1860—to impel conviction. In short, you have had a man at the right moment who was able to understand the works of a Pasteur and appropriate his principles and thus to establish modern surgical antisepsis.

Gentlemen, to be associated with you is one of the most enviable honours, and we thank you.

Professor V. PACHOUTINE (*who spoke in English*).

I observe amongst the number of illustrious surgeons of many nations elected Honorary Fellows of the Royal College of Surgeons of England the names of some of the surgeons of Russia.

This is a great honour to Russian surgical science which, although in its youth, has produced already a Pirogoff.

I take this opportunity to express to this greatly esteemed College, in the name of all Russian surgeons, their very sincere gratitude for the distinction conferred upon their countrymen, and on their behalf to further express the wish that the Royal College of Surgeons of England may continue to flourish and to give to the world illustrious men, who like their predecessors will be shining lights to the surgical science, ever opening new roads for surgical practice to the benefit of the human race.

THE CENTENARY DINNER.

The centenary dinner was held in the beautiful Hall of the Honourable Society of Lincoln's Inn on the evening of Thursday, July 26th. Sir WILLIAM MAC CORMAC, the President, was in the chair and a large and distinguished company of some 300 was present, including H.R.H. the Prince of Wales, Hon. F.R.C.P., Hon. F.R.C S., the Marquis of Salisbury, Hon F.R.C.S, the Earl of Rosebery, Hon. F.R.C.S., and the distinguished surgeons who had received the honorary diplomas of the College in the course of the afternoon. There were also present among those who did not belong to the medical profession, H.R.H. the Duke of Cambridge, the Portuguese Minister, the Lord Chancellor, Earl Spencer, the Lord Mayor of London, the Duke of Northumberland, the Earl of Kimberley, the Lord Bishop of London, Lord Rothschild, Maharajah Jugga Rao, Lord Davy, Lord Strathcona, Lord Kelvin, Sir Henry Roscoe, Mr. Justice Lawrance (treasurer of Lincoln's Inn), Lord Alverstone, and others.

The PRESIDENT, in proposing "Her Most Gracious Majesty the Queen," said: Your Royal Highness, my Lords, and Gentlemen,—The first toast I have to propose is that of the Queen, God bless her. I know nothing more touching or soul-stirring than to hear as I recently have heard them, in some distant and lonely land, perhaps in front of the enemy, the strains of our national anthem peal out. Let us drink, then, with all enthusiasm the health of the best of women and the greatest of queens.

In giving "Their Royal Highnesses the Prince and Princess of Wales and the other members of the Royal Family," Sir WILLIAM MAC CORMAC observed: I need scarcely repeat, what is well known to this company, what a large part the Prince of Wales takes in the public affairs of this country and the cordial goodwill and affection which his fellow-countrymen entertain for him, and this is not only because he is Prince of Wales, but because his incessant labour for the public good and devotion to every good cause have earned for him our profound respect and esteem. For the beloved Princess his wife every Englishman and Englishwoman, too, entertains the deepest admiration. Her charitable impulses have found further and wider scope in the necessities of the war we are still unhappily engaged in, and it would be difficult to estimate the far-reaching results of her influence. There is another member of the Royal family present whom we should at this time especially delight to honour—I mean His Royal Highness the Duke of Cambridge. There is no man in all Her Majesty's wide dominions more whole-hearted and true, and there is no one more worthy of the respect and affection which he so universally possesses. I call upon you to drink with all enthusiasm the health of our new Fellow, His Royal Highness the Prince of Wales, and that of the other members of the Royal family.

His Royal Highness the PRINCE of WALES, who was received with enthusiasm, on rising to respond said that he did so in a totally new capacity, that of an Honorary Fellow of the Royal College of Surgeons of England. The sister College had already elected him an Honorary Fellow, so that he was indeed one of them and a member of the two professions which did such good to mankind. He was afraid, however, that he would not be allowed to practise the profession, for if he did he very much feared that he might perhaps commit manslaughter or even murder, from the results of which even his good friend the Lord Chancellor would not be able to save him. He then referred to the great progress which had been made in surgery and in graceful terms spoke of the service which had been rendered to him by the President of the College when he (the Prince) two years ago met with an accident. He also alluded to Sir William Mac Cormac's services during the war in South Africa and acknowledged the services of Mr. Treves in a similar capacity. He then referred to the work done by the medical profession in the South African campaign and said he was sure that the members of that profession had done their best and that the way in which the hospitals had been managed reflected the greatest credit on them.

The toast of "The Honorary Fellows of the College" was proposed by Sir WILLIAM MAC CORMAC, who observed: This is the first time this toast has been proposed, as it is only quite recently, as I explained this morning, that we obtained the necessary authority to grant these honorary distinctions. We attach great value to them, and it was our wish to bestow the highest honour in our power on the distinguished persons who have just been made Honorary Fellows of our College. There can be no doubt that the importance and success of this occasion have been greatly enhanced by the exercise of these powers. We are greatly gratified at being able to bestow these honours, and there can be no question that the position of the College is strengthened by the inclusion within its ranks of so many distinguished persons. To you, sir, who stand first upon our roll of honour I should like to say with what enthusiastic acclaim your name as one of us has been received. I know well—indeed, we all know—your generous sympathy and interest in our affairs and your special desire that this centenary celebration should prove worthy of the College and of the occasion. I trust that it has been so. Our great countryman Lord Salisbury has spared the time from the affairs of State to come to do us honour. We are deeply grateful to him and we have tried to make what return was in our power not only to the great statesman but to the altogether admirable chemist, a branch of science of such great importance to medicine. Lord Rosebery's great gifts are known to us all. I was lately asked by an eminent physician to tell him the principle which had guided us in our selection as Honorary Fellows of Lord Salisbury and Lord Rosebery, and my reply was that Lord Salisbury was an eminent man of science and that Lord Rosebery was eminent in everything else. All the other Honorary



THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND. THE FESTIVAL DINNER IN LINCOLN'S INN HALL.

Fellows are surgeons, the elect of their profession, the glory of their country, and the pride of ourselves. We congratulate them on their newly acquired distinction, and we congratulate our College on the distinction they bestow upon us. Let us drink to the health, long life, and happiness of the Honorary Fellows of the Royal College of Surgeons. I have now to call upon the Earl of Rosebery, Honorary Fellow of the Royal College of Surgeons of England, to respond to this toast.

The Right Hon. the Earl of ROSEBERY, K.G., K.T., Hon. F.R.C.S., in responding, said that he had filled many embarrassing positions, but he had never felt what embarrassment really was until he had been made a Fellow of the College of Surgeons. The Honorary Fellows of the College, for whom he had been asked to reply, represented all the countries of Europe; their names and distinctions occupied three printed pages and constituted a numerical catalogue with which he was not able to deal, but he was glad to say that they had already replied for themselves in the afternoon. That left three Honorary Fellows. The Prince of Wales, however, had already replied, and so now the number was reduced to two—the Prime Minister and himself. He hoped that no one would entrust a surgical case to either his noble friend or himself. The Prime Minister was credited with the intention of performing on the illustrious mother of parliaments an operation which consisted in giving a new lease of life by first stopping that which now existed, and then flinging it into that exhilarating cauldron which would return it to life. He did not know whether the scalpel or knife would be shortly applied in any such way as that, but that was the only surgical operation which he considered could with safety be entrusted to the noble marquis. He thought that if political matters were conducted on scientific principles it would probably be better for the peace of the world. Men of science knew nothing but peace. Science was sometimes defeated, but the defeats of science were the defeats of humanity itself.

The toast of "The Guests" was proposed by Mr. THOMAS BRYANT, who said: The toast which it is my privilege to give on the present interesting occasion is that of "The Guests," who I may honestly say are the choicest representatives of every learned, scientific, artistic, and useful branch of human endeavour which this metropolis can supply. We have been led to make this selection under the conviction that the distinguished Honorary Fellows of this College whom they have been invited to meet are men of equal calibre—for the three professing but not practising Fellows who head our lists are men whom all the world delight to honour and who honour this College by becoming Fellows and thus partaking of its interests, whilst the remaining Honorary Fellows are the leading practising surgeons of the European and American States and of our own much-beloved colonies. In fact, they represent, with the Fellows of this College, the working bees of the surgical profession which utilise to the full every science and art which our guests so ably cultivate, and cull from all branches of human industry everything and anything which can possibly help towards the investigation, the prevention, and the cure of disease. Indeed, I like to think of them as the representatives of applied science for the personal benefit of mankind. They at the same time recognise no rivalry, but only friendly competition which it is to be hoped, under the banner of the Fellowship of the Royal College, will be encouraged for the benefit of the world. The name I have to couple with this toast is the representative of all that is good and all that is great in this highly-favoured Island State—the Lord High Chancellor of England—Lord Halsbury.

The LORD CHANCELLOR briefly replied.

"The Royal College of Surgeons of England, coupled with the name of the President," was proposed by Lord SALISBURY, who received on rising a cordial reception. He said that until he received the Honorary Fellowship of the Royal College of Surgeons he never was a surgeon or as a surgeon proposed the health of surgeons. His colleague in the Honorary Fellowship seemed to think that he (the speaker) knew when the Dissolution would take place. He hoped to elicit from him a secret the knowledge of which he did not possess. He also referred to the fact that the distinguished surgeons who had that day received the Honorary Fellowship of the Royal College of Surgeons of England had come from all countries of the civilised world; and with a few words of acknowledgment of the work and services of Sir William MacCormac he proposed the health of the Royal College of Surgeons of England coupled with the name of the President.

The PRESIDENT, in replying, said: I venture to think that the time for any further speech from me is almost passed, and that I shall do best if I but thank Lord Salisbury for the very kind and handsome manner in which he has proposed the toast which I will call the toast of the evening, the continued prosperity of the Royal College of Surgeons. The inclusions within its ranks of so many distinguished men to-day is a great pleasure and satisfaction to our College, and it is a further and a convincing testimony of the high esteem in which our College is held. As for myself I thank him in all sincerity and gratitude for the kind words he has spoken of me and I do this with all my heart.

At the end of the dinner (during which a selection of music was played by the band of the Coldstream Guards) each guest was presented with a volume containing the Address of Welcome, Centenary of the Royal College of Surgeons of England, by the President and also with a Souvenir of the Centenary of the Royal College of Surgeons of England, 1800 to 1900.

The accompanying picture of the dinner is from a photograph taken by Messrs. Fradelle and Young.

CONVERSAZIONE AT THE MANSION HOUSE.

The concluding entertainment of the centenary celebrations took the form of a conversazione given by the Lord Mayor of London in the Mansion House on Friday, July 27th. A considerable company was present, including many of the Honorary Fellows and other persons of distinction.

Altogether the Royal College of Surgeons of England and its President, Sir William MacCormac, are to be congratulated on a brilliant celebration of the centenary.

THE WAR IN SOUTH AFRICA.

VERY important and stirring events have taken place at the seat of war since we last wrote. The unconditional surrender of Commandant Prinsloo and a large number of Boers at Fouriesburg comes as a great relief after the meagre news of desultory and indecisive movements and fighting which have been taking place of late. The war has not only lasted much longer but has cost a far larger loss of life than it was originally supposed it would do. Still it would now seem to be nearing an end. Further resistance, as far as the Orange River Colony is concerned, may be practically considered as having terminated. It is to be hoped that Lord Roberts will soon have the line behind him restored, in which case he will be able to move upon Koomati Poort and cut off the main source of Boer supplies and so convince Mr. Krüger, when he can no longer communicate with Delagoa Bay, of the folly and futility of any further efforts on his part. We confess that we have never been able to understand why a bold attempt in this direction has not been made before—by General Buller's force, for example. It is useless to speculate on the probable capture of General De Wet's force or that of General Botha, because this has so often failed of being accomplished when it seemed imminent; still the chances of their being surrounded and having to capitulate are increasing. The Boers are still showing great activity in the vicinity of Rustenburg and they have succeeded again in temporarily surrounding General Baden-Powell. All our campaigns in South Africa have been attended with unforeseen difficulties and occasionally with disasters. In spite of the fact, however, that the Boers have succeeded in protracting the war and inflicting a grievous amount of injury on this country, they have not really succeeded in any of their more ambitious attempts and they have failed to exhibit any striking strategical ability. On the other hand, South Africa has proved, as far as the British are concerned, the graveyard of many military reputations. There has scarcely been any branch of the service in the field which has not come in for some adverse criticism, and the commissariat and supply arrangements—especially those in connexion with General Rundle's force—have not escaped. A newspaper correspondent has represented the soldiers of that force as half-starved and in a pitiable condition, and we know all

that has been alleged about the shortcomings of the medical service. This is a very poor recompense for all the toil and hardship entailed by war. According to our reading a clue to the explanation of all such occurrences will be found in the difficulties arising from insufficient transport. It must never be forgotten that the more rapid the movements of an army the harder it is for all transport and supply departments. Mr. James Van Alen, who has just returned to the United States after having been present at Bloemfontein and Kroonstadt in charge of his own field hospital, has stated that the condition of affairs there was worse than ought naturally to be expected in even a rapidly moving army. He attributes this to such causes as the neglect of the sick for the troops and the preference given to the transport of ammunition rather than of hospital supplies, to the single lines of railroad, and to the want of preparation for an epidemic. He thinks that it was a fatal error to have neglected to protect and fortify the water-supply at Bloemfontein and that this oversight accounts for much of the sickness. It is quite possible that this view may be a substantially correct one.

It is clear that when the war is over there must be a very exhaustive inquiry into everything connected with our entire army system and that wholesale changes and reforms will be introduced into it. The progress made in all that relates to modern arms and the munitions and systems of warfare has revolutionised our ideas. The fear is, perhaps, that the reforms in our own army will be based too much upon our experiences with the Boers, and that, as a consequence, we may have in future an army admirably adapted for such kinds of campaign but less effective for other kinds of warfare against trained European armies. Our army medical system will, in any case, undergo great changes in the way of development and organisation.

(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

The feeling that pervades the whole of the medical staff, both civil and military, who are doing, and have been doing, their best in this country for the past nine months, on reading the telegrams from home during the past week is beyond description. They have disheartened beyond measure those of us who have borne the burden and heat of the day. Any stick, we are told, is good enough to beat a dog with, and on this occasion the stick seems to be the so-called "society ladies" whose concentrated wrath has been poured on the whole Royal Army Medical Corps without rhyme or reason. Of course it is not difficult to trace the reason which prompts this semi-hysterical onslaught, and to those of us who are behind the scenes there is a tinge of amusement pervading our resentment; but to the general public, whose only means of knowing what work is being done is by the medium of the daily papers, these accusations and allegations must bear the stamp of genuineness. I am not going to trouble your readers with any defence or excuse with regard to these monstrous complaints. This would only be an insult to a body of officers and men who have loyally, courageously, and with a devotion which would be hard adequately to praise, done their duty in the face of difficulties and dangers that anyone who has not been on the spot can have no idea of. On every hand, I am glad to say, amongst officers and men who have passed through our hands we are daily receiving indignant protests, and they, and they alone, are best able to judge if there has ever been a campaign in the memory of man when officers, non-commissioned officers, and men have been looked after so well and more considerately treated than in this. However, this is our reward, and I am afraid that after this campaign is finished it will take more blandishments than the War Office or Treasury possess to induce worthy men to enter a service the only reward in which is abuse.

I am glad to say that there is a steady diminution of enteric fever in this place, and that the number of admissions to hospital is declining; but of course we are sending home large numbers of men weekly who are unfit to go to the front again. I need not say that we shall gladly welcome the time when once more "peace reigns in the land."

There is a good deal of sickness in Johannesburg and Pretoria, but ample accommodation exists in the various splendid buildings that are found in these two towns, and as trains are now running with regularity, no want of supplies or comforts will be found. Whilst on the subject of comforts, I may say how grateful the men of the Royal Army Medical Corps are for the generous gifts that have been sent out to them, showing that in spite of all some people at home appreciate their efforts.

Bloemfontein, July 8th.

THE FIRST INTERNATIONAL CONGRESS ON MEDICAL ETHICS OR DEONTOLOGY, HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

MASSAGE, QUACKS, AND NOSTRUMS.

ON Wednesday afternoon, July 25th, the Congress divided into two sections, and as complaints had been made that the discussions had assumed a purely French and local aspect it was decided that subjects of this nature should be debated in the first section and questions of a more general character in the second section. Consequently I attended the second section. The afternoon was mainly devoted to the consideration of the many and various forms of competition from which medical men have to suffer.

Dr. DIGNAT (Paris) urged that nurses and others who applied water and electric cures were practising medicine, though they were not properly qualified. There was no denying that these agencies might do a great deal of good or, if wrongly applied, a great deal of harm. Then there were the prescribing druggists and the covering doctor. All these were the parasites of the medical profession. Under the supervision of medical men their work was sometimes legitimate and useful, but they had no right to go to families and propose to treat patients unless called in by a qualified medical attendant.

Dr. SALOMON, of the department of the Sarthe, mentioned a medical man who employed a masseur to administer chloroform and a postman who acted both as a masseur and doctor.

Dr. BENEDICK (Vienna) urged prudence. He had always found that the conviction of mesmerists only served to increase the number of their clients. In one case the public prosecutor who had secured a conviction subsequently went himself to consult the quack in question. In Austria also there were many eminent scientists who were not doctors of medicine, and in certain mountainous districts there were no medical men at all. But there were families who had inherited capacities which were probably in the origin based on a true knowledge of medicine. When there was no medical man available the sick could not be prevented from consulting such persons. Also, there were peasants who undoubtedly were wonderful bone-setters—one of them had been nominated honorary doctor by the University of Prague so great was his skill. It was wiser to show some toleration to those who outside the profession undoubtedly had rendered services.

Dr. OTTOLENGHI, from Italy, delivered an amusingly inconsistent speech. He lamented the ignorance of the profession in regard to the so-called occult topics—hypnotism, mesmerism, faith-healing, suggestion, &c.—and then urged that no one but medical men should be allowed to practise those very methods about which he had declared they knew so very little.

Dr. VANDAM (Brussels) argued that there were two sorts of massage, scientific and non-scientific. The former could only be attempted by medical men with perhaps some slight indulgence towards aids. Massage was a specialty in medicine, just like dentistry, and he was of opinion that medical men only should be dentists.

Dr. SEQUEL (Paris) thought that students were too soon allowed to administer chloroform, and this led them to be careless in after life as to whom they employed for this purpose.

Dr. BERTIL BUHRE (Sweden) explained that in his country diplomas were given to gymnasts; consequently they ventured to treat patients without referring their cases to a medical man. On the other hand, as the masseur received no diploma he did not dare to act on his own

responsibility. As for quacks, they were only fined 12s., but an unqualified individual who had attempted to stop a tooth had been fined £40, which showed that the Swedish dentists were better able to protect their interests than were the medical men.

Dr. DUGRON (Paris) said that many patients seen at the hospitals were suffering from serious consequences as the result of incompetent massage. But various classes of healers had formed a strong union or syndicate, with Members of Parliament and even medical men on their committee, and they were better prepared for defence than the medical profession for attack. They called themselves the association of all those who treat patients without medicine; and as they did not give or prescribe medicine they concluded that they could not be prosecuted for the illegal exercise of medicine. Unfortunately, qualified medical men were themselves very poor judges in regard to massage. He urged that massage should be taught and then, with the same inconsistency as the Italian delegate, he claimed for medical men a monopoly of massage, though he had declared that the majority knew little or nothing about the subject. Medical men, however, did know anatomy, and no one ignorant of anatomy should venture to practise massage.

Dr. BENEDICK agreed that all medical students should study massage and that massage should only be practised when controlled by fully-qualified medical men.

Dr. C. PETIT (Paris) raised the question of the sale of medicaments and poisons without prescription. If poison could not be obtained by itself it could always be bought in the form of a specialty or patent medicine. He thought that these specialties should only be sold when prescribed. Medical men alone could judge whether a special or patent drug was good, but the public were left to decide this matter for themselves on the reading of a pamphlet or advertisement.

Dr. BITTLE C. KEISTER (Virginia, America) read a strong denunciation of the so-called "cure-alls" and other nostrums. "About a year ago," he said, "I received a lengthy communication from the editors of a very respectable medical journal requesting my services in writing up some of their advertised preparations. In their letter they took particular pains to compliment my style of writing and insisted upon an immediate reply of my acceptance of their liberal (?) offer of a three years' subscription of their $3 journal for a single 'write up' of two medicines known as 'Viskolien' and 'Micajah's Uterine Wafers.'" Dr. Keister then gave a long list of drugs advertised in America, some in a very improper manner, but he saw "no objection to a carefully prepared and skilfully compounded preparation whose formula is correctly and clearly printed on the label, giving each ingredient its proper place and full sphere of merit." He thought that physicians who prescribed nostrums were acting against the better interests of the profession. It would also be to the better interests of the dispensing chemists if they gave up the nostrum trade, and he concluded by expressing the hope that the time would come "when the ethics of the two professions will be so sacredly and mutually respected that the druggist will disdain to handle in his stock any secret or semi-secret proprietary medicine, and the physician in a like manner will discountenance their use by not prescribing them."

The Section concluded by passing a resolution against the sale of poisons disguised in patent medicaments unless prescribed. It also expressed its opinion that unqualified persons should not be allowed to administer chloroform and that medical practitioners should not dispense drugs.

THE DEBATE ON DEONTOLOGY.

On Thursday morning Dr. GRASSET read his remarkable paper on Deontology, of which I have already sent you a summary. The discussion on this communication was opened by Dr. DE GOUVÉA (Rio Janeiro), who related that medical ethics were at a low ebb till the formation of a medical society in the capital. This produced such good results that similar organisations were created in other parts of Brazil, and now these societies were all federated and the position of medical men from the deontological point of view had consequently greatly improved.

Dr. ANTONELLI (Paris) maintained that such matters could only be regulated by a superior council that should be removed from all local considerations and interests.

Dr. THIÉRY (Paris) said there should be a book for students explaining the principles of deontology.

Dr. MALBEC inquired who would have the authority to draw up such a code.

Dr. VANDAM replied by proposing that an international committee should be elected for this purpose.

Dr. PETERSEN (St. Petersburg) thought the proposal excellent. Each country should have a national committee and there should be a general international committee.

Dr. LASSALE said that in the department of the Gironde the Medical Syndicate had drawn up a code of deontology, but it had in no wise improved the black sheep of the profession.

Dr. ZAMBACCO PACHA (Constantinople) stated that in the East the conduct of medical men was most deplorable. Their alliance with the dispensing chemists was apparent to all. They frequently practised abortion, and in spite of this were not excluded from the learned societies. An international code of deontology could alone remedy this disgraceful state of affairs.

It was finally agreed that at a later stage the Congress would be called upon to vote on the election of an International Commission to deal with the whole question of deontology.

THE MEDICAL CHAMBERS OF AUSTRIA.

The report by Dr. HENRY ADLER (Vienna) on the Medical Chambers of Austria was now read. Many medical congresses had been held before a definite project was approved in 1886 at the Innsbruck Congress, and it was on Dec. 22nd, 1891, that a law instituting these Medical Chambers was passed. The law states that all qualified practitioners must be attached to the Medical Chambers except in the case of a State functionary or an army surgeon, or when a medical man has formally retired from practice. The Chamber has to attend not only to such matters as concern the dignity of the profession but also to sanitary matters affecting the public health. The Chambers must organise all medical competitions that may be held, be ready to express an opinion on medical questions, to advise the authorities, and to act as a court of honour in regard to personal quarrels between members of the profession. In case of misconduct on the part of a medical practitioner the court of honour may, after a reprimand, impose a fine of not more than 200 florins and may finally temporarily or permanently withdraw the culprit's right to practise. The fines paid go to swell the funds of the Chamber. The Chambers themselves are controlled by the local government authority which may rescind the action of the Chambers when they have exceeded their powers. It may even dissolve a Chamber and order a fresh election. These Chambers must consist of at least nine members; that of Vienna has 29 members and the members are elected by the profession every three years. Medical practitioners who are more than 60 years old may refuse to be elected. All the services rendered are honorary. The hopes entertained as to the good effects to result from this institution have not been realised. Firstly, because the Chambers have not power enough to act. The Chambers have been of use in improving the course of medical education and in softening the acuteness of the competition between medical men, but there remain unaltered many abuses. They have had very little influence on sanitary matters nor have they been able to regulate the supply of medical men in accordance to the needs of the various localities. In regard to contract work for friendly societies, the fact that there is a grievance is now at last recognised, and both the State and these societies will soon be made to reckon with the medical profession, but the result will depend upon the energy and unanimity with which medical men support the Medical Chambers.

THE GERMAN MEDICAL CHAMBERS.

Dr. PAUL SCHOBER read a paper on the Medical Chambers in Germany, saying that those of Prussia were the best organised. Their object was to attend to matters affecting public health and all that concerned the honour of the profession. Each of the 12 counties of Prussia had a Medical Chamber, and every 50 practitioners elected one representative member to these Chambers. The elections take place every three years and the votes are sent in writing by post to the president of the local Chamber. The Chambers have the right to make proposals to the local government authorities, especially on sanitary questions, and to be represented on the county sanitary councils by one or two members. Each Chamber has its court of honour, consisting of the president, three members, and a member of a legal Chamber. It can inflict an admonition, a reprimand, a fine not exceeding 3000 marks, and may also disfranchise the guilty member. Any practitioner in Prussia may be summoned before these Courts of Honour

and there is a supreme court of appeal at Berlin. There is also a central committee at Berlin consisting of one member from each Medical Chamber which acts as an intermediary between the Government and the Chambers and between the Chambers themselves. None of these functions are paid but allowances are made for travelling expenses. All medical practitioners have to subscribe, the amount being fixed by the Chamber according to their requirements, and consequently it varies. The fines inflicted are also kept by the Chambers. This institution of Medical Chambers is too new to say much as to the effects obtained; but, on the whole, the medical profession is well satisfied.

Dr. JAFFÉ (Hamburg) protested that there was nothing new in the idea of a Medical Chamber. Those of Bavaria were much older than the Prussian medical Chambers and the same might be said with regard to Saxony, Hesse, and Würtemberg. On the other hand, there were some parts of Germany that had no such organisations. In all cases the first object of a Medical Chamber was to maintain the dignity and authority of the profession. They were, however, in need of a generally accepted deontological code. He also thought that the code of honour governing a medical man engaged in civil practice should apply equally to army surgeons and State functionaries. There should be equality and there could be no difference in matters of honour. Though at Hamburg their Medical Chamber could also inflict a fine of 3000 marks, by far the greatest punishment was the publication of the sentence. He concluded by urging that some such institutions as the Medical Chambers should exist in all countries and that their deontological code should emanate from an international court.

SHIP SURGEONS.

In the afternoon the Congress was again divided into two sections. In the first section the following resolution, proposed by Dr. BOREL and Dr. FAYOL, was adopted:—

Considering that ship surgeons have for mission (at least in France) the duty not only of medical surveillance over their ships but also of protecting the ports they enter from infectious diseases, this mission cannot be faithfully fulfilled if the surgeons are the dependant and paid servants of the ship-owners; therefore the Congress urges that the public authorities should render ship surgeons absolutely independent of ship-owners and that they should be responsible only to the maritime, sanitary, or port authorities.

A MEDICAL STRIKE.

There was also some discussion as to the relations of medical men with the large life insurance companies, it being urged that these should be treated as ordinary clients and no special terms made. Then Dr. BAUDRY (Rennes) related that a medical strike had taken place at Ille-et-Vilaine against the poor relief authorities. The latter proposed to pay the medical men who attended paupers one franc per consultation and one and a half francs per visit, medicine included. The strike failed through the action of some "blacklegs."—The Congress blamed the latter and congratulated the practitioners of Ille-et-Vilaine upon their energy and courage.

Dr. ISSA HAMDY PACHA (Cairo) described the strange situation of a medical man who was calumniated by another practitioner who had violated his pledge of professional secrecy. The victim in this case could not defend himself because to do so he would also have had to violate professional secrecy and therefore had to suffer unjustly.—The Congress approved of this conduct and congratulated the practitioner in question upon his reserve.

MEDICAL SOCIETIES.

In the second section Dr. MANOLESCU (Bucharest) related that a medical association of Roumanian doctors had been formed. It issued a monthly journal, held an annual congress, and discussed both sanitary and medical questions.

Dr. CAYLA described the medical societies of the department of the Seine. Some were 20 and others were 50 years old, but it was only during the last 10 years that they had discussed economical questions. At first these societies had been isolated; now they were united by their General Council.

Mr. ADOLPHE SMITH said that the description given corresponded with the general character of the numerous medical societies existing in England, several of which were over a hundred years old. These societies were highly respectable and rather than admit the black sheep of the profession had in some instances formed medical unions outside of their own ranks, for it was most necessary to bring into line those who were otherwise likely to become "blacklegs." Were the medical societies of France inclined to act in a similar manner?

Dr. DECOR replied that the French medical societies were old and when first established had not foreseen the present economic evolution. But it was a stain to be driven out of such a society or to be refused admittance, and this acted somewhat as a check.

Dr. BELLENCONTRE urged that the duality of societies was quite justified. There were the medical societies that might form the aristocracy of the profession, and there were the medical syndicates or fighting medical unions who would deal with the black sheep, &c.

Dr. CLEMENTS (Bucharest) said that the Roumanian Medical Association was more like the English and French medical sccieties. Medical men of good reputation all belonged to the association. Those whose reputation was more doubtful were put into a sort of quarantine and kept out of the association for a while. There was a general committee at Bucharest which acted as judge in such matters.

Mr. H. NELSON HARDY, treasurer of the British Police Surgeons' Association, read a paper urging that as the medico-legal advisers of the police the surgeons were insufficiently paid. They had to appear as witnesses for the Crown and often the remuneration they received did not cover the expense they incurred.

During the same afternoon Mr. ADOLPHE SMITH read a paper on the Organisation of Medical Unions in England, describing the development of economical forces which had rendered such organisation absolutely necessary. This was really an essay on political economy as affecting medical practice followed by an account of various medical unions formed in England. The paper was listened to with great attention and evoked marks of approval.

In the evening the members met at the Palais d'Orsay, where a banquet was held under the presidency of Dr. BROUARDEL, the Dean of the Faculty. This was the first banquet given in the magnificent hall of the hotel attached to the new station of the Orleans Railway. The band of the 130th Regiment of the Line played selections during the banquet. Of course there were numerous toasts and enthusiastic speeches, which were all the more enjoyable as the members present felt that their Congress had proved successful and wa likely to lead to great things in the near future

INSURANCES FOR MEDICAL MEN.

As usual, there was a certain rush on the last day of the Congress. The papers that had not yet been read had to be hurried forward so as to afford time for the final resolutions which were to complete the work of the Congress. Consequently the sitting began early on the Friday morning when Dr. LANDE'S paper on Mutual Assistance and Insurance for Medical Men was read. First he showed the expense in time and money of medical education, and then that the practitioner's income depended on his health, and was rarely sufficient to admit of his saving any considerable sum. Therefore the practitioner should insure his life early when the premium to be paid would not be high. Unfortunately, medical men were, as a class, somewhat improvident. The paper then described the various charitable or semi-charitable institutions existing in different countries that were likely to help practitioners in distress. After hearing all these details the Congress endorsed the conclusions of the report which were to the effect that the means of insurance for medical men were not yet sufficiently developed, that there should be insurance against sickness and old age as well as against death, and that there should also be a fund for old-age pensions. Finally, medical men should not only pay annually insurance premiums for their own personal benefit, but they should also pay a small sum, be it only 10 francs a year, to create a general fund for the aid of any exceptional distress occurring among members of the profession or their families.

THE FORMATION OF MEDICAL UNIONS OR SYNDICATES.

The paper on the Organisation of Medical Defence was taken next. It was written by Dr. SALOMON, member of the Administrative Council of the Union of the Medical Syndicates of France. Dr. Salomon considered that the medical profession had fallen in a great measure from its former high estate. Medical men had failed to notice the tremendous transformation going on around them. Other classes of the community had armed themselves, formed powerful associations, trades unions, coöperative societies,

benefit societies, and sick funds. What had the medical men done? Formerly no one outside the profession knew anything at all about medicine and they had to depend entirely on the medical man. Now with the spread of education, the literature of patent drugs and specialities, any number of people doctored themselves and rarely resorted to the advice of a medical practitioner. Others obtained such advice for a mere nominal sum through the agencies of friendly societies or for nothing from the hospitals. In the meanwhile medical men avoided each other, indulged in rivalries and antipathies, and by reason of their disorganised and divided condition became a ready prey and the victims of numerous forms of exploitation. It was said that there were too many medical men. The evil rested rather in the fact that too many medical men crowded together in large centres. Within the last ten years the number of practitioners had doubled in the departments of the Seine (Paris), Seine et Oise, Rhône, Nord, Bouches du Rhône (Marseilles), and Seine-Inférieure (Havre). Yet in other, especially rural, districts there were not enough medical men. There were also far more foreign medical men practising in France than there used to be. The author of the paper then reviewed at length all the causes that tended to diminish the possible income of medical practitioners, poor relief, charities, friendly societies, hospitals, improvement in the public health, prescribing chemists, the illegal practice of medicine, &c. The second portion of the report dealt with such measures of defence as had been attempted and mentioned that the honour was due to Orfila of having founded in 1833 the first French medical association. It was L'Association des Médecins de la Seine. Then in 1859 L'Association Générale des Médecins de France was established chiefly for the purpose of helping medical men in distress. But they also gave moral support in professional questions. The General Association and its branches were described as something less than a syndicate or union but something more than a mere charitable or benefit society. But the General Association of French Doctors had no mandate or authority to defend professional interests and nothing further was attempted till the year 1880, when the first medical syndicate was founded at Montaign, in the Vendée, by Dr. Mignen—unless the *Concours Médical*, which was founded in 1879, be taken as its precursor. This latter had been the work of Dr. Cézilly, whose absence from the Congress through illness led to a demonstration in his honour and to expressions of sympathy. When the number of syndicates had increased they formed a union of syndicates under the presidency of the late Dr. Gibert of Havre. In 1885 there were 40 medical syndicates in France. But the movement was in a great measure checked by the verdict given by the Tribunal of Domfront which declared that the law of March 21st, 1884, which gave a legal standing to syndicates, only applied to workmen's syndicates or trades unions. Now, however, a new law, that of Nov. 30th, 1892, on the practice of medicine, granted to the members of the medical profession the same rights as had already been acquired by the working classes, with this exception, however, that medical syndicates might defend the interests of the profession against all persons except the State, the Departments, and the Communes. Thus the powers and action of medical unions in France were more restricted than were workmen's unions. Of course, the medical profession would not rest satisfied till this disability was removed. Dr. Salomon then went on to say: "We are reproached for having imitated the workmen without perceiving that the necessities of our professional life place us nearer to workmen than to employers. As our colleague Dr. Chantemps said, 'We are workmen, the *élite* of the working-class if you like, but as skilled artisans we are alone in the accomplishment of our work—we do not pay wages to others to work for us.' This opposition explains many abstentions. The syndicate of the Seine, for instance, has only about 1000 members out of some 3000 practitioners. Not that our syndicate, like the other syndicates, has failed to render itself sympathetic, but because the greater number of our colleagues obey sentiments of selfishness, which prompt them to attend only to their own individual affairs, and does not allow them to pause to consider general interests or to trouble about confraternal relations and the future of the profession. Further, we must recognise that the syndicates have systematic irreconcilable opponents. These enemies are of two sorts, those who are at the top, and those who are at the bottom, of the ladder. At the top are the successful medical men who have nothing to fear from a crisis in the profession, who often do not even understand the dangers that menace the profession. At the bottom are poor, unscrupulous, wretched individuals of all sorts, who have to resort to all manner of stratagems to secure a bare existence and who keep away from us so that we should not see what they do." In spite of all this the cause was gaining ground daily. The report then went on to relate that the Medical Syndicates had succeeded in causing the law to be more strictly applied in prosecuting quacks, in bringing grievances to the front, and produced some improvements in raising the tone of the profession, and in engendering a more brotherly feeling among practitioners.

When the discussion was thrown open Dr. DUPLESSIS eloquently pleaded in favour of liberty while to-day everyone was seeking to establish rules and checks. He thought that the only check should be a moral check. He strongly objected to have the conduct of a medical man judged by a lawyer. The latter could never understand the ethics of a man of science. The lawyer adhered rigidly to the text of a law; the man of science knew that what was thought to be the truth yesterday had been proved false to-day, and what they now believed might be demolished to-morrow. By all means let moral restraint be brought to bear, but there must be no compulsion.

Dr NOIR replied that the liberty of to-day could not rest on the same basis as that of yesterday. The economic evolution had altogether changed the basis. To-day they had to abandon a great deal of their individual freedom in favour of the spirit of solidarity and so as to acquire the power of resistance.

Mr. ADOLPHE SMITH said there was no freedom for the man who was starving—he had to sell himself to the first bidder. He had more freedom in submitting to the discipline of his professional union than to the tyranny of a taskmaster who profited by his isolation and helplessness. So far the Congress had been mainly useful in bringing forward a long list of grievances. It was time to pass from the diagnosis to the prescription of remedies. United, the profession was the absolute master of the situation; the great battle, therefore, would be, not against outsiders, but against medical men who refused to unite. The medical man was the principal foe of the medical profession. Thus, for instance, at Wolverhampton and Coventry the medical unions of those towns would have been successful recently had not medical men from Birmingham come to consult with ostracised practitioners in those two towns. On the other hand, the consultants of Norwich had refused to act in a similar manner on behalf of the ostracised practitioners at Great Yarmouth. How were the more prosperous members of the profession to be brought into line? For his part he thought that there had not been sufficient use made of the weapon of publicity; and even if this were to lead to prosecutions for libel, or in France to arrest for attempting to interfere with the freedom to work, no great cause had lived without its martyrs and a public trial was the cheapest form of publicity, the most effective means of propaganda.

After some further discussion the following resolutions were carried:—

1. For the purpose of preservation and of professional defence all medical practitioners should unite and act according to the principles of solidarity.
2. This union and this solidarity will be established by the organisation of societies which may be at once chambers of discipline and associations for professional defence.
3. The syndicate will more especially take in hand the work of professional defence, for it alone has the necessary attributes to struggle against the attacks made by society upon our monopoly.
4. There should be but one syndicate per department, so that all members of the syndicate shall have to submit to the same rules.
5. The same union and solidarity should exist between the syndicates as exists between the members of the syndicates. They will thus form the syndical union and the union of the syndicates.
6. The union of the syndicates shall form, for France, a single federation for the entire territory. It shall be the agent of centralisation and of decentralisation, and ought to be officially invested with the power to go to law as the representative and in the stead of any one affiliated syndicate.

After this important vote the Congress adjourned.

THE MEDICAL ASSOCIATION OF NORWAY.

In the afternoon the Congress at first divided into two sections and subsequently met collectively to close the proceedings. In the first section Dr. HANSSON (Christiania) gave some account of the Norwegian Medical Association. It had drawn up a deontological code dealing with the relations of medical men towards medical men. It also treated the question of sick club practice and laid down as

a principle that the post of medical officer to such institutions was not to be accepted unless with the consent of the local branch of the Medical Association. They had secured an increase amounting to 75 per cent. on the sum paid to medical officers of these clubs previously to 1888. The association had likewise established and maintained a minimum for country practice, but then about 90 per cent. of the medical men in Norway belong to the association. This was in itself a sufficient explanation of these remarkable successes.

MEDICAL CHARLATANS.

Dr. LASSALE then spoke about medical charlatans. It was a mistake, he said, to believe that all charlatans were outside the profession and illegal practitioners. There were two means of action—conscience and the law. Those who had a conscience had no need of the law; those who had no conscience must have the law. The profession should organise its own police which should warn the public against the charlatans who were within the ranks of the profession. He was in favour of discipline as well as of liberty. While they talked about liberty their difficulties and misery increased. Besides, if liberty was unnecessarily and vexatiously interfered with the profession could easily change those whom it had placed in command.

Dr. BENEDICK (Vienna) said that he considered that the Austrian Medical Chambers had taken some false steps and he was now fighting against some details of their policy. Nevertheless, he was very glad that these Chambers existed. Every institution had its good and its bad side. He was in favour of Medical Chambers possessing extensive powers. There would be abuses and conspiracies, intrigues, troubles, and quarrels; but all this could be cured by the vote of the members, and in any case the good would outbalance the evil.

Some discussion ensued as to the advisability of forming an Order of Doctors, but the hour was too advanced to go seriously into this matter.

THE CONCLUDING SCENE.

At about 5 o'clock the members from the other section returned to the great amphitheatre of the École de Médecine and the Congress, sitting as a whole, at once proceeded to discuss where and when it should meet again. A proposal that it should meet in the same town as that in which the International Medical Congress met was rejected on the ground that the Congress should meet where the movement in favour of forming medical unions or syndicates had most need of its presence. It was finally decided that the Congress would meet in three years' time in Belgium. Then a great deal was said about an international committee which should meet and try to draw up a deontological code. Beyond a general feeling that this ought to be done, that the committee which had organized the congress, and Dr. Vandam who had made the proposal, should help in the work, nothing very decisive was voted. No names were proposed of members to constitute this committee, and the matter at present assumes merely the character of a pious wish. Nevertheless, it is probable that something will be done and a project presented to the next Congress.

A number of resolutions carried in the sectional meetings were read out. Some met with approval, others were referred to the French National Congress as being of too local a character, and then Dr. LEREBOULLET rose to close the Congress. He spoke with feeling of the gratitude that was due to all who had so efficiently helped this first and most difficult step towards the international organisation of the medical profession for the purpose of defending its ethical principles and economic interests. With deep emotion he declared himself convinced that a great and good work had been accomplished.

Dr. VANDAM moved a vote of thanks from the Congress to its President, Dr. Lereboullet, to the secretary, Dr. Jules Glover, and to all the other French organisers, which was cordially awarded.

With cheers and many friendly salutations and expressions of mutual goodwill the members of the Congress dispersed.

Paris, July 30th.

VACCINATION EXPENDITURE.—At the meeting of the Falmouth Board of Guardians, held on July 26th, it was reported that the vaccination fees during 1898 and 1899 amounted to £17 and £26 respectively. For the first six months of 1900 the fees amounted to £255.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 26th, Dr. W. S. CHURCH, the President, being in the chair.

The PRESIDENT announced that the Bradshawe Lecture would be delivered on Nov. 6th by Dr. Archibald Garrod on "The Urinary Pigments and their Pathological Aspects."

Dr. Gee, Sir R. Douglas Powell, and Dr. F. Andrewes were nominated to adjudicate on the Weber-Parkes Prize for 1901.

The following gentlemen having passed the required examination were admitted Members of the College: Alexander Gunn Auld, M.D. Glasg., Noel Dean Bardswell, M.D. Edin., L.R.C.P., Arthur John Cleveland, M.D. Lond., L.R.C.P., Henri Dardenne, M.D. Edin., Francis Woodcock Goodbody, M.D. Dub., Francis Henry Hawkins, M.D. Edin., Thomas David Lister, M.D. Lond., L.R.C.P., Wilfrid Brougham Warde, M.D. Lond., L.R.C.P., Thomas Rowland Charles Whipham, M.A., M.B. Oxon., L.R.C.P., and Oliver Key Williamson, M.A., M.B. Camb., L.R.C.P.

Communications were received (1) from the Secretary of the Royal College of Surgeons of England; (2) from the Director-General, Medical Department of the Navy, on the registration of volunteers for emergency service as surgeons in the Royal Navy; and (3) from the Vice-Chancellor of the University of London, requesting the College to elect two Fellows to be Members of the Senate of the University. Dr. P. H. Pye-Smith and Dr. W. H. Allchin were elected Senators.

On the proposal of Dr. NORMAN MOORE, seconded by the REGISTRAR, the following motion was carried by acclamation:—

That a vote of thanks and the sum of 100 guineas be given to Dr. Allchin as an acknowledgment of his services during several years and on numerous occasions as secretary to the University Committee, as representative of the College before the Royal Commissioners and the Prime Minister, and in many other ways in relation to the reconstruction of the University of London.

On the recommendation of the committee of management the following institutions were added to the list of institutions recognised by the Examining Board in England: (*a*) For instruction in chemistry, physics, and practical chemistry, the Municipal Technical School, Halifax, and the Modern School, Bedford; (*b*) for instruction in chemistry, physics, practical chemistry, and biology, the Technical College, Huddersfield, and the Municipal Technical College, Derby.

Reports were received from the representative of the College on the General Medical Council, from the Fever Hospitals Committee, from the Finance Committee, from the Library Committee, and from the curators of the museum. By-law 103, as amended to make it conformable to the conjoint regulations, was re-enacted a second time.

The Moxon medal was awarded to Sir William Tennant Gairdner, K.C.B., F.R.S., M.D. Edin., Emeritus Professor of Medicine in the University of Glasgow, as having pre-eminently distinguished himself by observation and research in clinical medicine.

The adjudicators of the Weber-Parkes prize reported that they had been unable to award the prize as no essay of sufficient merit had been presented.

The following were appointed censors and examiners for the ensuing year. Censors:—William Cayley, M.D. Lond.; Charles Theodore Williams, M.D. Oxon.; Sir Dyce Duckworth, M.D. Edin.; and Thomas Henry Green, M.D. Lond. Examiners:—Chemistry and Chemical Physics: Percy Faraday Frankland, Ph.D., F.R.S.; Frederick Daniel Chattaway, Ph.D., D.Sc.; Arthur Pillans Laurie, D.Sc.; Henry Wilson Hake, Ph D.; and Henry Foster Morley, D.Sc., F.C.S. Materia Medica and Pharmacy: Francis Warner, M.D. Lond., William Carter, M.D. Lond., Hector William Gavin Mackenzie, M.D. Edin., Edwin Cooper Perry, M.D. Cantab., and James Calvert, M.D. Lond. Physiology: Marcus Seymour Pembrey, M.D. Oxon., John Sydney Edkins, M.B. Cantab., and Robert Arthur Young, M.D. Lond. Anatomy: George Robertson Turner, F.R.C.S. Eng., L.R.C.P. Lond., and Alfred William Hughes, M.B. Edin., F.R.C.S. Eng. and Edin. Medical Anatomy and Principles and Practice of Medicine: Joseph Frank Payne, M.D. Oxon., Sir Thomas Lauder Brunton, M.D. Edin., Thomas Barlow, M.D. Lond., Francis

de Havilland Hall, M.D. Lond., Herbert Isambard Owen, M.D. Cantab., Percy Kidd, M.D. Oxon., John Abercrombie, M.D. Cantab., Nestor I. C. Tirard, M.D. Lond., Donald MacAlister, M.D. Cantab., and William Hale White, M.D. Lond. Midwifery and Diseases peculiar to Women: Charles James Cullingworth, M.D. Durh., John Phillips, M.D. Cantab., Amand J. McConnel Routh, M.D. Lond., C. Montagu Handfield-Jones, M.D. Lond., and Robert Boxall, M.D. Cantab. Public Health: Part I., James Lane Notter, M.D. Dub.; Part II., William Henry Corfield, M.D. Oxon.

Professor Clifford Allbutt, Regius Professor of Physic at Cambridge, will deliver the Harveian Oration on Oct. 18th (St. Luke's Day). Dr. Henry Head has been appointed the Goulstonian Lecturer, Dr. J. F. Payne the Lumleian Lecturer, and Dr. W. D. Halliburton the Croonian Lecturer for 1901, and Dr. J. W. Washbourn the Croonian Lecturer for 1902.

THE FIRST INTERNATIONAL CONGRESS OF THE MEDICAL PRESS HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

THE OPENING CEREMONIES.

ON Thursday afternoon, July 26th, the inaugural ceremony of this Congress was held at the Press Pavilion on the Exhibition grounds. Detained at the International Congress of Deontology I could not be present, but from what I heard from those who attended and from papers remitted to me I am able to give some account of the proceedings. It appears that there was quite a demonstration when Professor Virchow of Berlin arrived. Everyone rose and sought to manifest his respect for the eminent German *savant*.

Professor CORNIL opened the proceedings. He welcomed Professor Virchow who for 60 years had grouped in his *Archives* the writings of the most learned Germans. In France also the medical press had grown and could now boast of some 30,000 readers. It reflected medical life and should help to teach medical men what were their duties and what were their rights. Modern progress had been achieved by two scientific revolutions, first the pathological conception of the cellules, and secondly the Pasteur doctrines. The medical press had largely contributed to spread these new teachings.

M. MILLERAND, Minister of Commerce, who had entered while Professor Cornil was speaking, now rose and claimed that he also had been a member of the press and would doubtless return to journalism when his Ministerial career was at an end. If to-day they had scientific journalism as distinct from ordinary journalism, this was due to the natural economic evolution which classified and sub-divided labour. Besides many of the questions to be discussed interested the entire press, such as, for instance, the division between legitimate publicity and that form of publicity which tended to degrade the journalistic profession. It would be a great honour for the Congress should it be able to deal with such delicate matters. He concluded in welcoming all the foreign delegates and especially Professor Virchow.

Professor LANDOUZY recalled the fact that the first newspaper published in France was founded by a medical man and that Renaudot's Journal sometimes dealt with medical matters. The press, he said, was the most universal of universities and it would be the mission of the medical press to aid the Government to solve all matters affecting the interests of the profession.

Professor VIRCHOW congratulated the Association of the French Medical Press on having taken the initiative in organising an international congress of the medical press. He was happy to think that the creation of an international association might result from the Congress and thought that it was quite right for the medical press to meet apart from the Medical Congress.

After the election of the officers for the Congress all the members went by a special steamer to the Hôtel de Ville, where they were received by M. Grébauval, President of the Paris Municipal Council, and by M. Lépine, Prefect of the Police.

Professor CORNIL introduced the delegates and pointed out the importance of the medical press, as there were now actually 300 medical papers published in France. It is to be hoped that on this occasion Professor Cornil omitted to mention that the medical press had 30,000 readers, for as this would mean an average of only 100 readers per journal it does not say much for at least some of these publications. Professor Cornil was more happy when he described the practical services of the medical press and how Berlin owed its sewers and its sewage farms to the active press propaganda led by Professor Virchow.

Both M. GRÉBAUVAL and M. LÉPINE made suitable replies and then led the delegates to a well-supplied buffet.

NEWSPAPER PUFFS.

The Congress began business on Friday morning in the great amphitheatre of the École Pratique at the Faculty of Medicine. Professor CORNIL was in the chair. The Government delegates of the foreign medical press were first called upon to speak, and Dr. MENDIZABAL, of the *Gaceta Medica* of Mexico; Dr. GALLET, in the name of the Belgian medical press; Dr. DIAKONOW, for the Russian medical press; Professor BROSSI for Italian journals; Dr. HANSSON for the Norwegians; Dr. EHLERS for the Danes; and Dr. POSNER for the German medical journals, all made short congratulatory speeches.

Dr. MARCEL BAUDOUIN then described his system of tabulating and registering all scientific publications in a manner that greatly facilitated researches. This was followed by a discussion on the sort of advertisements that might be published in a medical paper. The great question related to what is known in France as a *réclame*, a term which may be generally taken to mean a puff. Of course, it is easy in discussing to confuse the issue. Notices and criticisms even when favourable to an article which has a commercial value may be quite legitimate. What is illegitimate is that such notices should be paid for as if they were advertisements. Dr. POSNER protested that such *réclames* were unknown in Germany.

In France, to make matters worse, papers redolent with *réclames* were now being distributed gratuitously to the members of the profession.

A report on Gratuitous Medical Journals by Dr. LABORDE and Dr. ROMME was read in which they urged that advertisements must be relegated to a special distinct part of the paper and not inserted in all directions.

The discussion was adjourned till the next day.

Dr. BLONDEL urged that medical papers should not publish advertisements of drugs if these were likewise advertised in the general political press.

After discussing without coming to any particular decision the question of newspaper exchanges Dr. DE MAURANS read a paper urging that efforts should be made to adopt a unique international classification for scientific terms. The morning sitting was terminated by Dr. DOYEN who reproduced by a kinematograph several operations which he had performed. This exhibition excited much interest and admiration; its practical utility, especially for students, was highly appreciated.

At the afternoon sitting Professor C. RICHET spoke on the necessity of decimal classification of periodic journals. In the 16 volumes of the Index Catalogue, which dates back 20 years, there were already 1,097,535 separate titles of articles. The decimal system consists of placing in nine separate categories all phases of human knowledge. Each of these would be subdivided into another nine.

This was followed by the reading of a paper on the Question of Copyright by M. POUILLET, M. ROCHER, and Dr. DE MAURANS.

After a few words of discussion Dr. MARCEL BAUDOUIN followed with his paper on the Property of the Idea. A summary of both these papers was published in THE LANCET of July 21st last and therefore I need not refer to them again. As a result of the discussion that followed on the reading of these papers the Congress adopted a resolution to the effect that Article 7 of the Literary Convention of Berne should apply to the medical press. As for the property of the idea, after some discussion this complex question was referred to future congresses. After another and long discussion on the copyright of newspaper articles, a resolution was carried to the effect that newspaper articles, criticisms, &c., should not be quoted without mentioning the name of the author and the publication. With regard to the reproduction of lectures delivered before learned societies the general custom was to ask the professor

permission to print some account of what he had said, and as a rule such requests were not refused.

This concluded the day's sitting and the members of the Congress were conducted to Professor Richet's laboratory, where they took wine together.

(To be continued.)

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6531 births and 4313 deaths were registered during the week ending July 28th. The annual rate of mortality in these towns, which had increased from 14·5 to 16·4 per 1000 in the three preceding weeks, further rose to 19·4 last week. In London the rate was 21·0 per 1000, while it averaged 18·3 in the 32 provincial towns. The lowest death-rates in these towns were 11·1 in Derby, 11·4 in Bolton, 11·5 in Huddersfield, and 11·6 in Bristol; the highest rates were 22·0 in Leeds, 22·1 in Sheffield, 24·1 in Salford, and 28·0 in West Ham and in Liverpool. The 4313 deaths in these towns included 944 which were referred to the principal zymotic diseases, against 427 and 555 in the two preceding weeks; of these 662 resulted from diarrhœa, 88 from whooping-cough, 76 from measles, 66 from diphtheria, 27 from "fever" (principally enteric), 24 from scarlet fever, and one from small-pox. The lowest death-rates last week from these diseases occurred in Wolverhampton, Bristol, Burnley, and Gateshead, and the highest rates in West Ham, Liverpool, Salford, Leeds, and Sheffield. The greatest mortality from measles occurred in Brighton, Swansea, Derby, and Huddersfield,; from scarlet fever in Blackburn; from whooping-cough in West Ham and Sheffield; from "fever" in Portsmouth; and from diarrhœa in West Ham, Liverpool, Salford, Leeds, and Sheffield. The 66 deaths from diphtheria included 27 in London, 10 in Leicester, six in Sheffield, five in West Ham, and four in Leeds. One fatal case of small-pox was registered in Blackburn, but not one in any other of the 33 towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 17, 17, and 14 at the end of the three preceding weeks, had further declined to 11 on Saturday last, July 28th: three new cases were admitted during the week, against four, four, and one in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1859, against numbers increasing from 1754 to 1877 on the seven preceding Saturdays; 207 new cases were admitted during the week, against 229, 208, and 222 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 160 and 169 in the two preceding weeks, further rose to 196 last week, and were 19 above the corrected average. The causes of 54, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Bradford, Hull, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, Manchester, and Newcastle.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·2 and 19·0 per 1000 in the two preceding weeks, declined again to 17·5 during the week ending July 28th, and was 1·9 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 10·6 in Leith and 13·0 in Dundee to 18·9 in Glasgow and 19·3 in Paisley. The 541 deaths in these towns included 36 which were referred to diarrhœa, 24 to measles, nine to scarlet fever, nine to whooping-cough, six to "fever," two to small-pox, and one to diphtheria. In all 87 deaths resulted from these principal zymotic diseases, against 73 and 102 in the two preceding weeks. These 87 deaths were equal to an annual rate of 2·8 per 1000, which was 1·4 per 1000 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 23 and 38 in the two preceding weeks, declined again last week to 36, of which 23 occurred in Glasgow and six in Aberdeen. The deaths from measles, which had been 17 and 18 in the two preceding weeks, further rose to 24 last week, and included 18 in Glasgow and five in Edinburgh. The fatal cases of scarlet fever, which had been seven and five in the two preceding weeks, rose again last week to nine, of which five were registered in Glasgow and three in Paisley. The deaths from whooping-cough, which had been 21 and 22 in the two preceding weeks, declined to nine last week, and included eight in Glasgow. The six deaths referred to different forms of "fever" showed a decline of five from the number in the preceding week, and included three in Glasgow and two in Dundee. The fatal cases of small-pox, which had been two, one, and two in the three preceding weeks, were again two last week, and were both recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 71 and 80 in the two preceding weeks, declined again last week to 67, but slightly exceeded the number in the corresponding period of last year. The causes of 31, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased from 17·8 to 23·4 per 1000 in the three preceding weeks, declined again to 18·3 during the week ending July 28th. During the past four weeks the death-rate in the city has averaged 19·4 per 1000, the rate during the same period being 16·2 in London and 17·2 in Edinburgh. The 123 deaths belonging to Dublin registered during the week under notice showed a decline of 34 from the number in the preceding week, and included five which were referred to the principal zymotic diseases, against six, eight, and 13, in the three preceding weeks; of these, four resulted from diarrhœa, and one from diphtheria. These five deaths were equal to an annual rate of 0·7 per 1000, the zymotic death-rate during the same period being 4·7 in London and 1·3 in Edinburgh. The fatal cases of diarrhœa, which had been two, one, and four in the three preceding weeks, were again four last week. The mortality from diphtheria also corresponded with that in the preceding week. The 123 deaths in Dublin last week included 24 of infants under one year of age and 33 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the numbers recorded in the preceding week. Four inquest cases and four deaths from violence were registered; and 39, or nearly a third, of the deaths occurred in public institutions. The causes of five, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

AFFAIRS IN CHINA.

ALTHOUGH there is every reason to hope that our worst fears regarding the Legations at Peking have not been realised up to the present time it is clear that an advance on the part of the Allied Powers will have to take place—if, indeed, it has not already begun. The undertaking is a large and formidable one both in its political and its military aspects. The task of taking part in it has occurred at an unfortunate time for this country, which is already occupied with a big war elsewhere. The Indian contingent is, as we have already said, accompanied by field hospitals, hospital ships, and medical establishments from India, and a number of medical officers from the fleet will, no doubt, be available to take part in the expedition, together with some officers of the Royal Army Medical Corps serving with the troops in China. As regards the German force, it will probably be accompanied by a large medical contingent, as any number of medical officers and members of the civil medical profession are available in that country for army requirements. We shall see how the Germans, Russians, and other Powers who are not embarrassed by having any other war in hand, manage to carry out the medical part of the forthcoming campaign in China, especially as, probably for the first time in their experience, they will have to convey their troops there by sea transport.

THE SUPPLEMENTARY ARMY ESTIMATES.

The Army Medical Service formed the subject of a good deal of discussion on the occasion of the House going into

Committee of Supply on the Supplementary Army Estimates. There is, however, no need to go over all the ground again at the present time, because our readers are already familiar with most of the points that were raised. It is well known that the strength of the medical establishment was dangerously low at the outbreak of the present war in South Africa and that it had to be reinforced by the employment of a large number of civil surgeons. Moreover, the occurrences in China, the West Coast of Africa and elsewhere, have vastly increased the demand for medical officers in the public services at the present time. It is only fair to say, however, that the present Secretary for War did much more than his predecessors had done to restore the popularity of the service, but whether it were owing to want of time or from other causes these measures have not so far been productive of the effect anticipated. As the matter stands at present the whole subject of the organisation of the army medical services and the provision of an independent medical transport and a large medical reserve will have to be taken up and most carefully considered at the close of the present war in South Africa.

THE SOUTH AFRICAN COMMISSION.

It would, of course, be premature and improper to discuss the subjects under investigation by the Commission, but we may nevertheless advert to the published evidence given by one of the invalided soldiers at Netley. His testimony has, of course, no pertinence or weight in regard to what was alleged to have taken place elsewhere and outside his own experience, but it exhibits such a fine type of soldierly qualities that it is well worthy of being recorded in our columns. "No. 7. Had been in the Indian Mutiny, China, and Abyssinian wars, and left New Zealand as a volunteer, paying his own expenses, and joined the local forces. Wounded in the spine at Paardeberg. Never was more surprised in his life than when he went down to the field hospital and found the comfort and provision which were made for the sick and wounded. Only one in a hundred made any kind of complaint, and those ought to take their mothers with them wherever they went."

AN UNDESIRABLE MEMBER OF THE ROYAL ARMY MEDICAL CORPS.

A youth aged 18 years, named Arthur Deighton, charged with violently assaulting the police, was sent to prison by Mr. Bros from the Clerkenwell Police-court on July 31st for 21 days. After some disorderly conduct he was arrested by a police constable, but six members of the force and a civilian were required to take him to the station. The prisoner, who wore an old khaki uniform, said that he belonged to the Royal Army Medical Corps, that he had been invalided home from South Africa, and that he was now on furlough. If this statement be unfortunately true we can only regret that such a person should ever have been admitted to the Royal Army Medical Corps. But if he is a member the authorities will no doubt see that he has no further opportunity of disgracing it.

DEATHS IN THE SERVICES.

Deputy Inspector-General Rinso Robert Siccama, M.R.C.S. Eng., L.S.A., R.N. (retired), on July 19th. Mr. Siccama received his medical education at King's College Hospital, London, and qualified M.R.C.S. and L.S.A. in 1857. He shortly afterwards entered the Royal Navy as a surgeon and retired some years ago with the rank of deputy inspector-general of hospitals. After his retirement he settled in Bath and soon made himself very popular. Taking an interest in municipal matters he represented the Landsdown Ward in the Bath city council. Recently he resigned his seat and went to Weymouth for the benefit of his health, where his death took place. Much regret is felt in Bath at his decease.

TRANSVAAL WAR NOTES.

The following steamships have arrived at Southampton: the *Nubia* on July 25th, the *Aurania* on July 26th, and the *Manchester Port* on July 28th. They brought respectively 272, 620, and 313 sick and wounded men from South Africa who were admitted to the wards of the Royal Victoria Hospital, making a total of 1205 admissions in four days.

Dr. A. Conan Doyle and Professor A. Ogston arrived in England on July 27th from South Africa.

Correspondence.

"Audi alteram partem."

"ADDISON'S DISEASE AND LEUCODERMA."

To the Editors of THE LANCET.

SIRS,—Writing, as I do, away from my notes and references, I shall not do more than reply as shortly as possible to the important communication of Sir Samuel Wilks in THE LANCET of July 28th. I am sincerely glad, however, that he has at length broken the silence which I inferred from my previous attempts to "draw" him that he preferred to maintain. For I need scarcely add that, apart from personal regard for him, which is that of all his friends, all the world will join with me in holding that if any point about Addison's disease can really be settled by authority Sir Samuel Wilks is the one living authority on the subject.

But a "law of nature"—or an "apparent exception" thereto (I fully accept the implication here implied)—cannot be dogmatically disposed of by mere authority. It is not because Newton wrote the "Principia" that we accept its conclusions or believe even in the law of gravitation. And it may be permitted to me to maintain, in the face of Sir Samuel Wilks's opinion, that the relation of leucoderma to Addison's disease is not settled by anything he has written upon the subject up to now. But his last communication to you unquestionably tends to clear the position, and I hope this imperfect reply will do so still more. I am not, indeed, disposed to admit (and I doubt whether it is intended to be conveyed) that in my lecture to the Medical Graduates' College I attributed to Sir Samuel Wilks any views that he does not in point of fact hold. If there is anything to be regretted, in my opinion, it is that he has been led by his attitude in this communication into even seeming to affirm that the continuity of the pigmentation—the "uniform staining of the skin"—in Addison's disease is to be regarded as a "law of nature." That in the very great majority of the cases the pigmentation is continuous, as Addison, Wilks, and Greenhow all describe it, is not (so far as I know) disputed. Indeed, it has occurred to me to have to demonstrate cases of Addison's disease to clinical classes in which there were present natives of India, and I have been restrained only by personal considerations from pointing out in words the very exact resemblance of the tint in the patient to that of the members of the class aforesaid But vitiligo (apart from Addison's disease) is generally reputed to be much more common in the dark races than among Europeans; and, if so, why should it not also appear among the accidents (if we may so call them) of the Addisonian pigmentation? Furthermore, if Dr. Radcliffe Crocker is right (but I am citing him only on the basis of a casual conversation) in supposing that a previous darkening of the integument is usually or always a first stage in vitiligo (or leucoderma), there is probably some "law of nature" connecting the two states which demands more investigation than has yet been given to it even by Sir Samuel Wilks. I do not, therefore (as at present advised), feel disposed even on Sir Samuel Wilks's great authority to accept the dictum that in the true Addison's disease there shall absolutely *not* be found an instance of leucoderma, and that Addison's own illustration to the contrary is "a false representation."

Now as regards this classical and much controverted instance in Addison's own book. It is true that there was no post-mortem examination in that case as there delineated, but Sir Samuel Wilks has not adverted to a fact (which I noticed in my lecture) that Addison records this case side by side with another in which there was an examination, and where the capsules were found diseased, but in which no drawing could be procured; and certainly no doubt existed in Addison's mind at that time that the two cases were exactly parallel in every respect both as regards the skin and where the condition of the adrenals. Personally, I see no reason to doubt that Addison adhered to his judgment of this case, or to presume that he would in a second edition have relegated it to the category of "those doubtful instances which have done so much to retard the progress of the discovery." But of course it is open to Sir Samuel Wilks, or to anyone else, to doubt this case. In fact, I only alluded to the apparent discrepancy of opinion on this as "a point requiring to be more carefully dealt with."

As regards my own case, however, very briefly alluded to in the Transactions of the International Medical Congress (London, 1881) and afterwards published by Dr. McCall Anderson, I cannot quite submit to allow its relevancy to be brought into question on the grounds stated. It is true that I gave no extended description of the case, for I had no cognisance of it except at the one visit in consultation. But I affirm now with the utmost confidence: (1) that the disease was recognised during life both by myself and Dr. Maclaren of Glasgow as having all the constitutional symptoms of Addison's disease; (2) that this was confirmed later by Dr. McCall Anderson, who had at an earlier stage regarded the pigmentary changes as vitiliginous (as indeed they assuredly and typically were); and (3) that the examination after death made by the late Dr. Foulis of Glasgow in full knowledge of the diagnosis, and with every possible care as regards histological details revealed exactly the state of the adrenals regarded by Sir Samuel Wilks himself as characteristic of Addison's disease. I am not concerned at present with the other elements of doubt cast on Addison's observations, but I venture to continue in the belief that the "law of nature" alluded to by Sir Samuel Wilks as regards the continuity of the pigmentary change will have to submit to some further "apparent exceptions" before we can be considered as having quite done with the subject.

I am, Sirs, yours faithfully,

Penmaenmawr, N. Wales, July 30th, 1900. W. T. GAIRDNER.

"RODENT CANCER OF THE CORNEA."

To the Editors of THE LANCET.

SIRS,—The "rare chronic creeping ulcer of the cornea" spoken of by Mr. Nettleship does not differ from the condition described in my case simply because it is one and the same thing. A reference to my article will show that I used the terms "rodent ulcer" and "rodent cancer" as interchangeable. The reasons for my assuming malignancy in the ulcer were: (1) age of patients (nearly always late middle life); (2) the raised sinuous undermined edge of the ulcer and its chronic course; (3) nothing but destruction of the growing edge by the cautery appears to be able to arrest the progress of the malady; and (4) the one pathological examination of which I can find any record is that of Schmidt-Rimpler who describes appearances not inconsistent with malignancy. Perhaps the most suggestive points about Mr. Nettleship's "chronic creeping ulcer" are that lymphatic glands are not invaded; that the condition remains local; and, above all, that it does not recur after complete removal. These are cardinal features of the cutaneous rodent ulcer, which is nowadays admitted on all hands to be carcinomatous. They were present in my mind when I spoke of the condition as "rodent cancer of the cornea," although we must all admit that at present the etiology of the disease is a matter of speculation. Mr. Nettleship speaks of the "chronic creeping ulcer of the cornea" as "somewhat rare," whereas in my original article I called it "one of the rarest affections of the eye." My reasons were: (1) not a single identifiable case can I find either in periodical English literature or in the Transactions of the Ophthalmological Society of the United Kingdom; (2) during the last 10 years there appear to have been only five recorded cases—namely, four by Dufour (Société Français d'Ophtalmologie, May, 1897), and one by Schmidt-Rimpler (*Archiv für Augenheilkunde*, 1898); and (3) Vossius, in Giessen, saw three cases among 25,000 ophthalmic patients and Jany of Breslau one only among 66,000. On these grounds I based my conclusion that "rodent ulcer of the cornea" was an extremely rare affection. I am, Sirs, yours faithfully,

Welbeck-street, W., July 30th, 1900. SYDNEY STEPHENSON.

To the Editors of THE LANCET.

SIRS,—The assumption that Mr. Sydney Stephenson's interesting case of corneal rodent ulcer, published in THE LANCET of July 21st (p. 173), was cancerous must have been felt by many ophthalmic surgeons who read the account to be "not proven," and I note that Mr. Edward Nettleship has given expression to his doubts on the matter and asks for further proof. I am very interested in the point, as I have quite recently had under my care the healthy little and not quite three-year-old daughter of healthy parents, living in a most salubrious neighbouring seaside town, where the father is a medical man, with a state of things, as far as can be judged from the description and diagram, identically the same as in Mr. Stephenson's case, except that the upper part of the cornea was attacked. The condition is so rare, at least in these parts, it being the only case which I have encountered in a period of 11 years, that it was not until the ulcer went on steadily advancing in spite of all the usual remedies that I had the child put under chloroform, and after a thorough examination, which I could not make before, recognised the grave nature of the case, when careful scraping and the energetic single application of pure carbolic acid, spudding it well in under the epithelium of the advancing edge, quite arrested the disease and led to a complete cure without causing so much destruction of tissue as the actual or galvano-cautery would have done. Clinically this case appears to me exactly the same as Mr. Stephenson's. Would he in my three-year-old patient consider it cancerous? Was it the age of his patient that led him to adopt this view of its nature, or what? A critique of Ulcus Corneæ Rodens appeared in the *Ophthalmic Review* for April of this year.

I am, Sirs, yours faithfully,

Norwich, July 29th, 1900. S. JOHNSON TAYLOR.

THE CURATIVE TREATMENT OF MICROBIC DISEASE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 20th, 1890 (p. 1354), there appeared a letter of mine entitled "On Immunity from Infectious Disease." In this letter I proposed a method of treating infectious disease by (1) bleeding the patient in order to remove some of his vitiated blood and (2) replacing this blood by healthy blood obtained from an individual who had recovered from the same disease as the patient was suffering from. This method, as far as I am aware, has not been tried on the human subject. It has, however, been tried in Cape Colony on cattle suffering from rinderpest some two years ago and with great success. The treatment to be successful depends on a very thorough bleeding of the sick animal, in a full-grown ox to the extent of several (five or six) litres; on the other hand, the inoculating dose of defibrinated blood or serum from a recovered animal need not exceed from 20 to 30 cubic centimetres in the case of a "fortified" animal, or 100 cubic centimetres if the animal be not fortified. I think the method may be now tried on the human subject in pneumonia and other acute fevers where in the olden days bleeding was usually resorted to, with this addition, that immediately after the bleeding a dose of curative serum (anti-pneumonic, &c.) should be given, and to avoid all risks subcutaneously, instead of the method I proposed in my letter—viz., by transfusion. Perhaps in a case of typhus or typhoid fever, where the blood-giver is the human subject, direct transfusion of the "recovered" blood may be the safest procedure.

I am, Sirs, yours faithfully,

GEORGE CARRINGTON PURVIS, M.D., B.Sc. Edin.

Grahamstown, Cape Colony, July 7th, 1900.

"RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS."

To the Editors of THE LANCET.

SIRS,—Dr. E. J. McWeeney's interesting paper on the above subject, published in THE LANCET of July 21st (p. 158), does not mention a table of 18 such cases which was appended to a paper by Dr. R. L. Bowles and myself sent in November, 1899, and read on March 27th of this year before the Royal Medical and Chirurgical Society and now published in its Transactions, p. 241. On analysing his table of 17 cases I find that Dr. McWeeney rejects two cases of Mr. Stanley Boyd's which we accepted. He tabulates one case rejected by Fitz which we did not include, but which perhaps it seems reasonable to accept. He does not include, as we did, Oppolzer's case, but mentions it with those of Williams, Bailey, and Heyfelder "as almost certainly belonging to this category." Two cases are in his tables in which an "ulcer" is described and are not included in our table. He does not mention three cases of Dr. S. West, of Dr. C. J. B. Williams, and of Guersent which are in our table He adds cases by Harrison and Wolf

and three (published since the compilation of our table) by himself, Heintze, and Lorrain Smith. Taking the 18 cases in our table and those added by him, five in all, and putting in those accepted by him but rejected by us (in two of these the word "ulcer" has led to confusion), the total number of all cases would seem to be about 25, a number sufficient to show, as Dr. Bowles and I contended in our paper, that this injury is not so rare as is commonly thought to be the case.

I am, Sirs, yours faithfully,

Half Moon-street, W., July 30th, 1900. G. R. TURNER.

"PADDLING IN THE SEA."

To the Editors of THE LANCET.

SIRS,—The letter of Mr. William Knight Treves on the above topic in THE LANCET of July 21st states that "for some reason or other paddling is very generally condemned by the medical profession." Presuming that Mr. Treves has good grounds for making such a statement—and I confess that I was not aware of such a prejudice—I cannot understand on what grounds paddling can be considered objectionable. The extensive sands of the Dee estuary are greatly resorted to by children of all ages for the express purpose of bathing and paddling, but principally for the latter delightful enjoyment. We have here, too, one of the largest preparatory boys' schools in England, the pupils of which school constantly go long paddles. I have therefore much pleasure in adding my testimony to that of Mr. Treves that paddling is not only delightful but beneficial to all children through the summer weather. My wish to help Mr. Treves in doing a "good turn to the children" is based not only on the experience gained as a medical man but also as a parent. It is usually the bad eating habits of children, not paddling, that "sends the blood to the head," whatever that picturesque phrase may mean. I am, Sirs, yours faithfully,

H. M. SPEECHLY.

Parkgate on the Cheshire Dee, July 20th, 1900.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

To the Editors of THE LANCET.

SIRS,—Herewith I enclose copy of reply received by me last night from the Local Government Board in reference to the memorial from medical officers of the more remote parishes of the Highlands and islands which was recently presented to the Board. You will see by it that the Board favour the proposal but have not the power to insist upon the parish councils granting the privilege. While I have no doubt that some parish councils would grant their medical officers a paid substitute, yet I fear we shall have to wait for an alteration of the Local Government (Scotland) Act before we can hope to see the reform general.

I trust you will kindly publish the reply, and am, Sirs,

Yours faithfully,

JAS. F. D. MACARA,

Durness, Lairg, Sutherlandshire, July 27th, 1900. Medical Officer, Durness.

[COPY.]

Local Government Board, Edinburgh, July 25th, 1900.

SIR,—With reference to your letter dated 27th ultimo enclosing a memorial by the medical officers of the more remote parishes of the Highlands and islands of Scotland as to the difficulty experienced by them in obtaining an annual holiday, I am to say that this matter has received careful consideration from the Board. In reply I am to say that the Board desire to express their sympathy with the views expressed in the memorial, and having regard to the very special circumstances and conditions under which the duties of the memorialists have to be discharged are of opinion that it would be to the advantage of the public service that parish councils should grant an adequate holiday to their medical officers, defraying at the same time the cost of a substitute to act for the doctor during his absence. But, as the Board have often had occasion to point out, their powers in regard to the relation subsisting between parish councils and their medical officers are very limited, being derived solely through the medium of the grant in aid of medical relief to the conditions in connexion with the distribution of which parish councils are required to conform in order to participate. I am to add that the rules of the grant have been held to be stereotyped by the Local Government (Scotland) Act of 1889, so that, as will be seen, additional legislation would be necessary to give general effect to the views of the medical officers. The Board, however, direct me to say that they are prepared to do the best within their power—that is, they will offer no objection to the cost of substitute medical officers being ranked against the medical relief grant in the more remote parishes of the Highlands and islands of Scotland, provided that the local circumstances are such as are described in the memorial and provided care be taken that the parish council shall pay only for the services rendered by the substitute to the paupers and not for his services to the medical officers' private patients. The Board have forwarded a copy of this letter to Lord Lister.

I am, Sir, your obedient servant,

G. FALCONAR-STEWART, Secretary.

Dr. Macara, Durness, Lairg.

THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE.

To the Editors of THE LANCET.

SIRS,—In consequence of the appearance of an article in the *Times* of to-day we, the members of the honorary medical and surgical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, now desire to address you on the crisis in the affairs of our hospital which has been brought about by the acts of the board of management during a number of years.

The relations between the medical staff and the board of management have shown increasing signs of strain for several years past, in proportion as the board has more and more relegated its functions and authority to the hands of a paid official, Mr. Burford Rawlings, who, from the position which he originally occupied as secretary, has been advanced to the dignity of "secretary and general director." Those practically acquainted with hospital affairs will scarcely need to be told that the effect of such an appointment is that although the management of the hospital may be nominally directed by a board the institution is practically, to a great and dangerous extent, in the hands of one man. That the autocracy of the office referred to should be as complete as possible it is enacted in the rules of the hospital that no member of the medical staff shall be allowed to have a seat on the board. The "secretary and general director" is thus relieved of any inconvenience which might possibly be occasioned by the presence on the board of persons professionally acquainted with the work and necessities of a medical institution and able to supply essential information and counsel.

It is not surprising, therefore, that for a number of years the medical staff have found that the administration of the hospital was becoming more and more unsatisfactory. Ten years ago, with the view of remedying this state of things, the medical staff suggested to the board of management that two of the medical officers should be annually elected members of the board (12 members) as their representatives. This was refused and various substitutes were proposed by the board which have proved failures owing to acts of the board. The first of these substitute arrangements was summarily terminated in 1893 by a decision of the board of management, no reason being assigned. The last of these arrangements came to an end in 1899 in consequence of a breach of faith on the part of the board of management. Since then the medical staff have renewed their claim for direct representation, which the board have persistently refused, and as a result a state of acute dissension between the two bodies has existed since the early part of last year. In July, 1899, the chairman of the Distribution Committee of the Hospital Sunday Fund warned the secretary and general director that unless the want of harmony ceased the customary grant would not be renewed in the following (this) year, at the same time expressing the opinion that the medical staff should be directly represented on the board of management. He also instructed the secretary director to communicate these observations of the committee to the board of management. We must here observe that the secretary director, Mr. Burford Rawlings, in reporting to his board did not communicate the whole of the instructions he had received from the chairman of the Sunday Fund Committee, but informed them that the chairman (Sir Sydney Waterlow) had "confined his observations to an expression of regret that perfect harmony did not exist between the board and the staff and the expression of the hope that this state of things would have passed away before next year."

Between the meeting of the Sunday Fund Committee last year and that held on July 19th the medical staff, after further fruitless negotiations with the board of management, determined to inform the governors of the hospital not only

of the defects of its constitution but also of certain administrative evils which had resulted therefrom. To this end the medical staff issued to those governors whose names and addresses could be discovered by them a statement and report of the condition of the affairs of the hospital. This report we enclose together with other documents. It should be noted that an application by the medical staff for a copy of the official list of the names and addresses of the governors was refused by the board of management. The next step was the appointment by the board of a sub-committee consisting of three of their own members to investigate the grave defects to which their attention had been called and for which they were responsible. The medical staff naturally at once repudiated such an unsatisfactory inquiry and urged upon the governors that any committee of investigation should be an independent one and not appointed by the body whose acts were called in question.

The final stage of this dispute was reached at the recent meeting of the Distribution Committee of the Hospital Sunday Fund. The Sunday Fund Committee, bearing in mind their instructions to the board of management of last year, issued this year a request to the board and medical staff respectively to send representatives to their meeting on July 19th.

After hearing both sides the Distribution Committee of the Hospital Sunday Fund adopted the following resolution for submission to their council:—

> In consequence of the serious dissensions between the staff and the board of management at the National Hospital for the Paralysed and Epileptic, Queen-square, your committee held a conference at which both were fully represented. After a long discussion it was decided that no award could be recommended until the existing differences had been satisfactorily arranged.

In conclusion, we desire only to reaffirm our view that the affairs of the hospital need a searching inquiry and its constitution thorough reform. We are unanimous in our resolve to put an end to the evils of the present system of administration. We are, Sirs, yours obediently,

J. HUGHLINGS JACKSON, M.D. St. And., F.R.C.P. Lond., F.R.S.,
THOMAS BUZZARD, M.D., F.R.C.P. Lond.,
Consulting Physicians to the Hospital.
R. BRUDENELL CARTER, F.R.C.S. Eng.,
Consulting Ophthalmic Surgeon
H. CHARLTON BASTIAN, M.D., F.R.C.P. Lond., F.R.S.,
W. R. GOWERS, M.D., F.R.C.P. Lond., F.R.S.,
DAVID FERRIER, M.D. Edin., F.R.C.P. Lond., F.R.S.,
J. A. ORMEROD, M.D. Oxon, F.R.C.P. Lond.,
Physicians to In-patients.
CHARLES E. BEEVOR, M.D., F.R.C.P. Lond.,
HOWARD H. TOOTH, M.D., F.R.C.P. Lond.,
JAMES TAYLOR, M.D. Edin., F.R.C.P. Lond.,
J. S. RISIEN RUSSELL, M.D Edin., F.R.C.P. Lond.,
Physicians to Out-patients.
W. ALDREN TURNER, M.D. Edin., F.R.C.P. Lond.,
FREDERICK E. BATTEN, M.D. Cantab., M.R.C.P. Lond.,
Assistant Physicians.
FELIX SEMON, M.D. Berlin, F.R.C.P. Lond.,
Physician for Diseases of the Throat.
VICTOR HORSLEY, F.R.C.S. Eng., F.R.S.,
CHARLES A. BALLANCE, F.R.C.S. Eng.,
Surgeons.
R. MARCUS GUNN, F.R.C.S. Eng.,
Ophthalmic Surgeon.
A. E. CUMBERBATCH, F.R.C.S. Eng.,
Aural Surgeon.

(The names of absent members have been added by authority.)

July 27th, 1900.

"THE APPOINTMENT OF SPECIAL MEDICAL OFFICERS FOR THE CERTIFICATION OF LUNATICS."

To the Editors of THE LANCET.

SIRS,—What Mr. Polhill Turner proposes in THE LANCET of July 28th is identical with what I proposed in a short pamphlet entitled "Proposals for the Amendment of the Laws relating to Lunatics and Habitual Drunkards," published in 1885. Many, if not all, of the anomalies now connected with the process of certification of lunatics would be obviated by the adoption of some such plan, and much benefit will accrue, not only to the public, but to the profession, if such a plan were to receive your powerful advocacy. Only those whose fate it is to have to do with lunacy certificates, both in their inception and in their completion, know how gladly a simplification of the process such as that proposed would be welcomed.

I am, Sirs, yours faithfully,

Hendon, July 31st, 1900. W. H. KESTEVEN.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University College, Liverpool: The Work of the Medical Faculty.

THE medical faculty, which may be regarded as the foundation-stone of University College, continues to flourish. Professor A. M. Paterson, the Dean of the Faculty, in his recently-issued report for the past year remarked on steady progress in all departments. The number of students attending classes during the winter session of 1899-1900 (excluding those taking out hospital practice) was 194. In 1897-98 and 1898-99 the numbers were 169 and 188 respectively. There were 85 new entries, including 60 medical, 13 dental, and 12 entering for special courses. In the previous winter session there were 88 new entries—54 medical, 19 dental, and 15 for special courses. During the present summer session the total numbers have been 163, including 10 new entries and 16 for special courses. Last summer the total reached 144, including 12 new entries and five for special courses. These figures represent the largest numbers in the history of the medical school. The increase was mainly due to students taking special courses or parts of their medical curriculum. Professor Paterson elaborates the subject of buildings. Last year the plans of the new building were devised and passed. The scheme was divided for building purposes into three sections, which was necessitated through lack of funds. The first section, comprising an anatomical museum and dissecting-room, is now being erected. The second section will include, in addition to the main staircase, the laboratories for surgery and the lecture theatres. The third section, which will complete the block, will contain laboratories and smaller rooms necessary for teaching, investigation, and administration in the several departments of the school. Professor Paterson regrets that the surgical section of the building has not already been begun, as the completion of the old block would be expedited by the erection of that section. The estimated cost of the three sections is £30,000, towards which promises of £14 000 have been received. As each section of the building is estimated to cost about £10,000, a start will be made with the second section when the requisite sum of £6000 has been guaranteed.

Woolton Convalescent Institution.

The twenty-sixth annual meeting of the Woolton Convalescent Institution was held on July 21st. The institution is largely self-supporting; payments made on behalf of patients amounted last year to £1729 4*s*., whilst the total receipts realised £4701 5*s*. 4*d*. Subscriptions amounted to £944 8*s*. 6*d*. The Hospital Sunday Fund contributed £315, the proceeds of the city ball amounted to £159 0*s*. 8*d*., and during the year donations had been received amounting to £415 4*s*. The number of patients received into the institution was 2661, which was six short of the previous year, but showed 25 per cent. above the average for the past 10 years. The accounts showed an increase in the debit balance from £63 to £354, which was due to necessary alterations in the institution. The number of special subscriptions had increased and Mr. T. S. Timmis had endowed a free bed, bringing the number of free beds up to 20. The popularity of the institution is evidenced by the fact of the number of applicants for admission. In the year 1878 the number of patients was 638 and the annual subscriptions were £110, as compared with 2661 patients and £944 recorded for the past year. The grounds of the institution have been considerably improved at an expense of £1206, and the committee have spared no effort to make the institution comfortable and attractive. The Council in their report referred with great regret to the death of Sir Henry Tate, Bart., who had closely connected himself with the institution for many years, having been the honorary treasurer

in its early days and a liberal donor to its funds. A number of seats for the grounds were presented by the Lord Mayor, Sir William Tate, Bart., and Mr. S. S. Bacon. Complimentary references to the benefits of the institution were made by the Lord Mayor, Monsignor Nugent, Sir Henry Tate, and others.

Hospital Saturday and Sunday Funds: Distribution of Grants to the Charities.

The joint committees of the Hospital Sunday and Hospital Saturday Funds distributed the following amounts among the local charities:—Royal Infirmary, £2860; Royal Southern Hospital, £1950; Northern Hospital, £1690; Stanley Hospital, £910; Liverpool dispensaries, £780; Queen Victoria District Nursing Association, £780; Infirmary for Children, £780; Eye and Ear Infirmary, £520; Consumption Hospital, £455. A sum of £2080 was also distributed among minor charities, making a grand total of £12,805.

July 31st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Death of James Rodger, M.A., M.D. Aberd., of Aberdeen.

LAST week Aberdeen lost one of its best known medical practitioners, Dr. James Roger. The deceased was born in 1841 in Aberdeen, where his father owned the Gilcomston tanworks in Rodger's-walk. Dr. Rodger had a distinguished university career. In 1865 he graduated M B., C.M., both with highest honours; and from 1865 to 1867 and from 1868 to 1871 he was demonstrator of anatomy at Aberdeen University under the late Professor Sir John Struthers. During the interval (in 1867 and 1868) he studied at Paris, Berlin, and Vienna. He volunteered his professional services during the Franco-Prussian war, in recognition of which (including the organisation of the Saarbrucken hospital) he received from William I. of Germany the war medal for non-combatants, and on his return to Scotland in 1871 he was awarded a money gratuity by the International Society for Aid to the Sick and Wounded in War. He was physician to Aberdeen General Dispensary from 1870 to 1876, and from 1869 for about 17 years he was pathologist to Aberdeen Royal Infirmary, of which he was, further, assistant physician from 1886 to 1897, being thereafter honorary physician. In 1874 he was appointed one of the examiners in anatomy, pathology, and medicine at Aberdeen University. He also held various other public appointments in his native city, such as physician to Robert Gordon's College; secretary, treasurer, and president in succession of the Aberdeen Medico-Chirurgical Society; and surgeon-lieutenant-colonel of the 1st Aberdeen Volunteer Artillery. He had a large private practice, consultant and otherwise, and though somewhat abrupt in manner, his geniality, general cleverness, and professional ability were widely recognised. Dr. Rodger married a daughter of the late John Hill Burton, historiographer royal for Scotland, author of "The Scot Abroad," "The Book Hunter," &c.; and one of the last acts of his life was to offer as gifts to Marischal College, Aberdeen Free Library, Aberdeen Art Gallery, &c., replicas of a noted bronze bust of his father-in-law.

July 31st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Water Supply.

LITTLE is being done among the learned societies of Paris just now, for all the active members are reserving their most interesting communications for the great International Congress of Medicine which is on the point of being opened and which absorbs everything. The Academy of Medicine is the only one where there has been an important discussion, and in this case the subject considered was one of general interest at the present time, being no other than the state of the Paris water-supply, which attracts attention regularly every year during the hot weather. The temperature has now become milder, but it was exceptionally high during the last fortnight, on one of the days of which there was the highest temperature of the century in Paris. The consumption of water naturally increased at once and even commenced to exceed the anticipations of the engineers, who announced last spring that precautions had been taken and that in consequence of the opening up of new sources of supply and the construction of new filtering beds the Parisians would never again be in want of water, even with the most extravagant waste and with the increase of the population during the Exhibition. The quantity provided for each inhabitant of Paris is, in fact, 230 cubic metres (50,620 gallons). Nevertheless, it soon became insufficient, as had to be admitted by the water company itself, which promptly posted up throughout Paris the notices with which it favours the public every year, warning Parisians to limit their consumption in order to prevent an early failure of the supply. It is undeniable that owing to the hot weather there is an excessive consumption of water. For the purpose of saving a penny-worth of ice, people do not hesitate to let the water run for hours in order that it may be cool for drinking. The first water which comes after the turning of the tap is in fact quite hot, because the service pipes are generally outside the houses and are heated all day by the sun. Ineffectual attempts have been made to compel the use of water taps which remain open only so long as a hand is on them. Small metal nuts with an internal screw are sold which enable the taps to be kept always open. But from what has just been said it will be seen that with the usual rate of flow from a tap even if it was open all day long only a small portion of the allowance of each inhabitant would pass through it. It is the water company itself which is the real offender. If the spring water were reserved solely for human consumption the quantity supplied would be ten times more than the population required, but in actual fact the water company uses this spring water for all purposes, for lifts, street-watering, &c., in all the high-lying districts where the Seine water cannot be supplied under sufficient pressure by means of the company's pumping machinery. The remedy would be to use more powerful pumps and to fit up all the houses with a double set of service pipes, one for spring water and one for Seine water, but the company prefers not to incur the expense which would fall upon it alone. By its agreement with the city of Paris the water company is not required to provide pipes, mains, or machinery, the water being supplied to the company free of charge by the city, which undertakes the collecting of it and the construction of the means of conveyance. It is easy to understand that from motives of economy the company prefers to make general use of spring water which is delivered naturally at a sufficient pressure, rather than to erect costly machinery for raising Seine water to the requisite height and to provide a separate service for it in each house. This is the real difficulty of the question. At last the Academy of Medicine has intervened. The company having stopped the supply of water during the night in order to allow the reservoirs to become full everybody complained, especially the fire brigade—the latter on the ground that fires generally broke out at night and that the pressure of the water was insufficient for the fire engines. M. Laveran and M. Henriot opened a discussion in the Academy on this subject, and proposed the following motion which was passed unanimously:—

> The Academy of Medicine feels itself compelled to call the attention of the public authorities to the state of the Paris water-supply which is at the present time quite inadequate. The Seine water not being at sufficient pressure is in certain localities replaced by spring water being used for washing purposes. If there was a proper supply of Seine water there would be no deficiency of spring water for human consumption.

The Academy also passed the following motion:—

> A double service for spring water and for Seine water ought to be established everywhere, so that they may be kept quite separate from one another.

The Prohibition of Spitting.

Some days ago announcements to the following effect, printed on small white bills (the official colour), were to be seen on the walls of the public buildings everywhere in Paris:—

> NOTICE.—In the interests of public health and with the view of checking the spread of tuberculosis persons are requested not to spit on the ground ("*par terre*").

This was the result of a resolution of the municipal council and of a discussion on a report presented by M. Fortin last March. As might be expected some journals complained, saying that spitting in omnibuses, tramcars, and railway carriages had been already prohibited, and asking where people might spit if they must not spit on the ground. The

object of the notice, however, was only to discourage spitting on the pavement ("*sur les trottoirs*") and not in the roadway.

July 31st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Diseases of the Philippines.

AN interesting paper was read recently before the Southern Idaho Medical Association by Dr. W. D. Springer of Boise in that State, who served as surgeon of the Idaho Regiment in the Philippines. He said that among the troops malaria, small-pox, typhoid fever, dysentery, tropical diarrhœa, intestinal parasites, and skin diseases were the most common maladies. Typhoid fever prevailed on an extensive scale, but amœbic dysentery was the most frequent and fatal disease. A complaint known as "Manila itch," "Dhobie itch," or "Filipino itch" was the most common of the skin affections. This is of parasitic origin and peculiar to the tropics. It spreads very rapidly during the hot, damp season. It attacks first the perineal region and the axilla. After the acute stage is over and the inflammation is somewhat subsided scales rub off and the inflammation gets down about the feet, where it spreads. The burning and itching are much worse at night, and cause much suffering. The patient unconsciously scratches the part affected, and this in many cases causes boils. The regions occupied by the disease always remain pigmented. This trouble was almost universal among the troops. Small-pox, Dr. Springer stated, prevailed all the year in Luzon and the troops suffered severely from it. The report of the Surgeon-General attributed over 200 deaths to this cause. Dr. Springer, however, drew attention to the fact that where vaccination was carefully practised and reliable lymph was used small-pox was absent, and he was of opinion that both its prevalence and its mortality were owing to the carelessness shown in performing the operation and the inferior quality of the vaccine lymph.

Public Baths in the State of New York.

There has been some difference of opinion recently as to who is entitled to the chief credit for the establishment of free public baths in the State of New York. This honour has been claimed in several journals by the Hon. Goodwin Brown. The *Medical Record*, however, took up the cudgels for Dr. Simon Baruch and proved fairly conclusively that this good work was first commenced on his suggestion. The *New York Herald* of October 25th, 1891, referring to the opening of some baths built by funds supplied by Baron Hirsch, says, "These rain baths are something entirely new for this country. Attention was first called to this system of baths in this country by Dr. Simon Baruch. Dr. Baruch spent six months in Europe studying the baths of all foreign nations. On his return he brought the subject before the Academy of Medicine and headed the rapidly-growing movement for public baths." The report of the committee on public baths appointed by the Mayor of New York, transmitted to the Legislature on March 25th, 1897, was that out of 480 houses visited only 17 had baths and only three houses of each 100 had bath-rooms and that there were only three public baths in the city of New York. The Bill, which became law in 1895 and for which the Hon. Goodwin Brown was mainly responsible, reads as follows: "All cities of the first and second class shall establish and maintain such number of free public baths as the local board of health may deem to be necessary." This is the first general legislation on the subject ever enacted in the United States and the first bath erected under its provisions was opened in Buffalo in January, 1897. It has a capacity of 1000 baths daily and cost $8000 (£1600). In Rochester a bath has been erected to all intents and purposes on similar lines to that of Buffalo at a cost of $5000 (£1000). In Albany the money has been appropriated, and plans prepared, for a bath in that town the cost of which will be $22,000 (£4400). In Greater New York the first public bath is nearing completion and is likely to be opened in the course of a month or so. It is situated on the water front in a crowded part of the city, and will cost $100,000 (£20,000). It will have a capacity of 3000 baths per day—one-third each for women, men, and boys The United States is very many years behind most European countries so far as free public baths are concerned. The following cities contain public baths:—Boston, Chicago, Yonkers, New York, Brookline (Mass.), Providence, Philadelphia, Worcester, Buffalo, and Rochester. In a country, therefore, which contains upwards of 80,000,000 people, there are only about a dozen cities that provide bathing facilities. The health authorities seem to be becoming impressed with this lack and probably in the course of a few years the United States will be as well equipped with public baths as are countries on the other side of the Atlantic.

The Disinfection of New York.

An anti-germ crusade has recently been carried on by the active Board of Health in this city. An appropriation of $20,000 (£4000) was recently made to the Board of Health for the purpose of cleansing the unsavoury districts of New York. Probably the occurrences in the Chinese quarter of San Francisco impelled the authorities of New York to set their house in order and to run no risk of the plague or any other infectious disease gaining a foothold there. At any rate, be the cause of the action what it may, the proceeding can have none but good effects, and the activity of the New York Board of Health is a useful object-lesson to such bodies everywhere. The sanitary condition of New York, as proved by its vital statistics, has improved to a wonderful degree within the past few years. For this the chief credit is due to the Board of Health.

July 14th.

Obituary.

JOHN STUART STEVENSON, M.R.C.S. ENG., L.R.C.P. LOND.,

CAPTAIN, INDIAN MEDICAL SERVICE.

In THE LANCET of July 28th we announced the sudden death of Captain J. S. Stevenson of the Indian Medical Service. A further telegraphic message has now conveyed the news that this promising young officer fell a victim to heat apoplexy at Lucknow on Friday, July 20th.

John Stuart Stevenson was born at Benares on August 24th, 1872, where his father was stationed as the medical officer of a battery of Royal Artillery. He was educated at St. George's College, Croydon, matriculated at the London University, was entered as a student at St. Bartholomew's Hospital, and became a Member of the Royal College of Surgeons of England and a Licentiate of the Royal College of Physicians of London in 1895. In the spring of 1896 he took the fifth place among 17 selected candidates for the Indian Medical Service, and passing through the Army Medical School in the summer session of that year was duly gazetted as a Surgeon-Lieutenant on July 29th. Within three months of his arrival in India he was appointed to do duty on the railway as an examiner to prevent the spread of the plague in the north of India. Few men of his years had such opportunities of studying this disease, for he was subsequently sent to Bangalore on plague duty, and last year he was sent to Mauritius as "special plague officer," a position which he occupied with great credit for about a year. While at Mauritius he volunteered for active service in South Africa, but his services could not be spared. When the plague was stamped out in Mauritius and he returned to India he was appointed to the important post of deputy-sanitary-commissioner of the North-West Provinces—a post which he had held for a brief period when he so suddenly passed away. Captain Stevenson was a general favourite in society and won considerable reputation while in the Mauritius for the careful way in which he carried out the very important charge committed to him. He served on the North-West Frontier of India in 1897-98, when he was with the Tirah force and in the operations in the Mamund country, for which services he received the medal and clasp. He was duly promoted to be a captain on July 29th, 1899, and was considered to be one of the most rising young officers of the service. He was the only son of Surgeon-General W. F. Stevenson, now with Lord Roberts in the Transvaal, who at the opening of the war was taken from his appointment of professor of surgery in the Army Medical School, Netley, and sent out to South Africa as principal medical officer on the line of communications in Cape Colony and consulting surgeon to the forces. To him who in the midst of an arduous campaign has now to face this great sorrow and to the other members of the family we offer our heartfelt sympathy.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT IPSWICH.

THE sixty-eighth meeting of the British Medical Association was opened at Ipswich on Tuesday, July 31st, under the presidency of Dr. William Alfred Elliston, senior surgeon to the East Suffolk and Ipswich Hospital. This is the first occasion upon which the Association has met at Ipswich.

Ipswich, although it cannot lay claim to the ancient history and natural beauties of Edinburgh or to the naval and military importance of Portsmouth, has nevertheless peculiar interests of its own. It will always be remembered as being the birth-place of Cardinal Wolsey, of whose connexion with his native town a sad memorial remains in the crumbling Wolsey Gateway—all that is left of the demolished college with which Wolsey intended to endow Ipswich. Less fortunate than its founder's other great educational establishment at Oxford, it fell into the same rapacious hands which so nearly destroyed St. Bartholomew's Hospital.

The streets of Ipswich are narrow, yet they are singularly clean and well kept, while there still remain many beautiful examples of old domestic architecture. Perhaps the most notable is the "Ancient House," dating from 1567, though the ornamentation, we should fancy, was somewhat later, as it is distinctly Jacobean in style. Another striking building is the Neptune Inn. Christchurch Mansion, a fine old Elizabethan house, together with its park, now belongs to the town.

The systems of water-supply and drainage of Ipswich are worthy of note. The water is derived from chalk at some considerable depth and hence in quality is similar to that of the Kent Company's wells. At present there is practically little adopted in the way of actual purification of the sewage. What is done is that the sewage is screened at the outfall and after some attempt at precipitation is allowed to flow into the river Orwell without further treatment. The district, of course, is very flat and somewhat unfavourable to satisfactory sewage disposal. Indeed, the Stoke and Marsh districts are too low for connexion with the main drainage system which depends upon gravitation. Consequently recourse is had to the Shone pneumatic system which is applied in conjunction with the Hermite process of treating sewage with electrolysed salt water. The salt water of the estuary of the Orwell affords an abundant supply of material for this purpose. The streets of the town appear to be well kept and the reproach of being "smelly" which was at one time levelled against Ipswich and its thoroughfares has been removed.

Dr. William Alfred Elliston, the President-Elect, gave a dinner on Monday evening, July 30th, to the members of Council, the presidents of sections, and others. The following were among the guests: the Lord Bishop of Norwich, the Lord Lieutenant of Suffolk, the High Sheriff of Suffolk, the Mayor of Ipswich, Dr. Dawson Williams (the Editor of the *British Medical Journal*), and Dr. H. P. Cholmeley (representing THE LANCET). There were only two toasts, that of "Her Majesty the Queen" and that of "The Colonial Members." To the latter Professor T. G. Roddick of Montreal, whose name had been coupled with the toast, replied. On the afternoon of the same day Mrs. Elliston received, at Stoke Hall, the members of the Local Committees and such members of the Association as had arrived in Ipswich.

The space devoted to the Annual Museum was somewhat scattered, though this fact afforded an excellent opportunity of dividing the exhibits into distinct classes. What is known as the Public Hall in Westgate-street was set apart for the display of food and food products, drugs and mineral waters, while the old museum rooms close by were devoted to the exhibition of surgical instruments, hospital appliances, aseptic furniture, &c. The Public Hall admitted of a more artistic arrangement of the exhibitors' stalls than was possible in the Drill Hall at Portsmouth last year or at Edinburgh in the previous year. The exhibitors, indeed, must have found it a welcome change to have been able to place their exhibits in a structure having no glass roof with the hot sun's rays playing upon it and possessing some pretence at design instead of that rectangular precision of the average drill hall, which has been provided on previous occasions.

From the point of view of structure the Public Hall in Westgate-street may be regarded as resembling the Queen's Hall in London, having a gallery and orchestra-platform. At intervals a selection of music was provided. Despite the ample space afforded the Exhibition was decidedly on a small scale when compared with those of previous years. One very notable and commendable advance in the direction of accommodation was the provision of seats between the rows for the visitors and a smoking lounge. The stalls were on the whole tastefully arranged and were practically ready for inspection on Tuesday, though the attendance on that day was somewhat meagre. We may repeat what we said on the occasion of last year's meeting that the Organising Committee might make this feature of the annual meeting more attractive and interesting to the members by including amongst the exhibits a selection of a really scientific and instructive character. At present it may be said that demonstrations of the x rays are the only things laying claim to this description.

In another column will be found the first contribution of a special account of the exhibits at the annual museum, for which purpose the order of treatment adopted in previous years will be retained as being on the whole the most convenient. This is as follows:—1. Drugs. 2. Foods and food products. 3. Sanitary appliances, disinfectants, &c. 4. Surgical instruments and appliances. 5. Mineral waters and beverages. 6. Publications. 7. Miscellaneous.

St. Mary-le-Tower was appointed as the church for the opening service, and at 11 A.M. on Tuesday the edifice was filled with a congregation composed of the members of the Association and their friends, amongst whom were a great number of ladies. The order of service was appropriate to the occasion and the Lord Bishop of Norwich, the Right Rev. John Sheepshanks, delivered a somewhat long discourse, in which the peroration was the most impressive feature. The text was the oft used one from the uncanonical book of Ecclesiasticus (chap. xxxviii. verses 13 *et seq.*):

"Honour the physician with the honour due unto him, for the use ye may have of him: for the Lord hath created him.
For of the Most High cometh healing, and he shall receive honour of the king.
The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration.
The Lord hath created medicines out of the earth, and he that is wise shall not abhor them."

The musical service was admirably rendered as it was tastefully appointed. The offertory was, as on previous occasions, devoted to the British Medical Benevolent Fund and we learn that the proceeds amounted to 20 guineas.

The corporation of Ipswich was represented by the mayor, aldermen, and councillors who were present in state attended by the sword and mace bearers. The service formed a fitting and imposing prelude to the proceedings of the Association.

On the afternoon of Tuesday, July 31st, Mr. D. Ford Goddard, M.P., gave a garden party to the members of the Association and their friends at Oak-hill. Many of the leading townspeople and local residents were invited to meet the Association, and in all about 500 were present. The weather was beautifully fine, music was provided by the Ipswich Town Band, and a most enjoyable afternoon was spent.

In many ways the minds of all of us have been for nearly a year past exercised with affairs in South Africa. It therefore comes as a somewhat remarkable coincidence that a resolution which may have the most far-reaching effects upon the medical profession should have been carried at the second general meeting (held on August 1st), at the instance of a member from Cape Town—namely, Dr. C. F. K. Murray, President of the Cape Town Branch of the British Medical Association, who proposed the following motion:—

That this meeting resolves that the Council be requested to issue a circular to all branches of this Association inviting them to express an opinion and to submit proposals on the question of the "wage-limit" as applied to clubs, provident dispensaries, and societies, &c., with a view to suggesting a reasonable and fair working basis; furthermore, that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

We have in these columns so frequently and so earnestly insisted upon the necessity of the wage-limit that it is a great pleasure to us to be able to record the passing of this resolution, and we congratulate both Dr. Murray and the Association upon the fact.

Another most important decision arrived at at the same meeting was that agreeing to the appointment of a committee consisting of 24 members to consider and report upon the best means of re-organising the constitution of the Association, 12 members being nominated by the Council and 12 by the general meeting—the whole 24 members being eventually elected by the members assembled in general meeting. It was understood that the Council would submit the names of their nominees on the following day (Thursday) at the general meeting and that the full committee would likewise be settled on the same day.

As it is proposed that the committee should report to the branches by Feb. 1st next, in order to present a complete scheme of re-organisation to the annual meeting at Cheltenham, there can be no question that much has to be accomplished in the small time at the disposal of the committee, and there can be few who are sanguine enough to expect the committee to attain its object and present a workable scheme within the period suggested. True, there is the now abandoned scheme of constitution presented by the Council to, and rejected by, the Exeter Hall meeting which should at least form a very substantial nucleus; but every well-wisher of the Association, and none more heartily than ourselves, must fervently hope that no attempt will be made to pass a hurriedly prepared scheme which may in the end not attain the desired result.

At the invitation of the Gloucester Branch it has been decided to hold the next annual meeting of the Association at Cheltenham, and Dr. G. B. Ferguson has been appointed President-elect.

THE GENERAL MEETINGS.

THE FIRST GENERAL MEETING.

The first general meeting of the Association was held in the Central Hall of the Higher Grade School at 3 P.M. on Tuesday, July 31st, the Council being well represented on the platform, and some 150 members of the Association being present in the body of the hall.

Mr. WARD COUSINS, the retiring President, took the chair, and moved that the minutes of the last annual meeting be confirmed, which was agreed to.

The CHAIRMAN said that his first duty was a very sad one. Everyone present had no doubt heard of the very sudden death of the Duke of Saxe-Coburg Gotha, better known to us as the Duke of Edinburgh. He was sure that everyone present would sincerely join with him in the vote of sympathy which he was about to propose. The vote was couched in the following terms:—

That this meeting of the members of the British Medical Association, assembled at Ipswich, desire to express their deep sympathy with Her Most Gracious Majesty the Queen, H.R.H. the Duchess of Edinburgh, and all the members of the Royal Family at the sad and sudden death of H.R.H. the Duke of Edinburgh and Saxe-Coburg.

Mr. Ward Cousins then vacated the chair in favour of Dr. William Alfred Elliston, Senior Surgeon to the East Suffolk and Ipswich Hospital and President for 1900–1901.

Dr. ELLISTON took the chair amidst applause, and moved that His Royal Highness the Prince of Wales, K.G., Hon. F.R.C.P., Hon. F.R.C.S., be elected an honorary member of the Association. He said that His Royal Highness had kindly intimated that he would be pleased to become an honorary member.

Professor RODDICK of Montreal seconded the motion, and expressed the hope that at some future meeting the Prince would honour them with his company.

The motion was carried unanimously.

Sir WALTER FOSTER, M.P., moved a vote of thanks to the retiring President, Mr. Ward Cousins, for so ably presiding over the Association during the past 12 months, which was seconded by Dr. C. HOLMAN and agreed to unanimously and suitably acknowledged by Mr. WARD COUSINS.

The President of the Council, Dr. JOHN ROBERTS THOMSON, then moved that the annual report and statement of accounts be adopted. He said that he knew that the moving of the adoption of the report was considered an opportunity for members to speak upon various points and, therefore, he would not detain the meeting with any remarks of his own.

Mr. ANDREW CLARK, the treasurer of the Association, seconded the motion in a few words.

The first member to rise to speak was Lieutenant-Colonel INCE, I.M.S., who expressed dissatisfaction with the action of the Council on certain points but congratulated the editor upon the Journal of the Association.

The report contained among other matters a paragraph about the Coventry Provident Dispensary wherein it was noted that

At the last annual meeting the Council was requested to ascertain whether any of the present medical officers of the Coventry Provident Dispensary were members of the Association and if so that they should be called upon to explain why they still continued to give their services to that institution. In their report these gentlemen claimed to have obtained several reforms in the last few years and hoped to obtain more, and that further, many of the statements made with regard to the institution were inaccurate.

The following motion was passed:—

Resolved: That the Council is glad that the medical officers of the Coventry Provident Dispensary are still endeavouring to get the rules altered and strongly recommends them to continue their efforts to obtain a wage limit as expressed in their letter of Oct. 8th.

In reference to the above Mr. G. BROWN considered that some stronger steps should be taken in the matter of the medical officers of the Coventry Dispensary, who should be called upon either to mend their ways or to cease being members of the Association.

Dr. R. SAUNDBY said that he could not see why the Coventry Dispensary should be specially singled out for r probation. He held no special brief for the Coventry Dispensary, and it was true that it had no wage-limit, but neither had the friendly societies any wage-limit. Gentlemen who held the posts of medical officers to friendly societies came down here and howled (uproar and loud cries of "Withdraw") at the Coventry Dispensary because it had no wage-limit, which was not fair. Dr. Saundby was

"Annals of Ipswich," by Nathaniel Bacon; and "Old much interrupted in the course of his remarks, and the Chairman appealed for order.

Dr. E. PHILLIPS of Coventry said that the Coventry Dispensary was condemned in 1892, when 25,000 persons belonged to it. The medical officers of the dispensary said that since 1892 they had been endeavouring to obtain reforms in the matter of the wage-limit, and apparently they were still endeavouring. The dispensary was condemned alike by THE LANCET and the *British Medical Journal*, and its advertisements were refused insertion by both these journals.

Dr. F. M. POPE of Leicester said that they must either let these medical officers alone or else expel them. There was no middle course. A motion for expulsion in a meeting like that, always raised the worst possible feelings. He was sure that they did not desire to do that. Even supposing a medical man started a practice at penny fees he did not believe the Association would be willing to expel him.

Mr. R. B. ANDERSON took up the subject of the Council's report on the question of the Midwives Bill. The terms of the report did not satisfy him. He therefore proposed a very lengthy rider to the section of the report in question, upon which a long, and in many ways irrelevant, discussion arose, the principal speakers being Dr. BRASSEY BRIERLEY, who harked back to the Coventry Dispensary question, Dr. J. HADDON, Dr. A. COX of Gateshead, who seconded the addition of Mr. Anderson's rider and said that THE LANCET *plébiscite* showed plainly that the feeling of the profession was against the Midwives Bill, and Mr. D. O'SULLIVAN. Finally Mr. VICTOR HORSLEY pointed out the danger of correcting one inaccuracy by another inaccuracy, and portions of Mr. Anderson's rider were undoubtedly inaccurate.

Mr. ANDERSON said that as the accuracy of his statement had been called in question he would withdraw his rider.

Amid cries of "Vote" the whole of the rider was eventually withdrawn.

Another paragraph in the report referred to the new Articles of Association in the following terms:—

> Certain difficulties and legal questions on the Articles of Association as adopted when the Association was first incorporated in 1874, which articles had been mainly drawn on the basis of the regulations of the unincorporated Association, having arisen, the Council consulted eminent counsel on the matter, and was advised to adopt amended regulations, as the Association had outgrown the old constitution. New regulations and articles were prepared by your Council and submitted to a special meeting of the Association held in London, on July 18th, but the resolution was not carried by the requisite majority.

A discursive conversation—it could not with justice be called a debate—arose over the last 10 words. Remarks were made for some two hours by Dr. LORIMER HART, Mr. R. B. ANDERSON, Dr. J. HADDON, Dr. BERNARD O'CONNOR, Dr. BRASSEY BRIERLEY, and others, in the course of which it was seriously proposed that the discussion on the report should be commenced *de novo* paragraph by paragraph. Finally, Mr. G. BROWN proposed that the sentence should simply run, "but the resolution was lost," which was carried.

Mr. VICTOR HORSLEY then said that he wished to draw attention to a leading article which had appeared in the *British Medical Journal* previously to the Exeter Hall extraordinary meeting. He contended that this article was not only an instance of *suppressio veri* but also of *suggestio falsi*. The article had intimated that discussion of the new articles which were desired to codify certain conditions would be allowed. At the meeting no discussion took place, while the new articles did not codify the machinery of the Association in the sense of amalgamating and simplifying its working, but changed the constitution of the Association. Mr. Horsley also complained that the report of the meeting presented to the members in the *British Medical Journal* was very incomplete. He therefore moved as an amendment that the following paragraph be omitted from that section of the report which spoke of the *Journal*:—

> The Council has every reason to believe that the *Journal* has proved increasingly useful to members. The publication of the proceedings of the last annual meeting and of its sections was commenced immediately after the conclusion of the meeting, and was completed before the end of November.

Dr. DAWSON WILLIAMS, who rose for the first time to address an annual meeting of the Association, regretted that his remarks were not to be on a more pleasant topic, and said that he took the entire responsibility for what appeared in the *Journal* and did not desire to shield himself behind the Council. He wished to be quite frank and would say that when the particular leading article to which Mr. Horsley had referred was written he himself had no idea that discussion would not be allowed. With regard to the observation in the same leading article to the effect that the design of the new articles was to codify, amalgamate, and make simple the articles a charge of *suggestio falsi* was made, Dr. Dawson Williams did not allow that that was an inaccurate statement of what the intentions of the new articles were. The intention was that the by-laws should be amalgamated with the articles; the intention was that the articles and by-laws should be codified; for if the articles were looked at it would be found that there were special resolutions amending articles, and the intention was to make certain additions. He was, however, inclined to admit that in the article referred to it was not sufficiently clearly stated what it was these additions were. As to the report of the meeting he could only print what was supplied to him. He considered it necessary that the report should appear in the *Journal* for the week in which the meeting took place and owing to the *Journal* going to press upon the day following the meeting a *verbatim* report was not practicable.

Mr. VICTOR HORSLEY eventually consented to withdraw his amendment on condition that his speech and the reply of Dr. Dawson Williams should be printed *verbatim* in the *British Medical Journal*. The report was then agreed to as amended, and the meeting adjourned.

THE (ADJOURNED) FIRST GENERAL MEETING.

The adjourned meeting was held on Tuesday evening in the Lyceum Theatre at 8.30 for the delivery of Dr. Elliston's presidential address. The attendance was good and amongst those present were the Mayor of Ipswich, Sir Charles Dalrymple, M.P., Mr. Alderman C. H. Cowell and Mr. Alderman S. R. Anness, together with several of the town councillors.

The MAYOR (Mr. W. A. Churchman) made a feeling reference to the deaths of the King of Italy and of the Duke of Edinburgh and moved:—

> That the President and members of the British Medical Association, assembled at their annual meeting, together with the townspeople of Ipswich, desire respectfully to express to Her Most Gracious Majesty their deep sorrow and sympathy at the severe loss Her Majesty has sustained in the sudden decease of the Duke of Edinburgh, and trusts the Almighty may afford to Her Majesty and the members of the Royal Family abundant consolation.

The resolution was unanimously agreed to.

The MAYOR then, in a few felicitous phrases, welcomed the members of the Association to Ipswich, and congratulated Dr. Elliston and the townspeople upon his selection as President, which they all looked upon as a very great honour.

Dr. ELLISTON rose amidst applause and thanked the Mayor for his kindly words. He then proceeded to read his presidential address as follows:

THE PRESIDENT'S ADDRESS.

[Dr. Elliston took as the title of the address "Some Incidents in the Evolution of the Modern Physician," and commenced by welcoming most heartily to East Anglia the sixty-eighth annual meeting of the British Medical Association. After commenting upon the growth of the Association during the quarter of a century since its last meeting in East Anglia and after detailing the various literary and scientific reasons why Ipswich should prove an interesting place of reunion, he continued:—]

East Anglia and Medicine.

It is 26 years ago since this great association met in East Anglia, in the city of Norwich, and it speaks for its ever-growing importance and utility that on that occasion there were some 6000 members only, and the scientific business of the meeting was conducted in four sections. On this occasion, the first meeting of the nineteen hundreds, the members have increased to over 18,000, of whom 4000 are members of our Colonial branches, and the scientific work needs 13 sections. The town in which we are assembled is one of much commercial importance. Manufacturers and merchants do a considerable business with many of our colonies. It is an ancient town, and there are many beautiful specimens of old houses, gateways, and corner posts. To those who desire a better acquaintance with its history I would refer them to "Round About Ipswich," by the late Dr. J. E. Taylor;

Corner Posts," by Mr. J. S. Corder, recently published. Great Englishmen have been associated with Ipswich in the past—Nicholas Bacon, the Lord Keeper, was a freeman of Ipswich; his son, the great Lord Bacon, represented Ipswich in two Parliaments, and in more recent times Lord Nelson was high steward. Thomas Gainsborough lived and painted here. Charles Dickens found Ipswich to be worthy of many scenes for his fertile pen; but the personal association which throws lustre upon Ipswich is the fact that the great Cardinal Wolsey was born here. It is still, I think, a standing reproach to Ipswich that there is no monument to his memory, except one that he built himself, and which is the sole remains of the great college he intended to have raised at Ipswich. Among the illustrious medical names associated with East Anglia are William Gilbert, Sir Thomas Browne, Edward Rigby, J. G. Crosse, Sir Astley Cooper, the Brothers Paget Sir Thomas Watson (educated at Bury St. Edmunds), Jeaffreson (ovariotomist), Sir William Gull, John Hilton, Sir George Humphry, and many others, while among those yet living are some of the foremost names in the science of medicine.

The Development of British Medicine.

The early history of medical science in this country is concurrent with the advance of all scientific knowledge. During the Dark Ages men of learning had spent their time in translating and repeating what the Greeks had taught, until at last they had come to believe that Ptolemy, Galen, and Aristotle had settled most of the scientific questions and that no one had any right to doubt their decisions. In the annals of British science there was one exception to the apathy of Englishmen—Roger Bacon, the Franciscan friar, who is stated to have been the first man in Europe to make gunpowder. Green speaks of him as living before his time, but the probability is that travelling and studying natural science, and particularly alchemy in Italy, he imbued ideas of scientific progress that were absolutely dormant in this country until 250 years later. The continuous progress of British science commenced with the return of Thomas Linacre to Oxford from the Italian universities, whence he came imbued with what was termed the "new learning," then recently introduced by the Greek professors who had been attracted to Italy. At this time the learned of all countries were profoundly impressed by the recent discovery of America, by the scientific discoveries of such men as Copernicus and Paracelsus. The printing press was changing the conditions of life, and literature became the common property of all. The great event in the sixteenth century, so far as medicine is concerned, was the success of Thomas Linacre in persuading the King to grant a charter to a small body of medical graduates, who were thenceforth called the Royal College of Physicians. He succeeded, it is said, principally through the great and powerful help of Cardinal Wolsey. The charter of the Royal College of Physicians was granted on Sept. 23rd, 1518. It gave them the sole power to license to practise physic in London or within seven miles radius, with other privileges which were confirmed by a statute of Henry VIII. and extended to the whole of England. Linacre was the first President, and he held office to the end of his life.

In 1540 the Barbers and Surgeons were united by Act of Parliament, 38 Henry VIII., cap. 42. They were incorporated as the "Masters or Governors of the Mysterie and Commonalitie of Barbers and Surgeons of London." Thomas Vicary, Serjeant Surgeon to Henry VIII., who had been previously Master of the Barbers' Company, was the first Master of the combined Companies. The Company employed Holbein to paint a picture with the King on his throne, who, with his two physicians, Sir William Butts and Dr. John Chantre, with his apothecary kneeling on his right, presents the Act, which is painted with a seal as if it were a charter, to Vicary, who, with 14 other barbers and surgeons, is on his knees. In 1543 the irregular practitioners of London were protected by Act, and became one of the corporations of the City, and both by royal charters and by Acts of Parliament exercised the power of granting licences to practise medicine. In 1505 the Royal College of Surgeons of Edinburgh was founded, and in 1599 the Faculty of Physicians and Surgeons of Glasgow.

Scientific Medicine.

Soon after the birth of the new learning the work of Vesalius, the brilliant young Belgian, aided by his contemporaries Fallopius and Eustachius, raised anatomy to a science based upon the dissection of the human body itself, in addition to that of animals.

It was at the very commencement of the seventeenth century that the original research of two great English physicians, Gilbert and Harvey, completely altered the position of our country in scientific advance. Hitherto there had been no contribution of importance; from this time, however, a complete change came over the scene, and from that day to this our countrymen have taken a conspicuous part in the solution of the many scientific problems and discoveries of the last three centuries. Our East Anglian county of Essex has the honour to be the birthplace of one of these illustrious physicians and the resting-place of both. William Gilbert was born and buried at Colchester, and at Holy Trinity Church there is a monument to his memory. He died unmarried, at the early age of 57 years, in 1603. William Harvey died in 1657 and was buried at Hempstead, in the same county, in his eightieth year.

William Gilbert—or Gilberd as it is spelt upon his mural tablet—was born in the same year that Vesalius was appointed professor of anatomy at Padua, in 1546. He was educated at Cambridge and became a Fellow of St. John's in 1561. In 1573 he settled in London and became subsequently physician to Queen Elizabeth and President of the Royal College of Physicians. His leisure hours were given to chemistry and magnetism. In 1600 he published his "De Magnete." He established the magnetic nature of the earth and he conjectured that terrestrial magnetism and electricity were two allied emanations of a single force. He was the first to use the terms "electric force" and "electric attraction" and to point out that amber is not the only substance which when rubbed attracts light objects, and he described how to measure the excited electricity by means of an iron needle moving freely on a point. He described the properties of the magnet and its attraction and its direction in the relation of the poles of the earth.

William Harvey, the discoverer of the circulation of the blood, was born at Folkestone, graduated at Cambridge, subsequently travelling through Germany and France, and enrolled himself as a student of the University of Padua. His name heads the list of what was called the Jurist University for the years from 1600 to 1602. Here he studied under the celebrated surgeon and anatomist Fabricius. Upon his return to London he joined the College of Physicians and was shortly after his commencement of practice appointed physician to St. Bartholomew's Hospital. In 1615 he was appointed Lumleian Lecturer, an appointment which he held with more or less interruption due to the political disturbances of the times until 1656. He was physician to James I. and Charles I. There are many evidences that his eminence was appreciated by his contemporaries. In 1620, for instance, he attended a conference with representatives of the College of Physicians to protest against the proceedings of the Surgeons, who were moving in Parliament in their own interests, but he failed to induce his own university to coöperate with the College of Physicians. During the Civil War he was in attendance upon the King, and while quartered with him at Oxford he was elected Master of Merton. The work of William Harvey which has immortalised his name in the annals of medicine was published in the year 1621 at Frankfort as "An Anatomical Treatise on the Movement of the Heart and Blood in Animals." Mr. D'Arcy Power, in his admirable contribution to the "Masters of Medicine," says, "Harvey chose Frankfort as the place for the publication of his book because the annual book fair held in the town enabled a knowledge of his work to be more rapidly spread than if it had been issued in England." His researches upon this subject had long occupied his attention, and had been referred to from time to time in his Lumleian Lectures from the year 1606 onwards. The bent of his mind and his method of departure are explained in his book, when he says, "I profess both to learn and to teach anatomy not from books, but from dissections; not from the position of philosopher, but from the fabric of Nature." The results of Harvey's observations are the more remarkable when we consider the scanty instruments and appliances then available, contrasted with our own time when the senses, the arts, and the sciences are all brought into requisition for the discovery and analysis of objective symptoms. The microscope was as yet undiscovered. The number of pulse-beats was not measured by a watch until nearly a century after Harvey's time. In his day, according to Dr.

Norman Moore, physicians contented themselves with estimating the character of the pulse rather than its precise rate. Specialism as now understood did not exist, and Harvey was a surgeon as well as a physician. He performed surgical operations to which he frequently refers. The brilliant work of Galileo, Gilbert, and Harvey, the awakening philosophy of Francis Bacon in this country and Descartes in France, gave an impetus to original research and the investigation of causes that was remarkable in upsetting ancient traditions, and little by little real observation and experiment took the place of mere authority.

The Royal Society.

It was about this time that a small body of students assembled at Oxford in 1645 who were later, in 1662, to be known as the Royal Society. It was established as an association of men interested in the development of mathematical and physical science. It is the oldest scientific society in Great Britain, and one of the oldest in Europe. Italy had already established two societies in the time of Galileo and Torricelli. In Germany the Imperial Academy of the Curious in Nature was founded in 1662. The famous French Academy of Science was legally established by the French Government in 1666. All these societies greatly influenced scientific research, and many men who were hitherto unable to publish now read papers at their meetings. Of our own Royal Society it is recorded in the first journal book of the society that these persons met together on Nov. 28th, 1660, to hear Mr. Wren (afterwards Sir Christopher Wren) lecture at Gresham College, London, mentioning twelve names, including three physicians, and that after the lecture they returned to converse and pass resolutions for future guidance. At one of their early meetings 52 was fixed as the number of the society, persons of the rank of Baron, Fellows of the Royal College of Physicians, public professors of mathematics, physics, and natural philosophy of both Universities being supernumeraries. In October, 1660, the King offered to be entered one of the society, and next year the society was incorporated under the name of "Royal Society," the charter of incorporation passing the Great Seal on July 15th, 1662. Soon after incorporation the Royal Society published papers by Malpighi, who by the microscope revealed the minute infinite particles of living bodies.

Somewhat earlier than this two of our countrymen—Boyle, son of Lord Cork, and John Mayow—did much for progressive research and anticipated some of the great discoveries in chemistry and physiology of a century later. Boyle proved that a candle could not burn or an animal breathe without what was afterwards proved to be oxygen gas. These observations were said to have been attentively listened to at the early Oxford meetings of Wilkins and his friends by a young physician, John Mayow, who died at the early age of 34 years, but not before he had proved that air was made up of two portions, the one heavy which supports flame and light, which he called "fire air," and which was subsequently discovered to be oxygen; the other light, useless for living and breathing, and this was the larger portion, which we now call "nitrogen."

Practical Medicine.

Practical medicine in Great Britain was developing in this century; a pharmacopœia had been issued, cinchona bark was introduced; and botanical gardens were established. The teachings of Francis, Lord Bacon, and subsequently of John Locke, influenced the direction of thought, while the learning and superb common sense of that great physician Sydenham gave effect to the general advance of this period.

In surgery the growth was slow, principally through the general want of knowledge of anatomy acquired by dissection; but two Englishmen had distinguished themselves in this branch—Nathaniel Highmore and Thomas Wharton—the former discovering the cavity in the superior maxillary bone which is still known by his name and Thomas Wharton discovering the duct of the maxillary gland which is still recognised as Wharton's duct. The diary of Mr. Samuel Pepys illustrates the primitive method of procedure at that time. He says that "on February 27th, 1663, he walked with Commissioner Pett to Chirurgeons' Hall, we being all invited thither and promised to dine there, where we were led into the theatre, and by-and-bye came the reader, Dr. Tearne, with the Master and Company, in a very handsome manner, and, all being settled, he commenced his lecture, and his discourse being ended, we had a fine dinner and good learned company, many doctors of physic, and we used with extraordinary great respect." He also speaks of the gilt cup the gift of Henry VIII., with bells hanging to it, which every man had to ring by shaking after he had drunk up the whole sup. There is also, he says, a very excellent piece of the King, by Holbein, that stands up in the hall, with the officer of the Court kneeling to him to receive the charter.

The man who of all others at the early part of the eighteenth century gave an impetus to medical education was the illustrious Boerhaave, who at the University of Leyden attracted students from all parts, and particularly from this country. He was elected lecturer in 1701 and a few years later occupied the chair of chemistry. He shares with Dr. Hales, the great English chemist, the honour of founding the science of organic chemistry. So highly was Boerhaave esteemed by his fellow-countrymen that upon his recovery from a serious illness in 1722 there was a general illumination of the town of Leyden.

At this time there was practically no systematic medical training in the British Isles, but there were isolated attempts at special instruction. A refugee surgeon, Brussière, settled in England in the time of Queen Anne, and for the first time gave lectures in anatomy in England. In 1711 Dr. Richard Mead lectured and continued his lectures for four years to the Barber Surgeons. In the same year Cheselden commenced a series of lectures which continued for 20 years. The first Munro opened a similar course at Edinburgh. John Rutherford settled in the same city in 1721. Speaking of him, his grandson, Sir Walter Scott, says: "He was one of those pupils of Boerhaave to whom the school of medicine in our northern metropolis owes its rise." Together with Sinclair, Purvis, and Innes he established a laboratory and taught the rudiments of chemistry and other branches of physics. In 1766 Rutherford was appointed Lecturer in Medicine and until 1785 he delivered the lectures in Latin. He founded clinical teaching in Edinburgh. The success was so great that the managers of the Royal Infirmary appointed a special ward for the exclusive use of Rutherford. This laid the foundation of that form of teaching in which Edinburgh has held proud pre-eminence.

Increased Study of Anatomy.

Speaking of the history of medicine in the eighteenth century Lecky says: "A still more important fact in the history of medicine was the increased study of anatomy. The popular prejudice against dissection which had for centuries paralysed and almost prevented this study still ran so high in England that in spite of the number of capital punishments it was only with great difficulty the civil power could accommodate surgeons with proper subjects, and all publicity was studiously avoided. With such a state of feeling it is not surprising that the English medical school in the beginning of the eighteenth century should have been far inferior to that which gathered round the chair of Boerhaave at Leyden." In London there was no concrete medical school until quite late in the century. William Hunter came to London and commenced to lecture in 1747; he became a member of the Corporation of Surgeons, and was appointed Obstetric Physician to the Middlesex Hospital in 1742. He is stated to have been an early riser and a man of untiring energies. He was undoubtedly the first great teacher of anatomy in London, and we owe his selection and advance to Dr. James Douglas, an anatomist and obstetrician whose name is associated to this day with modern anatomists as the discoverer of Douglas's pouch.

The advancement of medicine and the allied sciences in the eighteenth century commenced with the contributions of Boerhaave and Hales in organic chemistry, while Buffon taught natural history, and the Swede Linnæus patiently worked out the minute characters of animals and plants. In physics the Scotch physician Black proved the amount of heat dormant in water and steam, which Watt afterwards applied to the steam engine. Electricity was greatly advanced by Benjamin Franklin, the American, who attracted lightning from the sky and worked with it in his own laboratory. Galvani found the wonderful power hidden in the nerves of the frog, and Volta showed how powerful electricity could be produced by two metals placed in acid and water, and this could be carried along a wire of any length which touched the battery at both ends. In physiology great advances were made by Haller, Bonnet, and Spallanzani. John Hunter, by his untiring energy, industry, and perseverance founded the science of comparative anatomy, and as an anatomist and as a practical surgeon built himself an everlasting fame.

Birth of Chemistry.

The most remarkable scientific advance was undoubtedly

in the science of chemistry. Almost to the last quarter of the century the theory of "phlogiston" had confused and mystified the researches of the many great and distinguished scientists who had worked in this direction. The important part played by our countrymen in the elucidation of truth is highly satisfactory. The discovery of the gases which enter into the combination of air, water, and fire transferred the alchemy of old into the modern science of chemistry. It was the discoveries of Black, Priestley, and Cavendish, and the independent work on similar lines of the great Swedish chemist, Schiel—himself a practising apothecary—that enabled Lavoisier to recognise the value of the discoveries and proclaim their effects upon science in his "Elements of Chemistry." At the early age of 51 years this philosophical chemist was guillotined by his countrymen in 1794, during the French Revolution. Black discovered carbonic acid in 1756, Cavendish hydrogen in 1766, Rutherford nitrogen in 1772; and it was not until 1774 that Priestley—a Nonconformist minister at Leeds—discovered oxygen. It was also independently discovered by Schiel in 1775. They both deserve credit. Priestley's discovery was made with red oxide of mercury; he heated it, and found that a gas came off, which he collected, and he experimented with two mice and he found that they breathed it and lived much longer than in ordinary air; then he breathed it himself and found that he felt singularly light and easy for some time after. "Who can tell," he writes, "whether this pure air may not become a fashionable luxury. As yet, only two mice and myself have had the privilege of breathing it." It is only of recent years that the great value of the inhalation of oxygen gas has been recognised and utilised in the treatment of certain diseases of the heart and lungs. I think many of us could bear testimony to its life-saving properties in cases which appeared hopeless.

[After referring to the practical work done in the eighteenth and early nineteenth centuries by Jenner, by Dr. Richard Mead (who discovered the acarus scabiei), by Dr. J. Lind (who traced scurvy to dietetic errors), by the elder Heberden, by Dr. Robert James (the inventor of James's Powder), by Dr. Matthew Baillie, by the brothers Hunter, by Lettsom, Abernethy, Charles Bell, Cheselden, Astley Cooper, Pott, Hey, and many others, Dr. Elliston continued:—]

Medical Legislation.

The important legislation of the nineteenth century was the Apothecaries Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profession, and whatever may be the sentimental objection to a learned profession being connected with traders we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far-reaching in its results. Previously to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licences of the Universities or Colleges the greater number possessed no such qualification and many of them were wholly illiterate or uneducated. About the year 1850 a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L.S.A. of London was permitted to practise throughout Scotland or Ireland. The Apothecaries Amended Act passed into law in 1872. Women were admitted to practise in 1876. In 1878 the pharmaceutical chemists were licensed by Act. It is worthy of observation that the State has hitherto not interfered to prescribe the subject matter or the minimum standard of medical examination, although there has been at least one attempt by the Government of the day to establish a uniform minimum. Under the beneficent legislation of the century, and particularly by the establishment of the General Medical Council, jealousies between the different branches of the profession have mainly disappeared, and it is difficult now to realise that at the commencement of the present century it was far otherwise, thus, we find a young physician advanced by his College in 1808 as a reward for a pamphlet against the growing pretensions of army surgeons. The use of wise legislative enactments in the social influence and status of the profession soon became apparent, but of course its full effects were not evident until many years had elapsed. It is quite within my memory that the only qualification recorded in many instances in the annual "Medical Directory" was "in practice prior to 1815." It is not a little singular that the Apothecaries Act has gradually extinguished the apothecary as then understood. I can remember an apothecary's shop in this town. That has now become a thing of the past, as will be soon, I trust, what is called the open surgery of to-day. With the better education required and the institution of examinations a different class of students were attracted to medicine, and they were rarely satisfied with the apothecary's licence but sought further a surgeon's diploma.

The Medical Press.

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M.D., who was born at Harwich in 1767. He commenced in 1810 to edit a periodical which was styled the *New Medical Physical Journal or Annals of Medicine, Natural History, and Chemistry*. It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S. and commenced practice. Fortunately, perhaps, he did not altogether succeed and his great talents were turned in the direction of journalism. He founded THE LANCET in 1823 with the primary object of disseminating much needed information hitherto regarded as the exclusive property of members of the London hospitals and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations. For the first ten years of its existence THE LANCET provoked a succession of fierce encounters between the editor and the members of the privileged class in medicine. In the first number Wakley made a daring departure in commencing a series of shorthand reports of hospital lectures. On Dec. 10th, 1824, Mr. Abernethy applied to the Court of Chancery for an injunction to restrain THE LANCET from publishing his lectures. The injunction was refused by Lord Eldon, on the ground that official lectures in a public place for the public good had no copyright vested in them. Mr. Wakley then commenced a regular issue of hospital reports of cases and notable operations. The irritation at them was so great that his exclusion from St. Thomas's Hospital was ordered. He also carried on a campaign against the Royal College of Surgeons of England. Mr. Wakley and his successors have done work which has advanced the general interest of the profession by leaps and bounds, and during the long period of its usefulness THE LANCET has always availed itself of the best talent, and many of those who have achieved success in other departments have given their early work to the advancement of medical journalism. At the present time the influence of the press is enormous. Our own *Journal*, reflecting the opinions of this Association, shares with THE LANCET and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

[Dr. Elliston here acknowledged the impossibility of giving anything more than quite a brief enumeration of the brilliant work of the British physicians and surgeons of the nineteenth century. He alluded especially to the work of Richard Bright, of Hodgkin, of Thomas Addison, and of Sir William Gull (all of whom were members of the staff of Guy's Hospital), of Sir William Jenner, of Graves, of Hughes Bennett, Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the Farrs, Sir J. Simpson, Tyler Smith, the Budds, Spencer Wells, Bucknill, Tuke, Bowman, Hilton, Sir B. Brodie, Aston Key, Sir W. Lawrance, Robert Liston, Syme, Sir W. Fergusson, Sir George Humphry, and many others living and dead.]

It is not, perhaps, Dr. Elliston continued, so generally known as it deserves to be that William Jeaffreson of Framlingham in the county of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariotomy by a small centre incision. The circumstance, as recorded in the Transactions of the Provincial Medical Association of 1837, are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumour. She died from tuberculous disease of the lungs and, obtaining the consent of the friends, he made a post-mortem examination, which satisfied him that the tumour could have been removed, and but for the disease of her lungs her life might have been spared." In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumour. They subsequently advised an operation and

in May, 1836, a central incision was made, about one and a half inches long, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures and napkins wrung out in the coldest water were constantly applied to the wound. Sulphate of magnesia was administered every four hours and all went well until the tenth day, when Jeaffreson was called to his patient at 3 A.M., to find her pulseless, with incessant vomiting and hiccough and griping pains in her body. A stimulating enema with two grains of opium gave her speedy relief and she recovered. His friend and neighbour King, at Saxmundham, Suffolk, about 10 miles away, operated a few weeks later with complete success, his incision being somewhat longer—about three inches. Two years subsequently a third East Anglian surgeon, Crisp of Harleston, who lived about 20 miles from Jeaffreson, was also successful with an incision of two inches in length. These three cases, which were performed by three surgeons in general practice in this county were the first in England in response to the doctrines of William and John Hunter and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later and no ovariotomy was performed in a London hospital until 10 years after Jeaffreson's case.

Antiseptics and Anæsthetics.

The two great discoveries of the nineteenth century in connexion with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister) and the use of anæsthetics. The anæsthetics now in general use are nitrous oxide gas, discovered by Sir Humphry Davy in 1800; sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anæsthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether I thought it would be interesting to hear his record of the circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on Dec. 21st, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation—amputation of the thigh by the double flap method. Someone present timed the operation; it took 30 seconds; the few arteries were tied and all signs of blood cleared away. A towel was then thrown over the stump and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump he burst into tears, and I thought Liston would do the same."

[Dr. Elliston concluded an interesting address by a *résumé* of the various Acts of Parliament recently passed having for their object the maintenance and improvement of public health.]

At the conclusion of the address, which was listened to with close attention,

Mr. HOWARD MARSH proposed a vote of thanks to the President for his address, which was marked by great research, clear statements, and a due appreciation of the great truths passed in review.

Dr. I. H. CAMERON (Toronto) seconded the motion and expressed the pleasure with which they had all listened to a survey of 500 years of the history of medical and surgical art.

The motion was passed *nem. con.*, and the PRESIDENT briefly replied.

Mr. WARD COUSINS, on behalf of the Council, offered a hearty welcome to the foreign and colonial representatives, to which Professor RODDICK of Montreal and Professor NICOLAYSEN of Christiania replied.

The meeting then terminated.

SECOND GENERAL MEETING.

The second general meeting was held in the Central Hall of the Higher Grade School on Wednesday afternoon, the room being well filled.

The President of the Council, Dr. ROBERTS THOMSON, declared the names of those not returned to the Council and also the names of the newly-elected members. He also announced that an invitation had been received from the Gloucester branch asking the Council to hold the meeting of the Association in 1891 at Cheltenham and that the Council recommended that the invitation be accepted. This was agreed to and Dr. G. B. FERGUSON was appointed President elect.

The PRESIDENT then called upon Dr. Pye-Smith to deliver the address in medicine which will be found at p. 309.

At the conclusion of the address Dr. SAUNDBY moved, and Colonel KENNETH MACLEOD, I.M.S., seconded, a vote of thanks to Dr. Pye-Smith. This was carried unanimously, and Dr. PYE-SMITH returned thanks.

The PRESIDENT then said that it was his very pleasant duty to award the Middlemore Prize for 1900 to Dr. Ernest Maddox of Bournemouth. This prize is of the value of £50, and was awarded this year for researches in ophthalmology.

The report of the Parliamentary Bills Committee was then taken, and Mr. R. B. ANDERSON made a personal explanation with reference to some remarks which he had made in moving a rider to the sections of the report dealing with the Midwives Bill upon the previous day, the accuracy of which had been called in question by Mr. Victor Horsley.

On the report of the Scientific Grants Committee, Professor BYERS urged that the distribution of the grants was too much centralised. The grants should, in his opinion, be spread more over the country. He also objected to the giving of grants to rich London hospitals.

Dr. HUDSON moved—

That the scientific grants be discontinued and the money devoted as prizes to work already done.

At present he considered that the money was frittered away.

As, however, no seconder came forward the motion dropped.

On the report of the General Practitioners and Ethical Committee Dr. C. F. K. MURRAY, president of the Cape Town Branch, spoke of the growing difficulty at the Cape of dealing with friendly societies and clubs on the matter of a wage-limit. The medical practitioners in South Africa looked to the Council for guidance in this matter and he suggested that those at home who had had experience of the difficulty of the question should help their brethren abroad in a practical manner by expressing their opinion, and to this end he submitted the following motion:—

That this meeting resolves that the Council be requested to issue a circular to all branches of this Association inviting them to express an opinion and to submit proposals on the question of the "wage limit" as applied to clubs, provident dispensaries, and societies, &c., with a view to suggesting a reasonable and fair working basis; furthermore that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

The motion was seconded by Mr. G. H. BROADBENT, who thought it shocking to hear that such a state of things existed in South Africa. He considered that as the question had been before the Council for eight years it was quite time that something was done by them in the matter.

The motion was then agreed to, with one dissentient.

The PRESIDENT then called upon Mr. Victor Horsley to submit his motion, which stood in the following terms:—

That a committee be appointed to consider and report upon the best means of reorganising the constitution of the British Medical Association, such committee to furnish a provisional report to the branches by March 1st, 1901.

Mr. HORSLEY sketched his idea of what the reformed constitution of the Association should embrace. He referred specially to the creation of delegates from the branches to the Council and deprecated the view so commonly held that a delegate must be in a subservient position. He also referred to the establishment of a medico-political bureau and of an information bureau. He concluded by suggesting that the proposed committee should consist of 23 members, and if his resolution were accepted he would read the names which he proposed to submit to the meeting.

Dr. BRASSEY BRIERLEY in seconding the motion said that as Mr. Victor Horsley's motion covered most of the points with which he had dealt in his notices of motion he would withdraw them all except one, which he would bring forward later.

Mr. T. J. VERRALL, a member of the Council, then rose in support of the motion.

Dr. A. COX wished to move a rider dealing with the principle of delegation. It was, however, ruled by the PRESIDENT

that the rider was out of order. It could, however, be put as an amendment.

Dr. COX, however, withdrew it at the suggestion of the PRESIDENT, intimating his intention of bringing it up as a fresh motion if Mr. Horsley's proposal were accepted.

Mr. R. BRUMMITT asked Mr. Horsley if he would fix an earlier date than March 1st, as the Australasian branches would thereby have an opportunity of expressing their opinion on the subject.

Mr. HORSLEY agreeing to this the date was altered to Feb. 1st, and his motion was thereupon put and carried unanimously.

Mr. HORSLEY then read out the names he proposed for the committee, upon which a long discussion ensued, it being eventually agreed that the committee should consist of 24 persons, of whom one-half should be nominated by the Council and their names would be handed in to the general meeting which was to take place on the following day. The other 12 members were to be nominated by the general meeting, with whom also the final selection of the whole committee was to rest.

Dr. A. COX again brought forward his original rider to Mr. Horsley's resolution as a new motion, which, after some discussion, was lost, it being felt that the hands of the new committee appointed to consider the alterations in the constitution of the Association should not be tied in advance.

The meeting then adjourned.

THE SECTIONS.

MEDICINE.

WEDNESDAY, AUGUST 1ST.

The President, Dr. T. BUZZARD (London), stated that he had been requested not to give a formal introductory address.

Influenza as it Affects the Nervous System.

Dr. JUDSON S. BURY (Manchester) opened this discussion. He referred to the diversity of symptoms of influenza in different epidemics and in different persons which made it very difficult to construct a scheme of symptoms which could be said to represent a typical case of the disease. Four types of the disease could be recognised, distinguished by the organ chiefly affected; (1) affecting the mucous membranes; (2) the gastro-intestinal tract; (3) the heart; and (4) when the nervous system was exclusively attacked. In all these forms and in nearly every case the nervous system was profoundly affected, as evidenced by the pain in the head and the back, which was seldom absent, hyperæsthesia, delirium, and depression, all symptoms which were the result of the action of a toxin on the nervous system. In cases where the more ordinary nervous symptoms appeared to be absent careful observation would show others, such as undue dyspnœa in pneumonic cases and tachy- and brady-cardia in cardiac cases which were essentially nervous in nature. At the same time he was not prepared to say that in every case the influence of the toxin on the organ was exerted solely through the nerve. He recognised two chief groups of nervous affections following the disease—those developing during the febrile stage such as meningitis and encephalitis where the brain tissue was directly affected, and those arising later, due probably to a less virulent toxin, and in which while visible degeneration of nervous matter might be discovered in a proportion yet in many nothing of the kind could be seen. In the first group, again, he distinguished a comatose and a delirious type. The former was a very serious state, often ending fatally, and he quoted at length one or two cases. Post mortem a condition of hæmorrhagic meningo-encephalitis was found and a drawing of the condition in the pia-arachnoid was exhibited, showing endarteritis apparently of recent origin with thrombi in the diseased vessels. Pfeiffer's bacillus, though difficult to demonstrate, had been found, and cases of meningitis were also due to this as well as sometimes secondary to otitis media or nasal suppuration. Other results of influenza were cerebral embolism, thrombosis, and abscess. The delirious type was common in children. The spinal cord might be attacked together with the brain or independently. Generally it was affected after the initial attack but sometimes during it. The enumeration of every form of nervous disease that had been reported as following influenza would be merely the enumeration of every known form of nervous affection of brain, spinal cord, or peripheral nerves. The peculiarity of the influenza toxin as distinguished from that of diphtheria was that it affected nervous tissues haphazard and not so much in groups. He related a series of cases illustrative of his remarks, referring particularly to the various forms of multiple neuritis, and asked for the opinion of members as to whether in their experience the nerves affected were most frequently the sensory or motor, and also if anyone present had seen cases where the respiratory muscles were paralysed. In conclusion, he said that it was possible that multiple neuritis might be due to bacilli as yet unknown and not to Pfeiffer's or the Klebs-Læffler bacillus, these being merely predisposing agents.

Sir WILLIAM BROADBENT (London) distinguished between the results of influenza due to toxins and those due to the bacilli of the disease. He thought the poison generally attacked the weak spot. He related a case of acute dementia following influenza. He thought that in the neurasthenic, neuralgic, and similar cases they had the effect of the toxin, while Dr. Bury's acute comatose type was probably similar in character to those cerebral attacks in malignant malaria where the vessels were found choked with parasites and leucocytes. He had seen a most acute case of the kind during an epidemic of influenza on board a training ship. Five boys became comatose and two died. The chaplain who had visited the boys was seized with the disease. Coma came on very rapidly. There were muscular rigidity and inability to empty the bladder, the temperature was 103° to 104° F., and the patient, though rallying after large doses of quinine hypodermically administered, died in a week. Another patient had meningitis, some paraplegia, and very extensive herpes round the loins. Another had unilateral convulsions of great severity, accompanied by no paralysis. This patient made a complete recovery which was retarded somewhat by long-continued sleeplessness. In a case which he considered to be due to thrombosis of the vessels of the right cerebral hemisphere the patient had left hemiplegia of slow and gradual onset. It was 10 years ago and he had continued to show progressive improvement ever since, and was now nearly well. He had seen a case of universal multiple neuritis which eventually proved fatal by implication of the respiratory muscles.

Sir PETER EADE (Norwich) thought the fact worthy of notice that the section was still discussing influenza ten years after its reappearance as an epidemic, whereas as far as they knew previous epidemics had disappeared much more rapidly. He could not agree with Sir W. Gowers that the incidence of the influenza poison was chiefly on the motor nerves. He thought that the medulla oblongata bore the brunt of the attack of the disease, and that this accounted for the frequency of heart disturbance. He thought that all these nervous symptoms were not true sequelæ but continuations of conditions which had existed during the primary attack. He related some cases of sleepy condition with bradycardia.

Professor CLIFFORD ALLBUTT (Cambridge), who said that he had not intended to take part in the discussion, insisted on the importance of correct diagnosis. He thought they ought to be extremely careful before asserting that any particular condition was the result of influenza, and that in many reported cases it was merely a matter of remote inference that such was the case. As an assistance in diagnosis he considered suddenness of attack a very valuable sign and instanced the case of a man who was seized while riding on horseback. With regard to the parts of the body most frequently attacked he agreed with the opener of the discussion that the anterior part of the brain was most frequently the seat of influenzal lesions and described a case under his own care where there had been very slight paralytic symptoms which disappeared but the patient remained aphasic, not when speaking slowly and deliberately but whenever he tried to talk fast. If there were certain areas preferentially attacked by the disease they ought to be ascertained. He doubted if it attacked weak points. He recommended lumbar puncture in meningo-encephalitic cases and bacterial diagnosis. He confessed that he was a pessimist in regard to prognosis in most of the cases under discussion.

Dr. NEWTON PITT (London) said that many cases of meningitis occurred in the early days of the influenza epidemic, but he was not sure that they were all due to the influenza bacillus. In one or two cases when it followed distension of the nasal sinus and antrum, &c., the bacillus had been found. In another a bacillus thought to be the diplococcus of Fraenkel was discovered but he would not like to say now that it might not have been the diplococcus intracellularis meningitidis. He referred to cases of influenza

which were quickly followed by enteric fever, and while thinking that the diagnosis was probably in many cases correct considered that the cases of meningitis were not more likely to be due to Pfeiffer's bacillus than these cases of enteric fever were. As a point in diagnosis he thought that in multiple neuritis due to influenza facial paralysis was more common than in others. He considered the affections of the heart to be due to disease of the nerves and not of the myocardium. He also thought that in many cases the irregularity of the heart's action was secondary and due to dilatation of the stomach produced by the original disease.

Dr. J. MACCORMAC (Belfast) doubted whether diphtheria was a specific infectious disease.

Dr. FRANK M. POPE (Leicester) related a case of the comatose type of encephalopathy in a boy in a large industrial school, and thought that in some cases injury might determine the point of incidence of the disease. In anosmia, where the nervous mechanism of the special sense affected was very close to the nasal mucous membrane where the poison entered, recovery was not likely unless it began early. He found that most of the cases following influenza that he had seen were in connection with the earliest epidemic, and thought the reason was that the people whose nervous system were likely to be affected were attacked on the first occasion and the less liable only remained, among whom, of course, in subsequent epidemics not so many cases were likely to occur.

Dr. S. K. MULLICK (London) thought motor nerves were more usually affected than sensory.

Mr. S. E. SOLLY (Colorado) related a case of hemiplegia in a young woman with aphasia which was almost certainly of influenzal origin and which ended in recovery.

Dr. R. SAUNDBY (Birmingham) considered that diabetes after influenza was a similar condition to diabetes occurring after any other acute disease and he regarded influenza as a fairly typical infectious process. As to the way in which the diabetes was produced he thought some cases might be due to a chronic interstitial pancreatitis.

Mrs. GARRETT ANDERSON asked that diagnosis should be very carefully made. They were too ready to call everything influenza. Diagnosis, however, did not much help treatment in these cases. She inquired into the conditions which might intensify the poison of influenza, thought that such a series of cases as Sir William Broadbent had mentioned as having occurred on a training-ship showed that overcrowding intensified the poison, and had seen similar instances among crowded communities, such as schools and nurses' and servants' quarters. Prognosis must in most cases be based on the recovery rate.

Dr. W. EWART (London) spoke of the different aspects which such so-called system diseases as locomotor ataxia, Friedreich's disease, and spastic paraplegia presented when they were the effect of influenza as contrasted with their usual appearances. Instead of beginning gradually and increasing in severity the first influenzal forms began acutely and progressed, at all events for a time, towards recovery. He gave instances of several of such cases. He hoped that from that discussion they might learn something of how toxins affect the spinal cord and brain, and inquired whether in cases where nervous diseases come on some time after the initial disease there are not some bacteria still living and producing their toxin somewhere in the organism, nasal mucous membrane, or elsewhere, and suggested that an efficient cleaning was necessary here, as after diphtheria, lest the convalescent should be a disseminator of disease for some time after apparent recovery.

Sir J. W. MOORE called attention to the psychical state of influenza patients which makes them believe that they are the subjects of organic lesions and thought that many cases of post-influenzal nervous disorder were purely subjective. He agreed that most cardiac symptoms were of nervous origin and not myocardial.

Dr. ST. CLAIR THOMSON (London) agreed that anosmia was frequently curable. He doubted whether it was possible to apply stringent antiseptic proceedings to the nasal mucous membrane. It was naturally aseptic but he agreed that cleansing might be done.

Dr. W. CALWELL (Belfast) asked for statistics with regard to deaths during chloroform inhalation of persons who had recently had influenza.

The PRESIDENT considered the discussion suggestive and valuable. On the broad question he had no doubt that influenza was capable of producing and often produced the gravest changes in the nervous system. It might act in two ways. There was a class of disease which was revealed by influenza—i.e., the disease brought to light some flaw unsuspected previously. He quoted a case of tabes made worse by the disease. In the same way he believed that cases of melancholia and mania were due to the displaying of flaws in the mental apparatus. After all, this was only a small part of the question. They had to deal with the direct effects of a virulent poison on the nervous system. One point he thought had not been touched on which he considered an evidence of the toxæmic origin of the diseases mentioned. In early days he had written on syphilitic disease of the nervous system and had pointed out the bizarre arrangements of the symptoms of these diseases. They might see one leg paralysed together with the opposite arm, one eye and the opposite leg, and other such arrangements which they did not see in ordinary cases of disease from such causes as senile internal change or the like. Now this sign had been generally recognised as a sign of disease produced by toxins. Dr. Medin of Stockholm had reported an epidemic of anterior poliomyelitis where, together with the changes resulting from diseases in the anterior corneal cells, there were facial pain, hemiplegia, affections of the lateral columns, and other symptoms. Again, Dr. W. Pasteur had brought before the Clinical Society a similar epidemic and had asked if he was justified in regarding these cases as anterior poliomyelitis as other and remote structures were involved. Dr. Buzzard then quoted the case of a strong working man who, as the result of influenza, had double optic neuritis with complete optic atrophy, nystagmus, and paralysis of all four extremities, intentional tremor of one upper extremity, and loss of knee-jerks, showing that the toxin had affected widely separated motor and sensory neurons. Two similar cases were also given, in the latter of which a post-mortem examination had shown marked change in the vessels and ground substance in the floor of the fourth ventricle. He thought such anomalous conglomeration of symptoms pointed most strongly to the toxæmic nature of these affections. They could not cramp and confine the grave nervous diseases of influenza into ordinary terms. They must either largely increase their nervous terminology or else not use it in this respect. Systems of motor and sensory neurons must form the basis of their new nomenclature. The diseases of the nervous system due to toxins had largely increased in late years and they were not all due to influenza, there being a great many unlabeled toxins at work, but many had still the disease for their cause.

Dr. JUDSON BURY replied, and as an instance of the value of such a discussion he said that it was dogmatically stated in Leichtenstein's work on influenza, perhaps the best up to date, that the respiratory muscles were never affected in post-influenzal multiple neuritis, yet two such cases had been related in that room that day.

SURGERY.

WEDNESDAY, AUGUST 1ST.

The Presidential Address.

Mr. HOWARD MARSH, F.R.C.S., surgeon and lecturer on surgery at St. Bartholomew's Hospital, opened the work of the section with the following speech:—

It has been agreed that there shall be no formal addresses at the opening of the various sections. I think members will endorse this arrangement. It may be possible to make such addresses interesting and perhaps even instructive; but they are in no way a necessary part of your proceedings and they would encroach materially on the very limited time which is at your disposal for the proper business of the meeting—the reading and adequate discussion of clinical papers. A very few remarks, however, which have a direct reference to the work of the section may be really useful. On some previous occasions so many papers have been accepted for reading that many valuable contributions could only be hurried through in abstract and no discussion was possible. This was unsatisfactory to all concerned. On the present occasion the object has been to cut the garment according to the cloth; in other words, to adjust the number of papers to the time that is available, so that each may have a fair hearing and be fully discussed. I anticipate that all who are present will regard this as the proper method. Two set discussions have been arranged on subjects both of which I feel certain members will regard as well worthy of their attention. Subdiaphragmatic abscess is no doubt a somewhat

rare condition, yet it may occur in the practice of anyone. It is highly dangerous to life, and both in regard to diagnosis and treatment it presents difficulties of a very grave and embarrassing order. As the subject will be introduced by Mr. Godlee, and discussed by those whose names are a guarantee of their knowledge and sound judgment, I am sure that valuable information will be forthcoming. The subject of fractures belongs to a different order. It is so old and familiar that it may appear at first sight to be too hackneyed and barren to be worthy of your notice. On second thoughts, however, I believe that it will be felt that the opposite is really the case. Long a mere matter of routine, the treatment of fractures has lately felt the influence of modern advance in other departments of surgery. The Roentgen process secures an accuracy of diagnosis which formerly was often impossible. The aseptic method makes operative interference safe, so that when necessary it can be adopted without hesitation, and it has become obvious that to secure the best results treatment must be applied not only to the fractured bone itself, but to the neighbouring joint and the muscles and other structures of the limb. All these are points that present themselves, and I feel certain that Mr. Bennett's paper, on which I know he has expended considerable time and labour, and the ensuing discussion will be attended with practical results of very material value which will establish and disseminate methods of treatment which will largely promote the welfare of patients and the credit of this department of surgery. As to papers to be read I will merely venture upon one or two brief and, as I may term them, official remarks. The time allowed to each paper is 15 minutes, and to the discussion 10 minutes for each speaker. We must, as I have said before, cut our garment according to our cloth, and if one member of the section takes up more than his share of the cloth, those who follow him must go short, so that conciseness, which must not of course impair clearness of statement and completeness of argument, will be a blessing which we shall all thoroughly appreciate and greatly applaud, while as your humble servant I shall be spared the distress of curtailing remarks which, however weighty and to the point, are materially overstepping the allotted time.

Subdiaphragmatic Abscess.

A discussion followed on Subdiaphragmatic Abscess which was introduced by Mr. RICKMAN J. GODLEE (London), who pointed out that though the condition was rare yet it had lately been made the subject of a lengthy monograph by Prag. He mentioned that Maydl had classified the causes of subphrenic abscess under many heads, and he intended on the whole to follow the classification. In itself subdiaphragmatic abscess was not a disease but merely a by-product of some other disease. It was usual to speak of two varieties, an extra-peritoneal and an intra-peritoneal, but these two conditions presented very different symptoms and were associated with very different dangers. The best definition of a subdiaphragmatic abscess was "a collection of pus, with or without gas, between the diaphragm and the structures in contact with it." Mr. Godlee proceeded to give an elaborate and exact account of the anatomy of the under-surface of the diaphragm, detailing the relations of it with the contiguous viscera. He pointed out that the diaphragm should be regarded not as a single dome but as two domes, to a great extent separated by the projecting bodies of the vertebræ. It was also important to remember that a large portion of the under-surface of the diaphragm was not covered by peritoneum, but in immediate contact with the liver, stomach, spleen, pancreas, suprarenals, and kidneys. As to the symptoms of the disease there were none which could be described as pathognomonic. In the early stages there might be hiccough, a stitch in the side as in pleurisy, and friction. He considered that much benefit in diagnosis might be derived from the careful use of the stethoscope. The abscess might give rise to dulness at the lower part of the chest and might be accompanied by displacement of the heart. It might be diagnosed from pleurisy by the fact that the movements of the chest were not impaired, that the upper limit of the dulness was not so well defined as in a pleuritic effusion, and that the breath sounds might be heard below the upper level of dulness. Mr. Godlee mentioned that in emaciated persons it was frequently possible to see through the intact chest wall the lower border of the right lung ascending and descending during respiration. This sign, if present, would be quite against the presence of a pleurisy or pleuritic adhesions. If gas was present in the abscess (the so-called subdiaphragmatic pneumo-thorax) the bell sound might be readily elicited. The tympanitic note might reach upwards even as far as the second rib, and yet the respiratory movement of the chest was not interfered with. He proceeded to consider in turn the causes of the abscess. 1. *Stomach.*—If a gastric ulcer ruptured the pus might be localised, even though it had been poured out into the peritoneal cavity. In other cases the rupture might occur into the small sac. The symptoms in such a case would be very different from those met with in a case in which the perforation of the ulcer proceeded very slowly, so that the stomach had time to become adherent to adjacent viscera. These chronic abscesses burrowed greatly, and when accompanied by serous effusion into the pleura were likely to be mistaken for cases of empyema. 2. *Intestine.*—In these cases the abscess resulted from the rupture of a duodenal ulcer or an ulcer of the transverse colon. Pus and gas collected, pushing the diaphragm upwards, sometimes to a very great degree. There might be no dulness when the patient was lying down, but a tympanitic note; yet if the patient stood erect some dulness was evident at the lower part. In operating on these cases mere drainage might be sufficient, but sometimes it might be possible to close the opening in the bowel. 3. *Cæcum and appendix.*—When a subdiaphragmatic abscess followed on disease of the cæcum or appendix the original inguinal swelling might become less obvious. The abscess was usually on the right side, but it might occur on the left. The pleura might be perforated and an empyema might form. 4. *Hydatid.*—Suppuration of a hydatid cyst of the liver or spleen might simulate an empyema. 5. *Liver and bile passages.*—Many abscesses of the liver were really perihepatic and might perforate the diaphragm. 6. *Kidney.*—A perinephral abscess might be a true subphrenic abscess, and occasionally a greatly enlarged pyonephrosis might extend so far upwards as to simulate a subdiaphragmatic abscess. 7. *Subcutaneous injuries.*—The abscess sometimes followed a blow without a wound of the skin; in this case the blow had probably caused the rupture of a previously existing ulcer, just as the removal of a breast had been followed by perforation of a gastric ulcer. 8. *Wounds* might give rise to the abscess by the introduction of septic material. 9. *Metastases.*—Mr. Godlee thought it was a little difficult to be sure what Maydl meant by this class. 10. *Ribs.*—Caries or necrosis of the ribs might cause this form of abscess. In these cases the suppuration was really in the substance of the muscle, and might give rise to numerous sinuses. 11. Collections of pus in the thorax might make their way downwards, so that caries of the dorsal spine and inflammation of the mediastinum might cause a subphrenic abscess. 12. Under the last heading Maydl put "Various causes.' One of these was actinomycosis; it progressed very slowly, and it hardly gave rise to true pus. It was probably a much more common cause than was usually imagined. Surgical treatment was unsatisfactory. Tuberculosis, peritonitis, and disease of the pancreas were also rare causes.

Mr. BRUCE CLARKE (London) said it was difficult to lay down general rules for diagnosis. In some cases the diagnosis could only be made by recognising that the patient was suffering from some obscure illness and by excluding other conditions. He was inclined to believe that an ulcer of the stomach or intestine was by far the commonest cause. In the treatment of these cases much help was obtained by inserting one hand through a laparotomy wound; thus the exact relations of the abscess could be made out and the best position for an incision could be found. A case illustrating this point was related. He objected to "metastasis" being given as a cause; the expression "a septic condition" was much better.

Mr. L. A. BIDWELL (London) had had six cases. In four of these a diagnosis of empyema was made, and of these four cases three were caused by an ulcer of the stomach and the fourth by an ulcer of the colon. He considered that the pus in a subdiaphragmatic abscess had a peculiarly offensive odour by which it could be distinguished from an empyema.

MRS. STANLEY BOYD (London) read the notes of a case of subphrenic abscess which had commenced with vague gastric symptoms and for some weeks an exact diagnosis was not possible. Ultimately a correct diagnosis was made and the abscess was opened and drained and, so far as the abscess was concerned, the patient improved, but died a little later from ulcerative endocarditis.

Mr. FULLER (Cape Town) urged the importance of a

bacteriological examination of the pus removed from the abscess by an exploring syringe, for if the bacterium coli were found it would be greatly in favour of a subphrenic abscess and opposed to an empyema.

Professor CAMERON (Canada) related a case in which a subdiaphragmatic abscess burst into the general peritoneal cavity. Incidentally he mentioned that it would be desirable to have a word more philologically correct than "appendicitis."

Mr. FIRMIN CUTHBERT (Gloucester) mentioned a case in which a subphrenic abscess was drained. The patient had had the symptoms of gastric ulcer five years previously. In that case the hyper-resonance over the abscess was well marked.

Mr. R. C. CHICKEN (Nottingham) described two very interesting cases in which dulness in the left hypochondrium was caused by extreme thickening of the pericardium. In one of these there was an abscess under the diaphragm with a very tortuous sinus.

Professor LENNANDER (Upsala) mentioned a case of a man who received a severe blow on the right side from a carriage. The liver was pushed down by a liquid collection between the diaphragm and the liver; this was evacuated by an incision in the loin and it was found that the liver was torn. The fluid was found to be a mixture of blood, pus, and bile. The man recovered.

Mr. NOBLE SMITH (London) described two cases in which the subdiaphragmatic abscess was the result of caries of the spine.

Mr. GODLEE, in reply, expressed the opinion that many cases of so-called metastasis were really cases of direct extension of sepsis. He doubted the value of the smell in the diagnosis of these abscesses.

OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, AUGUST 1ST.

After a few introductory remarks by the President of the Section, Dr. W. S. A. GRIFFITH (London), the first discussion on

Puerperal Fever in Relation to Notification

was opened by Dr. BERRY HART (Edinburgh). He recognised three forms of puerperal fever—viz. (1) the acute form associated usually either with serious laceration or ruptures of the genital tract, or with retention of portions of the placenta or membranes; (2) the lymphatic form; and (3) the venous form. As to the first form the difficulties of the labour would probably put the medical attendant on his guard. The second form was the most frequent, presenting the characteristic features of rigors and rapid pulse, high temperature, and in short the typical picture of sapræmia. The third or venous form was the most difficult to diagnose, inasmuch as it was simulated by typhoid fever, drain infection, &c. As to the "drain poison" so ably advocated by Dr. Playfair as a cause of puerperal pyrexia, he could only regard it as "not proven." Cases should be notified as puerperal fever where they had the clinical features of a general or threatened general pyæmia; sapræmic conditions, and localised septic pelvic conditions need not be notified. These definitions would, he hoped, meet the first of the objections made to notification—viz., the difficulty of definition of puerperal fever. Two other objections were met with—viz., the risk of misleading statistics due to errors in diagnosis, and the supposed unwillingness of practitioners to notify cases likely to end fatally. Of the first of these little was to be said, but as to the last there was no doubt that the notification of puerperal fever was always disagreeable to the practitioner, and yet on looking over the statistics of large towns, like Sheffield, London, and Leeds, he felt sure that notification was conscientiously carried out, since the notified cases considerably exceeded the number of actual deaths. The advantages of notification were, first, that it supplied information as to the frequency of this condition and of its tendency to increase or decrease; secondly, that it would help in prevention by putting the medical officer on the track of careless midwives or nurses. But notification was of little value unless accompanied by provision of hospital accommodation and isolation for bad cases. Proper laboratory equipment of such a hospital would be essential.

Dr. W. J. SMYLY (Dublin) said that it would be very important to know the extent of the mortality from puerperal fever in private practice; but this was a matter of great difficulty. As a matter of fact, the total returns of mortality in childbirth were of more scientific importance than the cases notified as "puerperal fever," for the latter returns were apt to be vitiated by variations in definition. In the Registrar-General's returns there were three classes of deaths reported: (*a*) deaths from metria; (*b*) deaths from accidents in childbirth; and (*c*) deaths due to causes not directly connected with childbirth. The greatest difference of opinion would be found in relation to the third group, because cases reported as due to rheumatic fever, typhoid fever,, scarlet fever, &c., after parturition might well be considered as being really, in some instances, cases of puerperal fever. The term puerperal fever was an anachronism; there was no such thing as a specific "puerperal fever," since fever after childbirth was merely a form of sepsis. The great difficulty was to know which cases should be notified. Dr. Berry Hart had said that cases of general infection should be notified but that it was not necessary in the case of local infection. But why not? Was not local infection also apt to be dangerous as a source of infection? And then why should they stop at puerperal sepsis? Why not notify all cases of sepsis occurring after surgical operations. As a matter of scientific value notification did not promise much, but as a matter of prevention of puerperal fever it might be of some value by inducing greater care and acting as a check. The popular view of puerperal fever was very different from the scientific one. According to the former it consisted in a kind of malign influence which became attached to a medical man, causing him to carry infection to every woman he attended; consequently notification would in many cases mean great injury to medical practitioners, if the words "puerperal fever" were used. It would be better to use the simple word "septicæmia."

Dr. JOHN CAMPBELL (Belfast) also thought that notification of puerperal fever as such would, in the present state of public opinion, lead medical men into great trouble with their patients and their friends, for the popular view was that puerperal fever was due to the fault of the medical man or the nurse. Consequently, while notification would be a good measure some means should be taken to safeguard the practitioners. His own view was that medical men were responsible for puerperal fever in only a small proportion of cases; the infection being generally conveyed by midwives. He knew of a case where a medical man attended a woman, using all possible precautions, yet she contracted puerperal fever. Three months later the medical man found that the daughter of the midwife was sufferiug from gonorrhœal ophthalmia, and that at the time of the confinement the midwife, who had made several examinations of the patient, was douching her daughter for gonorrhœal vaginitis. He believed that in a fair proportion of cases puerperal fever was due to antecedent conditions in the patient herself—e.g., gonorrhœa contracted before delivery. One important point in connexion with notification would be greater control of midwives and the education of the public.

Dr. ROBERT BOXALL (London) joined issue with Dr. Campbell in regarding the disease as at all likely to arise from disease pre-existing in the patient herself. This at least was the conviction forced upon him by the results at the General Lying-in Hospital where no case of sepsis had arisen during the last 12 years. Owing to the difficulty in deciding what should or should not be included under the term "puerperal fever" he agreed with Dr. Smyly that all cases of septicæmia, whether local or general, should be notified, for a mild form in one patient might be quite capable of setting up a violent form in another.

Dr. A. V. MACAN (Dublin) said that public notification of puerperal fever appeared to him to be out of the question until it became the rule of the profession to tell the patient and her friends when the case was one of puerperal fever. It was well known that at present this was usually not done. The use of notification generally was either for the good of the patient herself or to prevent the spread of the disease to others. The first object could hardly be hoped for in the case of puerperal fever, for unless the patient were removed from the charge of her medical attendant, no change could be made in the treatment or surroundings. As to the second object, if the practitioner were acquainted with modern antiseptics, he would not require notification to prevent the spread of the disease, and unless they had compulsory powers over midwives they could not compel them to cease practice. The great *desideratum* at present

was the better training of midwives. He believed that at the present time it was the rarest thing to find a trained midwife in country workhouses and country districts in general. As to auto-infection, while quite believing in its occurrence, he regarded it as so exceedingly rare as to have no practical influence on the percentage of puerperal mortality. In his opinion the first step should be to train both medical men and midwives more thoroughly, and not to adopt compulsory notification.

Professor J. W. BYERS (Belfast) pointed out that the great argument in favour of notification was that by its means the prevention of the disease might be hoped for. The definition of puerperal fever was a very difficult matter; but on the whole Dr. Berry Hart's broad definition might be accepted. Bacteriological examination was of great value in forming a diagnosis. Dr. Campbell had said that cases of auto-infection formed a large proportion of cases, but this was not his own view; on the contrary, he thought that they were of comparatively rare occurrence, as was shown by the statistics of lying-in hospitals and by the fact that the majority of cases of puerperal fever were met with in primiparæ, and that patients who were not examined vaginally hardly ever contracted puerperal fever. The mortality from this disease might be diminished, first, by teaching students and midwives the importance of abdominal examination; secondly, notification, for this would teach all concerned, on reflection, that in the great majority of cases the disease could be prevented.

Mr. JAMES GREEN (Portsmouth) asked what degree of pyrexia and what period of its onset after delivery would mark a case as a suitable one for notification. His own view was that a temperature under 100° F. would not need certifying, nor would a case coming on a week or more after delivery. As to personal asepsis on the part of the medical attendant, he found absolute certainty very difficult to secure.

Dr. R. BRUMMITT (South Australia) spoke of the conditions that existed in that colony, where the responsibility of notification rested with the medical attendant. Any statistics of cases of notification were of little value because of the differences of opinion as to what constituted puerperal fever.

Mr. J. H. TARGETT (London) thought that the object of notification should be the provision of proper nursing and treatment of the affected case, and if necessary its removal to an infirmary when the circumstances of the patient required it. In his teaching of the students he always impressed upon them the importance of the medical attendant taking upon himself the responsibility in every case of puerperal fever.

Dr. MICHAEL BEVERLEY (Norwich) considered that the main reason for the notification of puerperal fever was that it was a preventable disease and that notification would be the best means of stamping it out.

Dr. ARTHUR HELME (Manchester) took exception to Mr. Targett's attitude in instructing the students that when puerperal fever developed the student and the nurse were responsible. It had been so persistently explained to the public that in the matter of puerperal fever the practitioner was the sole and blameworthy cause that at the present moment in many districts to tell the friends that the patient had puerperal fever would permanently injure the practitioner. Whilst it was true that in most cases puerperal fever was due to infection from without it was equally true that in a large number of cases the source of infection was within the patient herself, hence if notification was to be adopted it was important that the erroneous popular view that in every case of puerperal fever the practitioner in attendance was practically a criminal should be combated.

Dr. HENRY BRIGGS (Liverpool) pointed out that puerperal fever should be regarded as surgical fever and that the modes of prevention of the one and of the other were identical. Much in the success of treatment depended upon early diagnosis, and if this were attended to notification was unnecessary. He advocated the provision of isolation wards as a supplement to notification.

The PRESIDENT considered that in the matter of puerperal fever, the only course open to the medical practitioner was to be candid with the patient's friends. He could not suppose that, as some of the speakers apprehended, the practice of the medical attendant would be seriously affected by such a course; every man who had done his work conscientiously would surely receive sufficient support from his patients to avert such dire consequences of a single unfortunate case. He read an extract from a communication from the Local Government Board pointing out that "the object to be attained in so far as preventive medicine is concerned, is to bring to the knowledge of the sanitary authority all those conditions which, supervening upon parturition, are communicable from one parturient woman to another. He also quoted the statement of a medical officer of health that his experience of notification had been disappointing, inasmuch as the deaths from puerperal fever in one or two years had been in excess of the notifications in his district; and that except for disinfection of bedding at the end of a case, the intervention of the medical officer of health was seldom necessary.

After a brief reply by Dr. BERRY HART, the following motion was proposed by Dr. BOXALL, seconded by Dr. BEVERLEY, and carried *nem. con.*

That it be a recommendation to Council that in the opinion of this meeting it is desirable that notification of puerperal fever (septicæmia) should be adopted generally.

STATE MEDICINE.

WEDNESDAY, AUGUST 1ST.

Dr. J. C. THRESH, medical officer of health to the Essex County Council and Lecturer on Public Health at the London Hospital Medical College, delivered a

Presidential Address

entitled Some Problems in Rural Sanitation. He said: One of the most interesting problems which has engaged the attention of scientists during recent years is that of the period for which man will continue to live upon this earth. There is a general consensus of opinion that a time will come when the earth will cease to be habitable, but there is a wide divergency with reference to the length of the period which will elapse before the human race disappears. There are those who think that some great catastrophe may terminate our existence at an early period, others calculate that we are using up the available oxygen in the atmosphere so rapidly that in the course of two or three centuries there will not be sufficient left to support life. At the opposite extreme we have those who teach that man may continue to inhabit the earth for the millions of years which will elapse before the cooling process solidifies all the water on the globe. These speculations, however interesting, have little bearing upon public health, but there are other questions somewhat analogous in character which sanitarians will have seriously to consider. One of the most important is the continued increase of population, an increase almost exclusively confined to towns and cities. The effect of over-population is well exemplified in the two countries in which the population has attained its maximum density, India and China. The result is periodic famines, generally associated with pestilence in some form, affecting wide areas and millions of people. The earth's population is increasing steadily and in certain countries with great and continuously increasing rapidity. The production of food cannot for any very lengthened period keep pace with the increase of population, and it may be that famine and disease will more and more frequently occur and keep down the population within the limit of the available food supply. The growth of the large manufacturing centres with the influx of rural labourers into towns, and the general neglect of purely agricultural pursuits, must in this country produce some marked effect. That this effect will conduce neither to increased health nor to longevity can scarcely be denied; hence it is a result which we must deplore. The country has already reached a condition in which the population far exceeds that which can be fed by its produce, and the condition is being aggravated year by year by the increasing population and continuous neglect of agriculture, and I am afraid will continue until we receive a rude awakening, an awakening which in all probability will stagger humanity.

Our purely rural population is slowly decreasing, our urban population is rapidly increasing: therefore year by year the feeding problem becomes more serious. This is a fact so well recognised that its very familiarity is producing contempt. It is well, however, that we should from time to time be reminded of the fate upon which we appear to be almost blindly rushing. Sanitary improvements unfortunately tend only to aggravate the evil and hasten on the day of reckoning. So much attention has been devoted to urban sanitation that the town dweller enjoys now many

advantages not possessed by those who remain in the country, advantages which tend to prolong life, increase health, and, generally speaking, make life better worth living. For example, in most of our towns every house is efficiently drained and abundantly supplied with pure water, rendering it possible, with the minimum of trouble, to keep a house and its surroundings sweet and clean and therefore healthy. In our villages and rural districts nuisances from the improper disposal of filth abound on every side and the water-supplies too often are unsatisfactory in quality as well as in quantity. Land is going out of cultivation and decreasing in value, yet it is often impossible to obtain a small quantity to effect sanitary improvements. Let a plot be required in order to provide cottages with ground upon which to dispose of the slops and house refuse, or for the erection of better houses for the labourer, or for the erection of an isolation hospital, and it is often almost impossible to obtain it. Land-owners refuse to sell small areas for such purposes, yet, in my county at least, farms are sold at ridiculously low prices and the speculator who purchases, recognising the demand for small plots, promptly cuts up the farms and sells the land at an enormous profit. The dog-in-the-manger policy so common amongst land-owners and their agents I cannot account for, but it is a fact which is well recognised and deplored. How to bring back people to the land is one of the greatest problems of the age. It is far too large a subject for me to dwell upon, but I am convinced that one of the chief requirements for restoring prosperity to our rural districts is increased facilities for acquiring small areas of land for sanitary improvements. With a sufficiency of land adjoining or near each house the necessity for sewers in most of our rural districts would be avoided, though in compact villages urban in character drains and sewers will still remain a necessity. The supply of water to our cottages is even a greater difficulty. Sanitary authorities are not only averse to the expenditure necessary to provide a public supply, but too often also averse to causing landlords to provide such a supply when it can be done at what is defined by Act of Parliament as a reasonable rate. Another very important requirement, I might almost say the vitally important requirement, is decent cottages for our rural labourers. Many Acts of Parliament have been passed having for their object the better housing of the working classes. Their utility in rural districts has been practically *nil*. We shall welcome the discussion on this subject, which will be opened by my friend Dr. Tew at one of the meetings of this section. The effect of the present defective accommodation upon the mental, physical, and moral well-being of the inhabitants is too well known to need repetition. The housing problem is of importance not only to the rural labourer but to the whole country, and should be treated as a national problem. My apology, if any is needed, for touching upon these questions relating to rural sanitation in my opening address is that we are meeting in a large agricultural centre, in the centre of a group of rural counties in which these subjects are of the deepest interest, and that I, as medical officer of health of one of these counties, am myself more particularly interested in their study and am desirous of doing what little I can towards improving their sanitary condition and bringing about a new era of prosperity.

Rate-supported Sanatoria for Consumption.

Dr. NATHAN RAW (Liverpool) read a paper on this subject in which he dealt specially with household infection. Phthisis was essentially a chronic disease that could not be stamped out by legislative action. The education of the public was a necessary preliminary. From the facts of the case the consumptive poor would have to be cared for at the expense of the rates. Existing Poor-law institutions were unfitted for the treatment of such cases. The Liverpool and Toxteth Unions formed a joint tuberculosis committee and secured a site upon the Dee at an elevation of 650 feet to be used for early curative cases only. Fresh air and sun were the only cures known at present. Notification and free disinfection were desirable. The erection of public sanatoria was mainly one of municipal enterprise. Within a few years it would probably be difficult for a consumptive to obtain employment.

Dr. COOPER PATTIN (Norwich), Dr. ALFRED HILL (Birmingham), Dr. D. OLDFIELD (London), Dr. J. GROVES (Carisbrooke), Dr. H. PECK (Chesterfield), Dr. GRÜNBAUM (Liverpool) Dr. C. MACFIE (Bolton), and Dr. THRESH (Chelmsford) discussed the paper, and Dr. RAW replied.

PSYCHOLOGY.

WEDNESDAY, AUGUST 1ST.

Dr. PERCY SMITH (London) in his Presidential Address, referred to the subject of the Prevention of the Causes of Insanity. These comprised the marriage of the neuropathic and hereditary transmission, alcoholism, and syphilis. He pointed out the ways and means of prevention that should be brought into operation so that the recent and alarming increase of insanity should be checked.

A vote of thanks was proposed by Dr. MACDOWALL, seconded by Dr. SOUTAR, and carried unanimously.

Dr. MACNAUGHTON-JONES (London) opened a discussion on the Correlations between Insanity, Vice, and Crime, and pointed out the importance of coöperation between the alienist and the gynæcologist. The discussion was continued by Dr. SOUTAR, Dr. BERNARD O'CONNOR (London), Dr. WYNN WESTCOTT (London), Dr. PERCY SMITH, Dr. SEYMOUR TUKE (London), and Mr. CARDEW.—Dr. MACNAUGHTON-JONES then replied.

Dr. E. S. PASSMORE (London County Asylum, Banstead), read a paper on Epileptoid Mania or Psychic Mania, and instanced cases in support of the view that many cases regarded as recurrent non-epileptic mania were really epileptic in character.

The paper was discussed by Dr. OLDFIELD, Dr. LLOYD ANDRIEZEN (London), Dr. MACNAUGHTON-JONES, Dr. PERCY SMITH, Dr. SOUTAR, and Dr. MACDOWALL, and Dr. PASSMORE replied.

The meeting then adjourned till the next day.

PHYSIOLOGY.

WEDNESDAY, AUGUST 1ST.

The proceedings of this section opened with a debate initiated by the President, Dr. W. D. HALLIBURTON (London) upon the Formation and Excretion of Uric Acid in Health and Disease.

Dr. A. HAIG (London), Dr. T. H. MILROY (Edinburgh), Dr. F. G. HOPKINS (London), Dr. W. J. SMITH JEROME (Oxford), Dr. J. HADDON (Denholm), Dr. HARRY CAMPBELL (London), and Dr. R. J. ANDERSON (Galway), took part in the discussion.

Papers were then read by Dr. J. HERBERT PARSONS (London) upon the Dilatation of the Pupil from Cortical Stimulation, and by Professor E. WACE CARLIER (Edinburgh) upon Changes occurring in the Cells of the Newt's Stomach during and after Secretion.

PATHOLOGY.

WEDNESDAY, AUGUST 1ST.

Dr. E. E. KLEIN, Lecturer on General Anatomy and Physiology at the Medical School, St. Bartholomew's Hospital, delivered the following short

Presidential Address.

Pathology in its analysis of the nature of the tissue changes has been influenced, it is admitted, to a not inconsiderable degree by the progress made in bacteriology within the last two or three decades. Pathology no less than, and in no way different from, other biological sciences, intent on answering the "what," as also the "why," asks not merely what is the intimate nature of a particular change and aberration of a tissue or organ from its normal or physiological state, but also, and in a higher degree, why this change, and what its cause? Why a particular alteration in one, another in another instance? Microscopical and experimental analysis have both been active in discovering some fundamental facts, but have left numerous gaps in this study, and it is by the aid of bacteriology—since it became, thanks to the foundations laid by Koch, an exact science—that these gaps are being closed up, or at any rate that the manner and method are indicated by which these gaps may, and probably will, be filled up. The time at my disposal does not permit of more than illustrating these propositions by a few of the more striking examples.

1. *Inflammation.*—For more than a century inflammation, by the aid of the improved microscope and by experimental work which had occupied a host of active minds and of great experimentalists, was being analysed in all its elements—the part that the vascular system, that the tissues, that the nervous mechanism play in establishing the peculiar alterations constituting the phenomena of inflammation, suppuration, and

their sequelæ; thereby an enormous number of facts were brought to light, by which the understanding of these particular aberrations from, and return to, the normal conditions became clearer, or were believed to have become well understood. It is now admitted, however, that with the exception of traumatic, thermic, and chemical agencies, the chief, if not the sole, cause of the changes of the vascular apparatus and the surrounding tissues constituting inflammation, inclusive, of course, of suppuration, are micro-organisms, which either by their chemical activity—producing substances which exert a toxic action on the vascular system or the tissues, or both—or by the toxic nature of the protoplasm of the microbes themselves lead to the abnormal interaction between the vessels and the tissues, manifesting itself in the exudation of fluid and formed elements of the blood and the progressive or retrogressive changes of the tissue elements themselves. It is one of the best-proved acquisitions in bacteriology that many microbes, either when growing and multiplying outside or within the tissues, produce toxins which in the tissues set up the phenomena of inflammation either locally or generally. This applies not only to those microbes which are specially and in the narrower sense connected with suppuration and abscess—for example, various species of pyogenic staphylococci, streptococci, and bacilli—but also to other specific pathogenic microbes like the diphtheria bacillus, the tubercle bacillus, tetanus bacillus, and typhoid bacillus. Koch's tuberculin, the diphtheria toxin, and the toxins of many other microbes produced in the test tube and then injected into the tissues produce typical inflammation. The same has been shown of the dead protoplasm of many microbes—for example, tubercle bacillus, cholera vibrio, bacillus pestis, and others, as also of some ordinary saprophytes—namely, that the dead bodies of these microbes contain pyrogenic and pyogenic substances capable of producing typical inflammation. Another set of phenomena of which an explanation is supplied by bacteriology is one well known in the study of inflammation—that is, the greater or lesser number of leucocytes in some inflammatory foci. It is well known that while some inflammations are characterised by copious transudations with few leucocytes, others, on the other hand, are associated with copious accumulation of leucocytes, as in suppuration. The phenomenon of chemotaxis seems to offer a good explanation for these differences; that is to say, while some microbes or their toxins powerfully attract leucocytes from the blood and connective tissues, others have no such effect or possess even the reverse—namely, negative chemotaxis. In a similar manner Pfeiffer first classified the effects of chemical substances on lower organisms.

2. *Necrosis.*—The most valuable and earliest observations were those of Roux and Yersin, showing that the toxin produced by the diphtheria bacilli has a powerful necrotic action on the tissues. The further demonstration of the actual presence of the toxin in the diphtheritic membrane supplied at once the simplest and most feasible explanation of the necrotic condition of the mucous membrane in diphtheria—namely, the multiplication of the diphtheria bacilli at a particular locality—be it the fauces or larynx, or trachea or bronchi, or any other membrane—causes the production of the toxin, which in its turn causes the inflammation, and further the necrosis, of the membrane. But this action—namely, localised inflammations leading to gradually progressing necrosis of the tissue elements—is not peculiar to the diphtheria bacilli and their toxins, for it is almost a common character of many, if not most, pathogenic microbes; it is observed in connexion with almost all hitherto known pathogenic bacteria, tubercle, glanders, leprosy, pseudo-tubercle, pathogenic cocci, and bacilli of various kinds. It is this progressive necrosis of the tissue following the typical symptoms of inflammation—congestion, stasis, diapedesis, and emigration of leucocytes—which is observed, granted the necessary number and virulence, as the effect of the action of many pathogenic microbes; inasmuch as at a particular locality primary as well as secondary foci are found, so long as their multiplication proceeds and their toxins are being produced, and thus the necrosis of the tissue spreads into larger and larger areas. In non-microbic inflammations, on the other hand, this necrosis is local and circumscribed, being due to the direct action of the noxious agent—thermic, chemical, or traumatic—and its action is limited to the part actually attacked or its immediate surrounding. The necrosis itself appears in both series, however, of the same essential character—namely, coagulation of the protoplasm of the tissue cells, inclusive of the vessels themselves, and a gradual disintegration and destruction of the cells as also of the intercellular ground substance. These phenomena have been well observed in the case of a number of pathogenic microbes. Another not less important set of appearances associated with the necrotic change caused by bacteria is the secondary leucocytosis and suppuration; and for this the chemotactic action that the necrosed tissue exerts on leucocytes, attracting these for one reason or another, probably as scavengers and removers, offers a ready explanation.

3. *Specificity of cell secretions.*—Until recent years it was generally considered that a specificity of cell secretions was one of the fundamental phenomena of the physiological or normal tissues. Behring, Kitasato, Brieger, Roux, Ehrlich, and many others have, however, shown that under the activity of many pathogenic bacteria and their toxins in an affected body a curious and important series of secretions on the part of the cells of the tissues takes place which is as specific as those others associated with the normal life—I mean the production of specific antitoxins and the production of specific agglutinins. It was further shown that not only under the stimulation of the cells by bacteria and their toxins are those specific antitoxins secreted, but that organic substances like abrin, ricin, and venin are capable of stimulating the cells to a like production of specific antitoxin. Moreover, quite recently a further highly interesting series of facts have been brought to light—namely, that particular tissue taken from one animal body and introduced into another causes a specific reaction, showing itself in this, that the living cells of the latter produce under the particular stimulation substances specifically acting on the particular tissue that has caused the stimulation.

A discussion was then introduced by Dr. F. W. ANDREWES (London) upon

The Pathological Distribution of Bacillus Diphtheriæ and the Bacteriological Diagnosis of Diphtherial Infection.

Dr. ANDREWES pointed out that the bacteriological diagnosis of diphtheria was required for two purposes—for the purpose of clinical diagnosis and for strictly scientific purposes, such as the demonstration of the diphtheria bacillus in the throats of healthy persons. In the latter case a rather prolonged investigation, extending perhaps over many days, might be required before the identity of the bacillus could be satisfactorily established. For clinical purposes a diagnosis was required within 24 hours, and for his report the bacteriologist had to rely mainly on the microscopic appearance of the culture. This was not sufficient by itself for the positive identification of the bacillus, and the report sent to the physician merely meant that a bacillus morphologically resembling the diphtheria bacillus was present in the patient's throat. With that additional fact in his possession the physician must then consider the clinical features of the case and form his own diagnosis. Under the conditions in which the diagnosis was required it was impossible to place the onus of making a diagnosis on the bacteriologist without affording him sufficient time to complete his investigation.

In the discussion which followed the PRESIDENT, Professor MUIR, Mr. W. M. CROWFOOT (Beccles), Dr. LISTER, Dr. LAZARUS-BARLOW (London), took part, and the conclusions formulated by Dr. Andrewes were accepted by all the speakers.

Professor MUIR read a paper On a Case of Serious Anæmia and Purpura Associated with Great Deficiency in the Red Bone Marrow.

Mr. ROGER WILLIAMS (Clifton) read a paper On the Pathogenesis of Myoma of the Uterus, and Dr. JOHN EYRE read a communication On Nutrient Media of Standard Reaction.

The proceedings of the section were adjourned until the following day.

OPHTHALMOLOGY.

WEDNESDAY, AUGUST 1ST.

An opening address was delivered by the President of the Section, Dr. W. A. BRAILEY (London), upon the subject of Ocular Headaches, after which a paper was read by Mr. RICHARDSON CROSS (Bristol) upon the Treatment of Chronic Glaucoma, when a debate ensued in which Dr. J. HERN (Darlington), Mr. WORK DODD (London), Dr. K. A. GROSSMANN (Liverpool), Mr. G. A. BERRY (Edinburgh), and Mr. DEVEREUX MARSHALL (London) took part.

DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

The proceedings in this section were well attended. After a few brief introductory words from Dr. F. TAYLOR (London), the President, the first subject for debate, the Nature and Varieties of Pneumonia in Children, was introduced by Dr. NESTOR TIRARD (London). Dr. LORIMER HART (London), Dr. NICOLAYSEN (Christiania), and Dr. A. M. GOSSAGE (London), took part in an interesting debate which followed.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, AUGUST 1ST.

Dr. WALTER G. SMITH, King's Professor of Materia Medical School of Physic, Trinity College, Dublin, and Physician to Sir P. Dun's Hospital, gave a short

Presidential Address

on the subject of the Teaching of Pharmacology. The rise and growth of the science of pharmacology, he said, which was founded by Bichat and Magendie early in the century, has made it plain that all correct appreciation of the mode of action of drugs must be based upon physiology and pathology. The new departure has gradually leavened our conceptions of therapeutics and renders the teaching of this branch alike more intelligible to the student and more satisfactory to the teacher. I well remember the time when attendance upon materia medica lectures was a dreary enough obligation, and the course was to students perhaps the least popular in the entire curriculum. Comparing the teaching of materia medica and therapeutics 30 years ago with the present time three features stand out prominently: (1) the retrogression of descriptive materia medica in its restricted meaning; (2) the establishment of special courses in practical pharmacy at the medical schools, conducted in suitable laboratories; and (3) the development of pharmacology in its present acceptation—that is, the scientific investigation of the modes of action of drugs. In regard to the place of pharmacology in the medical curriculum and the best mode of teaching medical students I heartily join with Dr. J. B. Bradbury (Address to Section of Pharmacology and Therapeutics, Portsmouth, 1899) in protesting against undue neglect of what may be termed old-fashioned materia medica—that is, description of the *essential* properties and chemical nature of drugs—so far as these elucidate the action of the remedy or its relations to prescribing. A modern course of lectures on materia medica should most certainly be founded on the bed-rock of pharmacology—that is, physiology; but there is still room—nay, I think, necessity—for practical demonstration of the physico-chemical properties of drugs, and we need not even be ashamed of inculcating the utility of some familiarity at least with the pages of the British Pharmacopœia which it is the fashion of some to despise or decry.

Thanks to the labours of physiologists and pharmacologists on the one hand and of organic chemists on the other hand, it is now possible, and even comparatively easy, to give an interesting and practically useful course of lectures on materia medica and therapeutics to medical students, but not earlier than their third year. I venture to affirm that it is entirely the fault of the lecturer and not of his subject if he does not succeed in quickening the dry bones of materia medica and in awakening and maintaining the lively attention of his class. With a little thought and trouble numerous simple experiments, chiefly chemical, can be shown in illustration of the more important physiological and therapeutical properties of drugs. General principles can be laid down, alliances pointed out, and broad features sketched which connect together large numbers of drugs, into the individual details of which it would be wearisome and a waste of time to enter. Take, for example, antipyretics and their mode of action; or the local action of astringents and caustics, experimentally illustrated by the reactions of various acids and metallic salts upon solution of albumin. Or, again, the group of "aromatic compounds" where it is possible to give a brief but comprehensive survey of the general chemical and physiological relations of the subdivisions of this great group—namely, hydrocarbons, phenolic compounds, acids, and nitrogen derivates (alkaloids, &c.). And in this aromatic group, which includes the antipyretic drugs, there is abundant opportunity for drawing attention to many interesting points in illustration of the connexion between physiological action and chemical constitution.

Since the properties and motions of molecules which determine physical properties depend upon the motions and properties of atoms which determine chemical reactions, the same common laws must govern both physical and chemical phenomena; and no one can doubt that the properties of the most complex compounds depend upon, and are intimately correlated with, the properties and configurations of the atoms and molecules of which the aggregates are built up. This fascinating subject, which received its impetus in Great Britain from the labours of Crum Brown and Fraser, has not escaped the attention of former speakers at meetings of this Association, for at the Brighton meeting of 1886 Sir T. Lauder Brunton delivered an attractive address on the Connexion between Chemical Constitution and Physiological Action; and Sir W. Broadbent upon more than one occasion (in 1890 and again in 1895) has likewise referred to this topic which he rightly esteems as one of fundamental significance. Bit by bit—here a little, there a little—we are gathering the kind of material which can best help us to gain insight into the principles of therapeutics. True, we may have to wait a good while before a stately edifice can be built up, but none the less does it hold true that the problems of therapeutics, and for that matter of all biology, are, at the root of things, essentially chemical or physico-chemical, in so far as we are at all able to interpret them or refer them to general laws. Within the last 15 years the remarkable and daring theories of Van't Hoff and his followers upon the nature of dilute solutions, based upon certain physical data—namely, osmotic pressure, alterations of the boiling-point and freezing-point—together with Arrhenius's hypothesis of ionic dissociation have largely engaged the attention of physicists and chemists. Nor have they failed to make their impress upon pharmacological investigations. The earliest reference I have noted in pharmacological work to Van't Hoff's important researches is contained in a paper by Hofmeister.[1] In the same journal[2] is a suggestive paper by Dreser, "Ueber Diurese und ihre Beeinflussung durch pharmakologische Mittel."

One word in conclusion. The flood tide of discovery of new synthetic chemical remedies has, together with a few treasures which have risen on its crest, also washed on shore much rubbish of a pseudo-scientific sort. Are we not daily worried with samples and with advertisements and circulars from eagerly competing firms announcing new drugs or novel combinations which I fancy are used chiefly by those who do not know how to employ the old ones? Scarcely are they advertised once before they are elbowed away by importunate new-comers. The advertisement is headed with an enigmatical name, standing over an appalling chemical formula, and probably ornamented with a structural or graphic diagram. All this is backed up by a plausible show of original experimental work and ends with a "full literature." In a pamphlet lately issued about some new-fangled preparations of iron 62 literary references were appended and a well-known and reputable drug firm advertised in a recent number of the *British Medical Journal* more than twenty of its special preparations, some of which probably most of us never heard of. And not only are we plagued with innumerable circulars which choke our waste-paper baskets, but we are tormented during our consulting hours at home by the visits of smooth-tongued touting agents of many of the large firms. This most objectionable practice is on the increase. It should, in my humble opinion, be stamped out by the medical profession, and I avail myself of this public opportunity to protest against it. For some time past I have made it an invariable rule, and given directions accordingly, that I will not receive or interview the agent or representative of any drug firm, no matter how famous. If by chance or sheer audacity one of these gentry does find his way into my consulting room he very speedily finds his way out again.

[1] Zur Lehre von der Wirkung der Salze, Archiv für Experimentell Pathologie und Pharmakologie, Band xxv., 1889.
[2] Band xxix., 1892.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, AUGUST 1ST.

Presidential Address.

The President of this section, Dr. SCANES SPICER, in his opening address, after welcoming those attending the

section and thanking those who had undertaken to introduce the discussions and offer papers for consideration, went on to say:—

Again, in 1900, we have a combined Section of Laryngology and Otology, in which arrangement, I think, the Council of the Association have acted wisely. Except when we meet in the largest centres, or on special occasions like international congresses, it is not easy to secure a sufficiently large attendance to make two sections profitable. Then, nearly all the present generation of specialists in throat, nose, and ear diseases practise all divisions, and there can be no doubt that the field of work and the chief questions of interest are the same to us all. Further, it appears to me that the sections of the British Medical Association annual meeting are intended not only for specialists but for the much larger number of practitioners who feel attracted to our subjects, and that we shall more effectually secure the diffusion of knowledge and interest by the consideration of broad questions common to both branches rather than of minute and unsettled problems peculiar to either laryngology or otology, more appropriately dealt with at the special societies and larger congresses.

In comparing the status of the specialist in the past with that of the specialist of to-day the President remarked upon the startling rapidity with which the evolution of the special study of diseases of the throat, nose, and ear had taken place, and predicted that it would not be long now before laryngology and otology would take full rank in all university and qualifying tests. He reminded his listeners that on the Continent and in America the universities had given to this specialty and its professors a recognition equal to that of any other branch of medicine or surgery. He then briefly reviewed the reasons for regarding nasal stenosis, obstruction, or insufficiency as a pre-eminent factor in the etiology of catarrhal processes of the throat, nose, and ear, and continuing, said:—

That the results of nasal obstruction are being gradually recognised is evidenced by the fact that it is now no uncommon thing to have cases of obstruction of the most diverse character sent for the adenoid operation in which the post-nasal adenoid hyperplasia element is absent or insignificant. This implies that the symptoms of obstruction as seen in one of its commonest forms are by some erroneously supposed to be due only to adenoids. It is by no means derogating from the claims of William Meyer to our gratitude if I suggest that in most cases of adenoids the post-nasal adenoid hyperplasia is only a part, and often a small part, in the pathological condition of the so-called adenoid child; that fractured and deflected bones and cartilages, turbinal enlargements, hypertrophied tonsils pushing up and growing up behind the soft palate, stunted nostrils, and even vaulted palate are often far more important features in the case at the time of examination than the post-nasal adenoid hyperplasia. The failure to recognise this or to act upon it is the cause of the unsatisfactory results which sometimes ensue if the practitioner has undertaken to bring about a cure by simply removing the adenoids. Hence the discredit and suspicion which have often surrounded the question of adenoid operations and an explanation, at the same time, of the most common factor in a recurrence. I believe the truth to be this: In many children with nasal obstruction no formal adenoid operation need be done with an anæsthetic—and its risks are not *négligeable* unless under special circumstances—if the other factors in the obstruction are attended to. I have no hesitation in estimating that many hundreds of adenoid operations are done unnecessarily in this country every year when adenoids are not present, or if present are only an insignificant element in the obstruction which depends mainly on other causes. The result of this is a complete absence of relief of the symptoms of obstruction or only a slight and temporary improvement by the adenoid operation. The question which we should put to ourselves is this: Is it the mere presence of the adenoids or the impeded breathing which leads to the arrested evolution evidenced by the so-called "adenoid physiognomy," the alar collapse, the stunted nostrils (persistence of infantile condition), the vaulted palate and crowded teeth, the "drawn" eyes, and the deformed chest? The answer can only be—the impeded respiration. This leads to imperfect use or disuse of the nasal channels, the structures adjacent have not the normal stimulus to grow excited by functional activity, and it is in the use or disuse of structures during growth and evolution that we shall find the master key to explain the normal or arrested evolution of the surrounding organs and structures. Hence child breathing is just as important as child feeding to bring about normal growth, and with insufficient supply of air through stenosed nostrils, or improperly prepared supply through the mouth come lessened vigour and weak breathing in addition to the developmental arrest.

It often happens that an operation for adenoids or nasal obstruction is regarded as the termination of the case and that it should be unnecessary to take any more special trouble. This idea should be most strongly combated. The operation is only the first step towards the child getting back into the right road. The track being clear it has now to be used and developed. Well-considered developmental and respiratory exercises for the expansion of the chest and the restoration of respiratory vigour, for the removal of articulation and resonance defects, hearing drill, correction of ocular defects, regulation of vaulted palate and crowded teeth, and numerous other defects may require careful attention if the child is to catch up his more fortunate companion who has not been hampered by years of obstruction. The operation removes the obstruction, but he has to overcome, often with difficulty, many of the results of the previous deficiency. In laying such stress on the influence of obstruction in producing hypertrophic or hyperplastic processes, it is not my wish even apparently to ignore other factors in the pathogeny of adenoids such as unresolved catarrhs, specific fevers, syphilis, struma, soil, climate, atmosphere, rickets, feeble breathing, and low vitality; but it is my deliberate opinion that if perfect nasal respiration be restored, in many cases, if the child is put under ordinary favourable hygienic conditions, almost miraculous improvement will follow; but all the care and attention directed against the other factors will prove unsatisfactory or fruitless if the nasal obstruction is ignored. Not that all cases of obstruction by any means require a formal operation if taken early. But it is far better to operate too early or for minimal obstruction than too late or not at all; but in order to prevent a long-standing obstruction during growth from imprinting itself indelibly upon the frame and features we must always have in view not only the removal of adenoids, but ensure the complete functional efficiency of the nasal channels as a whole.

In conclusion, I would remind you that prevention is better than cure, and that if in our field of work, as in others, we have knowledge of causative factors of disease, we can in many cases eliminate and prevent them. Just as in general medicine and surgery the highest achievement is the prevention of disease and deformity, so in our special areas of work we should aim at developing the prophylactic aspect of our subject and in diffusing the knowledge thereof broadcast. In this way, when a morbid process has been originated and detected, it can be corrected at an early stage. In this connexion I firmly believe that the greater recognition of the influence of nasal obstruction, in its earlier and slighter forms, in producing those catarrhal changes which extend to the ear, is destined to play a great part in the future in the prevention and arrest of deafness and other disorders in an early stage. As the constant dropping of water wears away the stone, though imperceptibly, so does the constant action of fall of air tension in a stenosed nostril make its result evident sooner or later. Physical laws are no more suspended in our field of work than in any other. It behoves us resolutely and firmly to apply scientific facts, and to concern ourselves no less with the beginnings of disease and its prevention than with the highest developments of special technique.

TROPICAL DISEASES.

WEDNESDAY, AUGUST 1ST.

Presidential Address.

Colonel KENNETH MACLEOD, I.M.S. (ret.), Professor of Clinical and Military Medicine at the Army Medical School, Netley, President of the section, gave an address defining the Scope and Aim of the Section's Work. He said: Since the last meeting of this section events have occurred which have emphasised the significance and enhanced the importance of its work. The war in South Africa has stimulated into vivid reality the unity and solidarity of the British Empire. The imperial idea implies not only a community of interests—social, commercial, and political—between the mother country and her colonies and dependencies, but also a community of suffering; and as tropical conditions and tropical diseases prevail in Greater Britain to such a large extent

the study of these, as they affect both the governing and the governed, has come to be recognised as a matter of vital and cardinal necessity. This has been fully acknowledged by the able Minister who presides over the colonies and who has realised more clearly than any of his predecessors the immense importance of inquiry and education as regards tropical pathology and hygiene. The Government of India has also awakened from its torpor and taken thought and action in the same direction by encouraging research, training men in bacteriological methods, establishing laboratories, appointing commissions, and promoting special investigations. A knowledge of the pathology and pathogenesis of disease must obviously precede and guide preventive and curative effort, and it cannot be too loudly proclaimed that this knowledge can only be obtained by systematic scientific research. The days of casual and statistical observations and dissertations have gone and it is now universally understood that nothing will avail for the solution of pathological problems except the undistracted work of trained agents provided with ample opportunities and appliances. The South African war has forced into prominent and painful attention two diseases which, although they cannot be called tropical diseases, manifest themselves with special severity as regards incidence and fatality under tropical conditions—namely, enteric fever and dysentery. That enteric fever existed in South Africa and was apt to prevail in South African towns and cantonments during the summer months was well known and its appearance among the troops engaged in this war was fully anticipated, but the excessive prevalence of the disease in a country and climate with a reputation for exceptional healthiness has come as an unpleasant surprise. No doubt the circumstances and exigencies of warfare are mainly responsible for the heavy tribute of sickness and death which enteric fever has levied. War shares with famine the malignant powers of enhancing the susceptibility to whatever infection happens to be present at the place and time. Enteric fever has been in grim evidence during recent wars on the Indian frontier and in the Egyptian Soudan; but malaria, cholera, yellow fever, and dysentery have on other occasions been stimulated into disastrous activity by war. So with famine: malarious disease, small-pox, diarrhœa, dysentery, and relapsing fever have attended or followed it, and at the present time cholera and plague are raging among the famine-stricken in India. The infection of enteric fever seems to be ubiquitous, portable, and peculiarly facile and subtle; and perhaps the most urgent question of the hour is how to mitigate its prevalence in the British army, in which in times of peace it causes one-third of the total mortality. It is important to note that a very marked contrast exists between the ordinary incidence and mortality of the disease in temperate and tropical or subtropical countries—in England and Canada on the one hand and in India and Egypt on the other. A similar contrast appears in the French army stationed in France and in Northern Africa. How much of this great excess is due to tropical conditions, topical and climatic, and how much to remediable sanitary defects, it is not easy to say, but side by side with the excessive suffering of the army in India we are confronted with the remarkable fact of the immunity of the native population. Whether a similar immunity exists among indigenous races and habitual residents in South Africa is an interesting question. Evidence seems to indicate that it is so. The native immunity in India, though not absolute, is undoubted; its cause has not been satisfactorily ascertained. It has been attributed to habituation to minute doses of the contagium, to protection conferred by attack during infancy and childhood, and to racial resistance acquired in the course of generations through both these influences. Some experiments by Freyer and others indicate that natives give positive reactions to Widal's test, but more extended and exact investigations on this point are desirable. It is quite certain that the immunity of natives is not due to superior sanitary conditions. Whether a similar immunity, temporary or permanent, can be engendered in European subjects by a process of inoculation such as has been devised by Professor Wright of Netley, and practised on a large scale among soldiers proceeding to the seat of war, is a question the reply to which is awaited with eager anxiety. Some figures obtained from Ladysmith have been published by Professor Wright which seem to show that some immunity is conferred by these inoculations, but though encouraging they are by no means demonstrative. Similar procedures for creating an immunity against cholera and plague initiated by Professor Haffkine have in India been attended with satisfactory results. But although a certain measure of preventive success has been obtained by these inoculations the employment of them appears at present to be practicable and useful only as an emergent expedient in the presence of a serious outbreak, and the prevention of cholera, plague, and enteric fever on a large scale must apparently be essayed on other lines and by other methods. Dysentery has been very rife in the South African army, but the disease has exhibited mostly a mild type and has been amenable to treatment. The persistence of plague in India and the appearance of the disease for the first time south of the equator—in Mauritius, South Africa, South America, and Australia—are events deserving of special notice. The disease has during its present prevalence confined itself mostly to warm and hot countries, and, though not exclusively a tropical disease, or apt in the tropics to be at its worst when conditions are most typically tropical, it appears to find in tropical countries and circumstances the most favouring environment. It is curious to remark that while in India natives appear to be readily susceptible to the infection of plague, Europeans, though not absolutely insusceptible, exhibit a comparative immunity—the reverse of what happens as regards enteric fever. This immunity is doubtless what I venture to call a sanitary immunity, due to a purer personal domestic and social life and perhaps to circumstances and habits rendering admission of infection less easy.

I trust that I have succeeded by these discursive observations in showing that recent events have expanded the scope and aim of our work in this section, and it seems to me fitting that we should at the commencement of our sectional labours remind ourselves of what these are. Our concern is not only with exclusively tropical diseases, many of them strangely named and imperfectly investigated and understood, which may be encountered and contracted in hot places where Europeans are compelled to reside for purposes of protection, administration, or commerce, and are not as a rule met with outside the tropics. More important are those diseases, originally or essentially tropical, which may be disseminated by intercourse with the tropics and may prevail for a time in extra-tropical localities in which they are not habitually present; and, finally, there are the diseases which are not specially tropical but which are liable to be aggravated in prevalence or severity by tropical conditions. These three classes represent a wide field of research, and, in addition, interesting questions arise as regards diseases which, common elsewhere, are rare or unknown in tropical countries. The field of study thus presented has its scientific and humanitarian aspects, and its cultivation has become an essential part of the business of imperial administration. It embraces not only acute infections and the sequelæ or constitutional incapacities resulting therefrom, but includes also those conditions affecting health and life which are vaguely designated as climatic, remediable only by adaptation, or which arise from sanitary defects or neglects capable of more easy amelioration. Hygienic improvements, personal, domestic, and social, have undoubtedly raised the standard of health and the value of life in the tropics, and residence and service in hot countries offer fewer and less formidable risks than they did in times past, but behind the question of individual impunity looms the question of colonisation or the continued vigour and vitality of the race when transplanted from temperate to torrid zones. The solution of these weighty problems constitutes the reason and purpose of our distinct sectional existence.

THE NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, AUGUST 1ST.

Presidential Address.

Inspector-General BELGRAVE NINNIS, M.D., R.N., took as the subject of his Presidential Address the Treatment of Wounded at Sea. It appears to me, he said, a happy omen that the inauguration of the Navy, Army, and Ambulance Section should take place at a time like the present, when the great war—now we trust nearly at an end—has directed special attention to its three sub-divisions—namely, medicine and surgery, in relation to the services, and ambulance in connexion with both, and likewise with civil life, particularly in large towns. A goodly supply of papers on these and kindred subjects will claim your attention, but I notice with

regret the absence of one on a subject which I consider would be well worth the trouble of writing—namely, on the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. Now, before I enter upon this subject, I should like to make a few remarks on the light in which the naval medical officer is regarded by his fellows in civil life. Experience of the medical press, extending over a somewhat lengthened period, has left the impression on my mind that there is a belief amongst our brethren in civil life that the naval medical officers, taken as a class, are either behind the times professionally or are credited (from lack of zeal) with neglecting to avail themselves of modern discoveries, both in medicine and surgery, and that this is due in great measure to absence for lengthened periods from the schools. If I have rightly interpreted the meaning conveyed in the medical press, I trust that you will believe me when I state that you do us an injustice. It is true that from the very nature of his calling the naval medical officer is away at times for a period of three or four years; but, on the other hand, it should be borne in mind that there are sick in other countries besides Great Britain; and studying familiar diseases under different climatic conditions, or cholera, yellow fever, plague, and other diseases in countries where they are endemic, with the methods of treatment adopted by those who have lived the whole of their professional life in their midst, and modifications in some ordinary operations and substitution of new ones amongst the profession abroad, is surely worth something. Operations at foreign hospitals can always be attended, and practitioners and hospital surgeons are, in my experience, ever willing to answer questions and to show you their cases where possible. I have not said anything about his own patients, which, if his ship is a large one, supply him with a heterogeneous practice in addition to a capital operation occasionally. From what I have said it should be seen that the naval medical officer need not of necessity get rusty. I have not mentioned that in addition he has the medical press, foreign as well as English, or that on his return home provision has been made for seniors and juniors alike to pass through a post-graduate course at the metropolitan hospitals of Great Britain and Ireland.

Now let us return to the question of the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. To grasp the situation fully it must be borne in mind that the essentials of a fighting ship may be said to comprise the largest percentage of armament, offensive and defensive, combined with capability of rapid motion and a steady platform. So far as our present knowledge goes these conditions can only be obtained at the expense of space; or, in other words, the more effective a fighting machine the ship is the less space is available for quarters and accommodation for the sick. Necessary as light and fresh air are to all of us, in the case of the sick on board ship it will easily be understood that this necessity is more urgent. But light and fresh air can only be obtained in sufficient quantity above the water-line, and to place the sick-quarters above the water-line, amidst the hurly-burly of a sea fight, traversed by projectiles and wrecked by exploding shells, is of course out of the question, even supposing that sufficient space could be spared. The alternative is treating the sick and injured below—which means a limited amount of fresh air and that almost invariably supplied by mechanical means—artificial light, rapidly deteriorating atmosphere, and the by no means unlikely intrusion of a torpedo or of the ram of a neighbouring ship. It will doubtless be said that this condition exists only during war-time and that under ordinary circumstances plenty of space could be found on deck. Sufficient accommodation is, as a matter of fact, already set apart for the treatment of the sick, with ample light and fresh air, cots, and other fittings of recent and constantly improving designs, and in some cases electric light; but it must be remembered that for the reasons previously mentioned these peace arrangements must be vacated in war-time. As permanent quarters for the sick on board a fighting ship, situated in such a position as to be freely supplied with fresh air and light, are practically an impossibility, it follows that the fitting up of apparatus and the means of utilising modern inventions are likewise practically impossible, and therefore the naval medical officer cannot avail himself of their use.

In fact, the naval medical officer is not to be judged by the ordinary standard. He works under great disadvantages. Take an ordinary operation. A moving patient on a moving table, a moving operator standing on a floor changing its slope laterally and fore and aft, assistants automatically altering their positions in relation to the patient in retaining the upright position or their equilibrium; tracheotomy by the light of a candle or lamp, the patient being in a cot, or possibly in a hammock; hernia to be operated on, possibly during bad weather, for it is the nature of things that on board ship accidents should most frequently occur when there is most motion and the decks are wet and slippery; fractures to be retained in position under the same adverse circumstances. As for lack of zeal a collection of the novel splints and appliances to be found on board ships on return from out-of-the-way foreign stations would testify not only to the zeal of the naval medical officer, but also to his resourcefulness, for, be it remembered, he cannot send into the next street for a second opinion or to the instrument-maker for special appliances.

In bringing these remarks to an end I may add that it is, I believe, intended in the future to supplement fleets and squadrons in war-time with hospital cruisers, not merely transports for the injured but veritable floating hospitals with steam power and fittings and appliances up to date. During an action these ships would keep out of range but sufficiently close to collect the wounded when the fight was over, and sailing under the regulations of the Geneva Convention would be free from molestation or capture.

THE ANNUAL MUSEUM.

Little fault could be found in regard to the space placed this year at the disposal of the exhibitors. Indeed, there was space enough left for a smoking-lounge, and seating accommodation was also provided between the stalls. The Public Hall in Westgate-street proved to be well adapted for the display of foods and food products, drugs, mineral waters, &c., and those thousand-and-one accessories with which the exhibitor decorates his stall with consummate effect and in a manner calculated best to attract the visitor's attention. Surgical appliances, aseptic furniture, and miscellaneous articles of more or less interest to medical men were assigned a place in the old museum rooms a few doors away from the Public Hall, and here, again, the exhibitors contrived to decorate the rooms in an artistic and striking fashion. The section relating to foods and drugs was decidedly on a smaller scale than the same section in the annual museum at Portsmouth last year; but there was enough to keep the practitioner's interest maintained from start to finish. The trade aspect of this section is unavoidable, but the museum sub-committee are to be congratulated on having selected only those subjects for exhibition which are strictly of medical interest. We cannot help thinking, however, that a considerable improvement would be effected and a certain substantial attraction added if a few demonstrations of a strictly scientific character could be held at the same time and in the same place. It is decidedly irksome to be constantly urged on all sides to consider new formulæ, to handle new contrivances, or to taste new food products. The round of inspection again would be much more comfortable to the visitor if the exhibitors were less pressing in urging the claims and merits of the various exhibits which sometimes is done in such a way as to come very close to the method of the tout. There is always a great deal to interest the medical man on the stalls of this annual exhibition, and he can soon become acquainted with the important advances in the preparation and style of drugs, in the elaboration of special foods, &c., without much assistance from the exhibitor, who is tempted too often to volunteer voluble information of a quite superfluous kind.

As on previous occasions we shall adopt the following classification of the exhibits, emphasising as far as possible those subjects of special novelty or which possess a special interest:—I., Drugs; II., Foods and Food Products; III., Sanitary Appliances, Disinfectants, &c.; IV., Surgical Instruments and Appliances; V., Mineral Waters, Beverages, &c.; VI., Publications; and VII., Miscellaneous.

I.—DRUGS.

In taking a general view of this important section of the museum two facts were noticeable—(1) that the tide of synthetics is steadily abating, and (2) that apparently little further departure has been made in regard to new administrative forms of medicaments. Certain organo-metallic preparations seem now to occupy the

position of novelty which some years ago was held by the coal-tar synthetics. It is easy enough for the organic chemist to elaborate new organic compounds, so abundant and suggestive are the materials at his beck and call; but some check, perhaps, has been placed on the successive production of these compounds by the action of the profession. Whilst recognising the value of many synthetics physicians have not failed to discountenance the indiscriminate placing upon the market of scores of complicated organic preparations the very multiplicity of which operates against determining their pharmacological value with that exactness which in the true interest of therapeutics is desirable. Some interesting derivatives of certain alkaloids were shown by exhibitors here and there, which are claimed to possess decided advantages over the original alkaloid. As examples we may quote the ethyl carbonate of quinine known as euquinine, and heroin the diacetic derivative of morphine. Again, there were some excellent illustrations of improvements in the pharmaceutical preparation of extracts and in the isolation from their respective plants of more or less definite and therapeutically active bodies which may be called "resinoids." A considerable amount of research has been undertaken in this direction in the "Merrell" laboratories of the Wm. S. Merrell Chemical Company, Cincinnati, Ohio (47, Wilson-street, Finsbury-square, London, E.C.), with encouraging results. Attention has been chiefly directed to retaining the active properties of the drugs and eliminating the inert or often injurious principles. Amongst these preparations we may mention podophyllin resin and the resin of rattle root or black cohosh known as macrotin and a much more efficient preparation than cimicifugin. The same firm showed some excellent hydrastia preparations and some pure specimens of salicylic acid crystals made from oil of winter-green. The crystals thus prepared are perfectly definite and well formed, a fact which in a measure testifies to the purity of the acid. An interesting derivative of oil of winter-green occurs in the form of "iodozen"—a true iodine compound of the oil of winter-green which possesses powerful antiseptic properties, rendering it an agreeable and effective substitute for iodoform. A very interesting collection of pharmaceutical chemicals was presented to view on the stall of Mr. E. Merck of Darmstadt (16, Jewry-street, London, E.C.). This firm has recently come prominently forward in the manufacture of perfectly pure preparations, including the alkaloids and the salts of organic acids, and the active principles of plant extracts and certain other rare principles. Perhaps the best examples of the interesting series of organo-metallic preparations which have been recently introduced into medicine occurred amongst the exhibits of Messrs. Burgoyne, Burbidges, and Company of 12 and 16, Coleman-street, London, E.C. We have already dealt with them in our analytical columns. Collargolum, for example, is described as a water-soluble metallic silver, and hyrgolum as water-soluble metallic hydrargyrum, both of which are more effective than the better-known salts of these respective metals. The exhibit also included citrate of silver, which is said to have been used with marked success in the treatment of wounds, and likewise lactate of silver. Messrs. C. J. Hewlett and Son, of 35 to 42, Charlotte-street, London, E.C., had a very well-arranged and attractive display of their special preparations. Worthy of mention as comparative novelties are bromipin, described as an organic compound of oil of sesame, and containing 10 per cent. of bromine, though there is no evidence of the presence of this element according to taste and smell. It appears to afford a means of administering bromine without giving rise to unpleasant effects. Naftalan has already been described in our analytical columns, but we may repeat that it is a product of the fractional distillation of Armenian naphtha and has been used as an analgesic and parasiticide. Cases are recorded of eczema and other skin diseases which have been benefited by the application of this interesting substance. Attention has recently been drawn to monsonia, the drug derived from *Monsonia ovata*, as a remedy for dysentery, and the seeds of the *Plantago isphagul* have been used for the same purpose. Preparations of these vegetable products are made by this firm. Their exhibit included also many excellent antiseptic preparations and a useful series of test-cabinets for clinical use. The introduction of "cacodyls" into medicine marks an interesting and important departure in the safe and effective administration of arsenic. Sodium cacodylate appears to be the best form for the purpose. It has been administered continuously in large doses in the treatment of phthisis and in diabetes. It favourably influences the processes of nutrition. Messrs. Gilbert, Kimpton, and Company of 19, St. Dunstan's-hill, London, E.C., showed examples both of the acid and of the sodium salt. Glass bulbs are made containing five-sixths of a grain and the so-called "arsycodile" pills 0·025 milligramme of sodium cacodylate. An iron cacodylate is also prepared especially for the treatment of chlorosis and anæmia. This interesting non-toxic organic salt of arsenic serves as a remarkable example of the therapeutic difference determined by molecular structure. The same acid and its sodium salt were exhibited on the well-stocked and attractive stall of Mr. W. Martindale of 10, New Cavendish-street, London, W. An interesting series of glass capsules was a feature of this exhibit, containing respectively amyl-nitrite, carbonised amyl-nitrite, chloroform, ethyl bromide and iodide, and isobutyl nitrite. Again should be mentioned the conveniently designed test-cases for clinical work. These included the portable urine test-case and a case containing bacteriological reagents necessary for the detection of tubercle bacilli, diphtheria bacilli, typhoid bacilli, and other micro-organisms. An interesting novelty on the stall of Messrs. Oppenheimer, Son, and Company, Limited, of 179, Queen Victoria-street, London, E.C., consisted of "cerettes." These are flexible tubes containing ointments and medicated soaps, each cerette holding sufficient for one application. The contents may be easily expressed from a cerette after the manner of a collapsible metal tube. While the cerette provides against the deterioration of its contents through contact with air, it avoids the possibility of metallic impurity. Ointments and soaps may thus be preserved unchanged and, moreover, are clean for the purpose of application. The exhibit included also some interesting applications of the palatinoids. Amongst these may be mentioned, as instances of the particular advantage of this administrative form of drug, palatinoids containing animal substances, palatinoids of liquids and of tinctures. Foremost amongst the pharmaceutical products shown on the stall of Messrs. Zimmer and Company, Frankfort-on-Maine, was a splendid specimen, in needle-shaped crystals, of euquinine. This is ethyl carbonate of quinine, behaving chemically as quinine, and pharmacologically also, with the advantage, it is stated, of being free from so many of the objectionable effects of quinine. Side by side with this interesting quinine substitute was eunatrol, a chemically pure oleate of sodium contained in chocolate-coated pills. This substance has been used with advantage in hepatic disorder and is said to stimulate the flow of bile and to assist the elimination of gall-stones. Another interesting compound shown by this firm was urosine, a quinate of lithia which is said to have a solvent effect upon uric acid concretions. It is used also favourably in gout. Validol (by the same firm) is a liquid compound of menthol and valerianic acid in which the objectionable properties of each constituent disappear. It has been employed as a restorative, stomachic, and anti-neuralgic, and has been prescribed also in hysteria with advantage. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, and Ebberfeld, have been very active during recent years in introducing new organic salts, and on the present occasion an excellent collection of skilfully prepared specimens were presented to view, which included trional, a hypnotic of some value, tannigen and tannopine, both intestinal astringents, salophen, valuable in the pyrexia of influenza, aspirin, the acetic ester of salicylic acid, giving all the therapeutic advantages of the acid without the disadvantages, heroin, the diacetic ester of morphia and its soluble salt, the hydrochloride, substituted with advantage for morphia. Lastly the interesting compound of protein with silver known as protargol is worthy of mention as an excellent substitute for nitrate of silver in diseases of the eye and for application as an antiseptic in gonorrhœa. It is easily soluble in water. Messrs. Parke, Davis, and Company of 111, Queen Victoria-street, London, E.C., exhibited such a complete series of their special preparations as to necessitate the occupation of two stalls. Amongst the drugs introduced comparatively recently should be mentioned chloretone, a hypnotic, antiseptic, and local anæsthetic which we have already described in our analytical columns. The exhibit included also standard serums, animal extracts, and a variety of drugs standardised by physiological tests upon animals and others standardised by chemical assay. "Kelpion" is the name of new stainless, non-irritant iodine ointment; the oil basis

is emollient and rapidly absorbs carrying with it the iodine. A few minutes after application the presence of iodine may be easily recognised in the saliva. It provides an excellent means of applying iodine in its well-known forms without producing objectionable effects. The preparation is exhibited by the Kelpion Company of Norgrove-buildings, 59A, Bishopsgate-street, London, E.C. Specimens of the pure oil of mustard were shown by Messrs. J. and J. Colman, Limited, of Norwich and 108, Cannon-street, London, E.C. The oil is well known as an application in the relief of rheumatic affections. Specially prepared sinapisms were also submitted to inspection, as was also a special mustard bran for use in poultices. A very tastefully displayed stall was that of Messrs. Wyleys, Limited, of Coventry. It contained a number of excellent administrative forms, powders, pellets, capsules, and cachets, whilst special drugs were contained in gelatin-coated pills which were oval in shape. This firm is evidently alive to the requirements of modern medicine. Kutnow's Improved Effervescent Carlsbad Powder has been approved by experience as one of the best preparations for the treatment of chronic constipation. It is identical in composition with the salts of the Carlsbad spring. It keeps well on account of having been carefully desiccated. The exhibit included an anti-asthmatic powder and cigarettes, the fumes from which are said to give relief and to have no objectionable action upon the heart, as is sometimes the case with lobelia and datura tatula.

Medical News.

VICTORIA UNIVERSITY.—At examinations held in July the following candidates were successful in the subjects indicated:—

SECOND EXAMINATION.

A. Anatomy and Physiology.—P. W. Ashmore, Yorkshire; C. H. Bromhall, Owens; Stanley Brown, University; Thomas Brown, Yorkshire; W. J. Cox, University College, Sheffield; J. A. Davenport, Owens; R. T. Dobson, University; W. P. Grant, Owens; H. S. Harling, Yorkshire; Rowland Heathcote, E. W. Henstock, Benjamin Herald, and G. R. Hitchin, Owens; E. F. Hoare, University; C. H. Hopwood and G. H. Leigh, Owens; Hugh McManus and William Rotheram, University; J. A. C. Roy, S. H. Ryan, W. F. Shaw, and J. M. Skinner, Owens; J. N. M. Sykes, I. C. Thorburn, and G. F. C. Walker, University; and M. S. Wood, Owens.

B. Materia Medica and Pharmacy.—R. A. H. Atkinson, J. B. Barnes, John Battersby, and A. N. Benson, Owens; J. P. Bligh, University; Alexander Boothroyd, Owens; Alan Boyle and W. E. Brierley, Yorkshire; Howard Buck and Laurence Clay, Owens; Richard Coates, Yorkshire; Reginald Collier and Thomas Coogan, Owens; Edward Cundall, Yorkshire; J. L. Falconer and J. P. Garlick, Owens; Ernest Gibson, University; Tom Glover, J. W. Hartley, and H. D. Haworth, Owens; S. L. Heald, Yorkshire; J. P. Henderson and Arthur Hendry, University; Benjamin Herald, Owens; W. E. Hewitt, University; Hubert Hodge and F. C. Hudson, Owens; C. A. Hughes, University; A. D. Hunt, Yorkshire; H. R. Hurter, University; Hamilton Irving, J. M. A. Jones, and W. H. Judson, Owens; E. W. Kemp, Yorkshire; George Laurence and J. T. Lloyd, University; T. W. Lonsdale, Owens; J. F. McCann, University; J. de V. Mather, Stuart Murray, R. T. A. Patchett, F. G. Pell-Ilderton, and Frank Robinson, Owens; William Rotheram, University; W. E. Rothwell, Owens; F. H. Salisbury, University; J. L. Schilling and W. G. Scott, Yorkshire; Harold Simms, J. M. Skinner, R. T. Slinger, and J. C. Smyth, Owens; J. W. Sowerbutts and Bertram Sluggitt, Yorkshire; R. H. Swindells, A. F. Thompson, A. M. Walker, Douglas Wardleworth, and E. M. Wilkins, Owens; Henry Woods, University; and A. R. Wright and William Wright, Owens.

FINAL EXAMINATION.

Part I.—E. M. Ashcroft, and F. H. S. Ashworth, Owens; Herbert Bates, University; S. W. Battle, Yorkshire; S. B. Brentnall, Owens; Henry Brown, Yorkshire; C. W. Budden, University; J. B. Cook, J. F. Corson, J. M. Cort, Alexander Cran, and E. N. Cunliffe, Owens; S. W. Davies, University; Tom Eastham, F. S. Fletcher, and Mercier Gamble, Owens; G. W. Gelderd, and V. J. Glover, University; P. H. Green, and J. W. Greenwood, Owens; Frederick Griffith, University; F. W. Harrowell, Yorkshire; A. G. Jackson, and R. E. Kelly, University; C. P. Lapage, H. F. Lee, and Charles Mackey, Owens; J. C. Mann, University; S. B. Mehta, Owens; J. S. W. Nuttall, and T. F. Pugh, University; P. A. H. Radcliffe, Yorkshire; H. H. Rayner, F. M. Rogers, F. R. Sawdon, and G. H. Shaw, Owens; Robert Smailes, Yorkshire; H. G. Tansley, Owens; A. R. Thompson, Yorkshire; George Unsworth, and H. C. Waterhouse, Owens; S. C. Wilkinson, Yorkshire; R. D. Willcocks, University; and B. M. Wilson, and J. G. Woolnam, Owens.

Part II.—Arthur Anderson, Owens; E. W. Anderton, Yorkshire; D. A. Ashton, Owens; Philip Benington and J. H. Billing, University; A. G. S. Broughton, Yorkshire; J. P. Brown, Owens; Robert Burnet, University; A. H. Capamagian, Daniel Cowin, and C. W. Crawshaw, Owens; J. L. Dimond,† University; F. H. Flack and C. R. Hall,* Owens; A. E. Horsfall, Yorkshire; E. C. Hulme, Owens; A. R. Jackson† and L. C. Johnson, University; Reginald Lawrence and C. H. Lee, Owens; S. F. Linton, University; B. C. Middleton and R. S. Nichol, Owens; A. S. Parkinson, Yorkshire; William Rigby, H. W. Russell, C. R. Schofield Herbert Terry, and A. G. Wilkins,† Owens; C. R. Willans, Yorkshire; and P. G. Williamson and W. A. B. Young, Owens.

* Awarded first-class honours. † Awarded second-class honours.

Diploma in Public Health.—J. J. Butterworth, M.B., Ch.B; F. J. H. Coutts, M.D.; A. S. Grünbaum; C. A. Hill; and W. F. Moore.

Sanitary Inspection Certificates.—W. Butler, Manchester Technical School; J. J. L. Clark, University; and A. Herringshaw, F. Wilkinson, and R. W. Willan, Manchester Technical School.

UNIVERSITY OF EDINBURGH.—On July 28th the following degrees were conferred:—

Degree of Doctor of Medicine.—Charles Crawford Aitken, Scotland, M.B., C.M.; Charles James Hill Aitken, Scotland, M.B., C.M.; ‡Hugh Llewellyn Apthorp, England, M.B., C.M.; ‡James Andrew Blair, Scotland, D.Sc., M.B., C.M.; ‡John Macdonald Brown, Scotland, M.B., C.M.; Alexander Brownlie, Scotland, M.B., C.M.; *Walter William Chipman, Canada, B.A., M.B., C.M. (*in absentiâ*); Frank‡ Herbert Aylen Clayton, England, M.B., C.M.; Frederick William Collinson, England, M.B., C.M.; ‡Horace Crankanthorp Colman, England, M.B., C.M.; William Craig, Scotland, M.B., C.M.; ‡Herbert William Crosse, England, M.B., C.M.; Arthur Dickson, Scotland, M.B., C.M.; †Charles Cromhall Easterbrook, England, M.A., M.B., C.M.; ‡Alexander Edington, Scotland, M.B., C.M. (*in absentiâ*); William Ernest Lloyd Elliott, Wales, M.B., C.M.; *David James Galloway, Scotland, M.B., C.M. (*in absentiâ*); William Alexander Gibb, Scotland, M.B., C.M.; Wilfred Ernest Gibbons, England, M.B., C.M.; ‡James Andrew Gibson, Scotland, M.B., C.M.; †Robert M'Lean Gibson, Scotland, M.B., C.M. (*in absentiâ*); Robert Wilson Gibson, England, M.B., C.M.; Thomas Gibson, Scotland, M.B., C.M.; ‡Harry Grey, Scotland, M.B., C.M.; George Pouncey Henderson, England, M.B., C.M.; †Thomas Alfred Hird, England, M.B., C.M.; Guy Bertram Hollings, England, M.B., Ch.B.; Edward Siddall Jackson, England, M.B., C.M.; Arthur Septimus Lawrence, South Africa, M.B., C.M. (*in absentiâ*); ‡William Duncan Lawrie England, M.B., C.M.; Henry James Ley, England, M.B., C.M.; ‡Peter Burden M'Nicol, Scotland, M.B., C.M.; ‡James Sackville Martin, Ireland, M.B., C.M.; George Victor Miller, England, M.B., C.M.; Ahmed Mirza, India, B.Sc., M.B., C.M. (*in absentiâ*); ‡Owen St. John Moses, Armenia, M.B., C.M.; ‡Bernard Ehrenfried Myers, New Zealand, M.B., C.M.; ‡James Nicoll, Scotland, M.B., C.M.; Harold Nuttall, England, M.A., M.B., C.M.; Ernest Stanley Nutting, England, M.B., C.M.; ‡Edward Lloyd Owen, Wales, M.B., C.M.; George Peterkin, England, M.B., C.M.; ‡James Coubro Potter, England, M.B., C.M.; Frank Grégoire Proudfoot, Scotland, M.A., M.B., C.M.; †Francis White Hope Robson, England, M.B., C.M.; David Richard Rowlands, Wales, M.B., C.M.; Gerald Alick Southwell Sander, France, M.B., C.M.; ‡James Duncan Slight, Scotland, M.A., M.B., Ch.B.; Alexander Campbell Smith, Scotland, M.B., C.M.; ‡John Nigel Stark, Scotland, M.B., C.M.; John Edward Thomas, Wales, M.B., C.M.; †Peter George Leeb-du Toit, South Africa, M.B., Ch.B.; and *David Waterson, Scotland, M.A., M.B., C.M.

* Awarded gold medal for thesis. † Highly commended for thesis. ‡ Commended for thesis.

Degrees of Bachelor in Medicine and Master in Surgery.—Maung Ba-Ket, Burma; John Brodie Boyd, Scotland; Oswald Arnold Gee, England; John Thomas Hurst, England; John Malcolm Jeffrey, Scotland; Robert Alexander MacKenzie Macleod, Scotland; §John Charles Mitchell, D.Sc., Scotland; Archibald Duncan Nimmo, Scotland; Robert Owen, Wales; and Miles Charles Carreston Seton, Scotland.

§ Passed with second-class honours.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Robert Cunningham Affleck, Scotland; Henry Alexander, Ireland; Thomas Hood Wilson Alexander, Scotland; Eliza Matthew Anderson, Scotland; Mary Scott Anderson, Scotland; Henry Ernest Arbuckle, Natal; Robert Andrew Jacomb Asbury, England; Bernard Hugh Stanley Aylward, England; Albert Augustus Ayton, Jamaica; Alexander James Baird, M.A., Scotland; Harvey Baird, Scotland; Simon Alexander Ballantyne, Scotland; Leonard Dieckmann Hamilton Baugh, Jamaica; John Henderson Bell, Scotland; Joseph Mitchell Benson, England; Hubert Bishop, Trinidad; ¶Arthur Branfoot Black, Scotland; John Southey Bostock, England; ¶Orlando Charnock Bradley, England; Laurence Percival Brassey, England; James M'Culloch Leigh Brown, M.A., Scotland; Launcelot Bruce, Scotland; Adam Brydon, Scotland; George Farnie Buist, Scotland; George Berkeley Butt, Ireland; John Profeit Campbell, Scotland; Malcolm Campbell, M.A., Scotland; Samuel Marcus Dill Campbell, Ireland; George Scott Carmichael, Scotland; Violet Alice Penrose Coghill, Ireland; John Craig, Scotland; Leonard Crossley, England; Horatius Bonar Dodds, Scotland; John Primrose Douglas, Scotland; Cyril Hartley Durrant, West Indies; William Eadie, England; Robert Sidney Ellis, Scotland; Cecil Henry Elmes, Ireland; Johannes Stefanus Enslin, South Africa; David Robert Evans, Wales; ¶Edward Ewart, Scotland; Drummond James Fergusson, England; Andrew Fleming, Scotland; Bernard Gilpin Forman, Scotland; Catherine Fraser, Scotland; Charles Fraser, M.A., Scotland; Alexander Frew, Scotland; ‖William Ernest Frost, Ireland; Yoshinobu Fukuda, Japan; James Stewart Geikie, Scotland; William Girdwood, South Africa; Arthur Evelyn Goldie, Jamaica; George Watson Guthrie, Scotland; George Henry Hanna, Jamaica; Frederick Hardie, Scotland; Norman Ernest Jasper Harding, England; Herbert Harris, England; Thomson Henderson, Scotland; Davis Heron, Ireland; Eleanor Hodson, England; Katie Welton Hogg, B.A., Australia; Henry John Hoile, M.A., Scotland; Lionel John Hood, Australia; William Hutchison, England; Francis Field Cunningham Jagger, England; Edward Bald Jamieson, Scotland; ¶James George Silver Jamieson, M.A., Scotland; James Crawford Kennedy, Scotland; Francis Kenneth Kerr, Scotland; Herbert Christian Keun, Straits Settlements; Servaas Meyer de Kock, South Africa; George Ross Laing, Scotland; ¶Langworthy Laurie, England; Robert Gerald Leach, England;

Charles George Stretton Leeds, England; George Herbert Lewis, Wales; Robert John M'Clelland, Ireland; Christopher Birdwood M'Conaghy, Ireland; ¶John Gordon M'Dougall, Scotland; Sara Lyle M'Elderry, Ireland; Elizabeth M'Elney, Ireland; Alexander Campbell Nicholson M'Hattie, Scotland; James Herbert M'Kee, Ireland; Alexander John MacKenzie, Scotland; Dundas Simpson MacKnight, Scotland; Robert Clephane Maclachlan, New Zealand; Harriet Joanna Campbell Maclaren, M.A., Scotland; Henry John M'Lean, New Zealand; Duncan Mackay MacLeod, Scotland; John M'Callum Anderson Macmillan, M.A., Scotland; Elizabeth Macrory, Ireland; ¶Arthur Anderson Martin, New Zealand; Harry Mason, England; Frederick Crichton Matthew, M.A., Scotland; Mary Jenny Menzies, England; Hugh Crichton Miller, M.A., Scotland; John Brownlee Milne, Scotland; Robert Macfarlane Mitchell, Scotland; Janet Ainslie Shiells Mouat, Scotland; James Munro, Scotland; Florizel de Lorme Myers, Jamaica; Horace Clulow Nixon, England; Caroline Elizabeth O'Connor, Ireland; James Cuthbertson Parker, Scotland; Norman Patterson, Scotland; Cuthbert Balfour Paul, Scotland; ‖John Pender, Scotland; Mary Churchill Pepper, England; John Boyd Primmer, Scotland; John Rowlands Prytherch, Wales; Samuel Rattray, Scotland; Percy Chambers Rayner, England; John Lawrence Rentoul, Ireland; Owen Lewellin Rhys, Wales; Catherine Mary Richardson, England; Lionel Charles Peel Ritchie, Scotland; Thomas Robert Robertson, Scotland; William Rogers, Wales (*in absentiâ*); ‖Robert Ainslie Ross, South Africa; William Charles Ross, Scotland; Arthur John Ryle, Wales; Laura Stewart Sandeman, Scotland; Richard Akiwande Savage, West Africa; Thomas Boyle Hill Scott, Ireland; William Sibbald Scott, Scotland; Alexander Kenneth Smith Shand, Scotland; Hubert Dunbar Shepherd, England; ¶Thomas Scott Shepherd, England; Samuel Ramsay Sibbald, Scotland; Frederic David Simpson, Scotland; William Sloss, Australia; Harry Oswald Smith, Scotland; Charles Buchanan Snow, B.A., B.Sc., New Zealand; Charles Edward Southon, India; Hugh Meredith Speirs, England; Arthur Dunbar Spence, Scotland; Eleanor Rosina Sproull, Ireland; Thomas Grainger Stewart, Scotland; Clement Percival Strong, India; Frederic Troughton Thompson, Scotland; John Thornhill, Ireland; John Hardwick Thornley, England; ¶Alexander Trotter, Scotland; George Reynolds Turner, England; Karl Hermann Heinrich Uffmann, India; ¶William Wallace, England; Andrew Gordon Watson, Scotland; Allan Stewart Watson, England; Norman Septimus Wells, Burma; George Duncan Whyte, England; Frank Morewood Wigg, Australia; Alexander Jeans Williamson, Scotland; Tasman John George Wilson, Tasmania; Albert Edward Bathurst Wood, England; ‖Arthur Murray Wood, Scotland; ¶Garnett Wright, England; John Harold Wrightson, England; and Johannes Cornelius Zuidmeer, Cape Colony.

‖ Passed with first-class honours. ¶ Passed with second-class honours.

The following scholarships, prizes, &c., have been awarded:—

Ettles Scholarship, Robert Ainslie Ross, M.B., Ch.B.; Beaney Prize in Anatomy and Surgery, George Scott Carmichael, M.B., Ch.B.; Freeland-Barbour Fellowship in Anatomy, Physiology, and Pathology, John Pender, M.B., Ch.B.; Allan Fellowship in Clinical Medicine and Clinical Surgery, George Scott Carmichael, M.B., Ch.B.; Mouat Scholarship in Practice of Physic, Edward Ewart, M.B., Ch.B.; Stark Scholarship in Clinical Medicine, George Lyon, M.B., Ch.B.; Gunning Victoria Jubilee Prize in Materia Medica, Ernest Francis Bashford, M.B., Ch.B.; Gunning Victoria Jubilee Prize in Obstetrics, Alfred Charles Sandstein, M.B., Ch.B.; Buchanan Scholarship in Gynæcology, Frederic David Simpson, M.B., Ch.B.; James Scott Scholarship in Midwifery, William Ernest Frost, M.B., Ch.B.; M'Cosh Graduates and Medical Bursaries, John Charles Mitchell, D.Sc., M.B., C.M.; and the Anderson Henry Prize in Botany, Cameron Robertson Gibson. The Cameron Prize in Therapeutics has been awarded to W. M. Haffkine, C.I.E., for his work in preventive inoculation for plague.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Dr. R. Stern has been promoted to an Extraordinary Professorship of Internal Medicine. Dr. Paul Jensen has been recognised as *privat-docent* of Physiology.—*Chicago (Rush Medical College):* Dr. J. Loeb has been appointed Professor of Physiology in succession to Dr. Dodson.—*Freiburg (Baden):* Dr. Nagel, assistant to Professor Kries, has been recognised as *privat-docent* of Physiology.—*Greifswald:* Dr. Philipp Jung has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Heidelberg:* Dr. C. Jung, Professor of Odontology, has resigned. Dr. Karl Gegenbaur, Professor of Anatomy, is retiring.—*Kiel:* Dr. Hans Hensen has been recognised as *privat-docent* of Internal Medicine.—*Leipsic:* Dr. Sandor Kaestner, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship.—*Munich:* Dr. Oscar Eversbusch of Erlangen has been offered the Professorship of Ophthalmology as successor to Dr. von Rothmund, who is retiring.—*Philadelphia (Polyclinic):* Dr. James Thorington has been appointed Professor of Ophthalmology.—*New York (Post-Graduate School):* Dr. Charles W. Allen has been appointed Assistant Professor of Dermatology.—*Strasburg:* Dr. Martin Benno, *privat-docent* of Pathology and Pathological Anatomy, and Dr. Dietrich Gerhardt—son of the well-known Professor Gerhardt—*privat-docent* of Internal Medicine, have been appointed Extraordinary Professors.—*Tubingen:* Dr. Ernst Schwalbe of Berlin has been recognised as *privat-docent* of Physiology. Dr. Sarwey, Assistant Physician in the Female Clinic has been accorded the rank and title of Extraordinary Professor.—*Würzburg:* Dr. Ludwig Medicus has been appointed to the Chair of Pharmacy and Pharmaceutical Chemistry.

SOUTH WALES AND MONMOUTHSHIRE SANITARY INSPECTORS' ASSOCIATION.—A meeting of this association was held at Cardiff on July 26th, under the presidency of Dr. W. Williams. Dr. Walford read an interesting paper upon the Work of Port Sanitary Authorities.

SUPERANNUATION ALLOWANCE.—On the resignation of Mr. George Rigden, M.R.C.S. Eng., after 63 years' service as surgeon to the Canterbury Dispensary, he has been granted by the committee an annuity of £200 per annum.

MEDICAL MAGISTRATES.—Mr. H. G. Button, M.R.C.S. Eng., of Junee, Mr. A. E. Cox, M.B. Edin., of Forbes, Mr. W. J. Munro, M.B., Ch.M. Edin., M.R.C.S. Eng., of Glebe, and Mr. H. Chesson, L.R.C.P. Lond., M.R.C.S. Eng., of Pittsworth, have been appointed Justices of the Peace for New South Wales or Queensland as the case may be.

PRESENTATIONS TO A MEDICAL MAN.—Mr. Frank A. Arnold, M.B. Lond., late resident surgeon of the Memorial Hospital, Buluwayo, on the occasion of his leaving the hospital, was presented by the nurses with a clock as a token of their high esteem and respect.—Dr. Arnold was also the recipient of a travelling toilet case from the orderlies of the hospital.

THE HOSPITALS OF ONTARIO.—The thirtieth annual report of the hospitals of the province of Ontario shows that there are now in operation in this province of 2,000,000 people 50 hospitals directly receiving Governmental aid annually from the revenues of the province. The number of sick treated in these various institutions during the past hospital year numbered 26,825, exclusive of the thousands known as outdoor patients who receive advice and medicine from time to time. The total expenditure for the year has approached 500,000 dols. Of this amount the Government contributes a little over one-quarter. In addition to this there are some 40 houses of refuge in the province, 31 orphan asylums, 4 homes for incurables, 3 convalescent homes, 18 county homes for the poor, and 2 Magdalen hospitals, having an aggregate of 10,000 inmates. A glance over the report shows the number of certain diseases treated in these hospitals; for instance, there were 527 cases of appendicitis, 321 being male and 206 female; hysteria, 47 males and 224 females; locomotor ataxia, 28 males and 3 females; glaucoma, 17 males and 17 females; gall-stones, 41 males and 43 females; diabetes mellitus, 42 males and 14 females; epithelial cancer, 112 males and 83 females; goitre, 7 males and 36 females. The Toronto General Hospital admitted 2986 patients during the year; 3388 were treated during the year, of whom 206 died. The revenue of this hospital was $76,633.13 and the expenditure $79,911.61.

METROPOLITAN HOSPITAL SUNDAY FUND.—A meeting of the Council of this Fund was held at the Mansion House on Monday, July 30th, Sir Sydney Waterlow being in the chair. The report of the committee of distribution for 1900, which stated that this year 199 institutions had made applications for grants from the funds at the Council's disposal and that the distribution of £46,492 to 140 hospitals, &c., and to 54 dispensaries was recommended, was adopted. For the second time Mr. George Herring has given £10,000 to the Fund. Sir Savile Crossley has made a donation of £500. The only matter of unusual interest upon which discussion took place was a reference to the state of affairs at the National Hospital for the Paralysed and Epileptic, Queen-square, a matter which we deal with elsewhere. Extraordinary pressure on our columns prevents us from detailing the awards this week.—The following were among the principal amounts received on July 31st at the Mansion House in aid of the Metropolitan Hospital Sunday Fund: Sir Savile Crossley, Bart., a further £500 (tenth donation); Westminster Abbey, £161; St. Stephen, Westbourne-park, £138; Willesden Presbyterian Church, £48; St. Matthew, Forest-gate, £20; Wanstead Friends' Meeting, £38; Catholic Apostolic Church, Chelsea, £40; St. Margaret's, Lee, and Boone's Chapel, £51; St. Margaret, Barking, £38; Barnes Parish Church, £25; All Saints', St. John's Wood, £40; St. Barnabas, Clapham-common, £32; Camden-road Baptist Chapel, £20; St. John's, Lensford, £22; St. Matthew, Ealing, £33. The total now

exceeds £49,500. This year's awards will probably be paid on or about August 10th.

THE LATE MR. W. L. HUGHES.—Mr. William Lewis Hughes died at his residence, Carmarthen, on July 17th, in his forty-eighth year. Mr. Hughes was the son of the late Mr. Hughes of Trebersed. He was educated at Llandovery Grammar School and received his medical education at the London Hospital Medical School, qualifying as M.R.C.S. Eng. and L.S.A. in 1875 and 1874 respectively. After filling resident hospital appointments in London he commenced practice in Carmarthen and held for several years the appointments of surgeon to the Carmarthen Infirmary and to Carmarthen Prison; he was also district medical officer to the Carmarthen Union and surgeon to the 1st Volunteer Battalion the Welsh Regiment. At the time of his death Mr. Hughes was consulting surgeon to the Carmarthen Infirmary and medical officer of health of the town. Mr. Hughes, who was very popular in Carmarthen, will be much missed there, and by his early death a familiar figure in the district has been removed.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, JULY 26TH.

Arsenic Poisoning.

MR. TENNANT asked the Home Secretary whether an inquiry was held in 1899 into the nature of employment in the extraction of arsenic; whether he had received a report upon the subject and, if so, whether it would be laid upon the table of the House; and whether it was proposed to amend the existing special rules relating to this employment.—Sir MATTHEW WHITE RIDLEY replied: I instituted an inquiry last year with regard to the health of the persons employed in certain works for the reduction of arsenic in Devon and Cornwall. I have not yet received the final report on this inquiry, but I gather from an interim report made some time ago that it is not likely that the establishment of any new special rules in these works will be necessary.

The Local Government Board Vaccine Lymph.

Mr. THOMAS BAYLEY asked the President of the Local Government Board (1) whether he had received information of the bacterial impurity of the vaccine lymph now or recently supplied for vaccination; (2) whether he was aware that certain brands of lymph, including that supplied by the Local Government Board, had developed colonies of germs, rendering their use improper for vaccination; and (3) whether he would prohibit the use of such lymphs in vaccination until freedom from contamination by them might be ensured.—Mr. CHAPLIN: In reply to the first paragraph, I have received no information as to the bacterial impurity of the vaccine lymph now or recently supplied by the Local Government Board which renders its use improper for vaccination. The answer to the second and third paragraphs is in the negative.

The Use of Preservatives in Food.

Mr. LAMBERT asked the President of the Local Government Board if he could state when the Departmental Committee on the use of preservatives in food might be expected to report; whether he was aware that summonses were being now issued by local authorities for adding to Devonshire clotted cream a small quantity of boric acid solely as a preservative; and whether he would communicate to such local authorities the undesirability of proceeding with prosecutions on this point until the report of the Departmental Committee had been issued.—Mr. CHAPLIN replied: I am informed that some delay has been occasioned by a series of experiments the issue of which will not be known for some months yet, but the Committee hope to complete their report by the end of this year. I understand that some local authorities have recently instituted proceedings in cases such as those referred to in the question. The Local Government Board, however, have no power to prevent such proceedings being taken, and they could not undertake to interfere with the discretion of local authorities in the matter.

Famine Administration in India.

In introducing the Indian Budget, Lord GEORGE HAMILTON made a long and interesting statement on the famine and the steps which were taken by the Indian Government to alleviate its consequences. He explained that the affected area in this case is greater than in 1876 or in 1896. In the former year the affected area was 205,000 square miles with a population of 36,000,000 and in the latter 275,000 square miles with a population of 52,000,000, while this year the area is 420,000 square miles with a population of 62,000,000. On the subject of administration Lord GEORGE HAMILTON said: The conclusion at which I have arrived from a careful study of the famine of 1896-97 and from my previous experience of the famine of 1874 is that the first essential of successful famine administration is to get the people to come in early, when they are still in good physical condition. If that is done then it is easy enough, but if, on the other hand, from various reasons, the people will not come on the relief works until the last stage of exhaustion and inanition, their vitality is so low that it is almost beyond the powers of the authorities to revive them. They bring with them the germs of disease which they communicate to healthy persons. Almost all the criticisms which have been hostile to the administration of famine relief have been devoted to the conduct of famine affairs in the province of Gujarat, and the province has not been afflicted by famine or drought for nearly 100 years. The mortality in Gujarat has been exceptionally high. It has been a source of the greatest solicitude both to myself and the Viceroy. I have been in constant communication on the subject, but it is exceedingly difficult to put your finger on any error which has been made. The expenditure per unit there on relief is higher than in any other part of Bombay. The works there are more numerous, and the number of additional officers drafted there is higher than in any other part of Bombay. The collection of the land revenue has been almost infinitesimal. Undoubtedly the result, so far as mortality is concerned, is not satisfactory. Whenever operations are over it has been the practice to appoint a commission of inquiry to investigate the various methods adopted. We shall have recourse to this procedure when the famine is over, and I hope that the collection of facts and the expression of opinions may be of use to the officials of the locality in dealing with subsequent outbreaks.

FRIDAY, JULY 27TH.

Preservatives in Food.

Mr. LAMBERT asked the Attorney-General whether, as a Departmental Committee was now scientifically investigating the question of adding preservatives to food, and would report by the end of the year, he would send an intimation to all judicial authorities before whom any cases of adding preservatives to Devonshire cream might be brought, that it would be expedient to adjourn the proceedings until after the Departmental Committee has given its decision.—The ATTORNEY-GENERAL replied: I have no authority to interfere with the discretion of the judicial authorities in the way suggested in the question, and it would be most improper for me to attempt to do so.

Enteric Fever at Bloemfontein.

Sir WALTER FOSTER asked the First Lord of the Treasury if the South African Commission would be able to inquire into the insanitary conditions which led to the outbreak of enteric fever and the consequent overcrowding of the hospitals at Bloemfontein.—Mr. BALFOUR replied: It will rest with the Commission themselves to determine the scope of their reference, but my own impression is that if the insanitary condition was due to the neglect of the Medical Department it would undoubtedly come under the cognisance of the Commission. If, on the other hand, it was due to military necessities—as, for instance, to the insanitary condition of the camp following on Paardeberg—I imagine it would not come under the survey of the Commission; but that is my own personal impression. The Commission have full liberty to determine their own reference.

The Army Medical Department.

This department was discussed at considerable length while the House was in Committee of Supply on certain supplementary army estimates.—Sir WALTER FOSTER spoke of the establishment being dangerously low. He said that the Royal Army Medical Corps was so diminished in number and so starved as regards medical equipment that if a division were to be sent to China now, and a German division of the same strength went out, it would be found that the German force had probably 50 per cent. more medical officers than our force—a state of things which, he said, would be discreditable to this country. In Africa many hundreds of brave fellows had been lost from the want of proper medical appliances. In China they had the danger of a disease more serious and loathsome than enteric fever. Plague was prevalent in that empire at the present time, and our troops would be exposed to sanitary dangers of the gravest kind. He hoped, therefore, that the War Office would be wise enough to take precautions against an outbreak of plague, or, at all events, would endeavour to minimise its effects as much as possible. He urged the War Office to consider the establishment of a reserve medical corps. It would not be difficult, he said, to get a large number of young medical men to hold themselves in readiness under very easy conditions to accept service in case of national necessity. Another point urged by Sir Walter Foster was that the War Office, in addition to sending out civil surgeons to South Africa, ought to have sent out civil physicians, men of experience in connexion with the fever hospitals of this country and others.—Mr. BURDETT-COUTTS complained of the Army Medical Department having no transport of its own and in this connexion called attention to the important services rendered by the Irish Hospital and the New South Wales Field Hospital, both of which, he said, have their own transport. He insisted that the Royal Army Medical Corps had been undermanned in medical officers, orderlies, and nurses, and said this was the explanation of the sick and wounded not receiving proper attention. On the subject of nursing Mr. Burdett-Coutts said the objection of the department at home to female nurses ought to be overcome.—Sir JAMES FERGUSSON said he had good reason to believe that often there had been a deficiency of articles of first necessity in the field hospitals because the medical officers were afraid to demand the things they wanted, and he submitted that such a thing would not happen if medical officers had now, as they used to have, a settled position from which they could not be removed except for some grave failure of duty.—Dr. FARQUHARSON emphasised the need for sufficient transport for the department.—Mr. GEORGE WYNDHAM, in his reply for the War Office, spoke of the recent changes in the Royal Army Medical Corps. The present Secretary of State, he said, had proposed an establishment higher than had ever previously existed, and had not been able to obtain the number of officers he required. It was said that was because the rewards offered were not sufficient, but, acting on the advice of his military advisers, he had offered inducements to tempt young physicians to enter the Royal Army Medical Corps, and was it fair, when it was matter of common knowledge that the great medical colleges had boycotted the corps for years in order to exact concessions as to rank—was it fair, when their wishes had been met to attract competent physicians, to attack the Secretary of State because he had not sufficient officers to meet the situation? He would not dwell upon this, for the point had already been threshed out, and what was to be said on either side was well known to the Committee. In view of the efforts made to increase the Royal Army Medical Corps, in view of the fact that the establishment voted had not been reached, he was convinced that it was a question of organisation that demanded most careful attention and most strenuous effort at the end of the war. But they could not do this now. It was his belief that no increase of pay, no exaltation of rank could be expected in times of peace to attract a sufficient number of young, keen, and ambitious men to fill up the places that must be

filled up in time of war. A young medical man did not care to bury himself at Colchester or any other military centre to attend to a few hundred men suffering from the customary ailments of this country; he was ready to work for little or no remuneration in the slums of a great city or in the wards of a great hospital; he wanted the practice and experience necessary for a successful career. Therefore he had himself come to the conclusion that instead of striving to expand the Royal Army Medical Corps in time of peace to be adequate for the time of war, it would be necessary to make application to the great hospitals throughout the country to know in time of peace what men would be ready for service in time of war, or when there was large concentration of troops what men would be ready to come forward and work for the army as they would work in a great city in time of pestilence.

MONDAY, JULY 30TH.

Specialists for Invalided Officers.

Mr. BAINBRIDGE asked the Under Secretary of State for War whether, if an officer invalided home from the seat of war required the attention of specialists while in a military hospital in England, it was the rule that such advice had to be obtained and paid for by the officer himself or his relatives.—Mr. WYNDHAM replied: If the medical officer in charge of a patient is of opinion that the assistance of a specialist is required the cost would be borne by War Department funds.

Post-Graduate Course of Naval Medical Officers.

Dr. TANNER asked the First Lord of the Admiralty if the long-promised concession in favour of naval medical officers which was stated some months ago to be settled for immediate working, viz., giving medical officers the opportunity of visiting and studying at metropolitan hospitals for a period of from three to six months on their return from a long term of foreign service on full pay was now working; and, if so, how many officers have availed themselves of the concession.—Mr. GOSCHEN replied: Naval medical officers have for many years past been permitted to pass through a post-graduate course at metropolitan hospitals. The number allowed has by the regulations of Nov. 1st last been increased from seven to 20 annually, but owing to the despatch of a considerable number of naval medical officers to the Cape and China it has not yet been found possible to allow this increase to take effect.

WEDNESDAY, AUGUST 1ST.

Medical Acts Amendment Bill.

The Bill framed by the General Medical Council to strengthen it disciplinary powers and to enable the universities and other medical licensing bodies to withdraw their diplomas from practitioners whose names had been removed from the Medical Register for misconduct, was at this sitting of the House withdrawn. It was withdrawn presumably because there was no chance of getting it passed.

THE SOUTH AFRICAN COMMISSION.

Lord Justice Romer (President of the Commission), Dr. W. S. Church (President of the Royal College of Physicians of London), Professor D. J. Cunningham (Trinity College, Dublin), Mr. Frederick Harrison (General Manager of the London and North Western Railway), Sir David Richmond (ex-Lord Provost of Glasgow), and Major Tennant (secretary), commenced their labours on July 24th, when a statement (a summary of which was printed in our issue of July 28th) referring to the terms of reference and to the course to be adopted in taking evidence was made by the President. The Commission sat at Burlington Gardens.

Among the first witnesses called on were a number of departmental officials who detailed the routine followed in equipping the army. Surgeon-General JAMESON, Director-General of the Army Medical Department, said that immediately on the outbreak of war it was found that the medical *personnel* for two army corps and a cavalry brigade were exhausted. The number of medical officers in South Africa on Sept. 1st, 1899, was 32. During September 19 were sent out; in October, 138; in November, 102; in December, 38; in January, 1900, 44; in February, 48; in March, 50; in April, 10; in May, eight; and in June, 19; making a total of 508. This month 20 more were being sent out. The figures did not include the medical officers of colonial contingents.

Lieutenant-Colonel Johnston, Assistant Director A.M.S., and Major W. G. Macpherson, Deputy Assistant Director A.M.S., were also examined.

Lieutenant-Colonel J. S. COWANS, Deputy-Assistant Quartermaster-General, said that every requisition for extra medical men had been complied with.

General Sir HENRY BRACKENBURY, Director-General of Ordnance, said that in every case in which the goods were requisitioned they had been supplied, but they were dependent entirely on the trade for supplies and there was great difficulty in obtaining them in sufficient quantities. There had been no complaints of delay.

Colonel STEVENS, Principal Ordnance Officer, and Sir RALPH KNOX, Permanent Under-Secretary, having given evidence, Colonel STIRLING RYERSON, Canadian A.M.S., British Red Cross Commissioner, said he had gone round the hospitals every morning to see what was needed and to distribute medical comforts. No complaints had been made to him. He thought that the abolition of the office of sanitary officer had had much to do with the enteric fever epidemic.

WEDNESDAY, JULY 25TH.

The first witness called was the Rev. W. H. ORFORD who was in Bloemfontein from the entrance of the British troops until Lord Roberts left for the north. The hospital to which for two months he was attached, he said, was one of the worst in the district, because it was an old building. Everything was done to make it as comfortable as possible and there was no overcrowding. It was true that patients were lying on stretchers and mattresses and in some cases patients were not undressed for a fortnight. The patients in the hospital numbered 60, and the nursing was done by orderlies whom the men did not obey as they would female nurses. Everything was improved after the hospital had been in use a fortnight. In reply to a question with reference to other hospitals he said that he had never seen men lying in the mud.

Sir HOWARD VINCENT, M.P., described his visits to the hospitals in South Africa and expressed his belief that there was no real cause for complaint. There were some deficiencies but he could not speak too highly of the general arrangements.

Mr. WATSON CHEYNE, F.R.C.S. Eng., said that of course there had been over-crowding in the field hospitals, but that was the fault of equipment. He did not think the medical service was cut down to the same extent as the ordinary transport. At Paardeberg men were put under trees because there were few tents. Being out in the open did not affect the patients at all, for it was a beautiful time of the year. Personally he preferred being out in the open. The supply of dressings was rather short. The number of wounded was greater than expected or the ambulance service would not have been cut down, but the medical comforts were to be obtained. The only hardship was the long distance the men had to be sent back in ox wagons. The St. John Ambulance men were not good as orderlies owing to their want of training. At Driefontein it was quite impossible to collect the wounded for several hours owing to lack of ambulance accommodation. He was at Bloemfontein from March 13th till April 20th or 21st, during the greater part of which time the enteric fever epidemic was at its worst. He believed there were more cases in May. Within five days of reaching Bloemfontein Dr. Stevenson had arranged accommodation for 500 or 600 sick. There was a lack of beds but there was no particular fault to find with the houses used. Those who had no beds were accommodated on tressels. About April 20th they had had over 300 deaths in a 50-bed hospital. He thought there was a point which the medical members of the Commission might consider—namely, how far this epidemic was one of typhoid fever. The great majority of cases recovered in 10 days or a fortnight, and there were other characteristics which made him think that it was not typhoid fever. He had never heard that there were any men, sick or wounded, left without any covering at Bloemfontein, neither had he any reason to believe that men did not get the rations prescribed for them. The hospital accommodation at Kroonstad was bad. The orderlies tried to do their best, but many were untrained men, and if their best was not good that was another matter. No neglect of the sick and wounded came under his notice in any way. He was of opinion that an unnecessary amount of the time of the medical staff was taken up in administrative and clerical work.

A trooper in the City Imperial Volunteer Mounted Infantry was examined and said he fell sick at Sanna's Post and was treated with every possible kindness at Bloemfontein. The only discomfort he experienced was a ride in an ox wagon.

The Commission then adjourned its sittings in London till Monday, July 30th.

On Friday, July 27th, the Commissioners visited Netley and took the evidence of wounded and invalided soldiers from the front.

MONDAY, JULY 30TH.

The Special Commission appointed to inquire into the care and treatment of the sick and wounded during the South African campaign held another meeting on Monday, July 30th, at Burlington Gardens for the examination of witnesses. All the members of the Commission were present except Sir David Richmond.

Captain COUSENS of the City of London Imperial Volunteers was the first witness examined, and in reply to the CHAIRMAN (Lord Justice Romer) he said that when he got to Greenpoint camp he found that the men from the hospitals came there, and it was his habit to speak with them about their experiences, and he assured the Commission that he never heard the slightest complaint from them. On the way up country he fell sick from heart disease and debility just before Edenberg and along with six of his men he was taken to the Portland Hospital at Bloemfontein. He himself was in the hospital for eight days and he had not the slightest complaint to make about the treatment which he received. Everything was done that could be done. He saw no cause for complaint in any part of the hospital. He left the hospital on April 3rd and stayed in a hotel for six weeks during which time he visited No. 9 General Hospital. He visited this hospital twice and saw not the slightest cause for complaint. While at Bloemfontein he saw all sorts of men from his own and other regiments and he was sure that if they had had cause for complaint they would have mentioned it to him, but they made no complaint. He was sent down from Bloemfontein to Wynberg where also the arrangements were in his opinion excellent.

Mr. MURRAY GUTHRIE, M.P. for Bow and Bromley, was the next witness, and in answer to the CHAIRMAN he said that he went out to South Africa as secretary to the American Field Hospital, getting there in the beginning of February. He went first to Kimberley and afterwards left the hospital and went across to Bloemfontein, which place he reached about four days after Lord Roberts. The first hospital he saw in working order was at Driefontein after the battle at that place. There were about 430 cases in the field hospital when he saw it—nearly all wounded, but also some fever cases. He thought that the medical officers did everything that they possibly could do, but they seemed to be rather short of supplies, which was only natural in the circumstances. There were about 30 or 40 stretchers, and the rest of the men, of course, were lying on the ground. He spoke to many men and they quite realised that it was impossible for things to be otherwise; there was no grumbling. The worst cases were on stretchers and the remainder, Boers and British, were lying against the sides of wagons and the walls of houses. They were short of everything except meat, but this was unavoidable for it was the end of a march. One of the medical officers had been working for 13 hours on operations, and all of the medical men were working like slaves. The medical officers themselves had no better food than the wounded. He knew that because he dined with them and they had only the ordinary rations. A field hospital was not supposed to have 430 cases, and naturally they were short of everything—medical officers, orderlies, stretchers, tents, &c. He saw the convoy leaving. To the best of his recollection there were 15 ambulance wagons and some 30 or 40 bullock wagons, and the distance was about 30 miles over extremely rough roads. The weather was very hot and he remembered thinking that the wounded men would have a terrible journey. It would have been better if it had been possible to send them all in ambulance wagons. For himself he did not see any merit in the ambulance wagon except that it had a cover and the ox wagon had none. Of course, if a man lay down in an ambulance wagon he had a flat surface to lie upon whereas in an ox wagon there were ridges and rough places which could not be very agreeable to a wounded man. The medical officers said that they had very hard work, but they

were perfectly cheerful and they did their very best and made no complaints. All they were anxious about was to get the wounded down to Bloemfontein. This, of course, was a question of transport. If there had been sufficient transport the wounded would never have been left there, they would have gone straight into Bloemfontein. The ordinary ambulance wagons were not sent up, they were reduced by four-fifths, from 10 per cent. to 2 per cent. When he left Driefontein he went to Bloemfontein. At the latter place he resigned his appointment as secretary of the American Field Hospital and he occupied the office described in the army orders as "distributor of military comforts." His business was to receive and arrange for the transport of all goods sent out from England for the men at Bloemfontein. The appointment was given him by Lord Roberts and was under Government. He was at the railway station all day long and had an office there and a staff. He was generally there from six in the morning till at least six in the evening with intervals for meals. By-and-by things got slack in his office and when he had leisure he went about the hospitals and he supposed that he visited every one of the hospitals at Bloemfontein. At first he went casually, say to see an official or a patient he knew, but towards the end of April and the beginning of May he took special pains to visit the hospitals because he had heard a good deal about what was going on in them. The first hospital he saw was the Imperial Yeomanry Hospital, and though it had not been long established he could see that it was by far and away the finest hospital in South Africa. So much was this the case that he was almost shocked by the money spent upon it. The wine-glasses had the Prince of Wales feathers engraved upon them in gold and everything was absolutely perfect; it was just like Guy's Hospital put down in the middle of the veldt. The inference to be drawn from this state of things was that if a private hospital could do so well why could not the hospitals of the Royal Army Medical Corps do better than they did? A great many people said that the Corps had no power of organisation. He was taken over No. 8 General Hospital by the sister superintendent. This hospital was under canvas and was situated about a mile from the town. He did not see anything very bad. The marquees were good. He found men lying in the bell tents very crowded. They looked in rather a bad state and the sister superintendent said that it was impossible to go near them; he supposed that they were attended to by the orderlies. One man asked for his medicine and they hunted up the orderly. They found the orderly and he was convinced that the man was doing his best, but the work was too much for him. There were enteric cases and dysentery cases, and the patients were lying in their clothes. They had been in their clothes for days, and some of them had not been diagnosed. Some of them had been in these tents for 48 hours and certainly they were in a pitiable condition. These men were in the bell-tents because there were no marquees for them. As soon as there were vacant marquees the worst cases were taken from the bell-tents and put into them. When they reached the marquees the men were undressed and washed and properly nursed and dieted. There were not enough nurses for the marquees, to say nothing of the bell tents. He could not speak too highly of the work of the medical men of the Royal Army Medical Corps and the nurses and the orderlies. Although there might be black sheep amongst them he never came across one, and he never came across anybody who shirked his work. He heard no complaints from the men who were in the marquees. So far as his experience and knowledge went, though the hospital was short-handed there was no absence of medical equipment or medical comforts. As for the men in the bell tents they made very bad complaints. Some of the cases were slight cases for which the bell tent was good enough, but others were serious, and no doubt there were far too many in each tent. In answer to Dr. CHURCH, the witness said that the feature of the Yeomanry Hospital was that it had fewer orderlies and more nurses than the military hospitals. Some of the men in the bell tents were semi-conscious only; some of them were very ill indeed and greatly in want of attention. In answer to the CHAIRMAN, witness said that he saw every hospital in Bloemfontein. In one case several men complained to him about their diet; they said that it was not good, and they complained that there was no fresh milk. He considered that there was cause for complaint about the milk-supply in Bloemfontein. Except for one or two cases he did not remember being without milk for his porridge in the club or hotel where he stayed. He thought that the milk of the town ought to have been requisitioned for the hospitals, which never had a sufficient supply. He felt certain that if proper steps had been taken the necessary milk for the hospitals might have been got in the town. He did not think that the convalescents were well looked after in their journeys and he gave as an instance a train he boarded on its way from Bloemfontein to Cape Town, which had 268 patients in charge of a single doctor and no orderlies. The Irish Hospital, he said, was as near perfection as could be found. The reason why these private hospitals were so much better than the military hospitals and why their death-rate was so much lower was that they had the power to refuse to take in more patients than they could look after properly. They might accept a few more patients than they were intended to accommodate, but they were never overcrowded. The patients whom they refused had of course to be sent to the military hospitals. In answer to Professor CUNNINGHAM witness said that he was of opinion that the medical officers, orderlies, and sisters connected with the Royal Army Medical Corps did everything that was possible with the resources at their command to make the patients comfortable, but he thought more might have been done by the higher authorities of the service. In the shops of Bloemfontein there was much that ought to have been bought immediately by the medical authorities. They could have had 25 or 30 mattresses turned out every day which would have been of great assistance in the hospitals and he knew that blankets were bought by private individuals and presented to the hospitals. In his opinion every blanket in the town ought to have been bought by the medical authorities. He thought that the principal medical officer ought to have looked after such a matter. He ought to have requisitioned every single thing in Bloemfontein which would be of any good to the hospitals, and he (Mr. Murray Guthrie) was perfectly certain that if he had done so he would have got a great many things. Not only so, but there were many buildings in Bloemfontein which might have been used for hospital purposes. One morning he was on the station platform about six o'clock on the look-out for some trucks which he expected. He walked along the line some distance and came across an open truck with 15 men in it. He looked at them and passed on, the sight being a common one. About 8 o'clock the truck was moved up to the platform close to his siding and he thought that the men were going to be taken out, but when he came back from breakfast about 9 o'clock or half-past 9 the truck was still there. At half-past 10 o'clock he asked the railway staff officer whether the men were going to be taken out and he said that it was none of his business and that he had no men to move them. A few men loafing about the station were picked up and the sick men were moved from the truck and ranged along the platform on the ground against the wall. They were all lying-down cases. Some of the patients were suffering from enteric fever and some of the cases were not diagnosed. Of the 15 there were eight who were stretcher cases. About 11.30 one of the men had his lips absolutely black. Witness asked one of them the history of their journey and he gave it to him. They had been upon an average about 48 hours in coming down to Bloemfontein from different places. There were eight cases which were certainly bad ones, and he gathered from the man in charge, who was not a hospital orderly, that the eight men had had among them during the 48 hours two tins of condensed milk. Witness opened one of his cases and gave the men bovril and milk. At two o'clock the men were still on the platform. Not the slightest attention had been paid to them. This was in May; not at the beginning of the campaign. He communicated with the principal medical officer, who told him that he had not been advised of the despatch of the men. He said that the civilian doctors constantly neglected to advise him of the despatch of patients, and it was not until ten minutes to 3 o'clock in the afternoon that the men were taken to one of the hospitals. This was not at all an uncommon case; it was a case that occurred almost every day. In answer to Dr. CHURCH he said that it was nobody's business to send a message to a general hospital that the men were at the station, and in answer to Mr. FREDERICK HARRISON he said that the railway staff officer had to see to the despatch of the train. He understood that since then a medical officer and an orderly had been placed at the station. In reply to the CHAIRMAN he said that when he went to Pretoria he had a conversation with Sir William Thomson, head of the Irish Hospital, who told him that things were in a bad way there, and that in the Irish Hospital they were very short of things and had 50 men lying on the ground. On June 14th he visited the seven hospitals in Pretoria and found them short of everything. He consulted the manager of the Natal Bank and asked him if he would be willing to form a committee to provide the material required, provided witness could get the sanction of the commander-in-chief. He consented and witness received the sanction of Lord Roberts. They set to work and got from the shops of Johannesburg a whole trainload of things which were distributed among the hospitals. No steps had been taken to buy anything either in Johannesburg or Pretoria by the medical authorities. The proper course of these authorities would have been to buy up everything instead of waiting for supplies to come up from Cape Town. That was what the Army Service Corps did when they entered a town, and in consequence they lacked nothing.

Mr. R. E. LAUDER, the next witness, said in course of examination that he went out in charge of the Southampton Ambulance Corps, and after being attached to No. 5 General Hospital at Greenpoint camp he acted in a stationary hospital on the Orange river. Afterwards he went with the mounted troops to Kimberley. In all his experience he saw no reasonable cause of complaint. He confessed that things were not always so desirable as one could wish or as one found them in a civil hospital, but if he were asked whether all the resources at command were utilised he would reply in the affirmative. When engaged in outpost duty near Bloemfontein he found great difficulty in getting milk for the patients.

Dr. W. M. RUSSELL, senior house surgeon at Kimberley Hospital, said that he was about two years at Kimberley and went through the siege. During the siege they had a good number of sick and wounded and they were all fairly well cared for having regard to all the circumstances. They had plenty of drugs and surgical appliances and everything else pertaining to a hospital. The only serious drawback they had was that towards the end of the siege they experienced some difficulty in getting milk. After the siege they found it necessary to open up certain buildings as temporary hospitals, the Kimberley hospital not being able to accommodate all the patients. About 40 buildings were selected as temporary hospitals, and they were filled fairly rapidly with cases of enteric fever and so-called dysentery. Of course there was a little trouble immediately after the siege, but the Red Cross Society sent up a train with supplies.

Mr. FREDERICK TREVES then gave evidence. He explained his position with General Buller and the movements of his hospital, which he described as an advanced field hospital. The hospital, he said, worked admirably. There was an immense rush of work after the battles of Colenso and Spion Kop. Some of the orderlies were indifferent, but on the whole they worked well. No doubt there were many things that stood in need of improvement. The difficulty was the difficulty of transport. For one month they were 26 miles away from a railway and such difficulties as presented themselves arose from transport. His hospital had its own transport. It was a field hospital originally equipped for 300 patients and they ultimately had to take in 800, but from Frere to Potgieter's Drift and back to Chieveley they had their own transport consisting of 260 oxen and 60 mules. They found this arrangement to work admirably and not to conflict in any way with the military arrangements. They were admirably situated in the matter of medical equipment. At times they were short of food—as, for instance, at Spearman's camp—but it was nothing unreasonable and he heard no complaints. The nursing problem was the most serious of all. He quite acknowledged that it was impracticable to have female nurses in a field hospital. He had his own two nurses with him, but that was possible because he had special provision for them. At a stationary hospital female nurses would be of the greatest possible service. There could be no doubt that they were short of utensils, this being due in their case to an oversight—they were lamentably short in this respect. He could say most emphatically that he never came across a serious case of neglect of the sick or wounded. In his opinion the wounded or sick soldier preferred the ox wagon to the ambulance and for this reason that the former was made for the country and ran smoothly. He went over all the hospitals at Pietermaritzburg and found in them no reasonable cause for complaint and he might say the same thing about Durban.

Dr. C. W. J. CHEPMELL, who acted as an Assistant Commissioner of

the Red Cross Society in Natal, gave evidence to the effect that the military hospitals in that colony offered no reasonable ground for complaint.

Nursing Sister BARWELL said that she went with the Army Nursing Reserve to South Africa, reaching Bloemfontein on March 24th. On April 2nd a considerable number of wounded were brought from Sanna's Post to Gray's Hospital where she was employed and new rooms had to be opened for their accommodation. For several days it was impossible to provide these rooms with beds and the patients were placed upon stretchers. There were two medical men and six sisters, the patients were well looked after, and there was no ground for complaint, except, perhaps, that they were badly off for some of the minor equipments.

Dr. A. CONAN DOYLE, the last witness of the day, stated that his experience was confined to the hospitals at Bloemfontein. He arrived in the town on April 2nd and stayed three months. He was connected with the Langman Hospital, which was equipped for 100 patients but at one time received 150 patients. He was sure that the pressure on the army hospitals was many times greater than that on the Langman because the former could not refuse patients. He and his colleagues were so busy that when they got out of their own hospital they did not think of going to visit another, but so far as he knew he did not believe that anybody could be charged with neglecting the sick and wounded. There were some defects but they were due to the wishes of the medical staff being overruled for political considerations. In other words, he held that there should have been less consideration for the Free Staters and more for the sick and wounded.

The Commission then adjourned.

TUESDAY, JULY 31ST.

The Commission met again to-day, when there was a full attendance of members, Lord Justice ROMER presiding.

Mr. W. BURDETT-COUTTS, M.P. for Westminster, presented himself for examination.

The CHAIRMAN explained to him that he and his brother Commissioners had read the articles in the *Times* and the speeches of the hon. Member in the House of Commons, and therefore it would not be necessary to go over familiar ground again.

Mr. BURDETT-COUTTS, in answer to questions by the CHAIRMAN, said that until he went to Bloemfontein he saw nothing to complain of in respect of the hospitals which he visited except in the case of the Woodstock Hospital. With regard to this hospital he complained of the site being badly chosen. Indeed, Surgeon-General Wilson himself told him that he was altogether dissatisfied with this hospital, that he did not think the building or the condition of it suitable for a hospital, that they had had to take it, that it was not, so to speak, a hospital of their creation; and witness, believing it to be a temporary expedient, abstained from mentioning the hospital in his letters. When he got back to Cape Town he found that the hospital had been improved and enlarged, and what he complained of was that it was not a proper place to take as the nucleus of a large general hospital. He arrived at Bloemfontein on April 7th and on May 1st he left for Kroonstad, returning to Bloemfontein about May 19th. Dealing with the state of things at Bloemfontein Mr. Burdett-Coutts said that the field hospitals reached that place in a more or less mutilated state. The field hospital described in his article was visited by him first on April 9th and he found it in a very bad condition. He did not think it right to describe it in his article because he considered it as more or less the outcome of the forced march. It was not until the railway had been running freely for nearly a month that he considered it fair to criticise the medical arrangements. With regard to No. 9 General Hospital, its tents and nothing else arrived at Bloemfontein on April 8th. These tents provided accommodation for about 800 patients. It was not until a fortnight later that the equipment for the tents came up and it was possible to put patients into them. His criticism had been, and was, that it would have been better to have sent up the tents and equipment for 400 patients in the first instance instead of sending up tents for 800 patients which were quite useless without equipment. In his letter which appeared in the *Times* on June 27th there was a phrase about "growing scenes of neglect and inhumanity." These words had been taken hold of and used in a sense which he had never intended. When he spoke of inhumanity he meant inhumanity which would arise from medical deficiencies. He had not the slightest intention of making any reflection upon the *personnel* of the Royal Army Medical Corps. He considered that their work had been magnificent and that they had performed their work in tremendous difficulties—difficulties which they ought never to have had to encounter. Examined next as to the state of the field hospital mentioned in this letter Mr. Burdett-Coutts said that the equipment in many respects might easily have been improved. All that was wanted for a mattress was a bag and something soft to put into it and if there had been the necessary initiative and energy in regard to such things he thought that beds might have been extemporised in a very few days for a large number of the patients. It was, of course, no hardship for a healthy man to lie on the ground but an enteric fever patient, aching and suffering, must have felt the ground very hard. Moreover, he had always understood that it was well to have a sick person raised off the ground. Many enteric fever patients passed the whole period of their illness in the field hospital. Serious cases could not be sent down to the town hospitals for the simple reason that the latter were crowded.

The CHAIRMAN: You say that there was want of initiative. Who was to blame for that?

Mr. BURDETT-COUTTS: I have endeavoured always to avoid putting blame upon individuals. In further examination witness said that in going through the bell tents he saw a man who the doctor told him was dying and witness could see that he was dying. He saw men lying in the mud. There had been torrential rain and it had got over the trenches and into the tents.

By Sir DAVID RICHMOND: He saw a large portion of the Russo-Turkish war and he was bound to say that he saw very much the same things at the front in Turkey as he saw in South Africa. Most of the statements he had received had been accompanied by a request that the name of the informant should not be given. In a few instances he had written to his correspondent and pointed out the protection and precautions referred to by the Chairman of this Commission in opening the proceedings, leaving it to him to decide whether or not he should tender evidence to the Commission. The statements which he had received came from various classes of people all of whom appeared to be convinced that it would injure their present or their future if they came forward with evidence.

The CHAIRMAN: There would be no injury. We should protect them amply and fully and we should be able to give them the necessary assurance.

Mr. BURDETT-COUTTS: How would you protect an officer, for instance, who considered that his future would be injured?

The CHAIRMAN: By not giving his name and not allowing his evidence to appear.

Mr. BURDETT-COUTTS: Will the evidence be seen by anybody?

The CHAIRMAN: Only by ourselves, and the evidence can be taken in such a way that nobody shall know that he has been examined.

Mr. BURDETT-COUTTS, proceeding with his evidence, gave figures to substantiate his statement in the *Times* letter that there were 20,000 sick and wounded in South Africa at the time of writing. No. 9 General Hospital he visited three times or more. He was struck by the absence of classification. The conditions of crowding were not so bad as in the field hospital to which he had referred, but a great many patients were together in what he considered a very unhealthy spot. The level of the hospital was low and a great remount compound was close to it and drained into it. When he arrived at Kroonstad he found the field hospitals with a great many sick in them. Four days after his arrival a large hotel was commandeered and made into a hospital, and this proving insufficient a Dutch church was also commandeered, and the staff of the field hospital of one of the brigades was taken to run these two hospitals. It consisted of three medical officers and six nursing orderlies in the hotel and four untrained orderlies in the church and among them they had to look after 300 patients. There were no medical comforts in these places and no beds, and none of the ordinary equipments of a hospital. A certain number of beds and mattresses were two days afterwards got hold of. He saw sick and wounded brought into the church and placed upon the stone floor in their uniforms with possibly a blanket underneath them. When these 300 patients were in the church and the hotel they had only two medical men to attend them, for the third medical man had his time taken up in trying to get things and to organise the place. What he felt about the matter was that they might have taken up on the march sufficient medical officers and orderlies and a light equipment which would have obviated the first 10 days of difficulty and pressure at Kroonstad. Before leaving Bloemfontein he bought a wagon and four mules. At the time there were four other wagons at Bloemfontein of which he had the choice, and the man who sold the mules to him said that he had 70 altogether. If the medical authorities had secured this means of transport they might have taken up medical men, orderlies, and light medical equipment. He himself had fresh milk at Kroonstad, but when he asked one of the practitioners whether he had any at the hospital he simply laughed at him. Witness wrote to the military secretary of Lord Roberts on the subject, calling his attention to the fact that the hospital had no fresh milk. In reply he received a letter stating that Lord Roberts, in company with his principal medical officer, had visited the hospital on the same day as witness, and that the principal medical officer had told Lord Roberts that the hospital was getting a large and increasing supply of fresh milk. One of the great difficulties of the situation was that the medical officers were not sufficiently resolute in asking for what they required for their hospitals. With regard to Woodstock he could present a witness who would say that operations were performed on the tables on which food was served, and that the utensils used for operations were also used for the feeding of the patients and that blood had been found on the edge of them. He could give the name of a witness who would say that at the convalescent camp at Greenpoint there were several dangerous cases of enteric fever and that the rations consisted of hard biscuit and bully beef. On the general question he thought that there was a great want of elasticity about the Army Medical Department. There were no reserves at home. He admitted that they could not maintain in time of peace the medical service required in time of war; but that made it all the more necessary to have a system capable of expansion when the necessity arose. There was, he believed, an objection in the department to female nurses and to the civil element altogether. If the system had been sufficiently elastic the three general hospitals at Cape Town could have been turned into civil institutions, and the military staffs set free to go to the front, which was their proper place. During the last 50 years the conditions of everybody had been enormously improved except those of the British soldier during a great war. His lot had not improved, and he himself did not know what medical treatment was, what it might be, and what it ought to be. If the British soldier were to be put on a gridiron and roasted, and to be told that that was the way to kill the germ of enteric fever, witness supposed that he would submit to the treatment, because the British soldier was brave and thought that bravery consisted of standing any hardships in sickness as in fighting. The opinion of witness was that they had no right to trade upon this ignorance and this bravery.

Private HAROLD MEADMORE of the Royal Horse Artillery gave evidence as to his experiences in various hospitals at Bloemfontein and Cape Town.

Sir WILLIAM MAC CORMAC, President of the Royal College of Surgeons of England, who was the next witness, gave to the Commission an account of the journeys that he made in the Cape Colony and Natal and the hospitals of one kind and another that he visited. The impression he received from seeing all these places was, he said, that the arrangements in general were simply admirable, and, he thought, would compare—and he spoke not without considerable experience—favourably with the arrangements of any previous campaign conducted by any nation in any part of the world. At Colenso, where he had the opportunity of seeing the three hospitals working in the field, there was, of course, very great pressure, but the pressure was absolutely inevitable, for it was impossible to provide for the cases that came in during and after such an engagement. In his opinion the pressure was met as well as it possibly could be met. Each field hospital had two operating-tables and these tables were in use continuously. The way in which the wounded were removed from the field on one occasion deserved, he thought, special notice; it was remarkable for promptitude. The whole of the wounded on the field of Colenso had been removed by about 3 o'clock in the afternoon of the day of the battle. He did not think that such a thing had ever happened before in war. The provision made for this was distinguished by remarkable foresight. The principal medical officer, Colonel T. G. Gallwey, with the knowledge that previous experience had given him, devised a plan whereby the services of some 1200 stretcher-bearers were obtained from among the refugees in Durban. Some of these bearers were perhaps not the most eligible members of society, but all these men worked exceedingly well and exposed themselves to all manner of risks and dangers. Some of them

were killed, many were wounded, and they worked for a wage of 5s. per day. They brought the wounded off the field by means of stretchers and brought them with the minimum of suffering. The less severely wounded were removed by ambulance wagons, which meant a terrible experience in a country where there were no roads but many stones. The hand carriage devised upon this occasion was the ideal mode of transport, especially in such a country. He should like to emphasise very strongly the fac that the principal medical officer in Natal availed himself of the opportunity which offered and organised, under the authority of General Buller, this ideal mode of transport which proved the greatest solace and comfort and saving of life to the wounded men. Another feature of the battle of Colenso was the hospital train, which was brought on to the field of battle and was under fire. This train was filled with wounded who were brought down to one of the stations on the line. Another thing was that in spite of the stress the operations in these field hospitals were conducted with every care, with the assistance of every modern appliance, and with the same precautions as those which were adopted at home, and really he thought credit and praise of no unstinted kind should devolve upon those men who did this work on the battle-field of Colenso. The wounded men came to the field hospitals ticketed with their names and numbers and the nature of their injury, which was of immense value to the surgeons. The result of the rapid evacuation of the field hospitals was that two days after the engagement all the men had been sent down to the stationary hospitals and the base hospitals or to the ships at Durban. This was a great contrast to his experience at Sedan, where there were men who lay upon the field of battle for three, and some for four, days before they received succour of any kind. He thought that there could be no doubt in the minds of those who watched the proceedings at the front that in a very trying emergency the medical officers met the duties imposed upon them in circumstances of extreme tension with a very complete success, and he knew from conversations with officers and men afterwards that they had the greatest confidence in the medical officers and realised that everything that could possibly be done for them had been done. As to the complaint about the prevalence of vermin he defied any person to prevent vermin in wooden buildings where soldiers were congregated. The only way to stop the vermin was the Chinaman's method of roasting pork—namely, to burn down the buildings. In the hospital bed he occupied at Sedan he had to endure not only bugs but also lice, and he had the same experience in the Russo-Turkish war. As to sanitary precautions in the camps, they had to remember that there were dust-storms and that the soldiers had to breathe the dust with which was mixed the excreta of the camp, and that caused a good deal of sickness. Everywhere the water was bad, and he did not think that any sanitary precautions could prevent a thirsty soldier after a long march from drinking the first water that came in his way. He was with the great march of Lord Roberts and no doubt the equipment was seriously reduced, but they had a mobile enemy to deal with and to catch him they had to be equally mobile. War was a cruel thing and the incidents of war were cruel, but the object of war was not the care of the sick and wounded—it was the winning of battles. Witness then quoted from his letters to THE LANCET and said he had nothing in these letters to withdraw or modify. He held to the opinions expressed in them in spite of subsequent criticisms by people who did not appear to know very much about war and its conditions. He thought that the medical conduct of this campaign, subject to the existing drawbacks which were inevitable, had been exceedingly good. He was sure that it would compare most favourably with the medical conduct of any previous campaign. In answer to Sir DAVID RICHMOND the witness said that there was no comparison between the medical provision in this campaign with that in the Franco-German war, so much superior was the former. The train in which he went down from the front in Natal was equipped with everything that was wanted. He saw no evidence whatever of friction between the officers of the Royal Army Medical Corps and the civil surgeons. In the Mooi River General Hospital there were a large number of comparatively young civil surgeons, and they and the army medical men were simply a happy family, free from the slightest trace of friction.

Captain ADAM, who accompanied the Indian contingent and was wounded near Dundee in October, gave evidence as to the state of things in the hospital on the neutral ground at Ladysmith, saying that there was not the slightest cause for complaint.

Lieutenant OSBORNE, one of the Australian volunteers, who afterwards joined the 16th Lancers, said that there was no cause for complaint about the Langman Hospital at Bloemfontein.

Lady CHAMPION DE CRESPIGNY stated that there were deficiencies in the hospitals at Kimberley. Men, she said, were kept lying on the ground outside and did not receive the comforts essential to their proper treatment. At Bloemfontein there was a boy who wanted wine and was told that he must buy it. In the train in which she travelled to Cape Town there were five wounded officers and 25 wounded men with no one to attend them. They had no food beyond what she gave them. Her opinion was that the medical officers should be given more power to get the things required by the patients under their charge.

Major BRIDGES of the Australian artillery said that he could not praise too highly the kindness and attention he received at the hands of the medical men and orderlies at Bloemfontein; he could not have been better treated in London. The only cause of complaint he had was that they gave him too much champagne.

The Commission then adjourned.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BERRY, R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for Southport, Queensland.

BLACKBURN, E. W., M.B., B.Ch. Oxon., D.P.H., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Barnsley Beckett Hospital, vice J. Blackburn.

BLACKBURN, J., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Barnsley Beckett Hospital.

BLAKE, STUART RYALL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the No. 4 Sanitary District of the West Ham Union.

BOVILL, F. M., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Fourth Sanitary District of the St. Albans Union, vice F. M. G. Smith, deceased.

BROWN, G. H., M.B., Ch.B. Melb., has been appointed Officer of Health to the Lawlers Local Board of Health, West Australia.

BURCH, H. E., M.R.C.S., L.R.C.P. Lond., late Assistant Resident Surgeon, Memorial Hospital, Bulawayo, has been appointed Resident Surgeon at the Hospital, and Surgeon to the Depôt Troop of the British South Africa Company's Police, vice Frank Arnold, resigned.

BURKE, P. J., M.D., M.Ch. Irel., has been appointed Junior Resident Assistant Medical Officer of the Workhouse, Chorlton Union.

CAMPBELL, COLIN, L.R.C.P. Irel., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Saddleworth District of the West Riding of Yorkshire.

ELLIOTT, J. L., L.S.A., has been appointed Medical Officer of Health for the Cudworth Urban Sanitary District.

ELLIS, H. A., M.B., Ch.B. Dubl., has been appointed Officer of Health to the Bonnieville Local Board of Health, West Australia.

EVERED, A. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Quarantine Officer and Medical Officer to the Board of Health at Albany, West Australia.

FORREST, W., M.B., B.S. Durh., has been appointed Medical Officer for the Newbottle Sanitary District of the Houghton-le-Spring Union.

GARDE, T. W., L.R.C.P., L.R.C.S. Edin., has been appointed Visiting Surgeon to the Westbrook Reformatory, Brisbane.

GILLIES, J., M.B., M.S. Edin., has been appointed, *pro tem.* Medical Officer at Ingham, Queensland, and Visiting Surgeon to the Police Gaol there, and also Health Officer at Ingham.

GRAY, F. J., L.S.A., has been appointed Medical Officer for the Third Sanitary District of the North Witchford Union, vice A. J. G. Waters, deceased.

HANLEY, THOMAS FRANCIS, L.R.C.P., L.R.C.S., L.M. Ed., has been appointed Medical Officer for the Dorset County Police at Gillingham, vice T. Woods.

HARKEN, C. F., M.B., Ch.B. Dubl., has been appointed Officer of Health and Public Vaccinator for the Shire of Chiltern, Victoria, Australia.

HENRY, A. G., M.B., M.Ch. Syd., has been appointed Medical Officer to the Public Institutions at Parramatta, New South Wales.

HENRY, JOHN P., B.A., M.D., B.Ch., has been appointed an Honorary Ophthalmic Surgeon to the Italian Hospital, Queen-square, London, W.E.

HOYLE, FRED., M.B., Ch.B. Vict., has been appointed Senior Resident Assistant Medical Officer of the Workhouse, Chorlton Union.

JACK, ALEXANDER, M.B., Ch.M. Glasg., has been appointed *pro tem.* Official Visitor to the Reception House, Townsville, Queensland.

KANE, R. E., L.R.C.P., L.R.C.S. Edin., has been appointed Assistant Medical Superintendent to the Hospital for the Insane, Goodna, Queensland, vice R. A. Meek, resigned.

KNOX, R. G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Eighth Sanitary District of the Bath Union, vice C. E. S. Fleming, resigned.

LUDLAM, ERNEST B., B.Sc., has been appointed Demonstrator of Chemistry at University College, Bristol, vice D. H. Jackson, resigned.

MCNISH, JAMES, M.B., Ch.M. Glasg., L.R.C.P., L.R.C.S. Edin., has been appointed Medical and Health Officer for Burketown, Queensland.

MILES, ALEXANDER, F.R.C.S. Ed., has been appointed Lecturer on Surgery at the Medical College for Women, Edinburgh.

NASH, J. B., M.D. Edin., M.R.C.S., has been appointed a Member of the Legislative Council of New South Wales.

PERREIRA, D. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed House Surgeon to the Italian Hospital, Queen-square, London.

PRICE, T. A., M.B., Ch.B. Edin., has been appointed Resident Surgeon to the Warwick Hospital, Queensland.

ROBSON, T. S., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the St. Osyth District of the Tendring Union by the Tendring Board of Guardians.

ROUTH, WM., M.R.C.S., has been appointed to take charge of the passengers of the steamship *Cintra*, quarantined at Magnetic Island, Queensland.

SHARMAN, EDWARD W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Health Officer for the Port of Auckland, vice T. H. Lewis.

SIMONS, C. N., L.R.C.S. Irel., has been appointed Public Vaccinator and Officer of Health for the Shire of Kerang, Victoria, Australia.

STAPLETON, JOS. J., M.D. Edin., M.R.C.S., has been appointed Government Medical Officer and Vaccinator for Wallsend, New South Wales, vice J. B. Nash, resigned.

STORRS, E. G., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer for the Haxey Sanitary District of the Gainsborough Union, vice C. Barker, resigned.

THANE, E. H., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Government Medical Officer, Wagga Wagga, New South Wales; and also Visiting Surgeon to the Gaol, Wagga Wagga.

TURNER, A. J., M.D. Lond, M.R.C.S., has been appointed Health Officer to the Central Board of Health, Brisbane.

WEBB, A. B., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Colac, North Division, and Public Vaccinator for Beeac, Victoria, Australia.

WILKIE, D. W. B., M.B. Melb., M.R.C.S., has been appointed *pro tem.* Medical Officer at Herberton, Queensland, and Visiting Surgeon to the Police at Herberton.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks from the middle of August. Board, apartments, laundry, and attendance provided. Apply, stating terms, to the Clerk to the Guardians, Birmingham.

BOOTLE BOROUGH HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, laundry, &c.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, increasing to £150 by three equal annual increments, with board, lodging, and washing.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals. Salary £120 per annum, with board, lodging, and attendance. Apply to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer, unmarried. Salary £140, rising to £160 the second year.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with an increase after twelve months' service. Board, lodging, and washing provided.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Salary £60, with board, lodging, and washing.

EASTERN DISPENSARY, Leman-street, Whitechapel.—Resident Medical Officer, unmarried. Salary £105 per annum, with furnished residence, coals, and attendance. Applications to the Secretary, 60, Great Prescot-street, London, E.

EYE, EAR, AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES, Shrewsbury.—Surgeon. Honorarium of £150 per annum will be given for three years.

GROVE HALL ASYLUM, Bow, London.—Junior Assistant Medical Officer. Salary £120 per annum, with board, furnished apartments, and washing.

LONDONDERRY COUNTY BOROUGH.—Medical Officer to act as Medical Superintendent Officer of Health and Medical Attendant at Foyle Hill Infectious Diseases Hospital. Salary £350 per annum. Apply to the Executive Sanitary Officer's Office, Guildhall, Londonderry.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., rising £10 annually to £150.

NORTH CAMBS. HOSPITAL, Wisbech.—Resident House Surgeon. Salary £130 per annum, with furnished house.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing. Also Locum Tenens. Terms 4 guineas per week, with board, washing, and residence.

PARISH OF ROUSAY AND EGILSHAY, Orkney.—Resident Medical Officer. Salary £51 sterling per annum. Apply to Inspector of Poor, Rousay, Orkney.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon, for one year. Salary £100, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried. Apply to Medical Superintendent.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Apply to the Secretary, 53, Borough High-street.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeon under the Factory Acts at Bradford-on-Avon in the county of Wilts, and at Freshford in the county of Somerset

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. Honorarium at the rate of £20 per annum, with board, residence, and laundry.

UNIVERSITY OF GLASGOW.—Chair of Clinical Medicine.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £150, rising £10 a year to £180, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

COPEMAN.—On July 29th, 1900, at Wakehurst Place, Sussex, the wife of Sydney Monckton Copeman, M.D., F.R.C.P., of a son.

EWBANK.—On July 28th, at 13, Rockstone-place, Southampton, the wife of Arthur George Ewbank, of a son.

HOSFORD.—On July 24th, at St. John's-road, Upper Holloway N., the wife of B. Hosford, M.A., M.D., of a son.

SEARS.—On July 25th, at Lee-terrace, Blackheath, the wife of Alfred Ernest Sears, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

HALL—GEDDES.—On July 25th, at St. John's Church, Ryde, Isle of Wight, Edmund Stokes Hall, M.B. Lond., M.R.C.S., L.R.C.P., second son of John Selby Hall, of Stoneleigh, Ryde, to Jessie Alexandra, only daughter of Robert Geddes, of Trotton, St. John's-park, Ryde, Isle of Wight.

MADDEN—COX.—On July 25th, at All Saints', Margaret-street, London, W., Frank Cole Madden, M.B., B.S. Melb., F.R.C.S., of Cairo, to Madeline Alice, second daughter of William Cox, M.R.C.S., Winchcombe, Gloucestershire.

PARSONS—PARKER.—On July 28th, at Holy Trinity Church, Llandudno Frederick Gymer Parsons, F.R.C.S., son of Thos. Parsons, of Lee Kent, to May, elder daughter of Henry R. Parker, LL.D., of Syweil House, Llandudno.

DEATH.

STEELE.—On July 25th, at Byford House, York-road, Southend-on-Sea, Ernest A. T. Steele, M.R.C.S., L.R.C.P., Surgeon to St. Mary's Hospital for Children, Plaistow, E., aged 34 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ZYMOTIC DIARRHŒA.

MR. WILLIAM BERRY, medical officer of health of the borough of Wigan, has circulated the following letter among the medical men practising in the district of which he has sanitary charge, his object being to obtain an accurate account of the deaths from summer diarrhœa:—

"MY DEAR SIR,—As the period for summer diarrhœa is at hand I venture with some degree of diffidence to call your attention to the alteration in the mode of certification in this disease, as recommended by a Committee of the Royal College of Physicians.

"Diarrhœa is a symptom of some other disease; it occurs in intestinal cancer, tuberculosis of intestines or lungs, diseases of the liver and pancreas, &c., &c., and in such cases the primary cause should be stated in the death certificate so as to prevent the death being registered as one from diarrhœa.

"From a public health point of view the deaths that should be registered as caused by diarrhœa are those which are preventable and which arise suddenly, as a rule, at this time of the year and the two following months—namely, August and September. For these the Committee of the College of Physicians recommend one of the following terms as the best designation: (1) epidemic enteritis, (2) zymotic enteritis, or (3) epidemic diarrhœa, all other synonyms to be entirely discarded.

"The synonyms in previous use were: simple cholera, cholera nostras, cholera infantum, choleraic diarrhœa, dysenteric diarrhœa.

"As our infantile mortality is high I am anxious to have as correct a certification as we can possibly get. Therefore I shall feel obliged if you will, in accordance with the recommendation of the Committee, use the term of 'zymotic enteritis' in all cases where there is no other pathological indication as to the cause of death. In other cases where diarrhœa has been a secondary symptom the primary cause should be certified and the term 'diarrhœa' may be omitted as being only a symptom.

"With every apology, I remain, yours very faithfully,

"WM. BERRY, Medical Officer of Health.

"July 18th, 1900."

"GOLDEN SYRUP."

A CASE said to be of some interest to shopkeepers and certainly of much interest to their customers was brought before the magistrates at Hyde on July 19th. A grocer was charged with selling adulterated syrup. The inspector under the Food and Drugs Act asked for one and a half pounds of golden syrup, for which he paid threepence and sent a portion to the public analyst who reported that it contained 55 per cent. of glucose syrup which is made from starch, while golden syrup, which people seem to look on as a refined treacle, is made from sugar-cane. For the defendant it was stated that he had never before been asked for "golden syrup," that his customers asked for "syrup treacle," and that most likely the inspector could not purchase it in Hyde. On the other hand, the inspector said that he bought three samples in Hyde on the same day, two of which were pure. Although this adulteration cannot be considered to be one of those which endanger health it ought not to take place, but the magistrates—perhaps because they have given up the use of golden syrup—though they fined the grocer five shillings, did not apparently think it very serious as they "believed that a *technical* offence had been committed." If people wish to have glucose it should be sold as such and not as a product of the sugar-cane.

THE "HAGEY" SYSTEM.

To the Editors of THE LANCET.

SIRS,—It may be interesting to you to know that what is called the 'Hagey" system for the cure of intemperance is about to be established in London. The Hagey Institute has been in existence for some years past in Glasgow and quite recently a similar institute has been set up in Wales. From an interview which I had with the local manager it appears that the treatment consists in the administration of some tonic and the hypodermic injection of some drug at regular intervals during the day. It is said that if during treatment the patients take any alcohol they become sick. My attention was called to the matter because the managers before they commence treatment get some medical man to certify that the patients are free from both heart and kidney disease. In this district I called the attention of the medical man in question to the rather serious risk he was running in associating himself with an institute where unqualified men undertook medical treatment. It appears that a very large sum of money has been expended in purchasing the rights to use this treatment in this country. Needless to add that it originated in America. It would be worth while to call attention to the question in order that qualified medical men might be warned of the danger of accepting office.

I am, Sirs, yours faithfully,

Cardiff, July 20th, 1900. T. GARRETT HORDER.

A QUEEN'S CHOCOLATE BOX FOR SALE.

To the Editors of THE LANCET.

SIRS,—I trust that you will pardon me for troubling you with this. I am the widow of the late ——, who resided for many years in ——. I am in very bad health and very straitened circumstances, and my eldest son, a private in the Royal Army Medical Corps, who has been out in South Africa ever since the war began, has sent me the Queen's Chocolate Box to dispose of for my benefit; and knowing from experience how very good and kind you are in rendering assistance to anyone connected with the medical profession and who may require the same, I have ventured to take the liberty to write to ask if you can and will be so very good as to assist me to find a customer for the box through the medium of THE LANCET. My health is so bad that at times it renders me quite helpless, and if I can sell the box it might enable me to undergo a course of treatment from which I have been told by the medical man who has attended me for some time I may derive a lot of benefit. I shall be grateful for any assistance you can give me in disposing of the box.

I am, Sirs, yours very truly,

A MEDICAL MAN'S WIDOW.

*** If any of our readers care to make offers for the Queen's Chocolate Box we shall be pleased to forward their letters to the writer of the above.—ED. L.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—My medical man has advised me to ask you if you can recommend me a school or home for a son of mine whom he describes as feeble-minded. His age is 11 years. He has been attending an ordinary school for some time and I have also tried myself to teach him, but he can learn nothing. You might possibly get him to say his alphabet one day but the next day it is all forgotten. I do not think his case is altogether hopeless because he can remember plenty of things that occurred a year or two ago. I may mention that my means are limited. I cannot afford much for him.

I am, Sirs, yours faithfully,

July 21st, 1900. A PARENT.

CLUB PRACTICE.

To the Editors of THE LANCET.

SIRS,—I should be glad if your columns could be opened to a defence of the club system by those who advocate or practise it—often old-established men of good standing—as contrasted with the general contumely poured upon the head of a man who does a low-fee cash practice of say a shilling. Naturally it may be comforting for a collector to bring periodically a more or less fluctuating sum wherewith to meet current expenses when bills are paid with much delay but as compared with work done it is out of all proportion. First of all, assuming that the average club subscription is five shillings per annum, which, as a matter of fact, is far above the average, while in many places children are accepted at the starvation price of one half-penny per week. This means that two visits per year exhausts, at the ordinary lowest scale of charging, that individual's premium for the whole of that said year, and in the case of a child, one visit in the same time on the above scale shows a balance on the wrong side. Moreover, children are always trespassing on the practitioner's time through their special ailments, not to mention maternal neglect. Of course, the theory is that the sound members pay for the sick ones, but in practice, as judged by work done, this is entirely erroneous. Even under the happiest conditions I have calculated that, taking 12 consecutive months, for every £1 taken at least £3 worth of work has been done in visits alone, as no record was kept of surgery consultations. As a matter of fact, on a certain Feb. 23th visits had been paid to the extent of the whole year's contract receipts, thus leaving every patient after that date to be seen and every bottle of medicine to be dispensed gratuitously. Further, apart from the above practical experience, on what grounds can the system possibly be defended, except as a charity, which I do not think certain undercutting medical men would advance, when statistics quoted in Whitelegge's Hygiene state that between the ages of 15 and 65 years the average sickness to be expected is 1·31 weeks per year, and this of course does not include children's ailments?

Then, again, a practice being as shown above trebled in work done must needs require more horseflesh and probably an assistant; consequently the net income is far below the actual turnover and the principal would be far better off with a much smaller purely private practice. Further, nightwork is materially increased, as a club patient scruples not to send at all hours for trivial reasons when a wholesome fear of an increased fee would deter any but a really important case sending; and when was a club patient grateful?

So the question may be summed up as follows. Increased work and impaired health thereby, net returns small, and, above all, the constant irritation of feeling that the profession is being sweated.

I am, Sirs, yours faithfully,

July 30th, 1900. M.R.C.S., L.R.C.P.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 2nd, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 27	30·03	S.E.	...	119	79	54	64	68	Cloudy
,, 28	29·73	S.W.	0·53	111	79	62	67	69	Cloudy
,, 29	29·81	W.	...	124	79	61	61	63	Cloudy
,, 30	29·82	N.W.	0·03	128	78	57	61	64	Cloudy
,, 31	30·05	WNW	...	118	79	59	63	66	Hazy
Aug. 1	29·85	S.W.	...	102	68	53	63	65	Overcast
,, 2	29·74	N.W.	0·39	118	72	56	60	63	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.).

THURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

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SATURDAY (11th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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Address in Obstetrics:

THE MATERNAL MORTALITY IN CHILDBED

Delivered at the Annual Meeting of the British Medical Association at Ipswich on August 3rd, 1900,

BY WILLIAM J. SMYLY, M.D. DUB., F.R.C.P. IREL.,

VICE-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND; GYNÆCOLOGIST TO THE ADELAIDE HOSPITAL, DUBLIN.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—As the century draws to its close a retrospect is not only excusable but advisable. At such a time we naturally pause to consider the way in which we have come, how we differ from our predecessors, and what we have gained in these hundred eventful years. Periodical literature is full of such retrospects. Our modes of life, the discoveries of science, our means of locomotion, and our methods of warfare are contrasted with those of 1800, and the verdict is that in the present century a greater advance has been achieved than in all that preceded it. Medicine and surgery have shared to the full in the advances of this wonderful age, and it now falls to my lot to show how midwifery has participated in the general improvement.

In considering the history of midwifery many subjects suggest themselves which would offer ample material for an address in obstetrics. The struggle between science and nescience, as represented by medical practitioners and midwives, commenced in the sixteenth century, was fought in every civilised country with varying fortune, and continues in our own time to be a burning question. The contest between radicals and conservatives, or those who incline to operative interference and those who rely more exclusively on nature, are as fully represented amongst us here to-day as they were in the days of Levret and Smellie, of Boër and Osiander. The rise and fall of lying-in hospitals, their almost total extinction and resuscitation in our own time, have no parallel in medical history. To have closed these institutions would have been to have sealed the fountain of knowledge at its very source, yet few could deny that Simpson was actuated by the highest motives of humanity in the campaign which he carried on against them. The development of obstetrical literature, the origin and development of obstetrical and gynæcological societies, national associations, and international congresses, each and all of these would have offered ample material. I have preferred, however, a subject much more familiar and often dealt with, but at the same time of much greater importance than any other that could be chosen—namely, the maternal mortality in childbed.

THE FAILURES OF THE EARLIER PART OF THE CENTURY.

The history of midwifery is a long one, extending back to the earliest times. The Hebrew Scriptures abound in obstetrics, and midwives as a class are distinctly mentioned therein. A knowledge of the art existed amongst the Indians, the Greeks, and the Romans, and later amongst the Arabians, but scientific midwifery may be said to have commenced with Ambroise Paré in the sixteenth century. During the intervening years up to the present time it has been advanced by ardent and zealous investigators, many of whose names can never be forgotten—Mauriceau, Deventer, the Chamberlains, Levret, Baudelocque, Sir Fielding Ould, Smellie, William Hunter, Boër, Naegele, the Ramsbothams, Sir James Simpson, Matthews Duncan, Robert Barnes, and a host of others too numerous to mention. But in considering the improvement in the death-rate in childbed we need not go back many years. It did not take place gradually as the light of science slowly dawned upon our art, but occurred suddenly in the seventh decade of the present century. The observers of the past pursued their object in the face of failure little short of disaster. Their zeal and perseverance were not rewarded by success, but, on the contrary, the more famous the professor, the wider his field of observation, the greater his industry, and the more searching his investigations, the worse were his results. In the first half of the present century the mortality amongst parturient women, especially in hospitals, was probably greater than in any other period of the world's history.

THE DECLINE OF MORTALITY IN LYING-IN HOSPITALS.

Towards the close of the seventies, however, a sudden and salutary change took place. In the Paris Maternity, for example, the mortality dropped in one year from 8 per cent. to 4 per cent., and in 1881 to 1 per cent., and has since improved, and in all the hospitals of Europe a similar change occurred. As to private practice, however, I am not able to give any facts founded upon reliable statistics. Dr. Matthews Duncan in his monograph on "Mortality in Childbed" published in 1870 deliberately stated that "all attempts at ascertaining scientifically the mortality in childbed must be given up." Dr. McClintock also said about the same time, "With our great registering machinery all at work we cannot find out what is the mortality of childbed in London. For my part I think that obstetrical common sense will be well contented if the true childbed mortality of modern London is at all less than in London of 1660. It is very doubtful if it is even now as low as 1 in 107." Matthews Duncan after careful investigation agreed with McClintock that the mortality in private practice was not less than 1 in 120. His own results were 1 in 105, McClintock's results were 1 in 108, and Dr. Churchill's results were 1 in 159. In the face of such results in the hands of the best men it is idle to talk of the general mortality having been at that time 19 per 10,000. In comparing the results, therefore, of modern with ancient practice, we must confine ourselves to hospital statistics, and I have no doubt that the results in private practice are a faithful reflection, perhaps some years later, of the teaching in those institutions.

Statistics of the Rotunda Hospital.—I will take as an example for the purpose of contrast the results obtained in the Rotunda Hospital during Dr. Johnston's mastership, from 1870 to 1876, and the seven years from 1890 to 1896. I have chosen Dr. Johnston's report because it was the period immediately preceding the introduction of antiseptics and because his results were considered at the time to have been remarkably good. During the first period (from 1870 to 1876) 8092 women were delivered in the hospital, of whom 169 died, or 1 in 45·5; during the second period (from 1890 to 1896) 9085, with 50 deaths, or 1 in 181·7, showing a saving of about 200 maternal lives in every 10,000 deliveries. If we adopt the classification of the Registrar-General the deaths appear as due to:—

—	1870–1876.	1890–1896.
1. Septic infection	89·1 in 90·9	10·1 in 908·5
2. Accidents of childbirth	46·1 in 176	24·1 in 378
3. Unconnected with childbirth.	34·1 in 238	16·1 in 568

Similar results are shown by hospitals generally. It is evident, therefore, that in hospitals at least a marked improvement has taken place during the past quarter of the century in all the three groups—death from puerperal fever, accidents of labour, and other causes.

PUERPERAL FEVER OR SEPTIC INFECTION.

The greatest improvement is observable in this group, and I shall offer no apology for dwelling at length upon the way in which it has been brought about.

In the beginning of the century obstetricians were ignorant of the nature of this, the chief cause of childbed mortality, and were helpless either to prevent or to cure it. Epidemics became more frequent and more virulent; and obstetricians endeavoured by clinical observation and post-mortem examination to discover its nature; but unfortunately both these roads to knowledge were pursued by the same individuals and with disastrous results. In Paris Cruveilhier, the most illustrious of French pathologists, was appointed physician to the Maternity; he multiplied his researches and at the same time the mortality in that institution increased. Little of value was added to our knowledge by these investigations, and even in 1872 Dr. Churchill reflected the general ignorance when he published in the sixth edition of his well-known work his opinion that puerperal fever was due to mental emotion, cold, putrefaction of portions of retained placenta, gastro-enteric irritation, the state of the atmosphere, epidemic influences, and contagion. With regard to the latter he felt compelled by the evidence to admit the

possibility of its being conveyed and communicated or excited by those who had attended midwifery cases after being employed in dissection or post-mortem examination, or who were much in contact with fever patients, but in all other cases he attributed its occurrence to epidemic influence. It is pleasant to turn from this general ignorance and mark the first beams of the dawning day.

Dr. White of Manchester.—Towards the end of the last century a remarkable work on the management of pregnant and lying-in women was published by Dr. White, a surgeon practising in Manchester. In that work, published in 1791, he attributed puerperal fever to the absorption of putrid matter by the lymphatics and vessels of the womb. He arrived at this conclusion by observing the similarity, in causation and symptoms, in putrefactions occurring in other parts of the body. In chronic abscess, for example, dangerous symptoms similar to those of puerperal fever set in after it had been opened and the air had gained admission; so also in childbed, fever did not occur until after the child was born. He further observed that when a putrid wound was cleansed the symptoms abated, and that where the disease was so situated that it could be removed by amputation they entirely disappeared, and from this he concluded that absorption of putrid matter was the cause of puerperal fever. His treatment was therefore directed towards the prevention of putrefaction and the elimination of putrid matter should it have already formed. To these ends he advocated thorough ventilation, cleanliness, and drainage. Foul stagnated air, human effluvia, heat and moisture, were to be avoided. Free and even cold air should pervade the apartment, and clean linen be supplied every day. The lochia, if permitted to stagnate in the vagina, would soon become putrid, for, he said, it is well known that the mildest humours in the human body, if suffered to stagnate, become acrid as soon as the air has access to them. He therefore encouraged his patients to sit up several times a day, and even to leave their beds, so as to prevent a lodging of offending matter either in the vagina, uterus, intestines, or bladder. Perhaps the most remarkable statement in this work is the following: "I must not omit to mention," he says, "the good effects I have experienced from emollient or antiseptic injections into the uterus by means of a large ivory syringe or an elastic vegetable bottle in those cases where the lochia have become acrid or putrid, and by being absorbed into the circulation have served as a constant fomes to the disease. I have by this means known the fever much assuaged, and in many cases wholly extinguished, for though the quantity of the lochia is not to be much regarded the quality of this discharge is a matter of infinite importance." One cannot but wonder at White's independence of opinion and the general correctness of his views. He was only a provincial surgeon, yet he did not shrink from stigmatising the teaching of the obstetric world of his day "as a set of pernicious maxims and opinions, built upon ignorance and supported by prejudice and obstinacy." With truth he declared that the slightest remark drawn from real observation is of more utility than the most extensive theory of causes drawn from hypothesis alone. Ignorance, prejudice, obstinacy—these were the forces against which he combated, and, alas, in vain, nor for 50 years afterwards did another champion take the field against them—to perish in the encounter.

Ignaz Philipp Semmelweis.—That champion was Ignaz Philipp Semmelweis. With what feelings of regret and shame should we recall his name. Not long ago obstetricians in every land combined to raise a memorial to it, but during his sad life no such recognition of his virtues smoothed his thorny road. Of us it may well be said, "Your fathers killed the prophets, and ye build their sepulchres." Had they but learned of him instead of ridiculing, opposing, and neglecting him, how different would have been the history of obstetrics in the past half-century. Obstetricians would have led the van and have taught the surgeons antiseptic methods; but the contrary has been the case, and surgeons have taught us what Semmelweis strove to teach our fathers 20 years before. What an amount of human life would have thus been saved, what untold anguish and remorse might there have been avoided; but ignorance, prejudice, and obstinacy prevailed. In 1846 Semmelweis, a young man of 28, was appointed assistant to Professor Klein in the maternity department of the Vienna Hospital. Not only was his sensitive nature shocked by the fearful mortality which prevailed in the department attended by the students, but his observant mind was also struck by the more favourable results obtained in the neighbouring department reserved for the instruction of pupil midwives. Reviewing the history of the institution he found that from 1784 to 1822 the physicians connected with it performed no post-mortem examinations and that the average mortality during that period was 1·25 per cent.; from 1825 to 1833 post-mortem examinations were made and the mortality increased to 5·3 per cent. In 1839 the clinic was divided into two departments and the second was reserved for pupil midwives; the mortality in it fell at once to 2·6 per cent., whilst in the other where the students attended it increased to 9·5 per cent., and this proportion remained the same for the five succeeding years except during the years 1841 to 1843 when during an epidemic of 20 months' duration the mortality in the first department averaged 16 per cent. and at one time rose even to 31·3 per cent. At the post-mortem examination of his colleague Kollitshka who died from septic poisoning Semmelweis was so struck by the similarity between the appearances in that case and in the patients who died from puerperal fever that he concluded that the cause must be the same in both—namely, an infection from without due to the transportation of cadaveric poison by the fingers of the attendants—and he directed that before attending lying-in women they should wash their hands in a solution of chloride of lime. The mortality at once sank to 3·05 per cent. Subsequently, however, he formed the opinion that any organic substance in course of putrefaction, and especially the discharges of women with septic diseases, and even air charged with putrefactive matter, might cause fever; and from this time the hands were disinfected in every case, as well as the instruments and the materials used in cleansing the patients, and the sick were separated from the healthy. The mortality fell to 1·27 per cent. Having been defeated by the intrigues of his colleagues whose animosity he had aroused in his candidature for a professorship in Vienna, he went to Buda-Pesth, where he filled the office of senior physician to the Rochus Hospital for a period of six years, and under his administration the mortality in that institution averaged only 0·85 per cent. Having again been unsuccessful in his candidature for the professorship in Prague, he retired from practice and devoted his energies to publishing his great discovery in a work on the "Nature and Prophylaxis of Puerperal Infection." The story of Archimedes springing from his bath and rushing forth shouting "Eureka, eureka!" is a comedy in science, but the history of this man urging his great discovery upon those who received it with indifference, or hostility, and ridicule, even stopping the passers-by in the streets to impress on them the importance of life-saving truths which they would not receive—this forms a tragedy fit to make the angels weep. In these endeavours he fretted and fumed his life away, until at last reason departed and he was consigned to the lunatic asylum in Vienna, where four years later he died from septic poisoning, that very disease which he spent his life in combating. Semmelweis discovered the same truth as White had done 50 years before, that putrefaction was the cause of puerperal fever, but he added another and much more important one—namely, that the disease could be conveyed to the patient by her attendants. These two methods he termed auto- and hetero-infection.

ANTISEPTICS.

Long before Semmelweis fretted himself into insanity he might have discovered, had he had patience to observe it, that the seed which he was sowing had already taken root and would soon bear abundant fruit. Michaelis and Lange had adopted his views with success. Simpson warmly advocated them in this country and pointed out their applicability to operative surgery. The wonderful discoveries of Pasteur were published two years before his death, and these discoveries not only confirmed his views but placed them upon a firm scientific footing. Lister was already in the field in 1864 and astonished the world by the wonders of antiseptic surgery. But it was not until 1870 that antiseptic principles were applied to obstetric practice, and practically banished puerperal fever from our hospitals. Stadfeld, Bischoff, Fritsch, Schroeder, Breisky, and Lucas Championnière were the pioneers in this movement. At first Listerian methods were closely followed, but not only was the original system too cumbrous for general practice, but it was soon discovered that many of its details might with advantage be abandoned.

THE DOUCHE.

The spray was replaced by the douche, and the vagina was douched with antiseptic fluids before and after every

labour. Soon the uterus was also included in the process, and prophylactic douching reached its climax when permanent irrigation or instillation was introduced by Schücking. Soon, however, serious accidents and even deaths, the result of the douche, began to multiply. These were due to injection of air and antiseptic fluids in the veins. In some cases the uterus was perforated and poisonous fluids were injected in the peritoneal cavity, but, worst of all, the douche proved to be a cause of the very disease which it was intended to prevent. Runge described an epidemic in the Charité Hospital, Berlin, in which the mortality remained at 3·8 per cent. so long as prophylactic douching was employed, but immediately sank to 0·39 per cent. upon its abandonment. Breisky reported a similar experience. In a series of papers in the *Archiv für Gynäkologie* Professor Leopold clearly showed that by thoroughly disinfecting the external parts and avoiding unnecessary examinations far better results were obtainable than by prophylactic douching. In 1888, however, in consequence of the results of bacteriological examination of vaginal discharges he returned to vaginal douching: immediately the morbidity increased by 3 per cent. The next year he again gave up the irrigator, and this was followed by an improvement of 9 per cent. I need hardly explain that by morbidity is meant a rise of temperature even once to 100·4° F. The whole question of the value of prophylactic douching—and it can hardly be said to have been finally settled even yet, for many leading obstetricians both in this country and abroad still resort to it—resolves itself into the probability or even possibility of auto-infection. That the vaginal discharge often contains germs many of which are apparently septic or saprophytic is undeniable, but are these germs really dangerous to the patient, and can they be removed by antiseptic measures? These are the two important questions. In 1888, Winter examined the discharge in 20 women, and found 27 varieties of micro-organisms. In 50 per cent. of these women he found streptococci and various saprophytes, though in an attenuated condition. In 1890 Streffeck made a similar series of examinations, and found pathological organisms in nearly the same proportion of cases. He therefore advocated vaginal douching. Döderlein's investigations in the same direction led him to classify discharges as normal and pathological. The normal were of a creamy consistence, intensely acid in reaction, and contained usually a pure culture of an organism which he named the vaginal bacillus and to which he attributed the acidity of the discharge. The pathological discharge was of thinner consistence, often puriform in appearance, it was feebly acid, neutral, or even alkaline in reaction, and it contained a great variety of micro-organisms, some of which were dangerous. The normal discharge he discovered to be not only innocuous but actually antiseptic. From experiments he concluded that where the discharge was normal vaginal douching was unnecessary, but, on the contrary, where it was pathological a thorough disinfection of the canal was imperative. Döderlein's investigations were repeated in the same clinic in Leipsic by Krönig. In 56·8 per cent. he found the discharge to be normal and in 43 2 to be pathological, but in none of these was it either neutral or alkaline in reaction. He agreed with Döderlein as to the antiseptic properties of the normal discharge, but denied that it was due to the vaginal bacillus, and found, on the contrary, that the so-called pathological discharges which, did not contain the bacillus also possessed a similar bactericidal property. He injected cultures of the bacillus pyocyaneus, staphylococcus aureus, and even streptococcus pyogenes into the vagina and found that they were all eliminated within 24 hours. A most important observation with regard to douching was that in cases in which, after injecting the micro-organisms, he at once thoroughly scrubbed out the vagina with a 1 per cent. solution of corrosive sublimate or lysol, they had not entirely disappeared at the end of 36 hours. The douche, therefore, not only failed to dislodge them, but so altered or removed the natural discharges that for at least 12 hours the normal bactericidal action of the vagina was annihilated. The result of these investigations was that vaginal prophylactic douching was altogether abolished in the Leipsic Hospital, with the result that morbidity was thereby reduced 10 per cent.; the gravity also of the infected cases was less, so that the number of women who were detained in the hospital beyond the tenth day was reduced by one-half. Some of the most distinguished French accoucheurs whilst admitting the importance of the facts I have mentioned still adhere to the prophylactic douche and with good results, but at the same time they point out the absolute necessity for observing perfect asepsis; the external parts of the patient, the hands of the operator, the instruments, and even the water must be absolutely pure. When we remember, however, that this operation, if carried out two or three times every day, must necessarily be entrusted to a nurse I have no hesitation in saying that the preservation of perfect asepsis or anything approaching it will be found in general practice to be absolutely impossible. Where are such nurses to be found? In these countries they are certainly rare and from personal experience I feel certain that routine douching has been productive of much more harm than good.

THE HANDS OF THE ATTENDANT.

We now come to the attendant and our attention may be concentrated upon his hands. The teaching of Semmelweis and Sir James Simpson that infection is carried chiefly by the hands of attendants is now the generally accepted opinion. If I were to state that where there had been no handling there would be no septic infection I should not be very far from the truth. Leopold has clearly proved that patients who deliver themselves without any vaginal interference make better convalescences than those who have been examined even with the most scrupulous antiseptic precautions. Experience therefore proves—what bacteriological investigation would lead us to expect—that an absolutely aseptic condition of the hands cannot be ensured by any known process, and from this we learn: (1) to avoid as far as possible septic contamination; (2) to spare no pains to render our hands as innocuous as possible; and (3) to restrict local interference within the narrowest bounds. The last of these includes not only unnecessary operative interference but also needless vaginal examinations. We can limit the numbers of such examinations best by substituting for them external manipulations; and next to antiseptics I consider this to be the most important advance in modern midwifery. By whom it was introduced, or when, I know not, but its systematisation and popularity we owe to Pinard, Credé, and Leopold. In 1888 Credé wrote as follows: "Even the simplest manipulation may cause infection. It should therefore be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits; it can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions."

DIAGNOSIS BY EXTERNAL EXAMINATION.

By external examination we can tell whether the woman is pregnant or not, and the period to which the pregnancy has advanced, and we can ascertain the presentation and position of the fœtus, whether it be living, dying, or dead, and whether there be one child or more in the uterus. We can also tell whether the patient is actually in labour or not, and the course and progress of the labour may be followed with accuracy. Pelvic deformity is suggested by pendulous abdomen, abnormal mobility and obliquity of the uterus, especially in primiparæ, and in the latter also, excepting hydramnios, hydrocephalic fœtus and plurality of children, all of which may be diagnosed by this method. It is an ominous sign, where labour has actually commenced, to find the head still above the brim; the way in which it enters the cavity is also characteristic. In prolonged labours danger to the mother is indicated by thickening of the upper and thinning of the lower uterine segments; the elevation of the contraction ring and the prominence of one or both round ligaments. External examination is equally useful in the third stage of labour, and its proper conduction depends upon it. The external examination then is the one chiefly to be relied upon, not only because it is safer, but also because it gives more information to the examiner, and because it is easier and more reliable. Having for many years practised the vaginal examination exclusively, I found it difficult to persuade myself of the truth of the latter assertion; but not only has my own individual experience proved to me that this is so, but in the Rotunda Hospital, where the students are obliged to write down upon the bedcards the result of each examination, I found that mistakes in diagnosis were much more frequent with the vaginal than with the abdominal method. There are two things, however, which can only be made out by vaginal examination, and these are the condition of the os uteri and a prolapse of the umbilical cord; and if for any reason, such as inexperience on the part of the

examiner or insuperable difficulties, such as very fat or rigid abdomen on the part of the patient, the results of the abdominal examination are unsatisfactory, a vaginal examination becomes necessary.

DIAGNOSIS BY INTERNAL EXAMINATION.

But before each internal examination the practitioner should remember that it is an operation never altogether devoid of risk and he should be fully persuaded in his own mind as to its necessity. For my own part I seldom examine internally more than once in the course of a natural labour, and I endeavour to do so as soon as possible after the full dilatation of the os, as indicated by the rupture of the membranes or a change in the character of the labour pains. I need not delay to describe the disinfection of the hands. Many excellent methods are in vogue, but thoroughness in carrying it out is of more importance than the selection of any particular method; at the same time in general practice it should be simple as well as efficient.

TREATMENT.

In the treatment of the disease when once established we have also made considerable advances. Local disinfection by antiseptic douching is generally employed, and the curette, abdominal section, and ablation of the infected organs have been employed with success, but are hardly in a position for a dogmatic pronouncement upon their value in an address which is not to be followed by discussion. For the same reason I shall not speak of the antistreptococcic serum, but the general treatment with which I have met most success, and which is, I believe, now most generally adopted, is that introduced by Runge in 1886, and consists in cool bathing, nourishing diet, avoidance of internal antipyretics, and free administration of alcohol.

CONCLUSION.

The subject with which I have dealt is, no doubt, lacking in novelty, and the method an elaboration of the old saying that "meddlesome midwifery is bad," but I have been urged to its consideration by the opinions expressed by Hegar, Boxall, and Cullingworth, that in private practice there has as yet been no improvement. If this be true, or even partially true, it proves that those who undertake the care of parturient women are not yet alive to the responsibilities of their calling, and I have no doubt that a faithful adherence to the principles the development of which I have briefly sketched will result in a vast saving of most valuable lives and will prevent you individually from standing—as many of us have done in the past—helpless spectators of a fatal malady which an accusing conscience whispers might have been averted.

Introductory Remarks
ON
THE PREVENTION OF INSANITY.

Delivered at the opening of the Section of Psychology at the Annual Meeting of the British Medical Association at Ipswich on August 1st, 1900,

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GENTLEMEN,—Probably few circumstances connected with insanity have stirred the public mind more in the last few years than its real or apparent increase. The question is constantly asked by people, Is it not very much on the increase? and it seems to me to be worthy of consideration by this section of the Association whether we as medical men concerned in the treatment of mental disorders are doing all we can to check what at any rate is a most serious increase in the actual numbers of the insane. As the public owes the checking of the ravages of small-pox, the notification of infectious diseases, the improved sanitary measures which have led to such a marked diminution of the death-rate, and now in all probability the successful coping with the large amount of illness due to malarial poison—to name only a very few instances—to the medical profession, so undoubtedly it will be to that profession that the public will look for guidance in what is assuredly a very serious question for the future of our population. The annual report of the Commissioners in Lunacy for the year 1898 (published in June, 1899), begins with the remark that the total number of patients under their cognisance in England and Wales on Jan. 1st, 1899, was 105,086, "being an increase on the corresponding number on Jan. 1st, 1898, of 3114, the largest annual increase we have yet had to record." The increase reported by the Commissioners had concerned all classes of patients, the private class to the extent of 2·73 per cent., the pauper class to the extent of 3·09 per cent., and the criminal class to the extent of 2 per cent. Of greater importance than the mere fact of increase is the fact that there is also an increase in the ratio of the insane to the general population, the advance being the small one of 0·4 per cent. in the private class, and of 0·59 per cent. in the pauper class. The total gives the ratio of one "officially known" lunatic to 302 individuals, as against one in 308 on Jan. 1st, 1898, and one in 337 on Jan. 1st, 1899 Attempts have been made to show that the increase is more apparent than real, that it is largely due to the accumulation of senile cases and to a diminished death-rate, and that there is no real increase of new cases; but when all is said there remain the undoubted facts that the numbers increase by leaps and bounds, that the county and borough authorities are constantly being confronted by the demand for more accommodation in county and borough asylums, that new asylums spring up as the result, and that the taxpayer has constantly to put his hand in his pocket to defray expenses. It will hardly be denied that such a condition demands that we should use every effort to diminish if possible at the source the numbers of those who thus become incapacitated either temporarily or permanently, who, if not possessing private means, become either a burden to their relatives or to the taxpayer, and who in some cases become criminals as the result of their mental disorder.

It would, of course, be quite impossible in the limits of time accorded by the rules of the Association to introductory remarks by presidents of sections to review all the causes of insanity and to cover the whole ground of their removal, but it seems to me to be profitable to draw attention to three items, viz., (1) the propagation of the race by those of insane inheritance or those who have suffered from insanity; (2) the influence of alcohol in the production of insanity and the need for preventive legislation; and (3) the causation of general paralysis by syphilis.

I.—THE PROPAGATION OF THE RACE BY PERSONS OF INSANE INHERITANCE OR WHO HAVE SUFFERED FROM INSANITY.

In Table XXV. in the report referred to above, giving the percentage of causes of insanity in patients under the cognisance of the Commissioners of Lunacy for the five years 1873-97 inclusive, hereditary influence was attributed as a cause in 20·4 per cent. of male and in 25·9 of female patients. These figures are well known to be far below what is the real proportion, and in Table XXVI., where the causes are reviewed in the two great groups of private and pauper patients, the percentages are found to be higher in the former, largely no doubt on account of the greater facilities for obtaining a history in that class; but even allowing that these figures are below the actual facts, we cannot escape from the fact that "hereditary influence" still gives the largest percentage of any of the causes enumerated by the Commissioners.

It cannot fail to be of the highest importance to the future of our race that the stock should be maintained in as healthy a condition as possible and should not be reproduced from defective individuals. This is fully recognised in the case of the lower animals, but human beings have a reluctance to apply the same rules to themselves. Nevertheless there can be no doubt that if we are to hold our own in the struggle for existence with other nations it is of the highest importance that the race should not be largely reproduced by individuals whose nervous system is so unstable that it very easily gives way under those stresses which must after all occur with great frequency in the various conditions of life, but should be propagated mainly by those who are abundantly well equipped from the nervous point of view. It will, no doubt, be thought that I am only giving utterance to a truism when I say that if the race were only reproduced by those of stable nervous system and sound by inheritance our existing asylums would soon be found to be larger than the

requirements of the population. In the last half of the nineteenth century enormous strides have been made in the care and treatment of the insane. They are infinitely better housed; their bodily and mental disorders are treated more assiduously and more scientifically, committees and unofficial visitors of all sorts take a much greater interest in and a much more humane view of their condition; their pathology is minutely inquired into; they are, thanks in great measure to the Medico-Psychological Association, infinitely better nursed; and after recovery such a society as the After-Care Association busies itself in helping the friendless victim of this most painful disorder again to take his place in the world. But I submit that with all this, which is most desirable and which exhibits all those qualities of sympathy with suffering for which our nation is so justly famed, very scant attention has been given to the question how a great deal of insanity can be avoided, and to the fact that a great deal of insanity is preventable and should be prevented. The Lunacy Law has been amended in the last few years so as to make it more difficult for those who urgently need care to be placed under care, while it has rendered it more difficult for patients to be detained and more easy for them to be discharged, as if the Legislature unconsciously arrived at the conclusion that by so doing it could diminish the numbers of the insane. There certainly was an impression among some members of the community, in spite of the denial of this by the Commissioners in Lunacy who are responsible to the public for the due discharge of patients from asylums, that large numbers of persons were detained on the very slightest pretexts, and it is thought by many that this impression weighed with those who were responsible for the drafting of the present Lunacy Acts. Nevertheless the numbers increase, and I submit that there is no more important problem for the twentieth century than the possibility of diminishing the numbers of the insane by their non-production. Among the more educated classes of the community there is, judging by the fact that those specially concerned in the treatment of mental disorders are often consulted on the subject, a recognition of the fact that the presence of insanity in a family at least demands from its members some serious reflection before marriage is entered upon, and it is often in the power of medical men to give advice which may, at any rate, prevent the union of two bad stocks. A short time ago I was consulted as to the rectitude or desirability of a marriage being contracted between a lady whose father had become insane about the time of her birth and had remained chronically insane since and a gentleman whose maternal aunt had been insane for 30 years. The gentleman would not agree to marry unless he could be assured that there was no risk whatever that his proposed wife would suffer from puerperal insanity in the event of a child being born, which assurance it was manifestly impossible to give, and also unless he were assured that there would be no risk of mental disorder in any offspring, which in view of the chronic insanity on both sides it was also impossible to give. Such a case shows that at least some members of the community have their eyes open to the fact of the importance of selection. Love is, however, proverbially blind, and among the unreflecting classes of the community nothing is thought of marriage with a person of insane inheritance. Unfortunately medical men themselves, unless they have had experience in an institution for the treatment of mental disorders, are not always sufficiently alive to the dangers of the propagation of the race from defectively constituted individuals and are sometimes apt to pooh-pooh any possibilities of risk in cases in which they are consulted and to give the opinion that there is no danger in a marriage between two persons of neurotic or insane stock provided the individuals themselves are apparently sound or have been so up to that time. It is perhaps well understood that in a question of marriage between cousins where there is insanity or any serious neurosis in a common ancestor or in the two separate families the idea of marriage ought not to be entertained but it is often overlooked that danger exists in the intermarriage of members of two families not related but where there is insanity or neuroses on both sides. It is very unlikely that the legislature will ever intervene to interpose any legal bar to marriage of individuals of insane inheritance; there will continue to be "free trade" in marriage as far as the law is concerned, but public opinion will have to be educated more and more to understand the importance of not propagating from bad stocks, and it is safe to lay down as a rule that no person of direct insane inheritance ought to marry with another of direct insane or neurotic inheritance, and that even if a person of stable inheritance proposes to marry with a person of insane inheritance, this latter fact of inheritance ought to be known and stated beforehand. In many cases this is done honourably, but in other cases the fact of insane inheritance of the most direct nature is concealed, on the one hand where large property is concerned, and on the other where, perhaps, there are several marriageable daughters in a family of limited means and where it is thought that the avowal of insanity in the family will "ruin their chances" as if the chief object in life were to propagate defective individuals. In other cases concealment takes place from ignorance or carelessness. In this, as in many other things, the greatest happiness of the greatest number must be thought of rather than the happiness merely of the individual, and there is the more honour to those who have relinquished what might have been a life of happiness rather than lend themselves to the degeneration of the race. With regard to the first heading, therefore, I conclude that it is the duty of the medical profession to give sound advice to those who consult them on this matter and not to lose sight of the fact that inheritance is the largest cause of insanity as shown by statistical tables.

If, however, there is doubt as to the marriage of persons of insane inheritance, there should be little doubt as to what ought to be the course and what ought to be the advice given in the case of persons who have themselves suffered from a definite attack of insanity, and in such cases marriage ought, as a rule, to be forbidden absolutely. Deplorable cases must be familiar to the minds of all those connected with psychiatry where patients who have recovered from a severe attack of mental disorder necessitating confinement in an asylum have subsequently married and either broken down again or propagated children defective from birth or breaking down at the critical periods of life. I remember well a patient in Bethlem Hospital who had great hostility to her parents, for which for a time I could find no explanation till one day she told me that what made her most angry was the fact that her birth had occurred subsequently to an attack of insanity from which her mother had suffered. Unfortunately, marriage with a person who has been insane is sometimes contracted by those who should by their education know better. For instance, I remember a patient in Bethlem who broke down in adolescence and eventually joined the large army of chronic dements whose father was a medical man who had married one of his patients who had recovered from an attack of insanity. In another case a nurse who was familiar with mental disease married a male patient who had temporarily improved but whose symptoms returned very quickly and led to a separation and much unhappiness. Fortunately there were no children of the marriage. She had taken this step against the advice of everyone who knew the man's condition. Again, a lady who had had several attacks of maniacal excitement and had been in Bethlem Hospital in one of them, married subsequently against advice and has only recently been discharged from Bethlem again, having broken down after the birth of a child. Such marriages as these are the surest way to increase insanity, but if they are sometimes entered into with a light heart by people of the educated classes it is not surprising that the more unreflecting classes should contract them freely. In the January number of the *Journal of Mental Science* of this year a deplorable case is recorded by Dr. C. C. Easterbrook, in which a girl of insane inheritance married after a fifth attack of insanity (which attack was a puerperal one following the birth of an illegitimate child) and subsequently had two children, after the births of each of which she again broke down mentally. I have no hesitation in saying that in some way or other such a patient ought to be prevented by law from reproducing her species. In all probability nature will speedily put an end to such a bad stock, but it may be at great cost to the community first. Another case occurs to me in which a young girl who had broken down acutely after the death of her lover recovered in a few months and within a year had found another young man to marry her. The marriage was undertaken against advice and within six months after marriage she had broken down again. In such cases the popular idea is that the patient is sure to be all right when she is married and that the insanity is due to the celibacy, and medical men even have not always the strength of mind to inform the relatives

that the likelihood of insanity after childbirth, if not at any other epoch, is greater in such cases than the likelihood of stability.

A great difficulty is presented in the case of those who break down subsequently to marriage but recover, and where the woman is still of child-bearing age. It is impossible to go deeply into this matter, but it is an important question when, for instance, a woman has had puerperal insanity after the birth of her first child whether she ought further to reproduce her kind. The answer to this, in my opinion, depends largely upon whether the puerperal attack depended simply upon what may be called an accident, as, for example, some septic condition, or whether it is merely the expression of an inherited neurosis which first appears at the puerperal epoch. In the latter case one feels that it would be best that the woman should cease child-bearing; but here again it is impossible to do more than advise to that effect, the advice given being in most cases not followed. In the case of a woman who has a puerperal attack after the birth of each child there can be no doubt of the unsatisfactory nature of the children she is bringing into the world and that such a bad stock ought not further to be reproduced, but how to effect this except by advice is difficult to see. The new civil code in Germany enacts that continuing insanity of over three years in duration is a ground for divorce, but I apprehend that in this country such a measure would have no chance of being placed on the statute-book in view of the fact that recovery may take place after a longer period than that, that where there are children their position would be rendered socially unpleasant, and that marriage is "for better or worse" and that the accident of disease should not be allowed to absolve a husband of his obligations. There is no doubt, however, that some such enactment would assist in putting an end to the chance of reproducing a bad stock.

It might be thought superfluous to comment on the iniquity of a congenital imbecile being allowed to marry were it not that several cases are recorded in which this has taken place where large property is concerned and with, of course, deplorable results to the offspring. Again, marriage ought not to be permitted in the case of chronic epileptics, whether the disorder be of the nature of *petit mal* or *grand mal*.

II.—THE INFLUENCE OF ALCOHOL IN THE PRODUCTION OF INSANITY.

Next to heredity alcohol figures most largely in the causes of insanity given in the Commissioners' tables, accounting for 22 per cent. of the male and 9·1 per cent. of the female cases. This refers to the effect of alcohol on the individual alone and takes no note of alcoholic inheritance as leading to the production of insanity, idiocy, alcoholism, hysteria, epilepsy, or other neuroses in the offspring, though it is well known to act in this way. This large percentage of what may well be looked upon as a preventable cause of insanity ought to give the Legislature profound heart-searching as to whether it is doing its duty to the community in checking the ravages of this destructive poison. I shall not be contradicted when I say that the percentages above quoted do not represent anything like the real amount of damage which is done to the nervous systems of the community by alcoholic excess. In addition to the actual numbers who are sufficiently poisoned by alcohol to be certified as insane, there are large numbers of individuals who are from time to time dangerously unsound, it may be for a few hours or a few days, who are the terror of their relatives, who form a large proportion of the cases at police-courts, and who ruin themselves in health and fortune. And those who have had charge of the insane will agree with me that the cases of mental disorder due to alcohol are among the most difficult to manage, the most hostile and litigious, and after recovery very often the most ungrateful of any patients with whom we have to do. No doubt in many cases the alcoholic is a person who starts life with an unstable nervous system; he has either an alcoholic or an insane or a neurotic inheritance, and to a certain extent he is defective *ab initio* in self-control and goes without much resistance into the paths of chronic alcoholism, but at present the Legislature has given him no assistance. The facilities for drinking are enormous and the revenue of the country largely depends upon the quantity of alcohol consumed.

As long ago as 1893[1] a memorial signed by many members of the medical profession urging the enactment of compulsory detention for inebriates was presented to a Departmental Committee appointed by the Home Office, but the only outcome of movement in that direction has been the Inebriates Act of 1898, upon which Mr. Wood Renton[2] remarks: "The first point that calls for observation is that in spite of the unanimous demand for them on the part of every Parliamentary Committee that has inquired into the subject during the last quarter of a century ..... no powers for the compulsory committal of non-criminal inebriates have been brought into existence by the new statute." The new powers for dealing with criminal inebriates, moreover, have been almost a dead letter in consequence of the supineness of local authorities, though it is satisfactory to see that the London County Council is at last alive to its responsibilities in this respect. The report of the Royal Commission appointed to inquire into the operation and administration of the laws relating to the sale of intoxicating drinks, published in 1899, recommends that simple drunkenness should render an individual liable to arrest, that it should be penal to serve habitual drunkards with liquor, and that habitual drunkenness should be treated as "persistent cruelty," entitling a wife or husband to separation or protection for herself, himself, or the children. Unfortunately, however, the present Government seems disinclined to take the subject in hand. That such protection is frequently needed by the relatives of those who become maniacal from drink is undoubted, and there are few histories more sad than those told by the wives of the alcoholic insane, in which for a long time before it has become necessary to take steps under the Lunacy Acts there has frequently been recurring excitement, brutality, and danger to wife and children, with gradually increasing poverty and loss of social position. In a note on the report in the *Journal of Mental Science* for January, 1900, the following remarks are made: "The Commission does not seem to have troubled itself with statistics with regard to the share of intoxicants in the production of mental disease." There need have been no difficulty in this respect, as it is only necessary to look at the tables in the reports of the Commissioners in Lunacy, or in any asylum report, to see that between one-fourth and one-fifth of the male cases of insanity admitted annually to asylums are attributed to alcohol. Dr. T. S. Clouston, in the report of the Morningside Asylum for 1899, speaks of alcoholic excess having been the cause of insanity in 25 per cent. of the cases admitted. He remarks that few persons who had had an opportunity of studying the effect of alcohol on the brain would not heartily approve of most of the recommendations of Lord Peel's Commission. The Inebriates Act of 1898, he points out, has done very little good, and if there is to be legislation on the subject it should be effective. Even those who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease or insanity and his family to poverty might at least turn their attention to the fact that nearly a quarter of the insane are so, either wholly or in part, from a preventable cause, and that in a large proportion of these cases the ratepayer has to bear the expense.

Closely related to this subject is the question of the relation of suicide to alcoholism. In a paper by Dr. W. C. Sullivan, deputy medical officer of Her Majesty's Prison, Pentonville, in the April number of the *Journal of Mental Science*, attention is drawn to the increase of suicide and of suicidal attempts concurrently with recent increase of alcoholism. He points out that the recent increase of suicide has coincided with a considerable increase of abortive suicidal attempts which have approximated to the type of alcoholic suicide in being more impulsive, more related to organic conditions in the individual, and occurring at an earlier average age than suicide from other causes. If his views be correct it is evident that alcohol is thus responsible for the loss to the community of many valuable lives in the period of early adult life. I hold, therefore, that it is our duty as medical men concerned with the care of the insane to point out, amid all the outcry about the increase of insanity, that with regard to alcohol at least there should be an opportunity, with proper legislation, of preventing a good deal of insanity, and that this Association should continue to urge the necessity of further legislation to check the ravages of that seductive but destructive poison.

III.—THE CAUSATION OF GENERAL PARALYSIS BY SYPHILIS.

There can, I think, be very little opposition now to the statement that acquired syphilis is one of the most potent

[1] Journal of Mental Science, April,

[2] Ibid., April, 1899.

predisposing causes of general paralysis. While some observers hold that in every case of general paralysis, if the history be carefully taken, some evidence of syphilis will be found, the great majority recognise at least that even if a history of syphilis cannot always be obtained at any rate such a history is to be found in cases of general paralysis very much more frequently than in any other forms of mental disease. I intend to regard this preponderance of a history of syphilis in cases of general paralysis as an established fact and to lay down the proposition that if there were no syphilis there would be very little general paralysis. According to the report of the Commissioners in Lunacy for 1898 the yearly average number of general paralytics admitted to asylums, hospitals, and licensed houses amounted to 13·1 per cent. of the male cases and 2·8 per cent. of the female cases (Table XXIII.), while general paralysis was the cause of death in 1057 males out of a total of 4065, or more than one-fourth of the total male deaths, and in 265 females out of a total of 3513. Evidently in males at least general paralysis is a most serious cause of death in asylums, and moreover it kills those chiefly who are in the prime of life. It is, therefore, most important that no stone should be left unturned to stay this waste of life. It is well known that general paralysis occurs most frequently in towns where syphilis, alcohol, and fast living are most rife, and no doubt one of the most important measures is to train the dwellers in towns in habits of self-control and to teach them to lead physiological lives; but there seems no reason why the Legislature should not take some steps to check the spread of such a potent poison to the nervous system as syphilis as it has already done in the case of the infectious fevers. It was formerly held that the general paralytic did not transmit the disease to his children, but in the last few years many cases have been recorded of "juvenile general paralysis," in practically all of which there had been found to be a history of parental syphilis,[3] and in many of these cases the father had previously died from general paralysis. It cannot be said, therefore, that the syphilitic general paralytic is not a danger to his offspring, and so a further waste of valuable lives takes place. In my opinion, if syphilis were made a notifiable disease and the chances of its spread diminished, we should see a corresponding diminution in the number of cases of general paralysis. I am well aware that any suggestion to control syphilis, or in fact any venereal disease, by legislation meets with opposition from a section of the community, but it is well to refer to the fact that in Finland, as the result of the hospital treatment of syphilis and the power given by the Legislature enabling the compulsory examination of any suspected individual, syphilis has much diminished in the course of 20 years, that congenital syphilis has become less frequent, and that both the hereditary and acquired forms have become of much milder type.[4] Dr. Drysdale,[5] in a paper on the "Norwegian Bill for the Prevention of Venereal Diseases," calls attention to the existing law in that country requiring practitioners to notify the existence of any case of venereal disease to the medical officer of health but without giving the name of the patient, and suggests that such simple notification would at least "for the first time in the history of these contagions, afford a basis for calculation of the extent to which they prevail among the population of the United Kingdom." He further says: "Eventually I believe that the danger to public health caused by these extremely prevalent contagions will result in punishment of persons who, knowing themselves to be infected, carelessly, or even without any compunction, are heartless enough to put themselves in the way of infecting other persons with their contagion." In my opinion general paralysis should be looked upon as a preventable disease, and I feel strongly convinced that were syphilis controlled this truly malignant degenerative disease of the nervous system, which at present seems to defy all treatment, which adds so largely to the deaths in asylums, which mainly affects men in the prime of life, and which may also affect their children by means of hereditary syphilis, would to a great extent disappear. In all probability, however, the public mind is not prepared for any legislation on the subject.

I have merely attempted to call attention briefly to what I consider to be preventable causes of insanity, and of the importance of prevention rather than cure I think there can be no doubt. Whether the ensuing century will be marked by an arrest of insanity at its sources is, however, a matter on which we cannot speak with any certainty, but it seems to me to be the direction in which our efforts should tend.

[3] Mott: On Twenty-two Cases of Juvenile General Paralysis, Archives of Neurology.
[4] Brit. Med. Jour., March 10th, 1900.
[5] Ibid., Feb. 3rd, 1900.

THE REMOTE RESULTS OF STRUCTURAL LESIONS ("INTERVENTIONS SANGLANTES") IN URETHRO-STENOSIS.[1]

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I HAVE been asked to report to this Congress on the remote effects of structural lesions (*interventions sanglantes*) employed in the treatment of stricture of the urethra. I think it will be generally admitted that these results are mainly determined by the nature of the wound and the circumstances under which it healed. For instance, incised and contused wounds and wounds that heal without any or with much inflammation, or with little or no provision for drainage, may be expected to yield different results. For this happens in all parts of the body. But in estimating the results of structural lesions of the urethra we must never lose sight of the fact that this canal conveys for several inches, at varying intervals, a compound and complex fluid which, under certain conditions not very clearly defined, is capable of exercising a highly poisonous effect on the tissues and fluids of the body with which it may accidentally come in contact. This is evidenced by the frequency of rigors and fever not unlike a malaria after slight lesions, such as passing a catheter or dividing a stricture, by the sudden suppression of urine which is sometimes similarly occasioned, by the happening of serious, if not fatal, septicæmia later, and more remotely by the formation of a contractile scar at and about the seat of the wound. Surely we may say that the pathology of the urethra is a unique one.

To compare their results it will be necessary to define with some accuracy the kinds of wounds that preceded and their probable process of healing. For the purposes of this report the following varieties have been examined and carefully studied both during life and, as opportunity offered, after death: (1) lacerated or contused wounds as follow such methods of divulsion as were practised by Perrève[2] in Paris and Holt[3] in London; (2) incised wounds from within the urethra as illustrated by Maissonneuve's[4] and other kinds of internal urethrotomy; and (3) incised wounds from without inwards as described by Syme[5] of Edinburgh under the name of "external urethrotomy" or perineal section.

1. Wounds inflicted by instruments for rapidly causing divulsion or rupture of a stricture are usually of a contused or lacerated character. When thus employed, unless the stricture is an annular or a ring-like one, a condition which is rare, the canal usually gives way at a point in its circumference where the resistance is least, and this is naturally not the densest portion of the contraction. Hence these operation wounds heal not unlike accidental lacerations of the urethra from injury, and in both instances the liability to stricture and to its recurrence is considerable. This was found to be so in cases examined both during life and after death and repeated operations by divulsion appear to have been followed by additions to the amount of contractile scar-tissue at or about the seat of stricture. There is, however, a form of stricture where divulsion is not open to these objections as judged by its more remote effects. Reference is here made to what are known as peri-urethral or sub-mucous strictures. My attention was first called to them some years ago by examining a patient who died from some other cause shortly after (within a week) a tight stricture in the deep urethra had been

[1] A paper read before the Thirteenth International Congress of Medicine in Paris on August 8th, 1900.
[2] Traité des Retrecissements Organiques de l'Urètre. Emploi Methodique des Dilateurs Mécanique dans le Traitement de ces Maladies. Paris, 1847.
[3] On the Immediate Treatment of Stricture, London, 1861.
[4] L'Urethrotomie Interne, Paris, 1879.
[5] On the Treatment of Strictures by External Incision, 1851.

divulsed by Holt's method. The stricture was found to be peri-urethral and it thus compressed the mucous coat as a ligature round it would do. The effects of the divulsion had been to rupture the fibres of the stricture whilst it left the mucous lining almost intact. Mr. Christopher Heath [6] has also recorded a similar observation. I am inclined to think that the consequence of its casual application to this class of cases and the excellence of the results was that Holt's operation attained a position regarding the treatment of strictures generally which it hardly appears to have merited. No better result relative to the permanency of the cure can be desired than this and if it were possible to limit divulsion to peri-urethral strictures I believe this operation would still be frequently employed. I have examined several urethras many years after Holt's operation had been performed where the canal had maintained its full measurements and no trace of a lesion of the mucous membrane could be found. We may claim these as instances of the successful treatment of stricture by subcutaneous, or rather submucous, methods.

2. The remote effects following internal urethrotomy are of a variable character, arising mainly from the nature of the cicatrix or scar-tissue that follows the operation. In some instances I found from examination after death several years afterwards that no signs of the original stricture were discoverable either in the mucous membrane itself or in the submucosa. As far as I could ascertain the incision made by the urethrotome had soundly healed without leaving any mark or contraction. As illustrating this class of cases I will select one that has recently come under my observation where the previous history was well authenticated throughout. It was that of a man, aged 53 years, whom I saw in February, 1900. He was operated upon in 1883 by the late Mr. Berkeley Hill for a stricture in the deep urethra which would only then admit a filiform bougie. Internal urethrotomy was performed. I saw and examined this patient with Mr. C. B. Lockwood, who had been personally aquainted with him throughout. I could find no evidence of stricture. The patient had ceased to use a bougie for some years. There could be no question that this man had been permanently cured by the operation.

On the other hand, the majority of instances examined showed in varying degrees that a tendency to relapse occurred within a few weeks or months after the operation, even where patients had endeavoured to prevent this by the use of a bougie. In these, for the most part, there were signs that the wound inflicted had probably been an irregular or jagged one, more resembling a lacerated wound than an incised one, and not what would be expected from a well-constructed urethrotome. Further, the resulting cicatrix often presented an appearance not unlike what happens after a burn of the second or third degree, or as I have seen following electrolysis for stricture.

In some instances of recurrence after internal urethrotomy it was apparent that this operation had only partly divided the stricture. From the evidence that was afforded by this class of cases it was concluded that the combination of partial incision of a stricture by internal urethrotomy, followed immediately by stretching of the wound thus made by divulsion or bougies, did not yield good permanent results. It was in some of these cases that recurrence took place most speedily and in an aggravated form.

3. The third group of cases examined were those where the stricture was divided from without inwards on a grooved staff in accordance with Syme's description of external urethrotomy or perineal section. In several instances where this operation had been practised some years previously I found no recurrence had occurred, though the use of a bougie had practically been discontinued. I have recorded [7] a case where a patient, aged 46 years, had been operated upon by external urethrotomy for stricture and urinary fistulæ by a former colleague of mine in 1867. He died 18 years afterwards, and on examining his urethra I could find no sign of stricture. The dimensions of the canal along the line where the section had been made were larger than the rest. The patient had not been in the habit of using a bougie since the operation.

It will not be necessary further to illustrate the permanent advantages that have followed perineal section in some cases of urethral stricture. In restoring and preserving the normal dimensions of the canal and in rendering catheterism easy where previously it was difficult its advantages must be apparent in cases to which it is applicable, and these include some of the worst varieties of stricture. If performed without a guide the prospect of a good result is very small. Where practised successfully it was not easy to determine how much of the permanent good that resulted was due to the complete division of the stricture and how much to the drainage which the external wound provided; but it seemed probable that both contributed to this end.

Taken as a whole, these investigations support a conclusion that most strictures treated in the three ways referred to, showed a tendency to re-contraction in varying degrees. In some this liability was easily counteracted by the use of bougies after the operation, though practically it could not be said that there was any time limit to this expedient. In others the tendency to relapse was so rapid and strong as to require repeated operations to maintain the dimensions of the canal, or even to necessitate the formation of a urinary fistula in place of the urethra. In a few instances, after rapid divulsion, internal urethrotomy, and perineal section or external urethrotomy, the evidence was conclusive that a permanent cure had resulted, and in such cases the subsequent use of a bougie appeared precautionary rather than necessary. It must, however, be stated that, compared with the large number of stricture cases which were investigated for this purpose, and where the observations extended over a considerable number of years under favourable circumstances for conducting such an inquiry, the instances last mentioned were rare. These conclusions will, I think, correspond with the experience of most surgeons.

I take it that the object of this report is not merely to reiterate a foregone conclusion but to explain, if possible, how these variations may have happened, and how both good and indifferent results may alike contribute to advance knowledge in connexion with this subject. In examining the lesions thus made for the treatment of certain forms of stricture by urethrotomy, and I include both varieties of operation under this term, it was evident that some of them had been faulty in their application and in their construction relative to the process of healing which would follow. In a few instances appearances indicated that the incision or incisions had not been accurately applied to the constriction, that the urethrotome had lacerated rather than cut, that several wounds had been made in various directions, and thus by scar-tissue the obstruction was rather added to than lessened by what had been done. This was probably directly due to faulty instruments in the case of internal urethrotomy and to want of precision and completeness in carrying out the details of perineal section. Though some failures may be accounted for in these ways, more were evidently due to the conditions under which healing proceeded after the operation. Many of the incisions that were made for the purposes of internal urethrotomy were inadequately provided with means for proper drainage, having regard to their extent, whilst some cases of perineal section or external urethrotomy were hardly any better off in this respect.

About the time I commenced to make these observations on a somewhat extended scale internal urethrotomy was being practised with a very free hand. The late Professor Otis of New York had recently formulated his views relative to the male urethra which to some extent were responsible for this. Though fully recognising the value of his work in demonstrating the greater capacity of the male urethra and the important influence that this had on the new lithotrity or litholapaxy which Bigelow was developing in the wake of Otis's investigations, I could not follow him in the practical application of it, in its entirety, to the treatment of stricture. However, it tended in the direction of increasing the range of internal urethrotomy as well as the size of the wounds thus made, but I cannot say that it proportionately added to the number of cures in chronic stricture of the deep urethra. It struck me in examining cases which had been thus operated on some years previously by various surgeons where the stricture had recurred that the size or depth of the wound so made was out of proportion to the facilities for drainage, whilst healing was going on, which the urethra alone afforded. In the absence of the latter condition I recognised one reason for the contractile condition of the scar that resulted. In arriving at this conclusion I was much influenced by what I had observed in connexion with the treatment of accidental lacerations of the deep urethra by perineal incision and drainage.

It may be generally stated that the worst forms of strictures are those following laceration of the urethra, and considering the circumstances under which such lesions usually heal this is not to be wondered at. Repair goes on slowly under the

[6] Brit. Med. Jour., July 17th, 1869.
[7] Surgical Disorders of the Urinary Organs, fourth edition, p. 100.

irritating influence of constant contact with confined urine, and excessive exudation about the seat of the wound takes place. This eventually, in conjunction with the irregularity caused by the wound, forms a stricture of the closest and most contractile character. On the other hand, in cases where perineal section and drainage were applied, this either did not happen at all or to a much more limited extent. In some instances where this principle was adopted in the case of ruptures of the deep urethra, healing took place just as kindly as it usually does after a median cystotomy, and no stricture followed. This I proved in many instances. It seemed reasonable to conclude that the treatment of stricture by section, or division of the stricture, might be improved by providing better drainage for urine and the discharges from a wound which can only be imperfectly treated antiseptically.

I am not aware that the influence of urine-drainage and irrigation in relation to the healing of wounds of the urethra and the kind of scar-tissue that results have ever been adequately discussed in connexion with the operative treatment of urethral stricture. With the view of meeting what I consider to be causes of failure and recurrence following some operations, I published[8] a series of cases and observations where I had combined the principles of internal and external urethrotomy in the treatment of certain forms of urethral stricture which on the whole have afforded good results. I shall best illustrate this practice by a typical case which was recorded and watched for a considerable number of years.

A man, aged 51 years, whom I saw and operated upon in 1890, had been the subject of a stricture with a strong tendency to contract for some years, and had undergone no less than six operations for it, including a divulsion by Holt's method, and five internal urethrotomies at various intervals and places. For some months before I saw him the stricture had been contracting and closing in spite of the patient's well-directed efforts with suitable bougies to keep it open. Straining to urinate was constant and prevented continuous sleep, and there was some cystitis with probably pyelitis. I performed an internal urethrotomy with Teevan's modification of Maissonneuve's instrument, as I thought that the latter might not stand the strain put upon it by the cartilaginous character of the tissues which had to be divided. This being done I passed a full-sized grooved staff (No. 12 English) into the bladder. As the staff was evidently gripped in the deep urethra the patient was placed in the lithotomy position and I divided in the median line from without inwards such contracted tissues as remained. I thus opened the urethra and found by passing my finger first into the bladder and then hooking it forwards along the urethra in the direction of the penile orifice that the walls of the canal had now been rendered free and unresisting. A full-sized gum-elastic drainage-tube such as I have elsewhere described[9] was passed into the bladder through the wound and retained. The parts were washed out with a solution of perchloride of mercury (1 in 6000). The stiff drainage-tube was withdrawn on the sixth day and a soft rubber one fitted with a tap for the voluntary withdrawal of urine was substituted which was worn for a fortnight longer and then finally removed, when the wound soon healed. Ten years have now elapsed since this operation was practised. The patient remains in good health and suffers no further inconvenience from his urinary organs than having occasionally to pass a full-sized bougie for himself.

It may be thought that the retention of a catheter in the bladder for some time after an internal urethrotomy has been practised is to be preferred to an external urethrotomy, and a perineal tube for drainage alone. In some instances the former may suffice, but in the majority of cases where a urethrotomy becomes necessary it will be found an imperfect substitute. The mechanism for the retention of a catheter along the whole length of the urethra and the irritation it excites are often obstacles to the successful employment of this expedient.

The conclusions arrived at from the examination of structural lesions used in the treatment of urethral strictures as detailed in the foregoing remarks may be summed up as follows.

1. That there is evidence to show that in peri-urethral strictures of the deep urethra the effects of divulsion as practised in Perrève's and Holt's operations may be limited to rupturing the dense stricture bands in the submucosa of the urethra, whilst the mucous membrane itself escapes any serious injury or laceration and is merely restored by stretching to its original dimensions. Here a permanent cure may result. On the other hand, where the mucous membrane is in itself the seat of stricture and forms part of the latter structurally it is necessarily torn or lacerated by the process of a sudden divulsion, and the pathological condition consequently becomes assimilated with that of traumatisms of the urethra from external violence accidentally applied which are followed by strictures of the most contractile and recurrent form.

2. That there is evidence to indicate that where the entire thickness of a stricture can be included within an incision of moderate dimensions made by an internal urethrotome the normal calibre of the urethra may be completely and permanently restored. Where this happens it may be concluded that all the fibres of contraction constituting the stricture were divided at the time of operation. And further that the converse is equally true. There is also evidence to show that the absence of recurrence under such circumstances is not necessarily dependent on the use of a bougie, though the latter is a precautionary measure which should invariably be advised.

3. That in the case of multiple strictures or strictures of the deep urethra of considerable dimensions either in their length or thickness treated by an internal incision of corresponding proportions, apart from other considerations, the tendency to recontraction and recurrence, with an additional amount of cicatricial material, is frequent; the latter being probably due to the circumstances under which healing takes place in wounds of these dimensions so situated.

4. That lesions of the urethra demonstrate in various ways the poisonous effects that unprotected and confined urine is capable of exercising both on the body generally and on the tissues in contact with it, and that the liability to such effects is greatly diminished where drainage and irrigation render these conditions of the urine unlikely.

5. That in the case of recurring strictures previously treated by incision and in primary strictures of such length or extent as to require an internal section of a corresponding size, or as to which there might be doubt as to whether it would be safely possible so to include them, for the purposes of the operation and its results such wounds should be made with due regard to other surgical principles in addition to the one pertaining to the division of the contraction.

6. That there is direct evidence to show that the tendency to recontraction and recurrence of stricture after internal urethrotomy is largely diminished by the concurrent employment of systematic and efficient urine and wound drainage such as the combination of external urethrotomy, or perineal puncture, affords.

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[8] Brit. Med. Jour., July 18th, 1885. [9] Op. cit.

THE INDICATIONS OF THYROTOMY.[1]

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WHILST it is in the nature of things that thyrotomy can never be an everyday operation, it cannot be gainsaid, I think, that hitherto it has additionally been anything but a popular one. The reasons of this are not far to seek. Previously to the invention of the laryngoscope the indications of opening the larynx were so very obscure that the number of thyrotomies known to have been performed in pre-laryngoscopic times is exceedingly small.[2] When with the introduction of the laryngoscope a period of greater activity and wider applicability seemed to be in store for thyrotomy a very formidable rival to it arose almost immediately in the shape of intra-laryngeal surgery. This rival vigorously, and on the whole victoriously, contested the

[1] A paper read before the Thirteenth International Medical Congress in Paris.

[2] With regard to the history of the operation, and indeed with regard to all details concerning the operation itself upon which I am unable in the limited time at my disposal to enter, I would refer to the excellent monograph on Laryngotomie written by Professor Max Schüller of Greifswald in Billroth and Luecke's Deutsche Chirurgie (Stuttgart, Ferdinand Henke, 1880).

propriety of the external operation with regard to two of its most important indications—viz., the removal of foreign bodies and the removal of benign new growths from the larynx—and succeeded in limiting its performance in these classes of cases to a very insignificant number. Shortly afterwards another of the most important indications of thyrotomy—its performance in cases of malignant disease of the larynx—was strongly assailed by Professor Paul Bruns in his well-known monograph, "Die Laryngotomie zur Entfernung endolaryngealer Neubildungen."[3] The conclusions which he drew from the statistical survey of the thyrotomies which had until then been performed for the removal of cancer and sarcoma were so convincing and at the same time so adverse to the performance of the operation that they were tantamount to its complete condemnation in cases of that sort. Only quite recently has the operation begun to recover its position. At present an era of far greater usefulness is, I believe, dawning for it, particularly in certain cases of malignant disease of the larynx. I shall be glad if the proposals which I am going to make and the discussion which will follow should contribute towards that goal.

Two short remarks are required before I enter upon my subject proper. 1. In discussing nowadays the "indications of thyrotomy" it is imperatively required to discard from one's mind antiquated notions about its dangers and drawbacks. The number of improvements in the technique of the operation itself and of its after-treatment, on which my friend and co-reporter, Professor Dr. Schmiegelow, will no doubt dwell in his introductory remarks, have done away with many of the objections which only 12 years ago were justified enough. It is therefore possible at present to recommend the performance of thyrotomy under circumstances in which in previous times such recommendation would have been unjustifiable. 2. In speaking of the "indications of thyrotomy" it must always be kept in mind that, with a few exceptions, the indications of this operation are not *compulsory* but merely *facultative*. In other words, in the great majority of circumstances in which the performance of thyrotomy comes into question other means of dealing with the case in question may be substituted.

The indications, then, which at the present stage of our knowledge present themselves to my mind for the performance of thyrotomy are: (1) foreign bodies in the larynx; (2) injuries to the larynx; (3) laryngocele; (4) stenosis of the larynx; (5) acute laryngeal perichondritis; (6) laryngeal tuberculosis (including lupus); (7) scleroma of the larynx; and (9) new growths in the larynx—(*a*) benign, and (*b*) malignant.

1. *Foreign bodies in the larynx.*—I do not think that there will be much divergence of opinion as to the mode of procedure in the event of a foreign body having been impacted in the larynx. Should the foreign body be comparatively small, not too angular, not possess many sharp hooks and edges, and not cause any respiratory difficulty, everybody nowadays will probably in the first place attempt to remove it *per vias naturales*. Should this be impossible on account of the size or the form of the foreign body, or of its firm impaction in the soft laryngeal tissues which might lead to their being lacerated in the event of forcible intra-laryngeal removal, or should œdema or considerable dyspnœa be present, either tracheotomy ought to be performed and an attempt be made to dislodge the foreign body from the tracheotomy wound, or subsequent intra-laryngeal attempts at removal might be made, or finally, thyrotomy might be at once performed. In this question no dogmatic rule can be laid down; every individual case must be treated on its own merits. There is one point, however, with regard to which a note of special warning must be sounded. Under no circumstances is it advisable to allow a foreign body to remain impacted in the larynx for any length of time even if at first it does not produce any serious symptoms. I have seen and recorded several cases in which a neglect of that kind led either to perichondritis, ankylosis of the crico-arytænoid articulations and lasting disablement of the organ, or to the sudden dislodgment of the foreign body and its entrance into the lower food and air passages, with serious consequences resulting.[4] Considering that thyrotomy in a healthy person is at present an operation of but small risk I should not now, if my attempts at intra-laryngeal removal failed or if the case from the first were not suitable for this method, hesitate to perform thyrotomy with or without preliminary tracheotomy according to the special requirements of the case.

2. *Injuries to the larynx.*—In cases of severe fracture of the larynx, bullet-wounds, or suicidal injuries it has been repeatedly proposed to perform thyrotomy in order to replace the dislocated fragments, and, if necessary, to retain them in position by a tube introduced either through the mouth or from the tracheotomical opening. The reasonableness of this indication cannot be doubted, and the operation has been performed in a few cases with excellent results, but the indication, needless to say, is likely always to remain a rare one.

3. *Laryngocele.*—Laryngeal air-cysts, themselves extremely rare, still more rarely cause serious symptoms. In a case described by Benda and Borchert,[5] however, sudden inflation of a laryngocele ventricularis caused death by asphyxia. Should the symptoms, therefore, be threatening, thyrotomy followed by extirpation of the cyst would be indicated, as already successfully practised by Ledderhose.[6]

4. *Thyrotomy in stenosis of the larynx.*—It is likely that thyrotomy will be performed more frequently in cases of stenosis of the larynx than hitherto when once the still prevailing impression has been corrected that thyrotomy is a risky and difficult operation. Any of the manifold causes of stenosis of the larynx—cicatricial contraction from ulceration of the mucous membrane; perichondritis, particularly of syphilitic origin; hyperplastic inflammatory processes; congenital webs; adhesions between the vocal cords, ventricular bands, or other parts of the larynx, from external wounds, scalding, syphilis, typhoid fever, and a host of similar causes—may produce considerable narrowing, or even complete obliteration of the larynx. A number of these conditions will be, no doubt, accessible to intra-laryngeal surgery. In another class intubation by either Schrötter's or O'Dwyer's tubes, when patiently used, will be productive of excellent results; but a number of cases will remain in which neither of these two methods can be made use of at all or in which, for external reasons, it is impossible to continue it for a sufficiently long time to prevent re-formation of the narrowing, a contingency which, it is well known, is unfortunately but too frequent. It is in this class of cases that I think there is a future for thyrotomy. Particularly in cases of hypertrophic stenosis, with enormous fibroid thickening of the mucous membrane, excellent results may be obtained, as I have twice seen in cases operated upon by this method in St. Thomas's Hospital by thyrotomy and bold excision of the hypertrophic masses. Hitherto such cases have remained either entirely unrelieved, the patient having to wear a tracheal cannula for the rest of his life and his voice being reduced to an almost inaudible whisper, or patients have had to undergo an intubation treatment extending over many months with the penalty attached to it that even a short interruption threw them back to the very beginning. Thyrotomy in suitable cases undoubtedly relieves more quickly, but here again I need not say that I do not recommend a wholesale performance of the external operation, but think it must be left in every individual case to the judgment of the medical attendant which method—intra-laryngeal operation, intubation, or thyrotomy—is most likely to lead to a satisfactory result. It also ought to be clearly understood that in some cases of great fibroid obstruction of the interior of the larynx, particularly of syphilitic origin, even if the result of thyrotomy at first be all that can be desired, occasionally renewed thickening takes place, sometimes after the lapse of a year or more. A case of this kind was recently shown by Mr. Spencer before the Laryngological Society of London.[7]

5. *Acute laryngeal perichondritis.*—The indications for thyrotomy in acute laryngeal perichondritis, in spite of Schüller's warm recommendation,[8] have never been generally accepted and are likely to remain extremely rare. According to Schüller, thyrotomy ought to be performed already in the first stage as well as in the further course of perichondritis in order to treat the perichondritis itself through the laryngotomical opening in a suitable manner—i.e., by

[3] Berlin, Aug. Hirschwald, 1878.

[4] Some Practical Remarks on Foreign Bodies in the Upper Air and Food Passages and on the Principles of their Removal, Medical Chronicle, April, 1885.

[5] Laryngocele ventricularis als Todesursache, Berliner Klinische Wochenschrift, 1897.

[6] Laryngotomie wegen intralaryngealer Luftcyste, Deutsche Zeitschrift für Chirurgie, xxix., p. 4, 1889.

[7] Proceedings of the Laryngological Society of London, 1900, p. 62.

[8] Deutsche Chirurgie, von Billroth und Leucke, 1880, Lieferung 37, p. 153.

incision, extraction of necrotic parts of cartilage, and aseptic treatment of the perichondritic abscess. Unfortunately, it is very difficult, and likely to remain so, in many cases of acute perichondritis to say definitely which cartilage is the actually diseased one, and the fear of producing by the performance of thyrotomy additional undesirable complications is more than a theoretical one. Occasionally, however, as in a case of my own,[9] real good may accrue from thyrotomy being resorted to in time in acute laryngeal perichondritis, and its performance in this class of cases deserves, I think, to be more frequently thought of than apparently it is at present.

6. *Laryngeal tuberculosis (including lupus).*—Of late years thyrotomy has been repeatedly performed in cases of laryngeal tuberculosis, and Dr. Goris, who has probably paid more attention to this subject than anybody else, has formulated its indications as follows.[10] "Thyrotomy," he thinks, "is optional in circumscript lesions, and even preferable in tubercular patients whose general state of nutrition is good, even if their lungs should be much affected. It is not desirable in tubercular patients, whose state of health is bad, or whose whole larynx is deeply affected." Undoubtedly cases occur in which intra-laryngeal surgery does not succeed in removing by curetting or similar proceedings even circumscript laryngeal tuberculous lesions, because they are not favourably situated for intra-laryngeal interference. In such cases if the general state of health be good thyrotomy would be entirely legitimate and, as Dr. Goris's results and one obtained by myself show, laryngeal lesions in such cases may be lastingly cured by that operation. There is, however, one very serious drawback to the employment of thyrotomy in this class of cases which ought to be before the mind of every operator—viz., the danger of tuberculous infection of the wound. In my own case just referred to, in which I performed thyrotomy, the laryngeal lesion was quite cured after thyrotomy had been performed, the ulcerating surface removed, its bottom scraped, and pure lactic acid applied, and the cure remains permanent now—i.e., fully three years after the operation. But this satisfactory result was at first greatly marred by the external wound becoming tuberculous and fistulous tracts forming all over in front of the larynx and the trachea. Finally reopening of the old scar and an extensive operation became necessary in order to thoroughly remove the parts which had become infected with tuberculosis in the course of the operation. At the time I thought that this was a very exceptional surgical misfortune. On studying, however, Dr. Goris's valuable contribution just referred to I found that the same mishap occurred in all his four cases, and it seems, therefore, legitimate to conclude that tuberculous infection of the wound is a danger which must be seriously reckoned with in this class of cases.

As to lupus of the larynx, thyrotomy has, so far as I know, but once been performed for that disease. In the "Handbuch der Practischen Chirurgie," by von Bergmann, Bruns, and Mikulicz, I see it stated that Brondgeest has obtained a cure in a case in which he performed sub-hyoid pharyngotomy combined with laryngotomy.

7. *Scleroma of the larynx.*—In this rare affection thyrotomy, occasionally to be followed by methodical dilatation, appears to be the sovereign operation. Pieniazek, according to his own statements,[11] has performed the operation in no less than 130 cases, "mostly on account of laryngo-scleroma, and considers it the quickest and most reliable method of dealing with this troublesome disease." Recurrences are not excluded but seem to occur much later and in longer intervals than after the use of other methods.

8. *New growths in the larynx.*—(*a*) Benign growths.—The principle for the removal of benign laryngeal growths which at present is almost universally accepted is to the effect that no external operation should be performed unless an experienced laryngologist has unsuccessfully endeavoured to remove the growth *per vias naturales*. Broadly speaking, I think this principle to be a sound one and to hold good now as much as ever. At the same time, in the light of the experience gained within the last 30 years, it appears to me that one ought not to be too dogmatic, and that in an individual case the observer's own judgment ought not to be too blindly subordinated to generally accepted canons. Undoubtedly in the enormous majority of benign laryngeal growths a competent specialist will be able, particularly since the introduction of local anæsthesia by means of cocaine, to satisfactorily effect removal by intra-laryngeal operation. Still, there are exceptions to this rule. Thus, above all, cases of multiple papillomata in small children form a group the possession of which has by no means been ceded by the surgeon to the laryngologist. It is true that here again the intra-laryngeal method has made considerable progress within the last few years. Kirstein's method of direct laryngoscopy and Scanes Spicer's introduction of the combination of general anæsthesia by means of chloroform with local applications of cocaine to the pharynx, whereby the troublesome salivation which formerly was the greatest obstacle to the performance of intra-laryngeal operations under a general anæsthetic is prevented or, at any rate, greatly diminished, have greatly facilitated the performance of intra-laryngeal operations even in small children and in towns of sufficient size to support the existence of a laryngologist and in large hospitals in which every possible assistance and after-care are warranted even in the cases of small children attempts at intra-laryngeal removal of multiple papillomata nowadays ought to precede if possible external laryngeal operations. But unfortunately cases of this sort will occur where no favourable conditions for intra-laryngeal removal exist and the grave question arises, What is to be done under such circumstances? Personally I should be in favour of mere prophylactic tracheotomy being performed and of the child wearing its tube until it had grown up sufficiently to assist intelligently at subsequent efforts at intra-laryngeal removal of the growth. But a former colleague of mine at St. Thomas's Hospital has drawn my attention to a contingency of which, if I remember rightly, he had seen a sad real illustration. Cases of this sort unfortunately not rarely occur in children of poor parents who are compelled to leave their children to themselves whilst both father and mother are following their occupations. Supposing there were several children in a house one of whom, for the reason now under discussion, was wearing a tracheal cannula, and that during play or a childish quarrel its tube was torn out from its throat, speedy death from suffocation might supervene before help could be afforded. The possibility of such an occurrence ought not to be lightly dismissed from one's thoughts, and if it be present I would rather, though not cheerfully, agree to the performance of thyrotomy than leave the child for years under the shadow of an almost ever-present danger. Should thyrotomy be resorted to under such circumstances one ought not to flatter oneself with the idea that by gaining easier access to the growth with the performance of laryngotomy a greater guarantee against recurrence would be offered than by the employment of the intra-laryngeal method.

Cases abound in laryngeal literature in which thyrotomy has had to be performed over and over again in cases on multiple papillomata in children, and an experience of my own which strongly bears upon this question has shown me the utter futility of the belief that in cases of a tendency to papillomatous degeneration this tendency can be eradicated by external operation. This experience refers to a case which I have reported in the *Archiv für Laryngologie*, vol. vi., Heft 3. It was the case of a man, aged 64 years, in whom I performed thyrotomy with removal not only of the growth, but also of the healthy zone in its entire neighbourhood, on account of what was supposed to be an epithelioma at the time of the operation. The removal, needless to say, was much more thorough than one would ever aim at in a case of benign papilloma. Nevertheless, four years later, practically the whole larynx of this patient was in a condition of papillomatous degeneration. If such an event could occur after so radical an operation, how much more likely will the occurrence be after mere thyrotomy and removal of the innocent growth in a case in which thorough removal of the healthy neighbourhood can hardly be considered permissible. It would not, therefore, be with a light heart that I would ever agree to the performance of thyrotomy for multiple papillomata in children, and cases in which it ought to be performed will certainly be very scarce. I did, however, not wish dogmatically to exclude altogether the propriety of its performance under certain exceptional circumstances, such as mentioned before. Another exception to the general rule named at the beginning of this paragraph may occur in cases of exceptionally large mobile laryngeal growths which may become suddenly impacted in the glottis and cause death before relief can be afforded. Such a contingency will

[9] Loc. cit.

[10] La Thyrotomie dans la Tuberculose du Larynx, Annales de la Société Belge de Chirurgie, No. 7, 1898.

[11] Heymann's Handbuch der Laryngologie, vol. i., p. 1326.

no doubt be extremely rare, but, as I know from sad personal experience, it may become a grim reality. An isolated case of that sort will not, of course, supersede the general accumulated experience of so many years, but if a similar case should again come under my notice I should certainly not persevere as I did with my endeavours at intra-laryngeal removal, but should after one or two failures either perform prophylactic tracheotomy and then resume intra-laryngeal operations or, more probably, should at once perform thyrotomy and remove the growth from the external wound.

(*b*) Malignant growths.—The last indication of thyrotomy which I have to discuss I believe to be both the most frequent and the most important one—viz., its indication in the early stages of intrinsic malignant neoplasms of the larynx. I have already mentioned that the operation in cases of malignant disease had been totally discredited in 1818 by the statistical monograph of Paul Bruns. Three years ago I endeavoured to show [12] that the condemnation which Bruns at the time (1878) was fully justified in passing was due to the fact that the operation at that time was almost always undertaken at a stage when the disease was much too far advanced for this form of operation. But in spite of the fact that our diagnostic powers of the early stages of intrinsic cancer and sarcoma of the larynx have made enormous progress since those days, that the technique of the operation itself has been greatly improved, and that its results nowadays, in really suitable cases, are of the most encouraging nature, the operation, except in Great Britain, has not yet fully recovered from the universal prejudice raised against its performance 22 years ago. A few operators, such as Butlin, Chiari, Schmiegelow, and myself, have repeatedly of late years endeavoured to convince the profession of the enormous usefulness of thyrotomy in really suitable cases of malignant disease of the larynx. Unfortunately, however, our efforts have hitherto, as far as I can judge, been greatly interfered with (1) by recent statistics, which owing to their controversial compilation do not, I am convinced, represent the *real* achievements of modern thyrotomy, and (2) by the rivalry of the two methods which, as it were, form the opposite poles of possible surgical interference in the class of cases now under consideration—viz., the intra-laryngeal method and partial, or even total, extirpation of the larynx. I therefore warmly appreciate the selection of this subject for discussion at an international gathering of this character. It is quite true that not many arguments are likely to be advanced which have not already been made use of in recent papers on this question, and I personally shall refrain from reiterating at length my own views, partly on account of the limited time at my disposal and partly because I have said practically all that I could say in my various papers on the subject.[13] But a few facts seem to me to stand out so prominently, both from the results obtained by various methods and from the considerations which could be urged in favour or in disparagement of any of the rival methods of surgical interference now in use, that I wish in conclusion of my paper to lay them before you in as concise a form as possible.

We are all agreed, I take it, (1) that no internal medication of any kind has the least influence upon the course of malignant disease of the larynx, and (2) that surgical measures are the more likely to be permanently successful the sooner they are undertaken—i.e., at the time when the mischief is still purely local and not yet generalised. For the last-named purpose it is of the highest importance that the *early symptoms* of malignant disease of the larynx should be known *to every general practitioner*, and that the superstitions, unfortunately still too prevalent with regard to this question, should for ever be swept away. It ought to be generally known that the symptoms now usually associated in medical minds with cancer of the larynx—viz., cachexia, pain, swelling of the cervical glands, fœtor of the breath, and expectoration of blood—as a rule only occur in the *later* stages of the disease and may even be absent, one or several of them, till the very end of life. It ought to be generally known, on the other hand, that, just in those cases which give the very best chance and which are particularly suited for thyrotomy—i.e., in cases in which the disease begins on the vocal cords—the *only* objective initial symptom is usually hoarseness, and that if a person above the age of 50 years, particularly a man, has suffered for some length of time from some inexplicable dry hoarseness without any further symptoms his case ought to be considered suspicious enough to be subjected to laryngoscopic examination at the hands of an expert. When once these simple truths have become common property, malignant disease of the larynx will be much sooner recognised than, unfortunately, even now is the rule, and the proportion of lasting success from surgical interference in this terrible disease will become much greater than it is at present.

Now, if a suspicious growth be discovered in the larynx, a part should, if possible, be removed by intra-laryngeal operation and submitted to microscopical examination; should this, however, be impossible, or should the result of the microscopical examination be indecisive, the clinical observer must have the courage of his opinion and not wait too long until it is either too late altogether or until such drastic measures as partial or total extirpation of the larynx are the only means by which a cure can possibly be hoped for. Better, as I have said on a previous occasion, a thyrotomy performed where milder measures might possibly have sufficed than a life lost or a most serious and mutilating operation rendered necessary by waiting too long. I would therefore put it as a clear indication for thyrotomy that in all cases in which the presence of a malignant growth in the interior of the larynx, of a still circumscribed character, has either been definitely ascertained or has been rendered, at any rate, very probable from the clinical symptoms thyrotomy should be performed with a view to eradicating the disease by subsequent removal of the growth itself with a zone of surrounding healthy tissue. In those cases in which the disease is still limited and situated within the confines of the larynx proper, without the cervical lymphatic glands being as yet infiltrated, this simple operation will be found to suffice, not only for the radical extirpation of the disease, but also for the prevention of recurrences.

Without wishing to anticipate in any way the conclusions of my co-referee, Dr. Goris, I must state here, to justify my own attitude, that in my own private practice I have succeeded, by following these principles, in lastingly curing 83·3 per cent. of all the patients whom I have operated upon by thyrotomy. At the same time I wish again emphatically to repeat that such results can only be obtained by the selection of cases which are really suitable for this form of operation. Very advanced disease, infiltration of the cartilaginous framework itself, affection by contiguity of neighbouring parts such as the pharynx, tongue, or œsophagus, extensive infiltration of the cervical lymphatic glands, very old age, concomitant chronic and serious disease of the lungs or bronchial tubes may, of course, from various points of view, be so many contra-indications to thyrotomy in particular and to other external radical operations in general.

Every single case ought to be decided upon on its merits. No operator ought to start on his operation with the determination to perform only thyrotomy, and nothing else. If in the course of the operation the disease should be found to be more extensive than could have been judged by laryngoscopical examination the compass of the operation should either be changed into partial or even total extirpation of the larynx or the attempt at radical operation ought to be altogether abandoned. What I have particularly at heart is that thyrotomy should not again be discredited by being undertaken in *a priori* unsuitable or in much advanced cases. Its real sphere of usefulness lies in the early stages of true intrinsic cancer or sarcoma of the larynx. Personally I am convinced that intra-laryngeal surgery will never be able and, indeed, in its own self-understood interest ought not even to try, to rival thyrotomy in cases of malignant growths of the larynx.

The principle so universally acknowledged in surgery—viz., that operation for malignant disease can never be successful unless really radical—so much militates against the employment in this class of cases of intra-laryngeal operations, which, from the nature of things, do not afford

[12] Zur Frage der Radikaloperation bei bösartigen Kehlkopfneubildungen mit besonderer Berücksichtigung der Thyreotomie, Archiv für Laryngologie, vol. vi., Heft 3, 1897.

[13] 1. The Results of Radical Operation for Malignant Disease of the Larynx, from the Experiences of Private Practice. THE LANCET, Dec. 15th (p. 1417), 22nd (p. 1474), and 29th (p. 1532), 1894. (This paper has been translated into French and published in the Supplement of No. 22 of the Revue de Laryngologie, Otologie, et Rhinologie, 1895.) 2. The paper already referred to in the Archiv für Laryngologie, 1897. 3. Die Thyreotomie bei bösartigen Kehlkopfneubildungen, Die Therapie der Gegenwart, April, 1899. 4. Einige Bemerkungen zu der neuen Sendziak'schen Statistik über die operative Behandlung des Larynxkrebses, Monatsschrift für Ohrenheilkunde, November, 1899.

a guarantee as to the thoroughness and completeness of the removal, that I honestly believe that, in the interest both of the operation and of the reputation of laryngology, in none but the most favourable cases should attempts be made to treat malignant disease of the larynx by endolaryngeal operation. I must frankly confess that even the reports of cases which have been successfully dealt with by intra-laryngeal operation have not been able to shake in the least my conviction going to that effect. The field is wide enough, in all conscience, for intra-laryngeal surgery without this very dangerous ground being contested.

On the other hand, there is ample scope for intra-laryngeal operations of the more extensive kind, such as partial or total extirpation of the larynx in cases in which the disease either has been *a priori* unsuitable for thyrotomy or in which the diagnosis has been arrived at too late for the minor operation to be undertaken with a reasonable chance of success. The results of Professor Gluck and others have shown us how much can be done by some operations in even apparently desperate cases, and I most heartily congratulate him and his followers on having by such operations saved life in an ever-increasing number of such advanced cases. But what I protest against is that these heroic measures should be undertaken in cases which do not really require them. There ought always to be some proportion between the degree of the disease and the operative measures undertaken to cure it, and from my literary studies on the subject I am seriously afraid that this principle has not been adhered to of late by every operator. Those who advocate thyrotomy in those early cases have been assured time after time that their endeavours were being followed with "sympathetic interest," but at the same time I regret to say that I have the impression as if their practical results were persistently ignored.

The time has now fully come when everybody should be capable of forming an opinion on this question, and if the results obtained be scrutinised with an unbiased mind I have no doubt that the chief indication for the employment of thyrotomy will in future be found in early intrinsic malignant disease of the larynx.

A NEW DISEASE WITH A SPECIFIC URINARY REACTION.[1]

BY N. F. SURVEYOR, M.D. BOMBAY, M.R.C.P. LOND.

ABOUT the early part of October, 1899, a young Parsee woman received rather a nasty cut on the tip of the thumb of the left hand. There was much bleeding at the time and the wound had not healed up even at the end of the month. About Oct. 29th she complained of smarting pain in the left eye. There was slight congestion of the conjunctiva, to relieve which simple warm astringent lotion was applied to it. On the next day the patient was much the same; during the night, however, the left side of the face was considerably swollen. In the morning when I saw her there was some redness of the part. The swelling, which was rather œdematous in character, seemed to start near the region of the left parotid gland and to extend over the cheek, nose, lips, and eyelids of the left eye. It did not extend to the right side. The inside of the mouth was also somewhat swollen and tender. The tongue and the gums were not involved. The swelling had very slight tendency to extend on the right side near the lips. There was increase of conjunctival congestion and there was much lacrymation. The skin over the left ear was not so much affected. The whole part was covered with small pin-head-like vesicular eruption. There was much smarting pain and a sensation of heat was complained of. There was no rise of temperature, nor did it rise higher than 99° F. during the whole course of the disease. The wound on the thumb was found to be dry and had an unhealthy look about it. There were present a few fine vesicles on both hands. There was no swelling of the left hand nor was there any pain except near the wound. On closer examination a thin bleb was found at the root of the left thumb on the following day. This was opened and serous fluid escaped which did not show any micro-organisms under the microscope. Thinking that erysipelas was threatening I painted the swelling with tinctura ferri perchloridi, tinctura iodini and Ferris's linimentum belladonnæ in equal parts. This caused some temporary smarting; however, the swelling and pain were decidedly less after a time. Internally the following prescription was given: three drachms of liquor hydrargyri perchloridi, 15 grains of potassii chlorati, 15 grains of potassii iodidi, 15 minims of tinctura nucis vomicæ, one and a half drachms of tinctura chloroformi composita, aquam to three ounces, misce—fiat mist., divide into three doses, one every four hours. 31-10-1899. On the next day—i.e., Nov. 1st—the condition was much the same. Hoping to obtain some information I examined the urine, which, however, showed nothing unusual as regards the ordinary constituents, except that it was rather watery and poor in urea, uric acid, indican, and salts. However, on adding a drop of strong caustic soda solution to the centrifugalised deposit, with a view to testing for pus, I found that the urine assumed a bright, pinkish purple colour. Examination of the urine which had been passed during the whole course of the illness showed the same reaction with varying intensity. There seemed slight periodicity; thus, about from one to two hours after a dose of the mixture it happened to be more marked. Again, lighter coloured urine as a rule gave feeble reaction. The colouring matter was generally completely brought down by the precipitated phosphates and the fluid became almost clear on centrifugalisation.

The precipitate was scarcely, if at all, soluble in any of the solvents that I tried. Thus distilled water, alcohol, ether, turpentine, chloroform, xylol, benzol, and carbon bi-sulphide remained perfectly clear even after repeated shaking for days together. Glycerine seemed to take it up very slightly. The reaction could be obtained by adding any other alkali, thus caustic potash, ammonia, liquor calcis, chlorinated lime, and dilute hypobromite of soda produced the same reaction; excess of the last-mentioned, however, destroyed the pigment. Even strong acids destroyed the pigment-producing substance very slowly, and on alkalinising the urine the reaction was obtained after more than five months. Thus the addition of hydrochloric acid to the extent of making a 20 per cent. solution was not able to destroy the substance after 181 days. In this case it was noticed that the supernatant fluid gave the reaction very feebly, while the scanty brownish deposit produced the reaction readily. In another sample the reaction was scarcely perceptible after four months—in this case, however, I had no opportunity of testing the deposit. Heat did not destroy the reaction. The pigment under the microscope appeared to be made up of amorphous granules. The spectroscope did not show any absorption band. At the suggestion of Dr. Meyer, experiments with oxidising agents, like permanganate of potash and hydrogen peroxide, and with deoxidising substances, like stannous chloride, Stokes's fluid, sulphide of ammonium, yellow sulphide of ammonium, and ferrous sulphate, showed that the colour became faint in the presence of deoxidisers, while oxidation with hydrogen peroxide seemed to make the colour brighter at first, then it gradually became faint, but total destruction of the colour was not produced even after five months. Yellow sulphide of ammonium turned the solution yellowish; however, on the addition of hydrogen peroxide, feeble reaction was reproduced. The effect of ferrous sulphate, Stokes's fluid, and permanganate of potash was disguised by the coloured oxides that were precipitated, while the ammonia, present in sulphide of ammonium, interfered with the effect being well observed. Stannous chloride and hydrogen peroxide were the two chemicals which I found best suited for studying the effect. At the suggestion of Dr. Herbert I tried the effect of solution of iodine in potassium iodide. The colour of iodine masked the reaction and the deposit became whitish in character; in fact, this reagent acted as a deoxidiser; however, on neutralising the iodine with excess of caustic soda feeble reaction appeared, and on oxidation with hydrogen peroxide the intense reaction was at once produced. The observations for the presence of this reaction were continued till Nov. 17th, on which day a negative result was obtained.

On the night of Dec. 5th, 1899, the attack recurred. On the previous day there had been some pain in the left ear. This time the eye was less affected while the pain in the ear and

[1] A paper read before the Bombay Medical and Physical Society.

the swelling of the skin near it were more marked. On this occasion the swelling and pain were not so severe as during the first attack. This time the whole course was febrile like the first one. In other respects there was no difference noticed. This time there was no external wound on any part of the body, the thumb having quite healed up. Before any internal medicine was given I had an opportunity of examining the urine and the same reaction was obtained. On this occasion there was a slight trace of albumin and it was found that saturating with neutral ammonium sulphate produced a dirty grey amorphous deposit. This was filtered, and the filtrate gave the reaction rather feebly, while the precipitate, although washed repeatedly with saturated neutral ammonium sulphate solution, gave the reaction strongly. However, on washing another sample with distilled water the reaction-producing substance was removed from the precipitate.

Here I may state that the presence of this substance is likely to mislead one as regards the presence of peptone. Fehling's solution produces a beautiful pale rosy colour identical with that of peptone reaction. The absence of peptone in this case was proved by the salicyl sulphonic acid and neutral ammonium sulphate test, while a control test with peptone added to urine failed to give the purple reaction with an alkali.

Now, finally, I have to say a few words regarding the nature of this substance. One thing is certain, that this reaction is not found in any other sample of urine which I have examined. However, I have reason to believe that the substance from which this pigment is produced does exist in a modified form in the urine in certain cases. In the sample of urine treated with hydrochloric acid mentioned above I have said that I was able to obtain the reaction by adding caustic soda. However, in my first experiment, there being probably too much brown deposit used, I found that the alkaline solution was brownish in colour, so I added a little hydrogen peroxide with a view to see if the brownish pigment could be so altered as to reproduce the pink reaction. This surmise was at once verified, and since then I have tried the same test with two other samples in which the pigment was not present in fresh urine and the brownish deposit had assumed a pale rosy colour similar to that which is produced by leaving the purple deposit in contact with hydrogen peroxide for a long time. This was in a case of scurvy and the other one was in a case of fever brought on by slight hepatic congestion. In other cases I have not obtained this modified reaction, and it is interesting to note that the urine of the patient whose case gave this reaction gives neither the original nor the modified one now that she has quite recovered.

I may state here that the patient is a martyr to asthma; yet during a rather severe fit I have failed to obtain the reaction with her urine. In the mixture given for this illness will be found tinctura chloroformi composita. Now this contains carmine as a colouring agent; so my attention was directed to prove whether or not this reaction was due to some special idiosyncrasy on the part of the patient to excrete this substance. Experiments on other people failed to give the reaction. Every single drug was tried separately and collectively on myself with negative result. On the other hand carmine was added in minute amount to healthy urine and the reaction was at once obtained; however, this reaction is soon destroyed by hydrogen peroxide. To be sure that carmine had nothing to do with the urinary reaction I availed myself of the opportunity afforded by the second attack, when the drug was withheld, yet there was no difference in the reaction produced. The blood was examined for the reaction during the second attack with negative result. At the suggestion of Dr. Lyons I tried Bremer's test with Congo-red, methylene-blue, methylene-blue and eosin fuchsin, and erythrosin. There was no difference noted in the staining reaction except in the case of Congo-red. This stained the blood film more deeply than in a control case, quite the reverse of that which happens in diabetic blood. I have not had an opportunity of verifying this observation under more rigid conditions, so I cannot say whether or not there is a specific staining reaction present in this disease. The filtered pigment being allowed to dry in air becomes bluish in colour. As regards the nature of this disease I abstain from making any observations now. In conclusion, I have to state that from a record of 195 cases of urine analysis I have not seen a single case giving this reaction.

Bombay.

ECZEMA AND THE ALLIED DISEASES: AN OUTLINE OF THEIR ETIOLOGY, PATHOLOGY, AND TREATMENT.[1]

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I HAVE been asked to open a discussion on eczema and the allied diseases with the hope that a large number of members will express their opinions regarding the etiology, pathology, and treatment of this widely-known and interesting group of disorders.

First of all, how are we to define eczema? On this very subject at the Edinburgh meeting of the British Medical Association in 1898 an eminent dermatologist, quoting John Hunter, said "that definitions were the most damnable things," and they are so. I would define eczema as "a serous inflammation of the skin not produced by any form of external irritants." At some stage or other of its evolution there is or has been exudation of serum. In the acute stage, at all events, the clinical signs of inflammation—heat, pain, redness, and swelling—are all present, but the rise of body temperature that accompanies other forms of inflammation is almost invariably absent. I agree with those authorities who regard an erythematous, a papular, a vesicular, a pustular, a dry or a scaly eczema, as simply stages of the same complaint. I would recognise as the great sub-variety of eczema "eczema seborrhoicum," and one means by that an eczema occurring in a patient who also suffers from seborrhœa, and it usually commences and spreads after the same fashion as seborrhœa, starting on the scalp and progressing slowly downwards over the body and limbs. Sweat eczema, follicular eczema, or sun eczema barely deserve the name of sub-varieties, and eczema marginatum is body ringworm attacking sweaty parts of the skin.

That there is real difficulty and confusion in connexion with the terminology of this disease is very easily exemplified, for do we not often hear people talk of the secondary eczema produced by the irritation of the itch parasite? Now this does not fit in with my definition of the complaint nor with any of the terminology usually accepted by dermatologists. Scabies, in fact, is produced by a direct irritant to the skin, and the various skin conditions associated with it should be varieties of dermatitis. If we are to retain the old familiar term—and it would certainly take a lot of knocking out—we should at all events have a clear image in our minds of what we mean by eczema and what we mean by dermatitis. We all appreciate one great difference between a dermatitis and eczema. The former is under control—i.e., the irritant can under ordinary circumstances be removed; but it is not so with the latter disease, only too frequently does it baffle us and get out of control.

THE ETIOLOGY OF ECZEMA.

Personally I prefer to consider eczema as a distinct disease, as an entity as clearly defined from other diseases as is, for instance, enteric fever from pneumonia. Hereby I commit myself to the parasitic theory, believing that it is brought about by the behaviour of a specific organism, possibly the "morococcus" of Unna, just as the other compared diseases are brought about by the doings of the bacillus of typhoid fever or the pneumococcus of inflammation of the lung. When we speak of eczema being produced, as it very often is, by a chill, or through nervous influence, or by a gouty inheritance, or by diabetes, we do not mean that these conditions are the actual cause of it. We mean that they are the exciting causes, that they reduce the soil suddenly, or perhaps quietly, to a condition favourably receptive to the eczema "morococcus." A chill may equally be the exciting cause of eczema, pneumonia, scarlet fever, or rheumatic fever, or of any other complaint, and the public at all events are quite satisfied with this sole explanation. Even to us, knowing more of the specific cause in each case, there is still a veiled pathological dreamland; for why should a chill in one instance favour the attack of the eczema organism, and

[1] A paper read before the Pathological Society of Reading on June 14th, 1900.

in another that of the pneumococcus, and in another that of the tubercle bacillus? Well, there is the individual to be considered; the altered conditions produced by the chill in the one case may be very different to the conditions brought about by it in the other. Then comes, too, the question of the "survival of the fittest"—I mean of the fittest organism. One particular set of bacilli in the neighbourhood of the depressed patient may be infinitely more numerous, or, again, one bacillus may be healthy and fit for attack while another may itself be suffering from a chill of some kind or be knocked out at the time from the attack of a better conditioned organism. We must not confuse the attentions of the staphylococcus pyogenes aureus or albus with those of a specific organism. Their doings are accidental and preventable.

In the January and February numbers for 1899 of the *Dermatological Journal* Dr. Leslie Roberts has a most excellent and exhaustive article dealing with the pathology of eczema. He opens it by drawing attention to the inflammatory, secretory, excretory, and digestive functions of the epithelium of the skin, or rather of the cellular components of the epithelial layer. To think of special skin cells possessing an inflammatory function is only funny upon first consideration, for, after all, they are strictly comparable to the cells of the epithelial layer along the alimentary and other tracts. There is no doubt, so far as our present knowledge goes, that only individual sets of cells along the mucous tracts do individual business, and it is fair analogy to give separate functions to separate skin cellular tracts. As to the digestive functions of the skin Dr. Roberts clearly proves them by actual test-tube reactions carefully watched in an incubator. But in the more practical part of his paper he allows no sharp line to be drawn between dermatitis and eczema. There are three main propositions that I would ask the members of this society to express their opinions upon. 1. Is eczema an entity—a specific disease? 2. Is it due to the fact that certain functional epithelial cells are excited into over-activity by some kind of irritant? 3. Is there any distinction at all to be drawn between eczema and dermatitis?

I will now cite just a few practical examples of the difficulty of the question. At a meeting of the Dermatological Society of London on March 14th I examined a patient brought forward as a case of "pyodermia." At a meeting of the British Dermatological Society on Feb. 23th I examined some pure cultivations of the staphylococcus aureus from a case of "acute recurring eczema." Then, again, there are the cases of exfoliative dermatitis which nowadays we frequently see, and which no doubt we saw quite as frequently in the days gone by, but we simply did not bother to differentiate and called them all "eczema." The sceptic will say that it did not matter—the patients did just as well and what particular coccus was knocking about was quite immaterial. This, however, is not true, for without a true pathological and bacteriological idea of what is going on it is quite impossible to methodically treat any case of skin disease—or for the matter of that any kind of disease whatever.

Some of the conditions simulating eczema are not easy of diagnosis. To compare dry eczema with psoriasis, for instance, or seborrhœic dermatitis with psoriasis, or eczema with seborrhœic dermatitis, we must often simply depend upon the general picture as shown to us. The scales of seborrhœic disease are more or less oily and there is not the red dry surface left as after the removal of the scales of psoriasis or the greater or lesser attempt at exudation as noted in the case of the cleansed eczema patch. Dermatitis herpetiformis is often not recognised by the general physician, but it is very important that it should be. Here again the general picture, and particularly the grouping of the vesicles and bullæ, will generally settle the question. The early stage, the pre-mycosic stage of granuloma fungoides, should be recognised. Not long ago at a meeting of one of the dermatological societies at which I was present a case was brought forward in a man as pityriasis rubra. It was recognised by Dr. H. R. Crocker and by others who were present as an early case of mycosis fungoides. There were, however, no signs of tumours present. They developed nevertheless within six months and within twelve months the patient was dead. Indeed, the disease is so invariably fatal that only the worst prognosis can be given. This man as he was shown for the first time corresponded with *les hommes rouges* of the French school. These cases also appear in their early stage pretty often as obstinate general cases of acute or subacute eczema, or, if you wish to call them so, as cases of acute or subacute general dermatitis. Indeed, a very obstinate general eczema should be regarded with grave suspicion. Having once seen one or two cases of developed granuloma fungoides one would not be likely to miss even a single very small tumour. It is useless to remove these tumours.

Patches of eczema and lupus may be very difficult to distinguish the one from the other. I can think now of a man being shown at the Dermatological Society a year or two ago with patches on his hands. They were on the back of the hand, were abruptly circumscribed, were covered with a slight crust, and were thickened. They looked very much like patches of lupus, but I believe that they subsequently turned out to be patches of eczema. There was much difference of opinion upon the condition as then shown. The abrupt margins, the thickening, and the slight crusts made them look very much like lupus. Such cases would have to be watched. If the patches spread by their edges steadily advancing and if some amount of scarring were left behind, the diagnosis would be for lupus, and a tuberculous history might still further assist this diagnosis. But if they spread more diffusely and an improvement was brought about by treatment and without any scarring being left behind then such patches could be definitely fixed as those of a chronic eczema.

The subject of seborrhœa and its allied conditions was brought forward at a discussion at which I was present only last month. Mr. W. Anderson, Dr. Stephen Mackenzie, Dr. H. R. Crocker, and others took part in the discussion. To enter into the details would take too long a time, but the close connexion or relationship between pityriasis of the scalp and seborrhœa sicca et oleosa, and seborrhœic dermatitis and alopecia, was clearly brought out. It seemed to be generally agreed that the waxy and oily forms of seborrhœa were the same disease either in different stages or on different soils. The dry scalp pityriasis is possibly a condition by itself. Seborrhœic dermatitis, or eczema seborrhoicum, is probably seborrhœa complicated by the invasion of the staphylococcus pyogenes aureus et albus. All of these conditions lead to baldness of the scalp or of any other part of the body, and it will be remembered that Sabouraud has lately demonstrated a cocoon of micro-bacilli and epithelium which belongs to, and is the destroying agent of, alopecia areata and which is also, he says, the actual cause of seborrhœa. He also says that these micro-bacilli pave the way for the various pus organisms which so frequently complicate these conditions. Just in passing I would say that there is no doubt that some forms of alopecia of the scalp are produced by the microsporon or by the endo-ectothrix fungus of ringworm.

There are one or two other forms of disease allied to eczema to which I ought to allude. They are amongst those produced by pus cocci. I think we may at once brush aside "ecthyma" as merely being an obsolete name for a form of pustular eczema or for impetigo contagiosa attacking such parts as the legs. Impetigo contagiosa we must accept as a separate entity. We are all familiar with the crusty patches of this disease, which appear, indeed, to be simply dabbed on the surface, and which, unless irritated, have no surrounding erythema and leave no after scarring. Then there is that particular form of sycosis produced by the staphylococcus pyogenes. I am speaking, of course, only of the simple form of folliculitis known as sycosis and not of the hyphogenic sycosis. It is said that it is more painful and difficult to epilate in the coccogenic than in the hyphogenic form, but the true test is the microscope.

I heard it laid down as an axiom the other day by Dr. Radcliffe Crocker that we should not use the terms "impetigo" or "impetiginous eczema" unless we are referring to impetigo contagiosa. Any authoritative statement of this kind is useful as tending to prevent loose descriptions and definitions. Then what do we mean by "prurigo"? I think it is a separate disease. The history almost always dates from infancy, the earlier manifestations being, perhaps, those of lichen urticatus. It attacks by preference the extensor surfaces and the leading symptoms are the hard, dry papules often topped by a crust of blood the result of scratching. There is something about the scratches which is difficult to describe but which is yet almost pathognomonic. The disease lasts indefinitely; the symptoms admit of amelioration but the condition is not, strictly speaking, curable. I saw an uncommon case of prurigo in a boy the other day in which the face and hands were alone affected.

All the varieties of erythema might be considered allied

diseases of eczema, as also dermatitis due to pediculi or to the acarus of scabies, or to the handling of the primula obconica; also here in Reading we should not forget the skin irritation caused by the handling of hyacinth bulbs. I have dealt with this subject in the number of the *British Journal of Dermatology* for February, 1897. I content myself with drawing attention to these additional diseases and conditions as possible subjects for discussion.

It has been suggested to me that acne in its varieties, and boils, and carbuncles were diseases allied to eczema. Pustular eczema, impetigo contagiosa, boils, and carbuncles are, at all events, due to the same cause. There are plenty of explanations as to why we should find pustular eczema in one patient, a suppurative folliculitis in another, and acne, boils, or carbuncles in another. The reasons for these various manifestations, if they are due to one actual cause, might form a part of the discussion. In connexion with all these pustular forms of skin diseases I think we may be apt to forget that pus may exist without the presence of pus cocci.

THE TREATMENT OF ECZEMA.

With regard to the treatment of eczema one of our members said to me only the other day that he treated his skin patients with zinc ointment and left the rest to Providence. It is an easy method of disposing of them, but I am sure it will be better for the patients if they are carefully and systematically treated. The physician in ordinary can say much to his patients without any fear of contradiction, but patients suffering from skin disease can see and note progress for themselves.

The first great principles in the treatment of eczema and its allied diseases are to soothe when the conditions are acute and to carefully stimulate the skin into healthy action as inflammation and irritation subsides. In a diffuse eczema one of the most important soothing elements is rest; oftentimes absolute rest is required.

Where there are a lot of dirt and crusts about all should be removed before any special form of treatment be adopted. Thorough soaking in weak carbolic oil is one of the best methods of loosening crusts, whether upon the head or elsewhere. The most careful and explicit directions must be given as to the removal of crusts from the scalp. There are various other substances that may be used for the removal of crusts, for instance, boric starch poultices, solutions of bicarbonate of soda or borax, or fitting the head or limb with an impermeable covering. Having removed all crusts and dirt as far as possible the next thing is to soothe and disinfect. There is hardly a skin disease which during some portion of its career does not require anti-parasitic treatment, and the application requires a great amount of care. It would not do to rush away with the idea that sulphur ointment would always do as the disinfectant. If my good friend aforesaid ever should go outside his zinc ointment treatment for acute eczema and the like diseases I think he would apply sulphur ointment, with the result, perhaps, that he would produce a dermatitis. Not that I am laughing at sulphur, for carefully applied in strengths suitable to each case it is an invaluable remedy. Mercury, ichthyol, tar, resorcin, and similar parasiticide remedies suit still better, some in one case, some in another. Experience gradually teaches us when to order lotions or sprays and when ointments or pastes. In any case the remedy must be kept at work. It is not a bit of good simply perfunctorily to tell the patient to dab on this or that ointment or lotion; he must be told how to apply it and how often to apply it.

It would be interesting to hear what members think with regard to the washing of eczema patients. I think that the patients should be washed from time to time for the better disinfecting of the parts, but I should in all cases order soft water or softened water and careful drying afterwards, and the general directions given for the cleansing of the patient should be similar to those that would be given for the cleansing of a wound. Lassar is one of the strongest advocates for these periodic washings, but many dermatologists are much against water being used to the skin in eczematous conditions. This is a fair question for discussion. Lassar particularly recommends tar-baths.

There is one caution about washes and sprays that everyone might not think of, and that is if the skin is broken do not order spirituous sprays or washes. Ordinary frequent washings in eczema and dermatitis are not to be allowed. The cleansing and disinfecting of the parts is the point. For macular and erythematous eczema, and also for some forms of weeping eczema, personally I think very highly of dusting powders. French chalk, cimolite, and powdered talc all make useful dusting powders. Oxide of zinc or starch powder is good for astringing or stiffening purposes, and salicylic acid, boric acid, or sulphur may be added for disinfecting purposes. I have used muslin bags filled with powder, as suggested by Unna, with excellent effect in situations like the groin.

Dry patches of chronic eczema, either hypertrophic or atrophic, are amongst the most troublesome conditions to cure; so, too, are those hypertrophic patches of lichen planus that one so frequently meets with. Stimulation, often strong stimulation, is necessary, but the results must be watched. It seems to me that what suits one case does not suit another and it is often necessary to ring the changes. Strong mercurial or chrysarobin ointments may be useful, tar in some form, or a salicylic and creasote paste, or they may be painted with 10 per cent. to 20 per cent. solutions of caustic potash or nitrate of silver. Blistering is also a valuable means of starting a cure. Of these and of the many other remedies the secret of success with all of them is to keep them at work. Of course, this does not apply to blistering or to the application of strong caustic solutions. Probably some members will give their experience of the gelatin preparations and other varnishes and pastes now so largely used. I am very fond of a medicated plaster in some cases of chronic eczema; I think their great drawback is the fact that they are probably not recently made.

I have said nothing about baths, but having shown myself on the favourable side for the cleansing of eczematous surfaces I have practically committed myself to baths and I fancy there are but few who would not sometimes order baths in skin diseases. Baths of soda and borax, and glutinous, starch, and bran baths we must frequently order; of the rest sulphur and tar baths are perhaps the best. I think the value of baths and their methods of application would be an excellent point in connexion with treatment for discussion.

With regard to the general treatment of eczema and the allied diseases I attach less value to this than to the local treatment. Nevertheless, in conjunction with local applications it must often be of service. In acute disease—especially in plethoric and gouty subjects—undoubtedly free purgation and the use of drugs that will lessen vaso-motor resistance and produce a free action of the skin, kidneys, and mucous tracts generally will be of service. In diabetic skins, whether the condition be xanthoma or ordinary eczematous irritation or dermatitis, undoubtedly general treatment must be gone into. Also where there is evidence of trophic disturbance the nerve change or nerve instability has to be corrected if it be possible to do so. Neurosis is given great importance to by some dermatologists, and sedatives, such as the bromides, and stimulants or restoratives, such as the zinc salts or arsenic or strychnine, should be serviceable. Personally, I think that when we have to deal with such a class of drugs for the cure that we are getting into troubled waters.

Diet in some cases is of importance, but I think time would hardly permit the discussion of the dietary treatment. It is practically treating acute or chronic indigestion. With regard to the treatment at health resorts, and particularly at bathing places and spas generally, no doubt many patients will be benefited by visits to Harrogate, Buxton, Strathpeffer, Aix-les-Bains, Carlsbad, Homburg, and the like places, but it is usually, I think, the patient's general condition rather than the particular form of skin disease that suggests the particular resort. The seaside is not generally suitable for acute or irritable skin disease, but such a statement requires modification.

I do not know why, but it seems to me that medical men as a rule do not trouble themselves much about skin diseases; indeed, they are either to be cured with a dose of white mixture and some zinc ointment or there is nothing to be done for them, and yet I would venture to say that the skin with all its glands and appendages and cells is as beautiful and intricate an organ as any we have to deal with. Its duties in the life-history of the individual are manifold and wonderful to think upon. The physiology of the corium and epidermis and of the appendages which strike down into the subcutaneous tissues teaches us more than a little of the way we live and move and have our being. Its pathology is equally instructive and beautiful; bacteriology probably plays a more important part for it than it does for any other class

of disease. Without this knowledge how can we successfully apply our treatment? Yet how few of us take the trouble to master it and what is the result? If we choose to neglect what is really a beautiful and sightly organ when it is sound the patient with an unsound skin tries to get it cured elsewhere. He dodges here and there, tries first one quack nostrum and then another, usually goes from bad to worse from want of systematic guidance, and occasionally stumbles upon a right remedy at the right time and finds himself better or cured. Forthwith he curses the whole priesthood of medicine and extols the quack nostrum to the skies and the quack proprietor shouts it beyond such trivial confines and space will not hold his jubilations. Of the 101 not cured one hears nothing, even less than nothing, if they return for help to the proper channels. Here some of them will find a kindly and sympathetic practitioner who will take the necessary systematic trouble to alleviate and cure them. However, he is not the man to holloa and the patient soon forgets that he has been ill.

I feel that I ought to apologise for trespassing so much on this one line of argument, but I do it because I feel that if we are to beat down quackery and quack nostrums it is to be done by stronger personal efforts on our part to face troublesome and nasty cases instead of just throwing them over as nuisances. All this applies with more force to the difficulties of dermatology than to any other groups of disease. I believe that the profession is really more in the dark about the knowledge of and the treatment of skin diseases than of any other disorders, perhaps because we have thought that we saw everything and that to know about it and treat it was so very easy. We saw when we had failed and desisted in disgust; the physician in ordinary seldom knows when he has failed and plods on merrily with his patient perhaps as happy as himself. Hard workers are lifting the veil that has prevented the medical man from always producing good results in eczema and the allied diseases, and I will end by quoting an old negro proverb that has just come into my head—"It takes heaps o' licks to dribe a nail in de dark."

Reading.

A CASE OF PUERPERAL SEPTICÆMIA TREATED BY ANTI-STREPTOCOCCIC SERUM, AND COMPLICATED BY PHLEGMASIA; RECOVERY.

BY A. HAMILTON WOOD, M.D., CH.B. EDIN.

THE patient whose illness I am about to discuss was confined on the afternoon of May 5th. The first stage was a long and tedious one, due mainly to extreme rigidity of the perineum. There was a superficial tear which, though very slight, may undoubtedly have been the source through which septic matter gained entrance into the system, seeing that the house and its occupants were by no means clean. I visited the patient on the following day and found her perfectly comfortable. She had little or no after-pains. I saw her again on the next day and found her much the same as before; the temperature was normal but the pulse was a little rapid. I was then rather afraid of some septic mischief setting in, and on calling on the following day, which was the third day after her confinement, I found her temperature to be 101° F. and her pulse 120. I gave her then five-grain doses of quinine with some hydrobromic acid to prevent as far as possible the uncomfortable head symptoms which are so apt to follow the continued use of this drug; also 15-minim doses of digitalis. She had some castor oil which moved the bowels well but had no effect on the temperature. I sent for one of the district nurses who douched her night and morning with 1 in 1000 corrosive (intra-uterine). The next day the temperature ran up to 104° and on the same night it was 105·6°. She complained of no pain and told me that she felt "all right but for a slight headache and a dreadful thirst." She was very sleepy and her expression was not anxious but rather drowsy and apathetic. The uterus, though enlarged and contracting badly, was not very tender, but there was a copious foul discharge, a lot of shreddy material returning each time with the douche. On this day, the fourth after confinement, I injected 10 cubic centimetres of anti-streptococcic serum, ordered her a little brandy every three hours, milk and soda-water, bovril, &c., and when I called the next day I found that the temperature had fallen from 105·6° to 102·6°. On that evening the temperature was about the same, 102·8°, so I did not inject any more serum. On the following morning it had fallen still further to 101·6°, but rose again in the evening to 104·2°. This was on May 11th, the sixth day after confinement. In the evening I again injected 10 cubic centimetres of the serum, the chart showing a fall on the next morning to 101°, but in the evening it again rose to 104·2°. Our supply of serum having unfortunately come to an end I could not inject any on that day. On May 13th the temperature in the morning was 100·4° and in the evening 104°, so I again injected 10 cubic centimetres of the serum. On the next day—that was about a week after the onset—the temperature fell to 100·6°; in the evening it was 101°. I now stopped the serum injections but continued the quinine and intra-uterine douching. The pulse, which up to now had varied with the temperature, had also fallen and was steadying down. I may mention *en passant* that from the commencement the secretion of milk was entirely arrested. On the 15th the temperature was 100·6° in the morning and 102° in the evening, but as the pulse was steady I did not mind the slight rise. On the next day it was a little above 100° and the patient was feeling a great deal better. The temperature fell still further on the following day and on the 18th it was down to normal, the pulse-rate falling simultaneously. The discharge, which for the last five or six days had been gradually diminishing, was now very slight. On the next day, however, the patient complained of a little pain down the back of the left leg, and on examining it I found the leg slightly swollen and tender, more especially posteriorly. There was not much tenderness above the popliteal space. The temperature ran up to 99·6° and the pulse to 86. For two days before this phlebitis set in; the bowels had not been opened. The patient had taken some castor oil, but had failed to get relief till an enema was given. I swathed the leg in cotton-wool and raised the foot of the bed. The quinine and digitalis were continued with the addition of some morphia to allay the pain. For the next two days the temperature remained at about 100° and on the following day she complained of pain in her right leg; this was only slightly swollen and not so tender as the left. The leg was wrapped in cotton-wool and bandaged as before. It is interesting to note that the left leg, as is invariably the case, was the first to be attacked and the severer of the two. On the following day the temperature fell to normal and remained so, except for a slight rise one evening due possibly to constipation. Towards the end of the month all pain had left the legs and by a little gentle massage the remaining swelling quickly disappeared. Since June 1st the patient has been getting up for a little each day, and at the time of writing (June 4th) she says that she feels herself again.

This case is deserving of some note, more especially with regard to the mode of treatment adopted. On the sixth day after the commencement of the disease, during which time three injections of serum had been given, the temperature fell considerably and remained down. But the question arises, would the same state of affairs have resulted from the administration of the quinine and digitalis alone without the anti-streptococcic injections? I think not. The intra-uterine douching, no doubt, played an important part in the treatment of the case, but apart from this I am of opinion that the success of the case was to a great extent due to the use of the anti-streptococcic serum. With regard to the after-effects, let me remark, the patient had absolutely no discomfort. Some hold that the serum produces a depressant action on the heart. It may be that three doses of 10 cubic centimetres each is not sufficient to cause any depression; all I can say is that in this case there was no depression, nor were there any uncomfortable symptoms whatever, either after each dose or after the third had been given.

Then a word or two with regard to the phlegmasia. It started in the left leg and a few days afterwards the right was affected, but to a less degree than the left. For a day or two previously she had been very constipated. This may be a mere coincidence, but it seems to support the theory that the rectum, lying as it does on the left side, has something to do with the phlebitis invariably starting on that side. This case, as well as others already published, may aid in inciting the profession to the further use of

anti-streptococcic serum in such cases as the above, my opinion being that it is undoubtedly worthy of a fair trial.

Falkland, Fife.

THE SYMPATHETIC ORIGIN OF POST-ENTERIC TACHYCARDIA.

BY P. CLENNELL FENWICK, M.B., L.R.C.P. LOND., M.R.C.S. ENG.,

SURGEON-CAPTAIN, NEW ZEALAND MOUNTED INFANTRY; LATE SURGEON TO THE CHRISTCHURCH HOSPITAL, NEW ZEALAND.

DR. C. BURLAND in his paper on Tachycardia following Enteric Fever[1] seen in military convalescents mentions a theory suggested by myself of a sympathetic origin of the cardiac phenomena. Having had the pleasure of assisting Dr. Burland in his investigation of the pulse-rate in typhoid fever convalescence I can fully endorse all his remarks. The actual percentages given by him were, if anything, larger than those stated in his paper, but he is no doubt anxious to keep well within the limits. The patients were most carefully examined and some of the more interesting were auscultated daily and the rapidity of the pulse was constant in all. It is a striking point that the only two cases in which the pulse was normal were those of a seaman and of a soldier who had escaped the hardships of the campaign by being stationed on garrison duty. Of the effects of the long marches and scanty food I can speak feelingly. My troop of the New Zealand Mounted Infantry left the base in splendid health. Every man had twice passed a severe medical examination and each had been selected from a large number of applicants. At the end of 700 miles marching a huge proportion had passed through hospital or were at that time on the sick-list. Cases of absolute exhaustion at the day's end were very common and cardiac trouble was a constant complaint at sick parade. Considering that these men had been selected on account of their splendid physique and excellent medical history it must be conceded that Dr. Burland's theory of overworked hearts has solid grounds of foundation.

Whilst discussing with Dr. Burland the reasons of the rapid pulse-rate which we so constantly found I recalled the many cases seen in New Zealand of irritable hearts due to thyroid overgrowth and remembering a proposal to treat this condition by excising the middle cervical ganglion I suggested to Dr. Burland that the cardiac irritability noticed by him in his convalescents from enteric fever might be due to a sympathetic disturbance arising in the superior mesenteric plexus and thence transmitted to the cardiac ganglia and plexus. The superior mesenteric plexus which supplies that portion of the intestinal canal chiefly attacked by the typhoid poison is so closely connected to the cardiac plexus that I saw no absurdity in suggesting that the intestinal inflammation might set up an irritation wave in the terminal filaments of the local nerve-supply which was transmitted or reflected to the ganglia or centre controlling the heart's action (exactly as the pain in hip-joint disease is transferred to the knee-joint) and thus react on a cardiac musculature already weakened and irritable from long-continued strain and insufficient nourishment and produce the rapid pulse noted by Dr. Burland.

The liquid evacuations in enteric fever surely point to a vaso-motor disturbance in the intestinal sympathetic supply, and if the typhoid poison can evoke one function of the nervous system cannot another reaction also take place? The liquid diarrhœa so often seen in nervous people, particularly in medical students undergoing the horrors of an examination, is an example of a vaso-motor explosion. Dr. Burland, whilst courteously declining my suggestion, advanced as an unanswerable argument that if typhoid inflammation could cause a nervous reaction then the same phenomena should also be seen in dysentery. My reply was that in typhoid fever the inflamed area was much larger and that the nerve-supply of this locality was in much closer connexion with the cardiac plexus than that of the rectum. The sympathetic supply of the latter is derived from the pelvic plexus which is directly joined by branches of the second, third, and fourth sacral nerves, and we may justifiably expect to find an irritation wave from the rectal sympathetic nerves reflected through its nearest nerve connexions; and surely the painful tenesmus so constant in dysentery is caused by reflection through the sacral nerves to the inferior hæmorrhoidal branches of the pudic nerves which is derived from the third and fourth sacral nerves and thus places the nerve-supply of the external sphincter in direct nervous connexion with the mucous membrane of the rectum. The marked nervous phenomena seen in the strangulation of a small piece of the intestinal wall, as in Littré's hernia, is surely an argument in favour of sympathetic irritation from the intestinal nerves being reflected to the gastric nerves or the vomiting centre.

A symptom seldom noticed in acute dysentery is a very painful throbbing pain in the lumbar region. This I can only account for on the supposition that the renal plexus is reflexly irritated from the nerves of the rectum. I have only seen this symptom in cases of severe dysentery, and tenesmus was also acute.

Having been for many months exiled from all medical literature I must apologise if my remarks show painful ignorance of current ideas.

[1] THE LANCET, July 28th, 1900, p. 253.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

CHARING-CROSS HOSPITAL.

A CASE OF FOREIGN BODY (CLINICAL THERMOMETER) IN THE BLADDER; LITHOTRITY; RECOVERY.

(Under the care of Mr. JOHN H. MORGAN.)

FOREIGN bodies are much more commonly found in the female than in the male urethra and this is doubtlessly due in part to the larger lumen and the shorter length of the female urethra and partly also to the more frequent occurrence of hysteria in women. If a skiagram had been taken it would probably have revealed the nature of the nucleus of the stone, for both glass and mercury are very opaque to the x rays. The only case which is at all parallel to the very interesting one recorded below is to be found in the *Medical Press and Circular*, 1894, vol. i., p. 546.

An unmarried woman, aged 32 years, was admitted into Charing-cross Hospital on May 17th, 1900. She gave the following history. In 1881, 1888, and in 1891 she was an in-patient at the London Hospital for "rheumatic fever." Whilst there in 1891 she had an attack of hypogastric pain similar to that which she had on admission to Charing-cross Hospital. It was not so severe and she felt nothing of it for twelve months after leaving that hospital. In 1893 she was in the Hastings Infirmary for three months for gastric ulcer and bronchitis and later for three months in the Chest Hospital. In 1894 she was an out-patient at the Grosvenor Hospital for Diseases of the Chest and an in-patient at King's College Hospital on two occasions. During her second stay at the latter institution she underwent an operation for fissure of the anus and hæmorrhoids. Since that time she had had long periods of illness. Two years ago, whilst at the Woking Nursing Home, she had another severe attack of hypogastric pain which came on suddenly and then left her. In August, 1899, she was on a visit to her sister at Cardiff and was suddenly taken ill. She was taken to the infirmary and apparently remained there till March, 1900. She said that during this time she had several periods of unconsciousness and also that her temperature ran an abnormally high course, ranging from 103° to 105° F. The last 14 days were marked by the onset of severe dysuria, the pain and frequency of micturition continuing and getting steadily worse after she left Cardiff. The patient was sent by her medical man to Charing-cross Hospital when she was discovered to be suffering from cystitis and was admitted.

On admission the patient was seen to be an ill-developed

individual. She was short and thin and looked unhealthy. Her conduct during her stay in the hospital convinced most of those who had to deal with her that she was a malingerer. She had always some fresh ache or pain to complain of, though when she was not being observed she was bright and cheerful. She made three consecutive attempts to produce hyperpyrexia. What method she used is not certain. The thermometer registered from 110° to 112° F. and then shortly afterwards the same instrument only recorded 99° if she was carefully watched. She complained on admission of a constant pain across the back and in the hypogastric region extending down the left leg. This was aggravated on micturition which occurred at first about every half-hour. Not only was there pain on micturition but also great difficulty. The urine was alkaline, of specific gravity 1013, and contained albumin and also pus. The evening temperature was usually 100°; the morning temperature was 99° or normal.

The patient's bladder was washed out with boric lotion once a day and she was given boric acid and ammonium benzoate internally. On May 22nd she was anæsthetised and the bladder was sounded by Mr. Morgan. A stone was found anteriorly and to the right. This was then crushed with a lithotrite. On washing out the bladder after several crushings particles of glass and globules of mercury were found to be mixed with the fragments of the stone. A pair of forceps was then introduced and some small pieces of stone and a piece of thermometer nearly an inch in length were removed. The débris thus removed was carefully collected, dried, and weighed, its weight being 12·31 grammes. It was then boiled with strong hydrochloric acid and filtered, leaving on the filter-paper glass and mercury. The filtrate was found to contain phosphate of calcium with a little uric acid. The remnants of the thermometer weighed 4·64 grammes, whilst a complete one weighed 6·1 grammes. The patient continued to pass particles of stone and mercury for a few days after the operation. There was some blood also in the urine. The pus gradually disappeared and the urine became acid. She still complained of pain on micturition and she was on two occasions sounded to find out if anything had been left behind. She was still complaining when she left the hospital on July 11th.

Remarks by Mr. MORGAN.—Amongst the many curious foreign bodies removed from the bladder this is the first instance in which a thermometer has been found. The patient was at first admitted under the care of Dr. Routh as her symptoms were referred to the uterus, and by him Mr. Morgan was asked to examine the bladder. The stone was easily detected and nothing unusual was suspected until the blades of the lithotrite closed upon a substance which yielded in a different manner to any of the substances ordinarily found to compose a calculus. At the first washing fragments of glass and mercury, together with some phosphatic deposit were removed, and the nature of the nucleus was thus disclosed. The previous statements of the patient and her general conduct forbade any reliance being placed upon her statements, but the weight and measurements of the fragments removed, the negative results of two subsequent washings, and the absence of any sign of irritation gave reasons for concluding that the whole of the foreign body had been removed at the first sitting. No trace of blood could be found in the urine a few days after the operation and micturition was called for only with normal frequency. As to how or when the thermometer was introduced through the urethra no cross-examination could elicit any information from the patient, but looking to her general behaviour whilst in the hospital there can be little doubt that it was done by her own act.

OPEN-AIR TREATMENT OF PHTHISIS.—At the meeting of the Bristol Board of Guardians held on August 3rd it was decided to apply to the Local Government Board for sanction to send two patients who were suffering from phthisis to the North London Hospital for Consumption, Mount Vernon, Hampstead, where the open-air treatment is adopted.

LUNACY IN SWINDON.—At the meeting of the Swindon Board of Guardians held on August 2nd it was reported that 142 patients from this union were inmates of the Wiltshire County Asylum, the cost for their maintenance being £3400 per annum. Ten years ago the guardians had only 66 cases in the asylum, at a yearly expenditure of £1160.

Reviews and Notices of Books.

A Manual of Pathology. By JOSEPH COATS, M.D. Glasg., late Professor of Pathology in the University of Glasgow. Fourth edition, revised throughout by LEWIS R. SUTHERLAND, M.B. Glasg., Professor of Pathology in the University of St. Andrews. London: Longmans, Green, and Co. 1900. Pp. xxv.-1132. Price 31*s.* 6*d.*

THE "Manual of Pathology" was the most important literary production of the late Professor Coats. It represents his life's teaching; it deservedly ranks as one of the standard works on pathology in the English language, and it owes that position to its undoubted excellence. It is well arranged, clearly written, and freely illustrated; it is so comprehensive that it leaves few points in the science altogether untouched; above all it is a manual for the student and the practitioner and not for pathologists only, for its author never forgets that pathology is essentially the foundation of medicine and surgery and he continually emphasises the clinical bearings of his subject. It is impossible to read the opening chapters of the book without feeling the value of a combination of clinical experience with pathological knowledge in one who would be a teacher of pathology.

This fourth edition of the work, unfortunately posthumous, had been in part revised by the author himself before his death. But the greater part of the work of revision, and hence a certain share of the responsibility, has rested on the shoulders of Professor Sutherland, who has conscientiously endeavoured to follow the lines laid down by Professor Coats. The task cannot have been an easy one, and though it is our duty to call attention to certain defects in the book it is certain that the work has been well done. Pathology is a vast and rapidly growing subject; it now embraces so many branches that it is doubtful whether anyone can hope to master them all. The development of experimental pathology, of pathological chemistry, of histology, and, above all, of bacteriology, has enormously increased the amount of ground to be covered by the student even since the first edition of this book was published. It is inevitable that with each succeeding edition of a book which seeks to be comprehensive the difficulty of including everything should become increasingly great and in time insurmountable. It is to our mind an open question whether it is any longer advisable to include in a single work so much as is attempted in this. The end can be attained only by an alarming increase in bulk or by inadequate treatment of certain subjects. It is clear that a book of over 1100 pages is as large as any ordinary student can be expected to master, and though the student who has mastered this edition will in most respects be well equipped in pathological knowledge it must be admitted that, as a universal work of reference on the subject, it is in other respects inadequate. As a text-book of morbid anatomy and morbid histology it is an admirable work; much of the information on general pathology—as, for instance, on inflammation and the various degenerations—is excellent and thorough; but there are sections on general pathology which are exceedingly scanty and imperfect—as, for example, the paragraphs on jaundice and albuminuria. The modern developments of hæmatology are practically neglected; leucocytosis is twice mentioned in a casual way, but its immense importance in diagnosis and prognosis is not touched on. Leukæmia is dealt with in almost as imperfect a manner, only a single reference being made to the all-important question of the absolute number of leucocytes per cubic millimetre. Bacteriology occupies 44 pages, and there is no fault to be found with the way in which the facts are presented. It is, however, doubtful whether it is wise to attempt to deal with

the details of the subject in so scanty a space. In the section on animal parasites malaria does not receive adequate treatment; in a work published in 1900 we might have expected some reference to the mosquito, since our definite knowledge as to the relation between it and the malarial parasite dates from 1898 at least.

If we have called attention to what appear to us deficiencies in this book it is because we are in duty bound to do so; but it is right to repeat that such deficiencies are almost inevitable and result from the natural growth of pathology beyond the possible limits of a single text-book. It is with much greater pleasure that we recur to the many good points of the volume. We have tested it as a standard of reference in daily work—the most severe test that can be applied to a book. It is but rarely that we have failed to find on any desired topic information sufficient for the ordinary needs of the student, conveyed in a clear manner and illustrated by a profusion of woodcuts and micro-photographs which are, as a rule, excellent. It is, indeed, the free use of illustrations—there are 490 in the text—which is partly answerable for the large size of the volume. The "Manual of Pathology" must long remain a standard work of reference for students, and Professor Sutherland is to be congratulated upon having carried out the designs of the original author in so successful a manner. But when, in the fulness of time, a fifth edition is called for, as will undoubtedly be the case, we would commend to his consideration the advisability of limiting in some measure the scope of the work.

Analytical Records
FROM
THE LANCET LABORATORY.

PLASMON.

(THE PLASMON SYNDICATE, LIMITED, 56, DUKE-STREET, GROSVENOR-SQUARE, LONDON, W.)

THE introduction of plasmon marks an important advance in the separation of the nutrient material without any deterioration of its dietetic quality from the most natural of all foods, milk. It is to be feared that in the preparation of many foods the process adopted seriously affects the nourishing qualities of the material in its original state. Chemical analysis may show an excellent proportion of flesh-forming constituents, but only physiological evidence can decide upon the real nourishing quality of the food product. Plasmon has satisfied both chemical and physiological inquiries. It consists practically of the casein of milk separated by a very simple process and dried. At no step in the process is objectionable chemical treatment introduced. Plasmon is a tasteless, odourless white powder which is entirely soluble in water though the solution exhibits a slight opalescence similar to that of milk. The dry powder swells up in water to a gelatinous mass which dissolves as more water is added. On boiling the solution a "skin" continually forms at the top of the liquid in the same manner as in fresh milk. The important dietetic salts of milk are retained in the preparation. Everybody is familiar with the effect of mixing aerated water with milk, the casein separating in fine digestible curds and not in voluminous indigestible clots. Further, it is well known that soda-water-and-milk is an excellent beverage and food for the invalid, especially where sensitive conditions of the digestive organs exist. Plasmon is practically the casein of milk thus separated and afterwards dried in a stream of the same gas (carbonic acid) which separates the proteid from milk serum. Our analysis of plasmon gave the following results: moisture, 10·76 per cent.; mineral matter, 7·24 per cent.; milk fat, 0·70 per cent.; proteids, 81·30 per cent. Excluding the moisture these results mean that dry plasmon contains over 90 per cent. of pure proteid. That this proteid thus separated retains its powerful nourishing qualities is evident from the interesting experiments made by Professor Virchow. He concludes that the albumin in plasmon is in its original unaltered condition, and therefore plasmon can replace all other albumin foods. He finds, further, that it is extremely digestible, and in some interesting experiments made upon himself in which the diet consisted almost entirely of plasmon the results were highly satisfactory. Plasmon has accordingly been found of great value as a nutrient in enfeebled conditions of the digestive organs and to be an excellent means of administering food to the sick. It is valuable as a prelude to solid food for patients convalescing after disease or after surgical operation. It is important to point out that plasmon contains, as our analysis shows, the salts of milk including the phosphates, while even a small quantity of common salt may be extracted from it. It is obvious that plasmon may be employed with the greatest advantage for enriching foods or for raising their actual flesh-forming value to a high and trustworthy degree. The variety of ways in which plasmon may be prepared need not be enumerated when regard is had to the fact that it is soluble in water. Thus a powerful nutrient may be administered to a patient without his knowledge, for, as we have already stated, the solution of plasmon is practically tasteless and odourless. The preparation is one worthy of the highest praise. It contains no alkali and is permanent for an indefinite period in the dry state. Chemical analysis shows what a remarkably high proportion of proteid it contains, and physiological experiment has established that this proteid is completely available for the nourishment of the human body.

(1) NEW TABLOIDS; (2) HIGH POTENCY ANTI-DIPHTHERITIC SERUM; AND (3) "ENULE" RECTAL SUPPOSITORIES.

(BURROUGHS WELLCOME AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Some comparatively recent additions to the list of tabloids are well worth the attention of our readers. The success which has attended the administration of codeine in place of morphine has suggested the preparation of tabloids containing a quarter of a grain and half a grain respectively of the alkaloid. Unlike morphine, codeine may be withdrawn from administration without being followed by unpleasant symptoms. It acts as a narcotic in the relief of pain in the same way as morphine but is less active, and is free from injurious after-effects. As is well known, the drug has proved useful in the treatment of bronchial irritation and cough, while its administration reduces the quantity of sugar in the urine of diabetic patients. Chinosol has been some time to the front now as a convenient bactericide and antiseptic in surgical work. It has also been tried internally in the treatment of tuberculous diseases. Again, it has been administered in febrile conditions which accompany leprous ulcerations and in dysentery. Lately it appears to have acted as a satisfactory febrifuge in typhoid fever. The tabloid of chinosol contains five grains of the salt. The tabloid of urotropine contains five grains of this ammonia derivative (hexa-methylene-tetramine). It has been used as a diuretic and genito-urinary antiseptic, while there is evidence also to show that it acts as a solvent of uric acid and urates. Urotropine is claimed to have been of distinct service in cystitis. Messrs. Burroughs Wellcome and Co., it is important to note, have discontinued the issue of anti-diphtheritic serum in vials containing 1500 units in favour of serums of higher potency. Each vial of the more powerful serum contains 4000 units in five cubic centimetres or less, or vials containing 2000 units in five cubic centimetres or less may be obtained. The rectal suppositories

made by this firm are distinguished by the brand "Enule." We have recently received specimens of "Enule" opium suppositories containing one grain of opium. As is well known the administration of opium per rectum has, besides acting locally, a favourable action in obstinate vomiting and in painful nephritic and uterine affections.

HEREFORDSHIRE CIDER.

(H. P. BULMER AND CO., RYELANDS, HEREFORD.)

The specimens sent for examination were distinguished by the following titles: (1) Cherry Pearmain; (2) Cherry Pearmain, extra dry; and (3) Draught Cider. The results of analyses were as follows. Cherry Pearmain: alcohol, by weight 5·25 per cent., by volume 6·55 per cent., equal to proof spirit 11·49 per cent.; volatile acid reckoned as acetic acid, 0·096 per cent.; fixed acid reckoned as malic acid, 0·24 per cent.; extractives, 6·09 per cent.; sugar, 5·8 per cent.; and mineral matter, 0·27 per cent. Cherry Pearmain, extra dry: alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent.; volatile acid reckoned as acetic acid, 0·16 per cent.; fixed acid reckoned as malic acid, 0·18 per cent.; extractives, 1·95 per cent.; sugar, 0·26 per cent.; and mineral matter, 0·23 per cent. Draught Cider: alcohol, by weight 5·87 per cent., by volume 7·32 per cent., equal to proof spirit 12·84 per cent.; volatile acid reckoned as acetic acid, 0·12 per cent.; fixed acid reckoned as malic acid, 0·23 per cent.; extractives, 2·36 per cent.; sugar, 0·28 per cent.; and mineral matter, 0·25 per cent. The results of these analyses practically divide the specimens into the two classes, "sweet" and "dry," the draught cider presenting a similar composition to the extra dry contained in bottle. In these two specimens the sugar does not exceed one-third per cent., while the ordinary Cherry Pearmain in bottle contains over 5 per cent. of sugar, which accounts for the high amount of extractives. All three specimens were in excellent condition and sound and no objectionable preservatives could be traced. The "extra dry" specimen possesses the marked and very pleasing fragrance characteristic of the apple and is a very wholesome and refreshing drink. Those who prefer cider in which the fermentation is not so complete, and therefore in which the sugar has not "worked out," may select the more or less sweet kinds. The specimens were brilliant and agreeably effervescent. There is abundant evidence tending to show that cider is a healthy beverage during the hot summer months. The above brands may be recommended in view of their purity and excellent quality.

HIGHLAND MALT WHISKY.

(J. S. WHERLY AND CO., 129, ASKEW-ROAD, GATESHEAD.)

On analysis this spirit proved to be free from excessive extractive matters and exhibited a fair average alcoholic strength. The results were as follows: alcohol, by weight 40·30 per cent., by volume 47·67 per cent., equal to proof spirit 83·54 per cent.; acidity reckoned as acetic acid, 0·021 per cent.; extractives, 0·23 per cent. The whisky was relatively light in colour and to the taste was satisfactory. It was free from the common impurities of whisky.

THE "GYE PROCESS" FRESH FOODS.

(THE GYE PROCESS FRESH FOODS (NEW) CO., LIMITED, SUNBURY, MIDDLESEX.)

We have formed a very favourable opinion of these foods, which are preserved without the addition of antiseptics and by a process which, though evidently a desiccating one, is in no sense a process of cooking, for on examination the specimens sent were found to have retained all the properties and characters of the fresh article. We found that on following the directions given the dried-up preparations could be restored to their original bulk and on subsequently cooking they were found to retain to a somewhat remarkable degree the attractive properties of the freshly cooked food. This satisfactory result was true not only in the case of the vegetables but also of the animal foods and the "ration block." Amongst the samples submitted to us were the following: turnips, leeks, carrots, apples, artichokes, onions, cabbage, chicken, veal, eggs, beef, ration block, &c. On trying the specimens of vegetables we found the product after soaking and cooking to be quite tender and to possess a good fresh flavour. These results are very encouraging and afford some evidence that an excellent way has been found of preserving many kinds of foods without the addition of chemicals and without cooking, the products retaining all the properties of the fresh article. As far as we can gather the process would appear to consist of extracting the moisture by special means without altering any of those particular qualities which are destroyed by cooking.

MEAT ESSENCES.

(F. B. COSTA AND CO., 16, DOWGATE-HILL, CANNON-STREET, E.C.; AND GEORGE BAGGER AND CO., PIAZZA SAN BERNARDO 100, ROME.)

The specimens examined were (1) essence of beef and (2) turkey jelly with meat. The former was found to contain the constituents of raw meat juice of which unaltered albumin is the most important. The essence is of excellent flavour and is especially valuable for invalids, since it is easily digested. The latter preparation was found to contain the meat of turkey in addition to the soluble portions. Meat fibre was easily identified under the microscope. It possesses a very pleasant flavour and yields a broth which should be acceptable to invalids. Both preparations are so excellent that it is a pity that the makers cannot contrive to preserve them in glass jars rather than in tins. As a matter of fact we found evidence of some metallic contamination.

HELIDON SPA WATER.

(THE HELIDON SPA WATER CO., HELIDON AND BRISBANE. LONDON AGENCY: IDRIS AND CO., CAMDEN TOWN, LONDON, N.W.)

We have made a careful analysis of this water, which is said to be drawn from the natural spring of Helidon, Brisbane, Australia, and the following results were obtained: carbonate of soda, 183·32 grains per gallon; common salt, 46·57 grains per gallon; and carbonate of calcium, 9·87 grains per gallon. The total mineral constituents are thus 239·76 grains per gallon. We could only find lithia in traces—that is to say, hardly in a quantity to justify the water being called a lithia water. In an analysis published on the label of the bottle we notice that 2·68 grains per gallon of lithium carbonate are said to be present. Assuming these figures to be correct it would not be true to state that "this water contains more lithia than any of the European spa waters." Further, the quantity of chloride of sodium given in the analysis on the same label is 2·99 grains per gallon, whereas we found over 46 grains per gallon. These figures are so discordant as to suggest that the water is liable to important variations in composition. The water has a very agreeable and soft taste, is free from iron, and pleasantly sparkling. Moreover, it contains no organic impurity.

DIETETIC PREPARATIONS.

(COOMBS EUREKA AERATED FLOUR COMPANY, LIMITED, NOTTINGHAM. LONDON AGENCY: 8, FARRINGDON-ROAD, E.C.)

An assortment of food preparations sent to us by the above firm comprised malted food, fruit salt, custard powder, blancmange powder, egg powder, and light pastry powder. The preparation possessing most merit, perhaps, is the malted food. Its title sufficiently explains its composition. By the method adopted the food is undoubtedly enriched and made more assimilable. The fruit salt consists of a powder which effervesces on adding water and its composition presents no novelty. The custard powder consists largely of starch faced with yellow colouring to give it the appearance of eggs, but in no sense can this powder be regarded as an

efficient substitute for the true custard made from eggs. It contains but a trifling proportion of flesh-forming materials. The blanc-mange powder is similarly composed, as is also the egg powder. The word "egg" in the latter case is a decided misnomer, implying eggs where no shadow of eggs is. Lastly, the light pastry powder consists of flour containing a small addition of ingredients which yield carbonic gas on moistening. Thus the product is made spongy and light by the disengagement of the gas during cooking.

HÆMOGLOBIN CAPSULOIDS.

(THE CAPSULOID CO., 31B, SNOW-HILL, LONDON, E.C.)

According to our examination these capsuloids contain hæmoglobin in an oily excipient. The contents of one capsuloid weigh a little more than three grains, and according to our analysis the proportion of iron is 0·30 per cent. The administration of iron in this form is satisfactory. Hæmoglobin is well borne by the stomach and easily assimilated. To not a few the appearance of hæmoglobin preparations is repulsive. The capsuloid meets this objection, and evident care is devoted to its preparation.

(1) SAVON DU TRANSVAAL; AND (2) SAVON SURFIN.

(MADAME ESMÈE, 5, BROOK-STREET, LONDON, W., AND BLANCHE LEIGH, 4, RUE DE LA PAIX, PARIS.)

Both specimens consist of delicately prepared soaps, neutral in reaction, free from irritants and resins, and therefore, apart from medication, suitable for delicate skins. But the soaps are regarded as antiseptic and also of some curative value on account of the presence of ichthyol. Ichthyol is, of course, of well-known value in various skin diseases, but we do not think that the very small amount present in these toilet soaps can avail much in this direction. On distillation with alkali the yield of ammonia was quite minute. Since ichthyol is an ammonium salt this result indicates but a very small proportion of this curious product. For external application ichthyol is used in an ointment containing from to 50 per cent.

CHELTINE FOODS.

(WORTH'S FOODS SYNDICATE, LIMITED, CHELTENHAM.)

We have on a previous occasion described the composition of the "diabetic food" of this company. Since it contains an abundance of carbohydrates it cannot be accepted as in the least degree suitable for diabetic patients. On the contrary, it would be harmful. We have also examined certain other foods prepared by this company, notably, "Perfect Food" and "Dyspeptic Food." We have devoted our attention chiefly to the proportion of soluble and digestible matters in these foods and to the evidences of a microscopical examination. The results were satisfactory and indicated that the foods had been prepared with the view of aiding the digestive processes. Their names, therefore, to some extent are justified. Further, we found that the foods contained an excellent proportion of the cereal phosphates and of the nitrogenous constituents. The flour used is evidently of superior quality.

PETANELLE DISINFECTING POWDER.

(PATE, BURKE, AND CO., 6, WOOL EXCHANGE, BASINGHALL-STREET, LONDON, E.C.)

Besides being itself a disinfecting agent on account of its porosity this curious substance is a most excellent vehicle for absorbing disinfectants to be applied for domestic purposes. Petanelle possesses the undoubtedly advantageous property of floating upon water, so that by keeping a film of an oily disinfectant upon the surface of water offensive gases are effectually deodorised. Moreover, the substance is so light as to be easily swept away by a flush of water so that it would not block the pipes. It is an interesting peaty product, very porous, and an effective absorbent—a property which adapts it admirably for hygienic and disinfectant purposes. Petanelle, it may be added, is used in the preparation of a surgical woo and of a variety of hygienic fabrics, such as clothing, abdominal belts, &c.

V. O. SCOTCH WHISKY.

(FINDLATER, MACKIE AND CO., 16, PRINCE ALBERT-STREET, BRIGHTON.)

Judging from the peculiar softness and mellowness of its flavour, which, of course, is a very satisfactory feature, this spirit has been properly left to mature. It is stated to be 10 years old. The results of analysis were as follows alcohol, by weight 43 24 per cent., by volume 50·82 per cent., equal to proof spirit 89·06 per cent.; acidity reckoned as acetic acid, 0·033 per cent.; extractives, 0·48 per cent. mineral matter *nil*. These figures show an alcoholic strength which is somewhat above the average for whisky. We have no doubt that this whisky is derived from genuine materials. It possesses a flavour characteristic of malt and is as free as it is possible to be from objectionable alcohols.

ALBUMEN PASTE.

(THE NAO FOOD COMPANY, 2, GREAT GEORGE-STREET, LONDON, S.W.

We have carefully examined this "paste" and have found it to be correctly described. The major portion of the albuminous substances of meat was present in an insoluble but finely-divided condition. We obtained, however, a cold water extract which proved to contain a notable quantity of coagulable albumin. The "paste" also contains fat. The flavour is good and therefore we may regard the preparation as both an acceptable and a highly nourishing food.

ASYLUM REPORTS.

Saint Andrew's Hospital for Mental Diseases, Northampton (Annual Report for 1899).—The average number of patients in the institution during the year was 377, comprising 186 males and 191 females. The admissions numbered 103, 35 being those of males and 68 those of females. Of these 19—viz., 6 males and 13 females—were re-admissions. The number of admissions has continued to increase steadily for the year 1899, as compared with 86 for the previous year and 73 for the year 1897. During the year 36 patients were discharged as recovered—viz., 14 males and 22 females—a total of 9·5 per cent. of the average number resident. The deaths during the year amounted to 22—viz., 17 males and 5 females—a total of 5·8 per cent. as calculated on the same basis. Mr. Joseph Bayley, the resident medical superintendent, states in his report that "the death-rate on the male side of the hospital has again been high, 17 out of 22 deaths having occurred on that side. ..... Two male patients were found dead in bed, and both these cases happened within a week of each other and under similar circumstances. ..... Post-mortem examinations showed that death in both these cases was the result of heart disease." Notice was sent to the coroner and an inquest was held on the second of these cases and a verdict of "Death from heart disease" was returned. Two accidents with fractured bones, one a fracture of the knee-cap and another of the femur, occurred on the female side. Both patients made good recoveries. Of the deaths during the year two each were due to phthisis, cardiac disease, and cancer respectively, three to general paralysis of the insane, the same number to acute mania, and four to senile decay. Early in the year the committee of management made an order that after March 31st no persons should be employed in the hospital or in the houses belonging to it who could not produce satisfactory evidence that they (and the residents in their houses) had been vaccinated. Seven persons refused to comply with this rule and resigned their situations. A fire broke out in the kitchen and extended to the roof, but was extinguished by the fire brigade without serious results Plastering and other alterations on the male side which have long been delayed by a strike of the plasterers are now completed. The new house for the boilers and electric light apparatus, engines, dynamos, &c., is now completed. The financial condition of the hospital continues to be very satisfactory, but there is a loss of £115 on the farm. The general health of the establishment is good, and with the exception of one case of measles the hospital has remained

free from epidemic or zymotic disease. The Lunacy Commissioners state in their report that the hospital and villas are maintained in excellent order.

West Sussex County Asylum, Chichester (Annual Report for 1899).—The number of patients on the books at the beginning of the year 1899 was 466. The average number resident during the year was 478 patients, and comprised 217 males and 261 females. During the year 100 cases were admitted—viz., 39 males and 61 females. Of these five—viz., two males and three females—were cases of re-admission. Mr. H. A. Kidd, the medical superintendent, states in his report that the causes tending to inflate the admission rate of West Sussex patients during the first year or two after the opening of the asylum have now ceased to exist. "But unfortunately there has been an increase of 20 in the numbers on the female side, and although there is but one female in the building not belonging to West Sussex there are already 15 patients in excess of the number of beds originally provided. The extensions which have been planned and which are now being carried out will provide 200 extra beds for females and 100 for males, and may possibly be ready for a partial occupation at the beginning of next year. By that time," says Mr. Kidd, "it is to be feared, the difficulty of providing accommodation for female patients will have become very acute." The character of the admissions, regarded from the point of view of recoverability, was even worse than during the previous year. Thus, of the 100 patients admitted recovery was considered reasonable probably only in 25 cases—viz., in those of 14 males and 11 females. "These are the cases for whom the institution is strictly a hospital. They afford scope for energetic treatment directed to the improvement of the physical ill-health ..... and to the cure of the mental disorder which needed certification and removal from home." Among the cases regarded as hopeless of recovery were those of 10 patients whose mental breakdown was consequent on senile brain degeneration and 11 congenital cases—patients who had either been born with defective brains or whose brain development had been arrested in infancy. Seven of the admissions were cases of general paralysis and five of the patients were in the last stage of mental decay. Dealing with the causes producing the mental diseases it was ascertained that heredity was a predisposing cause in 41 per cent. of the cases, alcoholic excess was ascertained to be the cause in 14 per cent., and several cases were traced to influenza. "The tendency to nervous breakdown following this very troublesome disease emphasises the great importance of careful treatment continued after the primary attack, even though slight, is past." In 23 instances there had been previous attacks of insanity. Among the moral causes the adversities and trials of life, emotional excitement, and domestic or business worries accounted for 26 per cent. of the cases. 35 patients were discharged as recovered during the year, or 7·5 per cent. of the average number resident. There were 32 deaths during the year, 18 being males and 14 females, or 6·7 per cent. of the average number resident. Necropsies were made in every instance and the fact that a bedsore was discovered in a single instance only is practical evidence of good nursing. Of the deaths during the year two were due to pneumonia, four to influenza, four to phthisis, three to general paralysis of the insane, seven to senile decay, and eight to organic brain disease. At the outbreak of the war in South Africa more than half of the male staff were reservists, and in the first week after the calling out of the reserves seven attendants left to join the colours. It was decided by the committee that their places should be kept open for the men while on leave. "The work of filling up satisfactorily the gaps so suddenly created in the staff has been a difficult and anxious task." The casualties during the year included fractures of the arms in two female patients and a fractured femur in a male patient. An epidemic of influenza occurred just after Christmas, about 50 patients being affected. A case of diphtheria occurring in the wife of an employé was treated in the sanatorium. 76 per cent. of the men and 85 per cent. of the women are occupied in some form of work or employment. Additions and alterations involving an expenditure of £236 have been carried out in the general stores, the butcher's shop, the laundry, and the wards. Improvements have been made in the electric light supply. The working of the farm shows a credit balance of £333. The Lunacy Commissioners in their report state that the case books are kept with care and intelligence and that pathological work is carried on.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was recently held under the presidency of Dr. FLETCHER BEACH.

On the morning of Thursday, July 26th, the officers and council for the ensuing year were elected and the reports of the Parliamentary and Education Committees were read and adopted. Seven ordinary and three honorary members were elected. It was also resolved that a copy of the following resolution should be sent to the Local Government Board in the three kingdoms: "It is the unanimous recommendation of the Medico-Psychological Association of Great Britain and Ireland that in union workhouses in which insane persons are detained a properly qualified and trained mental nurse should be employed in the insane wards."

In the afternoon Dr. SPENCE vacated the presidential chair, which was taken by Dr. FLETCHER BEACH, who delivered his presidential address. After referring to the losses which the association had sustained by the deaths of some prominent members during the year he gave an account of the progress which had been made in the treatment of certain defective classes of society, such as idiots, imbeciles, the feeble-minded, the epileptic, and juvenile delinquents, during the last 60 years. He described the labours of Séguin, who was the originator of the system of educating and training idiots and imbeciles which is now in use, as well as of Saegert and Guggenbühl, who were pioneers in the work. He then traced the progress of educating and training idiots and imbeciles in England and described the way in which the Earlswood and other charitable asylums were erected, as well as the one for paupers at Darenth. Reference was also made to the institutions which have been built in Scotland and Ireland. An account was then given of the progress of the work in America from the time of the opening of the Massachusetts and New York Asylums for Idiots in 1848 and 1851 respectively, down to the present time, and it appeared that there are now no less than 19 States which maintain 24 public institutions, providing accommodation for 8492 inmates. An account was also given of the provision made in France, Germany, Denmark, Norway, Switzerland, Austria, and other European States, in our colonies, and in the Argentine Republic for this class of cases. Dr. Fletcher Beach fully described the way in which the education of feeble-minded children originated in England from the time when the British Medical Association first in 1888 appointed a committee to inquire into the subject to the present day. Full credit was given to the labours of Dr. Warner and of various committees which have inquired into the subject, and it was stated that the Childhood Society now carries on the work. Reference was made to the Departmental Committee which was appointed to inquire into the systems now in force for the education of feeble-minded children, and a short account was given of the Elementary Education (Defective and Epileptic Children) Act which was subsequently passed. The labours of the National Association for Promoting the Welfare of the Feeble-Minded were also referred to, and it was shown that England, in spite of the work of the London and other school boards who have established special classes, is still far behind many continental countries. The provision made for epileptics was described, and it was shown that it is only in recent years that accommodation has been specially made for the sane and insane patients of this class. In providing for epileptics, as well as for idiots, imbeciles, and the feeble-minded, England has lagged behind, but it is satisfactory to know that there are now three colonies and there will soon be a fourth for sane epileptics, and that the Chorlton and Manchester and the Leicester Boards of Guardians, as well as the London County Council and Lancashire Asylums Boards, are about to erect colonies for the epileptic insane. A short account was then given of the way in which juvenile delinquents are now treated, from which it appeared that it was not until 1854 that reformatory treatment of criminals was substituted for retributive punishment. In 1896 there were 50 reformatories and 141 industrial schools, accommodating altogether about 22,000 youthful offenders.

Dr. WYNN WESTCOTT, coroner for North-east London, and

President of the Society for the Study of Inebriety, then read a paper entitled Inebriety, its Causes, Results, and Treatment. He reviewed the present opinions on the causation of inebriety and especially the question of inherited tendency to the drink-crave, touching upon the debated point of the possibility of inheriting an acquired inebriety. He pointed out the follies of the numerous claims to the cure of inebriety by secret medicines and processes and expressed his confidence in the treatment of inebriates in licensed reformatories by recognised therapeutic means.—The paper was discussed by Dr. FORMAN, vice-chairman of the committee of the London County Council for providing Inebriate Asylums, Dr. MORTON, Dr. HEYWOOD SMITH, Dr. ARCHDALL REID, Dr. STEWART, and others.

On Friday morning, at 10 o'clock, Mr. HAYES NEWINGTON exhibited and described the Plans of the new East Sussex Asylum, in which a hospital for 250 cases is a prominent feature. Provision is also being made for 60 idiot children in a separate building. Some villas were being built for the accommodation of male cases and it was intended to erect more as time went on.—The paper was discussed by Dr. CLOUSTON, Dr. ROBERT JONES, Dr. TURNBULL, Dr. MERCIER, and others, and Mr. NEWINGTON replied.

The rest of the morning was devoted to lantern demonstrations by Dr. ORR, Dr. COWEN, Dr. G. A. WATSON, Dr. BARRETT, and Dr. J. TURNER by which the Morbid Anatomy of General Paralysis of the Insane, Juvenile General Paralysis, Lepto-meningitis, and alterations produced by Disease in the Giant Nerve-cells of the Cortex were fully pointed out and it is evident that some of the younger members of the association are doing good work.

Dr. SHAW BOLTON exhibited some naked-eye preparations and specimens from the Museum of the Pathological Laboratory of the London Asylums at Claybury and Dr. CLOUSTON showed for Dr. FORD ROBERTSON a microscopical demonstration of the Normal and Pathological Histology of Mesoglia Cells.

In the afternoon Dr. BRUCE read a paper prepared by himself and Dr. ALEXANDER on Observations upon the Various Physical Changes in the Acute and Sub-acute Stages of Melancholia in which he pointed out that among other changes there was increased blood-pressure and a decreased excretion of urea and urine in the acute stage and not such high pressure and more abundant excretion of urea and urine in the sub-acute stage. In the acute stage the blood-pressure should be reduced by, among other remedies, rest in bed and vapour baths.—The paper was discussed by Dr. CLOUSTON, Dr. MICKLE, and others and Dr. BRUCE replied.

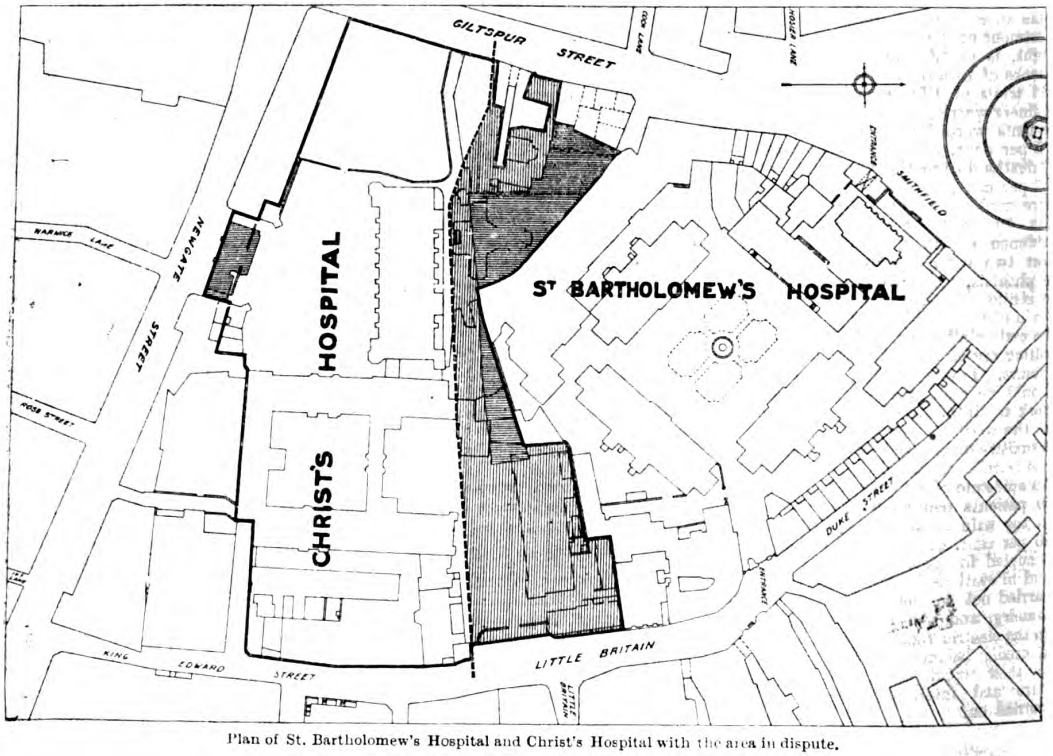
Mr. BEADLES read a paper on the Insane Jew, in which it was mentioned that general paralysis was common among Jews but epilepsy was rare.

Papers were afterwards read by Dr. SULLIVAN on Alcoholic Homicide, Dr. BLAIR on Non-diabetic Glycosuria, Dr. SHOYER on an Angeioma of Broca's Convolution in a Lunatic, and by Dr. EDRIDGE-GREEN on Psycho-physical Perception, but want of space prevents a description of them being given.

The annual dinner was held on Thursday evening, July 26th, at the Whitehall Rooms, Hôtel Métropole, at 8 P.M., the President, Dr. FLETCHER BEACH, being in the chair. On Saturday the President and Mrs. Fletcher Beach were "At Home" to members and their friends at Kingston Hill. Fortunately the atmospheric disturbance of the previous day had passed off, and the re-union of members and their friends brought to a close a very successful meeting.

ST. BARTHOLOMEW'S HOSPITAL AND CHRIST'S HOSPITAL.

THE accompanying plan shows very clearly the areas at present occupied by St. Bartholomew's Hospital and Christ's Hospital respectively. The land that St. Bartholomew's Hospital desires to acquire lies immediately on its southern boundary, being all that part of Christ's Hospital north of the broken line drawn from east to west across the plan. It is 1 acre 1 rood and 29 poles in extent. In the year 1819 Christ's Hospital was pressed for space and at their request St. Bartholomew's Hospital then gave up to them in exchange for other property a considerable part of the identical land that the latter now wishes to re-acquire. The authorities of St. Bartholomew's Hospital did not then foresee the urgent need that would subsequently arise for most of the very land which they were then parting with. That land is shaded horizontally. Almost the whole of the frontage that Christ's



Plan of St. Bartholomew's Hospital and Christ's Hospital with the area in dispute.

Hospital now possesses in Newgate-street was included in that exchange. The St. Bartholomew's minutes of the time record that the exchange was made for "the conveniency of Christ's Hospital" and that in assenting to it St. Bartholomew's Hospital was "actuated by the most liberal motives" towards that institution.

FACTORIES AND WORKSHOPS IN 1899.

II.[1]

No one can study the report of the Chief Inspector of Factories without being struck with the wide range of the work to be done by factory inspectors and the variety of the causes which make their work difficult to carry out effectively. That their duties are not limited to those most obviously suggested by the title "inspector" will be appreciated by all who remember that, as a rule, they have to conduct their own prosecutions. This necessarily implies being frequently pitted in a court of law against a skilled advocate accustomed to handle the tribunal before which he appears, while the tribunal itself may be composed of borough magistrates personally acquainted with the accused, themselves involved in similar trades and equally liable to inspection and prosecution. In an extreme instance (given at p. 247) a Bench mainly composed of local fellow-traders refused to convict in spite of the plain meaning of the Act, and in spite of the opinion of the stipendiary magistrates present that on the facts disclosed in evidence there was no possible alternative, the Bench finally refused to state a case for the opinion of a higher court in face of the authoritative demand of the representative of the Attorney-General for Ireland. That this should occur in the distressful country is not surprising, although it is a little disconcerting to those concerned in such prosecutions to find the compulsory protection of the working poor against the dangers of labour treated as another injustice to Ireland.

A glimpse of the difficulties attending the enforcement of Factory Acts in extreme cases may best be given by quotation from the report of Miss Deane, one of two lady inspectors temporarily employed during the past year in Donegal. "The struggle in which we found ourselves engaged," she writes, "involved a study of Irish law procedure which cannot but be invaluable to us, and has been carried on with a courage and tenacity which can only be described as dogged on the part of Miss Squire, who has lived for the most part practically under police protection, and who was much cheered by the undoubted sympathy and gratitude of the peasants on whose behalf she fought. ..... Nothing but a saving sense of humour could alleviate the misery of the long car drives of 18 and 20 miles which I took at 5.30 on dark and stormy mornings in November and December in pouring rain to fetch witnesses to the courts, no car-driver in the neighbourhood being available or willing to incur the consequence of aiding 'the Government' by bringing in the witnesses." It is consoling to read the above reference to the gratitude of the peasants on whose behalf all this was done by two ladies who, in the course of the year, travelled 9916 and 8518 miles respectively, but it is also possible to think that in cases of difficulty in which a great deal of time and labour are likely to be expended legal assistance should be afforded to the inspector who, whether man or woman, probably has not too much time in the year for the efficient performance of the primary duty of inspection.

The report of the medical inspector, Dr. T. M. Legge, is the last one given and is naturally one of the most interesting and one of the most important. Nearly half of it is occupied with particulars and comments bearing upon the existence and prevention of lead poisoning. This is not surprising when the numerous industries are taken into account in which lead poisoning may occur. We have spoken of the use of lead in the glazing of earthenware and of the possibility of the danger from its use being lessened in the future either by the observance of the precautions prescribed by the Home Office or by other processes of glazing being substituted for it, and we note another instance of the disuse or improved use of a dangerous substance in the case of glass polishing with putty powder. Putty powder, it is stated, has been dispensed with altogether in certain kinds of work, but as nothing else at present imparts the same brilliancy, putty powder is still used for certain high-class work, such as the polishing of lenses, but it can be and is mixed with wax or pitch which prevents "splashing." In addition, however, to the danger arising from the actual smelting of lead, the manufacture of red and white lead, and the manufacture of china and glass, it must be remembered that lead poisoning has occurred in ironworks and has to be guarded against, to give some instances, in file-cutting, printing, tinning and enamelling hollow ironware, and enamelling iron plates, in several of the processes connected with the manufacture of electrical accumulators, in various kinds of painting, and in the employment of red and white lead, as, for example, in shipbuilding yards. Lead-poisoning is also one of those dangers in which the precautions to be taken do not only rest with the employers but in which the apathy of the workers themselves has to be contended against. As to this Mr. E. H. Osborn, the "engineering adviser," has an interesting note. He writes: "I have been much struck with the variations of the personal factor among the workers in this manufacture; of course, similar dissimilarities are to be found in all industries where so much depends upon personal care, cleanliness, and common sense, without which no code, however searching, can secure its fair success. I noticed a marked contrast between the workers on the opposite sides of the Tyne in these respects. ..... It is odd, too, that personal neglect is more usual among women than among men. This seems of almost universal application in the scheduled trades." Mr. Bond, certifying surgeon of Poole, writing apparently of female decorators in china works in Dorset, says: "I attach the greatest importance to constant and incessant supervision, a doctrine very repugnant to the workers who entertain a great regard for the liberty of the subject."

To pass to other topics dealt with in the medical inspector's report we find interesting notes from Mr. Farnfield, dentist to the Diamond Match Company, Liverpool, on the work done by him. He found about 6 per cent. of those who needed treatment before proceeding to work were prevented either by their own fears or by the ignorance of their parents from availing themselves of his services, and he continues: "With regard to the new hands I have passed 554 into the phosphorous rooms and 271 into the box-room, rejecting altogether 40 per cent. of those examined from bad teeth and gums. They were mostly in a very dirty state, few ever having cleaned their teeth prior to entering the factory. This makes it difficult to determine during a brief inspection the number of fillings they require, but I have noted down 869 fillings and 604 extractions, or, allowing for omissions, an average of two fillings and one extraction for those admitted into the phosphorous rooms and 601 fillings and 739 extractions, or an average of three fillings and three extractions for those to the box-room. ..... The greatest difficulty is at present in getting the requisite number of boys, as their teeth are mostly in a very bad state, and it is very difficult to persuade the average lad of 14 years to trouble at all about them." It will be recollected that the same difficulty occurs in the obtaining of suitable recruits for Her Majesty's army and navy, and it may be suggested that if the compulsory use of the tooth-brush were instituted in public elementary schools it might be classed by some under the heading of "grandmotherly legislation," but it is no more "grandmotherly" to make a child brush his teeth than to compel his parent engaged in a dangerous manufacture to wash before eating or to wear a respirator.

Among other matters dealt with by Dr. Legge we note that he gives the rules in force in the German empire for the prevention of anthrax from handling hair and bristles, as requiring the disinfection of all material not liable to serious damage by such processes as follows: either (1) by the action for at least one half-hour of current steam under a pressure of 1·15 atmospheres; (2) by boiling for at least one quarter of an hour in a 2 per cent. solution of potassium permanganate and subsequent bleaching in a from 3 to 4 per cent. solution of sulphurous acid; or (3) by boiling in water for at least two hours. In order to make the steam process effective, Dr. Legge points out, the bales must be opened—in itself a task involving some danger. Attention is called on another page to the frequent occurrence of tetanus, where workers in jute mills have met with injury; with regard to this Dr. Legge suggests that the soil in which the jute is grown may be particularly rich in tetanus bacilli and states that inquiry is being made in India as to the incidence of tetanus among jute workers there. The usual complete tables are appended to the reports upon which we have commented.

[1] No. I. was published in THE LANCET of July 28th, 1900, p. 285.

THE LANCET.

LONDON: SATURDAY, AUGUST 11, 1900.

IT has been a pleasure to us to report with some fulness the proceedings of the First International Congress on Medical Ethics or Deontology held in Paris, and extending over four days, beginning on July 23rd. Our Special Commissioner has done much by his investigations into the state of medical organisation in Great Britain and in several foreign countries to prepare the way for this Congress, and all the subjects dealt with are of particular interest to our readers. The ethics of medicine are as old as HIPPOCRATES, if they are not older, and it is a proof of their strength that they have for so many ages been recognised and more or less acted on by members of the profession in every part of the world. Of late years, owing to great changes in society and in the organisation of its various classes, it has appeared to many that more definition of ethical principles and a completer organisation of the profession are necessary for the guidance of its members that they may maintain their high position in the esteem of mankind. Accordingly various societies in different countries have been instituted for the purpose of defining, declaring, and enforcing these principles. Most of these societies have arisen out of voluntary effort. Others, as those in Austria and Germany, have been established by law and have been endowed with strong disciplinary powers over all members of the profession. A Congress at which representatives and delegates from the principal of these societies were present must have a powerful effect in helping medical men to assert the claims of the medical profession and to uphold its dignity in their several countries.

The foundation of medical ethics rests on the fact that the relations of the medical profession to society and to its individual members are so serious and confidential as to necessitate a special code of conduct for medical men, while the dignity of the profession depends on the degree to which its individual members respect themselves and respect each other. Dr. GRASSET quoted DESCHAMBRE as saying that for medical dignity to be respected the medical man must first be imbued with the sentiment of self-respect. And he developed this sentiment admirably by saying: "The medical man will first seek to honour his profession by honouring himself. Placing himself beyond the possibility of reproach he will pay every deference to his colleagues and be guided by the sentiment of duty and honour, not by the desire of material gain. If the public are to respect medical men the latter must first respect each other." If such principles could be implanted in all medical men there would be little need of medical organisations, voluntary or statutory, to enforce them. They do exist and are operative in a large majority of the profession, but the question raised in the Congress is, How are we to deal with those who have little or no sense of such principles and how shall the profession be protected from those members of it who are blind to the way of honour and who put their own individual interests above the dignity and interest of the profession? The answer to this question is twofold. First, we must make sure that all medical men know their duty to their profession; and secondly, we must find some means of gently compelling them to do it. It was amply recognised at the Congress that many erring members err from want of knowledge and of thought. There is no adequate teaching of medical morals either in the books or in the schools of medicine. They are taken for granted. Several speakers urged that the subject should be dealt with and taught in the medical schools; others that it should be more fully discussed in books. But there was a general agreement that in all countries and localities there should be an organisation charged with the defining of medical duty in relation to difficult circumstances or new questions. In regard to ethical matters the opinion of men of repute in the profession on questions of conduct has a certain weight, on the strength of which penal or disciplinary measures may properly be taken. The General Medical Council acts on this principle in Great Britain, and its action has been amply supported by courts of law. In Austria and Germany, as we have seen, Chambers have been established by law having, in cases of misconduct, power to fine, or even to take away the right of practice. But it is obvious that such extreme powers must be reserved for extreme offences and that short of such offences voluntary and persuasive means of remonstrance must be chiefly relied on. Even in autocratic Austria Dr. ADLER showed that the powers of the Medical Chamber are not absolute but are controlled by the local government authorities, which may rescind the action of the Chamber when it goes too far.

Dr. DE GOUVÉA of Rio Janeiro showed that medical ethics were at a low ebb in that beautiful capital till the formation of a medical society in the city. This produced good effects which led to the formation of other societies throughout Brazil. Dr. ERNEST JENDRASSIK of Budapest gave a most encouraging account of the work of a medical union which Hungarian practitioners have formed, preferring this to the Medical Chambers created by law in Germany and Austria. It has collected statistics and is seeking to fix minimum fees for insurance work and for medical contract work; it has also established a benefit fund, but its fundamental purpose is to abolish "undercutting." Dr. HANSSON of Christiania showed that the Norwegian Medical Association had dealt with the question of sick club practice, and had laid down the principle that the post of medical officer was not to be accepted unless with the consent of the local branch of the Association. Such reports as these from different parts of the world, while they testify to the value of the Congress, show the variety of opinion prevailing and the need for patience and breadth of judgment. The time has not yet come for an international code of medical ethics. The proposal for a committee to draw up such a code did not take definite form but remained as a pious wish. None the less the Congress has done and will do great good by

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Finland, it is true, as the result of the legislature enabling the compulsory examination and treatment in hospital of suspected individuals, syphilis has much diminished in the course of 20 years; congenital syphilis has become less frequent, and both the hereditary and acquired forms of syphilis have become of much milder type. Finland is not Great Britain, and public opinion is not with us ripe for legislation on this point.

Some of the factors in the production of insanity are capable of being dealt with by way of restriction or prevention. The ravages of alcoholism, the contagion of tuberculosis—a known and potent cause of idiocy and imbecility in the offspring of affected parents—and the marriage of congenital imbeciles, chronic epileptics, and persons who have had one or more attacks of insanity, all these offer themselves for the application of preventive measures. The free and unchecked production and propagation of the lunatic, the idiot, the imbecile, and the neuropath constitute a serious and growing danger to the safety of society, a menace to its public health, and a burden to its resources.

A REPORT upon the condition of the London burial-grounds[1] which the London County Council has just issued deserves more than passing notice from us, for it deals in a practical way with a subject of great concern to the public health, one that is more than any other surrounded by feelings of religious sentiment. The report consists in the main of an excellent account by Dr. C. W. F. YOUNG of burial-grounds in which the London dead are interred, and of an introductory statement by Mr. SHIRLEY MURPHY, who indicates the conclusions at which he has arrived and the course which he thinks should be adopted with a view to bring the method of disposal of the dead into better harmony with health requirements. The report is the outcome of a resolution (adopted by the London County Council at the instance of Mr. SHAW-LEFEVRE) that inquiry should be made as to the condition of the burial-grounds chiefly used by the population of the County of London, as to whether further provision for burial is required, and whether further regulation is necessary in the interests of public health and decency. The information, therefore, which the report supplies is directed to answer these questions. So far as quantity of accommodation for the London dead in existing burial-grounds is concerned it does not suggest any doubt that for the immediate present there is ample provision; but it does indicate, and that very definitely, that the instruction of the London County Council has come none too early. The representatives of London on its County Council, as well as in the Imperial Parliament, should take into serious consideration without undue loss of time the course to be adopted for the disposal of the 100,000 corpses and more which annually have to be provided with resting-places.

The whole trend of the report is towards one conclusion. The inhabitants of London must determine whether the system of interment which is to be practised in the future is to aim at the preservation of the dead as in the past or at the speedy dissolution of all human remains. Upon this question the medical officer of health of the County of London has no doubt. His verdict is that every opportunity should be given for speedy dissolution, and he holds that no new brick graves and no new vaults should be provided in London. Beyond this he points out the advantages that would result from some local representative body having the power to make regulations which could be strengthened from time to time and which would determine the conditions under which interment should be carried out. Public opinion is evidently, as the report shows, moving in the desired direction, but it moves slowly. The wish to preserve as long as possible the remains of those who in life have been loved governs the usual method of interment, while inseparable from this sentiment is the interest of the undertaker. Neither change in sentiment nor change in practice can be suddenly effected, but change would be more speedily brought about if there were guidance by regulations made by those who are in touch with popular feeling and if trade interests could be eliminated by the vesting of all burial-grounds in public ownership. The teaching of Sir SEYMOUR HADEN and of Dr. VIVIAN POORE cannot longer be disregarded. Their work, and especially that of Sir SEYMOUR HADEN, has shown how speedily the earth does its duty when man does not by artificial methods prevent nature from accomplishing her final object, the resolution of organic matter into its ultimate elements. The question which remains is how this teaching can be adopted in the disposal of thousands of human bodies with due regard for the feelings of the survivors and with due regard to the conditions existing in centres of population.

The report points out the unsuitability of clay soil for the purpose of burial, and Dr. YOUNG discusses fully the results obtained under different conditions. Mr. SHIRLEY MURPHY hesitates to accept surface burial as a practical solution of the difficulty without more experience, but he definitely indicates the need for the experiment of surface burial to be made under proper conditions. There should be some opportunity for this to be done soon, inasmuch as the control of burial-grounds has been transferred by Parliament during the present session from the Home Office to the Local Government Board, showing that the matter is intended henceforth to be considered especially in its sanitary relations. The report published by the London County Council sets out the issues well and we are interested in the manner in which it will be received. At a later date we shall discuss in more detail the various questions which it raises.

[1] Sanitary Condition of Cemeteries and Burial-grounds: A report by the medical officer of health presenting a report by Dr. C. W. F. Young, assistant medical officer of health, as to the condition of the cemeteries and burial-grounds chiefly used by the population of the County of London, as to whether further provision for burial is required, and whether further regulation is necessary in the interest of public health and decency. London: P. S. King and Son.

Annotations.

"Ne quid nimis."

THE POSITION AT THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE publish in another column a further communication from the medical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, and we share with them the surprise which they express in their opening sentence. Apparently to-day (Saturday, August 11th) has been fixed by the board of management for an official

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symptoms, fatigue, disinclination for work, emaciation, and nervous irritability and depression. The patient shown to the society corresponded completely to the type described by M. Hayem. She was a woman, aged 53 years, who had been treated for chlorosis since the age of 23 years and was subject since the age of 25 years to disseminated and erratic pains which corresponded to the clinical type of general neuralgia of Valleix or painful neurasthenia. For 18 months she had suffered from obstinate dyspepsia with furred tongue, fœtid breath, epigastric pains, constipation, and sometimes glairy stools. For three months there had been a yellow tint of the skin without biliary colouration of the conjunctiva or urine. The tint was of a chamois-leather colour, especially marked on the face, hands, along the crests of the tibiæ, and on the soles. It suggested xanthodermia rather than icterus. The mucous membranes were not coloured and the urine, which was examined on several occasions, never showed a trace of bile pigment. This was in favour of the diagnosis of xanthodermia but the presence of biliary pigment in the blood serum settled the question. Blood obtained by cupping was examined after the retraction of the clot. The transuded serum was of a light mahogany colour; it darkened all the spectrum from blue to violet and gave Gmelin's reaction. After the appearance of the discolouration of the skin the patient wasted, the constipation became more marked than ever, and the neurasthenia increased. Examination of the internal organs was negative; the liver was not enlarged and the fæces were neither bilious nor discoloured. The urine contained neither sugar nor albumin; it amounted to from 1000 to 1200 grammes in the 24 hours, was of specific gravity 1013, and contained about 15 grammes of urea. This oliguria was no doubt in relation with the dyspepsia, for the renal permeability was normal. The pathogenesis of *ictère acholurique* was disputed. MM. Gilbert and Castaigne thought that the acholuria was due, at least usually, to defect of renal permeability; but this case was opposed to that hypothesis. M. Hayem supposed that there was a slight infection of the biliary passages and too little bile pigment in the blood to pass the renal filter. In the present case the icteric tint diminished 10 days after the administration of sulphate of soda, in daily doses of 75 grains, which regulated the bowels.

THE WATER-SUPPLY OF THE CITY OF LONDON

MORE than half a century ago Mr. (now Sir) John Simon, who was at the time medical officer of health to the City of London, strongly urged in his annual report that the supply of water for domestic use should be constantly instead of intermittently given. We regret to see that Dr. Sedgwick Saunders, the present medical officer of health to the City, in a report which has recently been issued, still finds cause to complain that the East London Waterworks Company has failed to carry out the statutory requirements which have been made that the water consumers in its district shall receive a constant service.

"In October, 1898," Dr. Sedgwick Saunders says, "I reported upon the absence of domestic cisterns in 89 houses at the following places—viz.: 29 in Bishopsgate-street Without, eight in Brushfield-street, four in George and Catherine Wheel-alley, one in Great Alie-street, two in Little Somerset-court, 20 in Mansell-street, 14 in Montague-court, 10 in Mason's-court, and one in Spital-yard.

The necessity for this provision arose from a scarcity of the water derived from the East London Water Company during the exceptionally dry summer season, the supply being only furnished for a limited time at certain periods of the day. The want of these receptacles for storing water occasioned much suffering in the poorer districts, owing to its intermittent delivery.

The Sanitary Committee at once recognised the importance of seeking action, and under the powers conferred upon them by the City of London Sewers Acts, 1848, 1851, gave an order that in all the above-mentioned dwellings cisterns should be erected without delay.

After much negotiation the owners of 59 houses supplied the deficiency without coercion, but in 18 instances it was not until pressure was put upon unwilling landlords by the issuing of 'compulsory' orders that this was effected. In five cases, however, the owners proved obstinate, and the Public Health Department was driven to the only alternative of ordering the works to be executed by its contractors, and in due course the defaulters will be sued for the cost thereof, as the law provides.

The question of doing away with cisterns in domiciles has exercised the minds of owners of house property and others, who argue that a 'constant service' ensures a purer supply of water; and so it certainly does when cisterns are improperly placed under inaccessible roofs or beneath floors without efficient protection from weather, dust, droppings of animals, or other sources of pollution; but if they are constructed in positions where they can be easily inspected and frequently cleansed we may concede the point, but it is only the commonest of common sense to insist upon some relief from the tyranny of the water companies, who, whilst charging the maximum of tax justified by inequitable legislation, give in return the minimum of accommodation in periods of water famine or when any accidental disruption occurs in their mains or other mechanical appliances; in other words, when the so-called 'constant service' becomes irregular.

What is the tenant to do under this contingency? The poor have neither the means nor the leisure to collect and store water for use during the intermissions of supply, and to them the want of water entails an amount of discomfort and uncleanliness that emphasises the bitterness of want and misery."

We do not propose to discuss in detail the various points raised by the paragraphs we have quoted from Dr. Sedgwick Saunders's report, but they naturally suggest one or two questions which are worthy of consideration. When a constant supply of water is given there is no need for cisterns, and water drawn straight from the mains is preferable for all domestic purposes. Under the present statutory regulations, as readers of THE LANCET know, all the London water companies are required to give constant service. This being the case, is it fair that the owner of a house in London should be out of pocket because a water company fails to perform its statutory duty? If a cistern be rendered necessary by the default of a water company, would it not be right that the cost of the cistern should be paid by that defaulting company? A metropolitan water company which fails to give constant service renders itself liable to heavy fines which can be inflicted at the instance of a metropolitan authority. Has the Corporation of London made any attempt to bring this moral pressure to bear on the East London Waterworks Company for its defaults? And if not, why not? Dr. Sedgwick Saunders gives no information on this subject. The City of London is chiefly supplied with water by the New River Company, to which Dr. Sedgwick Saunders in his report, no doubt inadvertently, does a considerable injustice by omitting to differentiate it from the "companies who, whilst charging the maximum of tax justified by inequitable legislation (i.e., charging the price settled by Parliament), give in return the minimum of accommodation." It is but simple justice to point out that the New River Company does not exact the maximum water-rents to which it is entitled, a fact which was clearly pointed out and duly emphasized by the City Remembrancer in the evidence which he lately gave before Lord Llandaff's Commission.

CYSTS IN THE ABDOMINAL WALL STRUCTURALLY IDENTICAL WITH OVARIAN CYSTS.

IN the *Boston Medical and Surgical Journal* of July 12th Dr. John Homans describes this curious and rare condition. When operating on a very old-standing enormous adherent ovarian cyst weighing 102 lb. he was surprised to find a large cyst in the abdominal wall in the epigastric region

PAGE NOT AVAILABLE

authority, the matron may possess has been accorded her by act of grace; she can claim nothing as her bounden right."

The latter portion of Miss Julian's remarks is worded too strongly. All positions in life are what we make them, but we think that in the small workhouse infirmary the care of the sick and the provision for nursing should be vested in the general practitioner who is medical officer to the workhouse, but in the large parish infirmary responsibility with regard to the nursing staff, except as regards purely medical duties, should be, as is the case in any general hospital, vested in the matron or superintendent nurse. In country workhouses the position of the superintendent nurses should be made more independent of the master and matron and more dependent on the medical officer. Miss Julian thinks that the great parish hospitals should be taken over by the State and freed from the union brand and the workhouse taint. So long, she says, as workhouse nurses are regarded as being on a lower plane than those attached to voluntary hospitals so long will the sick poor in rate-supported institutions lack a full measure of skilled attention. There are no doubt difficulties in the way, but until some arrangement is made for separating the deserving poor from the class who never do any work and do not wish to work so long will the workhouse be looked upon as a disgrace instead of a refuge.

THE HOUSING OF THE WORKING CLASSES.

AN interesting conference was held in London on the last two days of July upon the problems arising out of the overcrowded condition of great cities and the various efforts which have been made to deal with them. Sir Sydney Waterlow and Mr. R. M. Beachcroft, L.C.C., were chairmen of the two meetings held and various other gentlemen whose knowledge and experience qualified them to do so read papers and expressed their views, the general tenor of which might be said to be that whereas the rehousing of the class earning regular and substantial wages presented comparatively little difficulty and gave satisfactory results the question of how to provide wholesome dwellings in which members of the strata below these could and would live had hardly yet been solved. In addition to this there seemed to be a considerable weight of opinion adverse to the provisions already made by Parliament to enable local authorities and individuals to deal with the evils of overcrowding and to replace it by a better state of things, the necessity for the coöperation of individual effort being fully recognised. A resolution was passed that "the conference is of opinion that the present method of dealing with insanitary areas is extravagant and unsatisfactory and urges Parliament to provide some less expensive and more expeditious mode of procedure." It is certainly beyond question that legal processes in the United Kingdom are, as a rule, both cumbrous and costly, but at the same time the powers given under the Housing of the Working-classes Act will strike many as considerable and of such a nature that it should be impossible for them to be hastily employed or for the liabilities which they imply to be undertaken without due consideration.

THE STUDY OF INEBRIETY.

THE Society for the Study of Inebriety has appointed a committee of medical men to inquire into the relation of heredity to the production of inebriety. The president is Dr. Wynn Westcott, coroner for North-East London, and the committee includes such well-known names as Mr. Victor Horsley, Dr. Sims Woodhead, Dr. Archdall Reid, Dr. Heywood Smith, Dr. Harry Campbell, with Dr. Thomas Morton as secretary. Much progress has been made with the investigation, and the medical profession is now asked to supply evidence on the following important subject: "The committee are fully satisfied that drunken parents tend to have children who become drunkards, but they earnestly desire to obtain evidence bearing upon the question whether a parent who himself inherits *no* special tendency to inebriety can, as the result of mere intemperate habits, entail upon his children a potential inebriety." Communications will be gratefully received by the president or secretary, and may be addressed to 396, Camden-road, London, N.

THE LAMBETH WATERWORKS COMPANY.

A CORRESPONDENT complains in the *Times* that the Lambeth Waterworks Company has again lately failed to give a constant water service. Each metropolitan vestry and each individual water-rent payer now has power to punish a defaulting water company. It appears that the public spirit and energy which animated Mr. Archibald Dobbs do not co-exist in the district of the Lambeth Waterworks Company. It may be safely predicted that the full statutory fine inflicted on a peccant water company would be more effective than any number of letters to the newspapers. And the Courts are open.

THE LATE DEBATE ON THE SOUTH AFRICAN COMMISSION.

IN the debate on the second reading of the Appropriation Bill a very lively encounter took place between Mr. Burdett-Coutts and Mr. Balfour. Mr. Burdett-Coutts attacked the South African Commission in strong terms. He contended that it was divested of all the power requisite to get at the truth, that witnesses would be afraid to give evidence before it lest they should injure their future prospects, and he appealed to Mr. Balfour to take a more serious and sympathetic view of the question than the Government had hitherto done. Mr. Balfour, who has throughout spoken with a certain degree of asperity, which is quite unusual with him, in connexion with this subject, replied to Mr. Burdett-Coutts and indignantly repudiated the correctness of such statements and the inferences which might naturally be drawn from them. For our part we can only regret the manifestation of any irritation or contentious spirit in the matter. We are quite content to leave the inquiry in the hands of the Commissioners in the full assurance that if Lord Justice Romer requires any further powers to strengthen his hands in the investigation over which he presides or considers that anything further is required to protect and safeguard the witnesses he will lose no time in representing what is either requisite or expedient. What everybody desires is that the inquiry should be thorough—that the whole truth should be elicited and boldly stated without favour or affection to anyone. The precautions which have been taken seem to us sufficient to impart assurance to the most timid and we cannot believe that under such circumstances any witness will shirk a duty which he owes alike to his conscience and his comrades, any more than we can believe that the members of the Commission will fail to conduct the investigation throughout with absolute impartiality. If Mr. Burdett-Coutts really desires that the whole truth should be elicited he cannot perform a greater service, we think, than by writing to his correspondents in the spirit we have indicated. Mr. Balfour towards the end of the debate made the important statement that the Government had decided on appointing the Commission before Mr. Burdett-Coutts had brought forward his charges. At the conclusion of the campaign—as everybody foresees and the Government is pledged to do—an exhaustive inquiry into the whole conduct of the war in South Africa must inevitably take

place. The Commission now sitting is only part, and a very limited part, of a big subject.

THE OPEN-AIR TREATMENT OF PHTHISIS FOR THE POOR.

A MOVEMENT is on foot for providing for the poor of the metropolis a hospital for the reception of phthisical patients in which to carry on the open-air treatment. The movement originated with the board of management of the Poplar and Stepney Sick Asylum District. The managers doubtless thought that what was so essential in the case of the rich was still more so in the case of the poor whose power of resistance and recuperation is apt to become fatally impaired at an early period of tuberculous disease. It was found on inquiry that in this particular district alone there had been 65 cases of phthisis which might have been saved by this treatment. Accordingly the managers called together the medical officers and clerks of the unions comprised in the district. After this they sent a deputation to the Local Government Board on the subject. The Board expressed full sympathy with the views of the managers. The Board at the same time have suggested that the guardians of districts should not act seperately, but that such a provision should be made for the metropolis as a whole and that the management of it should be under the control of a metropolitan authority. They further suggested that the managers should invite a conference of the representatives of each Poor-law authority in the metropolis on the subject and have further communication thereafter with the Local Government Board. We highly approve the object and learn with gratification that the board of management of the Poplar and Stepney District have sent to each board of guardians in the metropolitan district a circular inviting a conference. It is desirable that every board should send a representative in sympathy with the object and with power to support the furtherance of it. We are not quite so sure that one huge institution for the whole metropolis is desirable or that this should be labeled a hospital. The congregation of too many such cases is depressing, and the name of sanatorium or convalescent home is to be encouraged rather than that of hospital. These are details. But as to the main object there can be no difference of opinion, and without advocating extravagance the institute should be pleasantly situated and generously administered with a view to the comfort and cheer of the patients.

THE Colonial Office has received a telegram to the effect that during the month ended August 2nd there were 10 cases of plague in Mauritius all of which proved fatal.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Famine: latest Mortality Returns.—The Plague.—Breeding-grounds of Anopheles in Calcutta City.—Sickness and Mortality in India.

THERE are still about five millions of people under relief and the mortality in the famine districts is very high. Cholera is the chief cause of death. At Ajmere-Merwara during June the death-rate was 180 per 1000 and in Bewar 144 per 1000 per annum. The worst districts were those of the Panch Mahals and Khandesh, inhabited by the Bhils and other forest and low caste tribes, where a death-rate of 256 per 1000 per annum was recorded. In Dhandesh cholera alone accounted for 63 per 1000 out of a rate of 150. Other districts in the Bombay Presidency were also severely affected. No returns are available for the native States but the terrible mortality amongst those who are crowding over the border into British districts tells its own tale. With all this terrible distress the prospects of the monsoon are very disheartening. Almost the whole of the famine tracts and North-Western India are still rainless.

The plague continues everywhere to decrease. Last week the number of fatal cases in the whole of India was only 227, Calcutta returning 107, Bombay City 62, Bengal Presidency 28, and Bombay Presidency 11. Only one case was reported at Aden.

The report of the chairman of the Calcutta Corporation has just been published. In it he directs attention to the plague measures during the past year and states that entire reliance was placed upon disinfection. He says that the change of policy has been justified by the result. "Not only were the people generally more pacific but information was obtained much more freely of plague cases." The difference between the normal and actual mortality is accounted for by the number of plague and suspicious cases registered. In addition to disinfection of the room where the plague patient was found attempts have been made to disinfect adjoining rooms and with some success. As I have before reported the system adopted seems to obtain information of nearly all the cases of plague which have occurred, notwithstanding that considerably less than half of the cases are seen by responsible authorities during life. The number of deaths from small-pox and cholera were both less than the average.

Experiments have been made by the health officer and his assistants in Calcutta during the past four months on the breeding-grounds of anopheles. The larvæ have been found in a large number of places, especially in small tanks containing rather foul water and low forms of vegetation. They were not generally found in the filthiest tanks containing sewage or in drains. The most favourite breeding-ground seemed to be excavations in the ground containing water. The water on paddy fields did not contain them, nor were they found in wells. There was great difficulty in exterminating them from tanks containing much vegetation, but other pools were easily covered with kerosine.

The annual report of the Sanitary Commissioner with the Government of India has been recently issued and like the immediately preceding volumes is much more than a mere compilation of statistics and local reports. Many parts of it prove very interesting reading. It deals as usual with the health of the British and native armies, with the vital statistics of the general population, with vaccination, and with various sanitary works. The mortality in the British army in 1898 was 20·05 per 1000, as compared with 22·93 for the previous year and as compared with 13·33 for the native army. Of this amount no less than 10·17 was due to enteric fever, which thus constitutes 51 per cent. of the total deaths and is unfortunately still on the increase. Hepatic abscess caused 8 per cent., heat-stroke 6 per cent., and dysentery 4 per cent. Amongst many civilian officers there is a tendency to put down to heat-stroke cases which cannot be easily differentiated from the "anomalous" fevers and the same tendency seems to exist on the military side. The heading of "heat-stroke" doubtless includes many cases of fever which have little or nothing to do with the heat at all. The sickness in the British army is chiefly caused by ague and venereal diseases, the former causing 27 per cent. of the total sickness, the latter 25 per cent. It is interesting to note that in the native army ague caused no less than 41 per cent. of the admissions. Compared with former years cholera has markedly declined. There were no less than 689 deaths from enteric fever, and the average number of men constantly sick from this one disease was 321, while other fevers were very small in amount. It is said that the British army is at present a youthful army, with 90 per cent. of the men under 30 years of age, whereas the corresponding percentage in 1871–79 was only 67. The figures for age and length of residence repeat former reports in the dangers to young soldiers and new-comers. It is satisfactory to find that the admission rate for venereal diseases has much improved, but this is explained partly by the widespread adoption of treating the affected men as out-patients. The death-rate among officers in the British army was 16·26 per 1000 and among those in the Indian army it was 10·18, both rates being much lower than in the preceding year. In the native army the chief causes of death were pneumonia and remittent fever, while the chief cause of admissions to hospital was ague. What "remittent fever" means is not very

clear; the title seems to cover a multitude of difficult diagnoses. Native troops suffer but slightly from enteric fever, and the death-rate from this cause is put down at only 0·13 per 1000, and forms only 1·2 per cent. of deaths, as compared with 50·7 per cent. amongst British troops. Natives are more liable to ague and so-called remittent fever, and apparently much less often attacked with "simple continued fever." Taking these statistics as a whole, it may be concluded that were it not for the prevalence of enteric fever among the British the actual liability to "fevers" would be greater amongst the native troops. With regard to venereal disease, there were only 40 admissions per 1000 men among native troops, against 363 for every 1000 among British troops. The Gurkhas, as usual, suffered proportionally more than other native troops.

July 5th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending June 23rd are as follows: Remaining at the beginning of the week, 76; admitted, six; discharged 14; died, none; remaining at the end of the week, 68. The totals up to the end of the week are as follows: Cases, 284; deaths, 98; discharges, 118; "contacts" isolated, 1586; "contacts" remaining, 91; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

June 26th.

The returns of plague in Sydney for the week ending June 30th are as follows: Remaining at the beginning of the week, 68; admitted, 12; discharged, 14; died, three; remaining at the end of the week, 63. The totals up to the end of the week are as follows: Cases, 296; discharged, 132; died, 101; "contacts" isolated, 1686; "contacts" remaining, 111; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

The larger number of cases admitted during the week came from localities still more widely scattered than during recent previous weeks; and, as time goes on, it becomes more and more difficult to trace them to dwellings within areas known, or on good grounds presumed, to be infected—that is, by harbour-infected rats. On the other hand, no probable source of infection for them can be fixed upon; these cases are as little connected with each other as (with few exceptions) have been all those which preceded them. Personal communication between infected and clean families clearly has been no factor in the rise and maintenance of this epidemic at Sydney.

Nevertheless, rats are not the sole possible source of the disease; here as elsewhere plague appears to have been contracted under circumstances which excluded diseased rats, though only in a single instance. The quarantine ground may be described as having been divided into three parts: one contains the hospital, one the convalescent quarters, and the third the "contact" camp. The two former are fenced and "contacts" and staff are alike prevented from entering; however, while the hospital fence secures a true isolation, the convalescent fence is only designed to prevent mingling of "contacts" and convalescents. But there is an exception: a scavenger enters the convalescent enclosure during the night only—at times, that is to say, when the convalescents are in their beds. It should be further noted that convalescents are treated as such only when they would be fit for release but that their buboes continue to discharge. This scavenger fell ill of plague after having performed similar duties for about six months. He was a young man in perfectly good health and was the only member of either staff, permanent or temporary, who had escaped inoculation—probably because he was already at work when the plague began, having been originally engaged in connexion with small-pox. On his right hand he had six unhealed, but not quite recent, grazes, of which one was slightly inflamed, and on the fore finger of the same hand he had several cracks or chaps on its external surface which ran horizontally to its anterior surface. His buboes were axillary and cervical on the right side. Bacteriological examination of liquid got from some of the scabs revealed no bacilli, nor were any present in serum drawn from a bubo; but this was taken two days after Yersin serum had been administered and after his temperature had fallen. His attack was slight. Notwithstanding the negative result of the bacteriological examination there was no room for doubt that his disease was plague in the opinion of those best able to judge. After a quite exhaustive inquiry into the conditions under which this man lived and worked at the quarantine ground (which he had not left during the long term mentioned) it seemed most likely that he had become inoculated in the right hand from dressings discarded by the convalescents; yet none of them reached the convalescent wards until long after the time when, according to the best information, bacilli have disappeared from the pus discharged from open buboes.

One other observation noted during the past four weeks is interesting. It has already been remarked that neither minor nor ambulant cases accompanied the beginning of this epidemic nor occurred during the greater part of its course. The first case recorded was the first case which occurred, and it was mild. The next, which happened just a month later, was fatal and it was immediately followed by many others among which the death-rate was high. After that the epidemic continued for many weeks with a steady virulence or intensity which yielded on an average a fatality of about 33 per cent. among whites. Lastly, the term now set in commenced; two or three cases were discovered almost by accident and were of the class known as ambulant. But besides this the virulence of the infection manifestly declined so that nearly all the new cases were of little apparent gravity. Recalling for a moment the fact so often pointed out already—namely, that the epidemic has certainly not been maintained by communication of the disease from person to person (whatever the few exceptions may have been)—it appears that both the primary virulence of the poison and its subsequent enfeeblement must have been independent of the agency or intervention of the human body. That the first case of all was slight may be nothing to the purpose; yet there is no evident reason why it should have been so were the virus derived from the same source as that with which the second, quickly fatal, case was infected. However, it was an example of inoculation by the flea, and it had shown the bleb which is said to be wanting when the implanted virus is very active. But, as regards manifestation in man, it is quite plain that there was no gradual exaltation of virulence of the infection by repeated passages through the human body (the possibility of this being assumed), nor can it be argued plausibly from the facts that the decline of virulence, now become apparent, has been the consequence of similar passages. The fact begins to appear that the whole process went on quite independent of man, who merely suffered incidentally and who was not of importance to the maintenance and diffusion of the disease. This statement, in my opinion, might have been expressed in more general terms. At all events, for the future the possibility of infection by rats and the subordinate possibility of infection by fleas must be excluded before other modes of infection need be seriously discussed.

July 3rd.

TOTNES HOSPITAL.—The annual meeting of this institution was held on July 30th. The report showed that 45 in-patients had been admitted during the year and that there was a favourable balance of £56 remaining. The committee stated that satisfactory progress has been made with the building of the new hospital. The Duke of Somerset was elected patron and Mr. A. M. Singer was elected president.

VACCINATION FEES.—The Vaccination Committee of the Cardiff Board of Guardians at their meeting on August 3rd decided to recommend the guardians to approach the Local Government Board with a view to the reduction of the minimum fees of the public vaccinators. It was stated that during the first year which has elapsed since the passing of the new Act 3743 vaccinations had been performed, the fees of the public vaccinators amounting to £1209. The year previous to the passing of the Act 5770 vaccinations had been performed, for which the public vaccinators had received £392 in fees.—At the meeting of the St. Germans Board of Guardians, held on August 2nd, it was stated that the cost of vaccination for the years ended March, 1898, 1899, and 1900, amounted to £23, £30, and £133 respectively.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

THE Thirteenth International Congress of Medicine was opened in Paris on Thursday, August 2nd, under the patronage of the French Republic. The arrangements of the Congress have been made by the Government Department of Congress and the President of the Congress is M. Lannelongue. M. Odilon Marc Lannelongue is Professor of Surgical Pathology in the Faculty of Medicine of Paris and Surgeon to the Hôpital des Enfants Malades. He was enrolled an Honorary Fellow of the Royal College of Surgeons of England at the recent centenary of the College.

The following are the Executive Committee:—President: M. Lannelongue. Secretary-General: M. Chauffard. Treasurer: M. Duflocq. Members: M. Bouchard, M. Bouilly, M. Brouardel, M. Dieu, M. Gariel, M. Le Dentu, M. Malassez, M. Nocard, M. Raymond, M. Rendu, and M. Roux. Secretaries: M. de Massary and M. Léon Weber.

The first outward and visible sign of the thousands of medical men attending the Thirteenth International Congress of Medicine was seen on the morning of the last day of July when the Rue de l'École de Médecine was blocked by cabs containing medical men from all parts of the world anxious to go through the formalities which were necessary for official acceptance as members. Though nothing authoritative was given out and the tickets for the different fêtes and entertainments were duly distributed there was a very general opinion quite early that the sad end of King Humbert of Italy would mean the abandonment of the official receptions. This sombre beginning of the Congress was not relieved by the monotonous proceedings at the first general meeting held in the Salle des Fêtes. Most of those who attended this dreary function found their way into the grounds of the Exhibition and in the brilliant sunshine of that Thursday afternoon the Exhibition certainly was a revelation of what can be done by the French in building substantial stone edifices which at once attract attention and demand admiration by reason of their exceeding elegance and beauty. Properly to appreciate the brilliant architectural *tour de force* achieved the spectator should proceed in one of the swift passenger steamers plying on the Seine from the Pont d'Iéna to the Pont Alexandre III. Both banks of the river between these points are lined by veritable palaces of glistening white stone, affording a spectacle well exemplifying the French capacity to rise above criticism in matters of taste. But this is not the place to attempt a description of the Exhibition.

Some little disappointment has been expressed at the small attendance from Great Britain. This is attributable to many causes, but most certainly the general idea that there would not be sufficient hotel accommodation was fallacious, for suitable lodging and good food at reasonable prices, considering the circumstances, are to be had without undue difficulty. The suspicion that the reception of the English would not be of the warmest has been signally disproved by the hearty welcome accorded to them. Certainly the impression prevailing at the Hôtel Trocadéro, where many of the British section, including Sir William Mac Cormac, Sir T. Lauder Brunton, Sir J. Burdon Sanderson, Sir Felix Semon, and Sir Dyce Duckworth, are staying, is that their reception has been most cordial and sincere. On arriving in Paris the first place to go to was the École de Médecine where, in the roomy corridors round a refreshingly cool-looking fountain set in a shrubbery under shady trees, the members of the Congress found officials for the different nationalities waiting to distribute the insignia denoting membership and to impart information to strangers from every country. It was here that the paucity in numbers of the British section was most forcibly demonstrated, for the two or three individuals gathered at the part devoted to Great Britain contrasted strongly with the crowds surging round the Russian and German sections. After receiving the official card of entry to the Exhibition most members repaired across the road to the Faculté de Médecine, where the ladies' committee inscribed the names and addresses of members' wives and daughters and entertained the lady visitors in a sumptuously furnished room forming a pleasant haven of rest.

THE POSTPONEMENT OF FESTIVITIES.

A little while ago fears were entertained that one or more of the four medical congresses would suffer in consequence of international mourning. It was then thought that in the event of official confirmation being received of the massacre of the ambassadors and other Europeans at Peking many of the official entertainments would be postponed. There was no established etiquette compelling such a course because, fortunately, the wholesale massacre of ambassadors was a disaster so unprecedented that the framers of even the most elaborate protocols had never foreseen such an occurrence; still, it was hardly likely that illuminations, music, and dancing would be organised by a Government on the morrow of such a disaster, and therefore it was widely rumoured and believed that many of the proposed festivities would not take place. This anticipation has been realised, and this at the very time when it was thought most likely to occur, but its cause was totally unexpected. It is not for the ambassadors and Europeans at Peking that all the Courts are in mourning—for however precarious their situation it would seem that for them there is still hope—but for the King of Italy. A fortnight ago the general secretary of the International Congress of Hygiene, Dr. A. J. Martin, was discussing this matter and he remarked that he hoped that the mourning for the victims of the Boxers would be over by August 10th when that Congress begins. This hope will presumedly be realised. What was expected has happened and yet the cause is utterly different and altogether unexpected. So many of the projected entertainments have been postponed which, at least for those who are remaining for but a short time in Paris, is equivalent to being totally abandoned. On Tuesday, July 31st, the members of the International Congress of Deontology and of the Medical Press Congress were to have been entertained at a grand fête at the Hôtel de Ville. This was postponed at the last hour. On August 5th the members of these Congresses, together with those of the Thirteenth Medical Congress, were to have been received by the President of the Republic, M. Loubet, at a garden party at the Elysée. This has likewise been abandoned, and other official receptions will probably share the same fate. No doubt the congresses will achieve their respective missions, but the more cheerful side of these gatherings has been sadly clouded over.

THE BANQUET TO LORD LISTER.

It is generally agreed, however, that public sorrow and mourning must not interfere with the private hospitality shown to the foreign visitors and guests. Therefore the private banquet organised in honour of Lord Lister by Professor Charles Richet and the Scientia society was not put off. At the Restaurant of the Congresses, opposite the Congress Hall in the Exhibition grounds, the leading professors of the Faculty of Medicine and some foreign members of the Congress of the Medical Press and the Deontological Congress met on Wednesday, August 1st, to welcome Lord Lister. It was a very quiet gathering of thoughtful earnest, and learned men who had all made their mark in the world of science and who all profoundly admired Lord Lister's career and work. At dessert Professor CHARLES RICHET was the first to rise and tender his thanks to Lord Lister for having come "to receive the homage of our

admiration." Throughout the world there was no surgeon who was not deeply indebted to Lord Lister and there was no physician who did not feel equally indebted to Pasteur. These two names would illuminate their century; their names would live throughout posterity. When a man by his genius had saved thousands and thousands from untold suffering he deserved more than their admiration—he was entitled to their love and gratitude. If all who had benefited from Lister's work were there, even the great Exhibition itself would not be large enough to hold the assembly.

Dr. BOUCHARD spoke next and recalled how some 17 years ago, when Lord Lister appeared before the Congress then meeting at Amsterdam, an immense acclamation arose, especially from the Dutch. After Lord Lister himself those who were most astonished by this ovation were the English and the French members present. Lord Lister was not then a prophet in his own country, and yet had ever a discovery been so quickly acknowledged? A hundred years after Harvey scientists were still discussing whether the theory of the circulation of the blood was true. This century commenced in the noise of battle and civil discord and yet in the midst of this trouble a man came and endowed the world with the benefits of vaccination. The century ended with the curse of war and the shame of abominable assassinations and then, said Dr. Bouchard, "you come and show us how to heal wounds. We wish in the name of the suffering peoples of the whole world to honour you as our great benefactor."—Professor GUYON spoke in the name of the Faculty of Medicine and Dr. LUCAS CHAMPIONNIÈRE related how 32 years ago he had heard Lord Lister explain his theories. He was then the object of hostile criticism and yet how rich with new developments and possibilities had he rendered the intervening time. "You acquired the conviction that there was no spontaneous generation; why, then, should it exist in surgery? That was your new faith, and when I repeated this in France I was called the apostle of a new religion; and I have merited this title by reason of my faithfulness to your teaching. ..... All new discoveries of the 30 years are your tributaries; none of them would have been possible but for you. We can remember the miserable condition of surgery and how great was the mortality. Nélaton said that a statue in gold should be raised to the person who was able to prevent what we now know as 'sepsis.' You have deserved that statue and our only regret is that at present we cannot offer it to you."—Dr. PINARD spoke for obstetric surgery, which he thought was more particularly indebted to the Listerian methods. The terrible mortality at the maternity hospitals was now a thing of the past. He concluded by exclaiming: "Lord Lister, when we are asked why you are illustrious we reply because you have driven back Death itself; because in all you have done you have only caused tears of joy and gratitude."

After a few words of admiration on behalf of the Paris medical students by the President of the Students' Club Lord LISTER rose to reply. He spoke slowly, gently, and in French. When he received the invitation to that banquet, he said, he was overwhelmed by the honour; but he accepted it because he interpreted the invitation as an expression of the respect of French scientists for the noble science of surgery and for the Royal Society of which he was President. He also thought that such a fête given by such eminent Frenchmen to an English scientist was a striking illustration of the happy fact that though there were animosities—or, rather, he would prefer to say misunderstandings—science knew nothing of them. Scientists had learned to respect each other—better still, to love each other—whatever might be their nationality. He had often stated, and he was pleased to repeat it, how much he was indebted to Pasteur. He had ever loved physiology and surgery, but he had lamented the disastrous results that followed even the best and most skilful operations. He saw that the chief evil was due to changes that occurred after the operation and to a cause arising not from within but from without the patient's body. He did what he could to guard against this, but all efforts were useless till Pasteur threw a powerful light on the subject. Pasteur had suggested a possible course which he, the speaker, had done his best to follow. That was all. If the results had been so beneficent as generously described by the various speakers that night it had been in a great measure due to accident. Lord Lister then renewed his expression of gratitude for the reception he had enjoyed and said that the memory of such a demonstration would never be effaced from his mind.

It would be difficult, nay, impossible, to fully describe the effect produced by Lord Lister's speech. The simple, brief sentence, "That was all," was more particularly commented upon. The extraordinary modesty and simplicity of bearing of the great British man of science evoked endless expressions of surprise. How was it possible to receive so many honours and yet not to be in the least degree spoilt by them? That seemed to be considered as wonderful and as exceptional as the services and the discoveries which all present sought to honour in the person of Lord Lister.

Lord Lister was then conducted to the Medical Club in the Avenue de l'Opéra, where he received a great ovation. The president of the club, Dr. Pozzi, wished Lord Lister in eloquent terms the heartiest welcome and suggested that a marble tablet should be put up in the club in commemoration of Lord Lister's visit. The greatest enthusiasm prevailed throughout.

THE OPENING CEREMONY.

(FROM OUR SPECIAL COMMISSIONER.)

By half-past one in the afternoon of Thursday, August 2nd, a long line of cabs was hurrying over the Pont de la Concorde, manœuvring round the Place des Invalides and seeking short cuts to the rear of the Gallery of Machines where is situated the nearest entrance to the Hall of Festivals. The man in the street was somewhat amazed by the presence of so many persons in full dress at this early hour, together with the display of many orders and decorations and brilliant uniforms, and all apparently going in the same direction. The weather, rendered cool by recent rains, was delightful and the members of the Congress for the most part rode in open carriages, to the great satisfaction of the Parisian crowds who were thus better able to contemplate the distinguished visitors and guests of their great town. The garde municipal à cheval guarded the approaches of the great hall, and, within, the republican guards, with their best plumes and newest uniforms, kept the passage clear for the members of the Congress. Though on that very day the computation had been made that the Congress numbered 5739 members—and there were wives, relations, friends, and journalists present not included in this number—still the great Hall of Festivals was not half full. It may be remembered that last year I described a conversation I had with Dr. Chauffard. The secretary-general of the Congress then lamented that there was no suitable hall in Paris for the opening ceremony. There had been some 5000 members when the Congress met at Moscow and there might be twice as many when it met in Paris. We did not then anticipate that a war would considerably reduce the British contingent or make sufficient allowance for the competition of other congresses and the fear of the cost of living in Paris during the Congress—a fear, by the way, which events have not justified, at least for those who knew their way about. Dr. Chauffard and myself did not then realise that a great Hall of Festivals would be built. I suggested the Trocadéro, but Dr. Chauffard is an artist and he could not bear the idea of bringing together delegates from all the world in a hall which could only boast of its size and which altogether failed to illustrate the artistic taste and capacities of the French people. Dr. Chauffard must now be well satisfied. No one can fail to have been impressed by the artistic beauty and grandeur of the Hall of Festivals. The domed stained-glass roof shed a rich yellow light on the great circle below which was about half covered with velvet benches. Between the four entrances on the four sides of the circle were vast tribunes or rising galleries where some hundreds of people could be seated. One of these served as the platform and was luxuriously furnished with gilt and red silk chairs, on another of these tribunes there was a military band, and the remaining two were occupied mainly by ladies. The benches in the body of the hall were divided by broad avenues, and each division was allotted to members under various classifications. On the platform academic and military uniforms helped to enliven the scene. The President of the Congress, Dr. Lannelongue, was resplendent in the bright green embroidery of the uniform of the members of the Institute, and Professor Marey was also in the same cheerful dress. Those who belonged to the Academy of Medicine but not to the Institute had their coats embroidered with more sober colours, violet and gold. Among the distinguished crowd occupying the platform I noticed M. Faillières, President of the Senate,

talking to his fellow Senator, the celebrated surgeon Dr. Labbé. Professor Bouchard, who presided over the French Section at the Berlin Medical Congress, was not far from Dr. Dujardin-Beaumetz, the chief of the sanitary services of the army, who ranks as a general of division, and Dr. Cuneo, chief of the sanitary services of the navy. At one time there must have been not far from 150 persons on this vast tribune.

At a quarter past two the republican guards advanced into the body of the hall and cleared the central passage and made an open space at the foot of the tribune. Five minutes later the band played the "Marseillaise." Everyone rose and strained to get a glimpse of the President of the Republic; but in spite of the national hymn which generally heralds his presence the President was not there. While the audience were still looking and wondering Dr. Lannelongue had taken the chair and half sentences or stray words were heard—"an appalling crime"—"sympathy"—"prevents the President of the Republic attending any public"—"sympathy of the whole assembly"—"horror at such an attempt"; and though but few heard a complete sentence everyone understood perfectly what was meant. Then the assembly sat down; and, after having explained why M. Loubet was absent, Professor LANNELONGUE proceeded to read the opening discourse; but soon there arose a strange sort of sound, like the beating of pebbles by the waves on the seashore. It was the effect of whispered conversation complicated by the incalculable echoes of the great hall. Professor Lannelongue read in a loud and distinct voice and slowly, but it was like speaking to the ocean. He said that the object unceasingly pursued was the improvement of mankind, and for this absolute freedom of research was necessary. Such researches would be materially facilitated if a nomenclature more in harmony with present knowledge could be universally accepted. After pointing out that the idea of an International Medical Congress was first brought forward at Bordeaux in 1855 Professor Lannelongue paid a handsome tribute to the help and support given by medical men of all nations and cordially welcomed all the members of the Congress.

M. MONIS, the Minister of Justice, followed and in the name of the French Republic greeted the leaders of civilisation. The French Government was anxious to show its respect for a profession representing devotion to humanity and for men who had come from all parts of the world to promote the cause of science based on truth.

The General Secretary, Dr. CHAUFFARD, followed, and then came the long procession of foreign representatives, headed by Dr. VON BERGMANN of Berlin, who spoke in a loud voice and was greeted with great applause. Though portly in figure his coat was almost entirely concealed by the numerous orders, stars, and decorations that have been conferred on the renowned German surgeon. Then appeared four other members; their names were not announced, though one of them was stated to be Dr. CASTILLANI of the Argentine Republic. They spoke in dumb show and fortunately very briefly. Dr. HINGSTON of Canada, who came next, was heard a little better and met with a hearty ovation. I caught some words about science that recognised no frontiers, and about duty. When he sat down, after uttering but a few words, a delegate from Chili spoke, and then Dr. CARTEJARENA on behalf of Spain. America, Greece, Japan, and other nations had their speakers, but the only real orator was the representative of Mexico. He knew how to step forward across the broad platform and was the only speaker who had the courage to go right forward to the place specially devised for the speakers to stand. He knew also how to manage his voice, and though at that moment no special interest was felt with regard to Mexico everyone was delighted to see a speaker whom they could hear. It is true that he indulged freely in platitudes, but then they were so well delivered that it was a great relief after the weariness of the previous inaudible speakers. He extolled Pasteur and the happy country that had given birth to a man who had won the title of a citizen of the world. When a brave man died all died with him; but when a man of genius died he did not disappear. Such men only died like the sun to reappear very soon, for their works continued to illumine the world. After more speeches suddenly the band began to play a lively tune, and it was inferred that by this time every nation had had its say.

But the ceremony was not over. The best was to come. Professor VIRCHOW of Berlin had to deliver an address on Traumatism and Infection, alluding to the influence of the French schools on science. He set to work in true German style thoroughly and completely to develop his thesis. He spoke in German, and very few persons present could have understood him even if they had been able to hear him. This finally broke the patience of the audience, which soon melted away, and three parts of the persons present had disappeared by the time the learned professor had finished. The gist of his remarks was as follows. Traumatisms might be defined as an alteration of any portion of the *living* body brought about by external violence. Traumatisms might be divided into visible, such as wounds, and hidden, such as contusions. A wound being necessarily accompanied by a solution of continuity it was very prone to collect foreign matter, either in bulk or finely divided, as in the case of dust. This was the way in which harmful matters brought about infection. Contusions, on the other hand, were capable of infection only by internal substances. There were cases, however, where a contusion without any superficial lesion was produced by external violence and in which, despite the integrity of the surface, infection supervened. Such, for instance, were the dangerous inflammations of the marrow of the long bones, although in such cases the skin, the subcutaneous tissue, the muscles, and the periosteum showed no alteration. Innumerable microbes were found in the affected parts of the marrow. Whence did they come? That was a question which could very rarely be settled by observation but which opened the door to hypothesis. General opinion at the present day favoured the theory of bacterial origin, according to which an infection already existing in the blood must be presupposed, produced at the seat of another wound, and carried to the focus of the secondary manifestation. Some surgeons considered that there must be some very minute erosion of the surface at the seat of contusion. Both these explanations were theoretical and had no definite proof. It was extremely difficult to prove that the traumatism and the infection were synchronous. Observations were on record where the infection preceded the traumatism and others in which it developed in a part wounded a long time previously. In cases of this kind a decision could only be arrived at by a careful consideration of the history of the case. If this was not to be obtained the anatomical points of the affection must be looked into. The great *savant* was proceeding to illustrate this point by special examples when a large part of the audience dispersed. There is not a centre of scientific thought in the world where Professor Virchow's inimitable achievements are in higher repute than in Paris. The apparent discourtesy was due to the fact that he was almost inaudible and speaking in a language with which many were not familiar.

It was then announced that Professor PAVLOV from Russia, who was to have delivered a discourse, had been detained through illness. The faithful few who had remained in the great hall then quickly dispersed. It must be confessed that this opening ceremony was dull.

In the evening Dr. Lannelongue received more than a thousand members of the Congress. It was a brilliant entertainment. There was some good music and then the children's ballet corps of the Grand Opéra danced and appeared bearing flags of the different nationalities. The band accompanied this display with the national hymns of Russia, England, Germany, Austria, and France.

THE GENERAL ASSEMBLY AT THE SORBONNE.

On Monday afternoon a general assembly of the whole Congress was held in the new hall of the Sorbonne. This magnificent building can seat 3000 persons and there were probably close upon 2000 present. The President of the Congress, Dr. LANNELONGUE, opened the proceedings at 12.15 P.M., and the General Secretary, Dr. CHAUFFARD, read out a long list of honorary presidents of sections whose nominations the assembly at once and readily notified. Professor LIKHATCHEFF then read on behalf of Professor Pavlov, who was absent through illness, the paper which he should have communicated at the opening ceremony. It dealt with Experimental Therapy as a new and fruitful method of physiological research. This lengthy and technical paper described many experiments made with dogs and concluded by a special homage to Claude Bernard.

Dr. LANNELONGUE then explained that Professor Baccelli was to have read the next paper, but in consequence of the national mourning refrained from doing so. He expressed,

on behalf of the Congress, sympathy for their Italian colleagues and called on Professor Burdon Sanderson. Speaking in French Sir J. BURDON SANDERSON explained that 47 years ago he had come to Paris to terminate his medical education and felt especially honoured, at the close of his career, at being thus able to speak in France to such a distinguished audience. These introductory remarks were delivered with some timidity and hesitation and only a few persons seized their meaning and faintly applauded; but when he entered into the subject matter of his paper—Some Modern Pathological Problems—his voice rose, his pronunciation improved, and the force of his diction as well as the subject matter of his remarks elicited several outbursts of applause. Professor JACOBI from the United States followed and gave a very interesting account of the growth of the medical profession in America, of its medical education from its crudest beginning to the present day, and of the American medical press. This was all quite new to the greater part of the audience and was consequently welcome and entertaining. These three papers were lengthy and sufficed to fill up the afternoon. Indeed, a good many persons left before it was over, though others came in to take their place. I do not know whether many persons noticed the admirable ventilation of the hall which in this respect is one of the model halls in Europe. The fresh pure air was filtering in all the time from every seat and was so carefully propelled forward that its passage could only be just faintly perceived by those who specially sought to note its passing. The readers of THE LANCET may remember the full description and illustrations of the system employed which were published in your columns some 10 years ago when the new hall had only been in existence a few months.

THE FÊTE AT THE LUXEMBOURG PALACE

As already announced all the official entertainments have been postponed, and it was at first generally supposed that the fête to be given at the Palace of the Luxembourg announced for August 6th would likewise be abandoned. This ancient palace being now the meeting-place of the Senate it was naturally supposed that the Upper House was desirous of receiving the members of the Congress, and this could not have been otherwise than an official reception. It appears, however, that these conjectures were mistaken. It was the members of the Bureau, or managing committee, and the committees of the sections who had organised the fête, and they had simply borrowed the *locale* of the Senate for that purpose. Therefore, though the Congress is indebted to the Senate for a certain measure of hospitality—namely, the use of the Senate House—nevertheless it was not the Senate that was giving the *fête*, and therefore it fell under the denomination of a private and not an official entertainment. Consequently it was not postponed, and as it was the only large festivity occurring during the week everyone made a point of going there, and the number of members has considerably increased since the opening day. On August 5th it amounted to 6170, and including the wives and families of the members, together with various officials and notable personages who are not members of the Congress, the number of those who were invited must have amounted to some 10,000. The programme was most attractive. In the gardens there was to be a military band, in the ballroom there was to be dancing to an orchestra of 45 musicians, and in the Salle des Fêtes another orchestra of 45 musicians were to accompany Madame Litvinne and M. Renaud from the Grand Opéra who, with others, sang selections. This was to be followed by an operetta, some dancing, and recitations by M. Mounet-Sully, of the Comédie Française, and Madame Sarah Bernhardt. Obviously there were here all the elements necessary for a most refined and enjoyable *soirée*. Unfortunately the results were entirely marred, firstly, because by far too many invitations were issued; and secondly, because there were no stewards within the building to guide the guests and to prevent crushing.

In the streets, round the Palace, there were a great number of police who with their white staffs regulated the traffic and got the carriages in and out of the great yard with perfect order and promptitude. But after this all semblance of organisation ceased. The cloak-rooms provided were altogether too small and the attendants were overwhelmed. Many guests had to wait half an hour, some a longer time, before they could get numbers for their cloaks, and this in a terrible crush of people. Then when they attempted to enter the Palace they found that there was only one door and that it was only four feet wide. At first, however, this only meant some delay and some squeezing. But the early arrivals soon found that the building was getting intolerably hot and overcrowded. The seats to hear the music were all filled at a very early hour. To stand closely packed in the aisles between the seats or in the passages outside where nothing could be seen or heard became both dull and wearisome, and before 11 in the evening a strong outward current set in. But by that time the banquet given by the surgical section at the Hôtel of the Palais d'Orsay, which is not far off, had terminated, as also a number of private dinners, and a large crowd of late arrivals coming from these minor entertainments now flocked to the Palais du Luxembourg. It was at this point that the want of stewards became manifest. Those who were already tired and wanted to go home knew of no exit save the door by which they had entered; and here and in the approaching passages they met the incoming crowd. Soon a terrific contest occurred between the out-goers and the in-comers which often resulted in a deadlock. Sometimes one side had the advantage, sometimes the other. For my part I was for a good quarter of an hour unable to move either backwards or forwards and had some difficulty in keeping my coat on my back. Several gentlemen had their collars torn off, their neckties disappeared, and fearful havoc was made of the ladies' dresses. I do not, however, believe that anything serious occurred, though some ladies must have suffered from the alarm which they very naturally experienced. There were, it appears, other doors intended to be used solely as exits, but not one person in 20, perhaps not one in 100, knew of their existence. The struggle at this one door probably lasted for a couple of hours; in any case, I was present for more than an hour while it continued. Reaching finally the open I witnessed a most remarkable sight. Here in the great yard, with its old-fashioned huge square paving-stones that in the olden days supplied the principal material for throwing up barricades, were gathered in clusters from 200 to 300 ladies and gentlemen. A few chairs had been discovered and some were quietly sitting down enjoying the cool of the evening. Ladies in low-neck dresses, officers in embroidered uniforms, and all the gentlemen in evening dress, contented themselves with loitering in the yard intended exclusively for carriages, and watching the struggle at the one door and hearing the stories of those who come out of the broiling crush from within. A great many guests, after waiting a considerable time, went home and never succeeded in entering the Palace at all. Among those who were thus patiently and modestly waiting outside in the yard I noticed the Dean of the Faculty and Madame Brouardel. This morning Professor Brouardel told me that he finally discovered a small back entrance by which he managed to gain admittance. In his opinion also the chief blunder was the want of stewards to show people where to go and what to do. In the dancing saloon though the band piped there was no dancing worth mentioning in consequence of the crush. On the other hand, some German members specially distinguished themselves by conducting the most effective raids upon the buffets, carrying away the provisions, which they put upon chairs, and, grouping round these extemporised tables, managed to make hearty meals on sweets and sandwiches. As it is the custom in France to dine at seven or eight o'clock it is not generally thought necessary to provide substantial fare so soon after dinner. Commenting on the evening and its mishaps the *Fronde* of this morning says: "Our regret for the manner in which our guests were treated is somewhat lessened by the utter want of consideration some of them displayed towards us. Some foreigners thought fit to come to this entertainment in travelling jackets and we perceived some women wearing boating caps."

THE SECTIONS.

Early on Friday, August 3rd, the different sections opened their sessions, and although under paragraph marked B of what is termed "Analytical Programme of Business" it was specially pointed out that members had a right to take part in all the sections it is unlikely that many medical men did much more than attend one or two, perhaps only visiting some of the others. The sections, numbering 26, were scattered over a wide area and some trouble was experienced in finding the different buildings where the meetings took place. The École Pratique accommodated three sections in a large amphitheatre. Under the presidency of Professor

PAGE NOT AVAILABLE

and to its transformation into actual gout, some of them being as follows: (1) all the circumstances being equal gout manifested itself earlier and with more severity when the uric acid diathesis was well marked than when it was not; (2) personal habits, such as idleness and luxurious living, or the combination of these two in a high degree, or the abuse of alcohol, favoured the development of gout and temporary variations might very often be attributed to those conditions; (3) certain acute and chronic toxic influences in presence of the uric acid diathesis favoured the development of gout, among which some bacterial toxins were of great importance, and the relations of gout to rheumatism, syphilis, lead-poisoning, and influenza must be kept in mind; and (4) neither contagion nor climate had any influence as regards gout. Uric acid seemed to be the poison which produced gout. The question whether other products of the organism, such as the alloxur bases or nuclein bases, also played a part was not yet decided. It was probable that it was only the uric acid formed at the expense of the nuclein substances of the human body, and not that formed at the expense of the nucleins of the food, which had an influence on the pathogenesis of gout. It was not yet proved that in gout uric acid was formed in excess; Dr. Ebstein considered that an increased formation of it was not indispensable, but was nevertheless very probable. The history of leukæmia showed that gout was not the result of over-production of uric acid (estimated according to the quantity of uric acid excreted in the urine), for in some cases of leukæmia there was an excretion of uric acid greater than ever occurred in gout. Uric acid was a chemical poison but not a septic one. Its effect was not the same either on animals of different species or on animals of the same species but of different ages. Inflammatory and necrotic changes of the tissues in question were the necessary consequence of the presence of uric acid which ultimately caused total necrosis. When the tissues were quite dead, but not before, the acid deposited itself there under the form of crystalline acid urate of sodium, called mono-natrium urate by Tollens and sodium biurate by Roberts. Tollens thought that uric acid circulated in the blood and in the alkaline fluids of the human body in this same alkaline combination, and not, as Roberts supposed, in the form of sodium quadriurate, a salt which Tollens has more correctly called hemi-sodium-urate. It might be admitted without hesitation that the mono-natrium urate of Tollens (sodium biurate of Roberts) could deposit itself in the crystalline form in tissues the vitality of which had been destroyed either by uric acid or by some other poison. In order to understand the pathogenesis of the different symptoms of gout it was necessary to presume the existence of primary articular gout and primary renal gout. The former was the commonest variety of gout and did not prevent the patients from attaining an advanced age. Primary articular gout developed itself at first under the influence of retained uric acid, this retention being localised because it affected only a single part or some parts of the human body. In primary renal gout there was from the outset a generalised retention of uric acid which affected all parts of the body and was always caused by primary structural disease of the kidneys.

Sir DYCE DUCKWORTH (London) followed with a paper on the same subject. Sir Dyce Duckworth's conclusions were as follows. 1. Gout as a morbid condition depended on an inherent vice of nutrition which was manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys and probably in the liver. 2. This trophic disorder or inadequacy (*ralentissement de nutrition*) led to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (gouty urichæmia). 3. Histology threw no light upon the intimate nature of this defect which thus related to cellular potentiality, possibly under neuro-trophic influence, and not, so far as was known, to structural alteration. 4. This textural disability or a tendency to it might be primarily acquired and also transmitted as a fault, thereby inducing from time to time urichæmia with gouty manifestations in the descendants. 5. In most instances under conditions which provoked it, and in some cases independently of these, attacks of gout might grow up and come to a crisis. Such crises were attended by an alteration in the solubility of the uric salt in the blood whereby irritating crystals of biurate of sodium were produced and precipitated in various parts of the body. 6. A paroxysm of gout, the sites of its occurrence, and its metastases were determined by nervous influences, probably dominated from the bulbar centre, and the local attacks alighted either in the joints or in textures which had been weakened or rendered vulnerable by impaired nutrition owing to past injury or over-use. 7. This central neurosis was an essential and transmissible feature in the pathogeny of gout and pertained to the arthritic diathesis generally. 8. The urichæmia of gout was peculiar and unlike that which was induced by other morbid conditions, but the occurrence of urichæmia in the gouty was by itself inadequate to induce attacks of gout. 9. Uratic deposits in any part of the body might be removed in course of time but were apt to be permanent in the least vascular tissues. 10. Uratic deposits might occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms. 11. The clinical features of gout indicated that both *hæmic* changes (due to inherent morbid tissue metabolism) and a *neuro-trophic disturbance* acted as pathogenic factors, and consequently gout was to be regarded as a neuro-humoral malady.

Diagnosis of Renal Insufficiency.

Dr. CH. ACHARD and Dr. S. LAACHE read papers upon this subject. Dr. Achard dealt chiefly (1) with the results of cryoscopy applied to the urine and blood serum, an index of the permeability of the kidney being thereby obtained, and (2) with the conclusions to be drawn from the elimination of a foreign body (usually methylene blue) in the urine.

Dr. LAACHE said that treatment ought to be prophylactic by preference, but if that was impossible the well-known methods of treatment in kidney disease ought to be followed. Special attention must be given to the state of the heart.

Muco-membranous Colitis.

Dr. ALBERT MATHIEU (of the Hôpital Andral, Paris), Dr. F. BOAS (Berlin), and Dr. JULIUS MANNABERG (Vienna) read papers upon this subject. Dr. MATHIEU said that constipation, often spasmodic, was the rule in muco-membranous colitis. Diarrhœa, which was always of short duration, was the result of an attack of catarrhal colitis. There was always in muco-membranous colitis a secretional irritation of the mucous membrane. The disease only showed itself in its full intensity in persons predisposed by previous neuropathic tendency. Nervous derangement produced hyperæsthesia of the walls of the large intestine and interfered with its motility. In treatment, castor oil, copious enemata, and belladonna were useful. Drastic purgatives, astringent injections, and massage should be avoided.

Dr. BOAS said that the only positive diagnostic symptom was the existence of the characteristic mucous masses; other symptoms, such as tenderness of the colon, coloptosis, moveable kidney, and intestinal atony, went no further than supporting the diagnosis. It was absolutely necessary to decide whether the muco-membranous colitis was idiopathic or a complication. Differential diagnosis was required only as between muco-membranous colitis and colitis mucosa. By frequent observations and the systematic employment of intestinal injections a decision would be almost always possible. The clinical history of muco-membranous colitis was exactly parallel to that of habitual constipation, and methods of treatment which were suitable for the one were also suitable for the other.

Dr. MANNABERG said that a distinction must be drawn between enteritis membranacea and colitis mucosa. By the former name was understood a sub-acute or chronic catarrhal affection of the large intestine accompanied by evacuations particularly rich in mucus. Colitis mucosa was the name of a morbid condition characterised by paroxysmal attacks of colitis followed by the evacuation of masses of mucus. The former variety was, in fact, only a catarrh of the large intestine, accompanied by an abundant evacuation of mucus; it had in a general way the same pathogenesis as catarrh of the large intestine. Colitis mucosa had, on the contrary, a special pathogenesis. In the great majority of cases its basis was a general neuropathy (hysteria or neurasthenia) and there was a tendency to consider it as a neurosis. The paroxysms might be induced by certain factors of occasional occurrence, the principal of which were diseases of the genital organs (both in the male and the female), mental disorders, constipation, irritating rectal injections, and organic diseases of the intestine. The pathological anatomy of enteritis membranacea was the same as that of enteritis in general. With regard to colitis mucosa, in the very rare cases in which an

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milk was never woman's milk; it was not a curative agent; it afforded, however, the great advantage of destroying fermenting and pathogenic germs; that was why it was indispensable in large cities and during the prevalence of certain epidemics, and wherever fresh and unpolluted milk was not accessible. When employed as exclusive infant food cow's milk watered or not was liable to cause constipation, or diarrhœa, rickets, and scurvy. To preserve its bactericidal effect heat should be followed by immediate and rapid cooling, but not freezing. Ample dilution of the artificial food of the infant, and particularly of the newly-born, was required because of the heterogeneous composition of cow's milk; even those who were as usual put to an incompetent breast required water to combat loss of weight and the tendency to nephritis and to nephrolithiasis, the former of which was still more frequent than the latter, indeed very frequent. A large amount of liquid did not interfere with the motility of the stomach and did not cause dilatation, firstly because the normal infant was no glutton and secondly because absorption began at once. Easy and equal digestibility of the casein in woman's and in cow's milk was either asserted or denied by good observers. When cereal decoctions were mixed with cow's milk its casein was claimed and proven to precipitate in fine tufts. On the other hand, cereals were said to have no such effect any more than water. The digestibility of a certain amount of amylum, such as was contained in cereals, had been erroneously and persistently denied when it had long been proven both by experience and by experiments to exist. Cereal decoctions were the proper diluents for the surplus casein of cow's milk. Milk sugar was partly absorbed in the stomach, partly in the intestine, and partly changed into lactic acid. It was required for digestion and was an antiseptic. Not enough of it, however, could be given to have the latter effect to the same degree that was exerted by flours. Besides, milk peptones disappeared with acid fermentation. That was why milk sugar should not be given in large quantities but other carbohydrates in its stead. Cane sugar should take its place particularly as for the purposes of digestion there was milk sugar enough in cow's milk that formed part of every artificial food, and because there was a ferment in the intestine of the young which inverted cane sugar and rendered it absorbable. Besides, every other carbohydrate had the same power to protect albumin against putrefaction. Fat was added to cow's milk for the alleged purpose of increasing its nutritive property by preventing the loss of the fat and albumin of the tissues and by loosening and separating the minute particles of casein. It should be remembered, however, that even human milk often contained so much fat as to cause "fat diarrhœa," that the normal infant in the fæces eliminated unchanged fat in goodly quantity, that moreover the fat globules of cow's milk were larger, less numerous, and less absorbable than those of woman's milk, that the two fats were not equal chemically, and that the urine was liable after feeding with cow's milk fat to contain ammonium, and the gut toxins. The mineral constituents of cow's and human milk were different. The addition of chloride of sodium to artificial foods was required both for physiological and chemical reasons. Home-made artificial foods were preferable to the proprietary foods of the market for many reasons. The separation of the component parts of cow's milk by mechanical means and the recomposition of the same was a procedure of doubtful value. The experience of the physician and of the well-directed public at large was equivalent at least to laboratory and library theories based on facts that were *sub judice*.

Dr. O. HEUBNER (Berlin) read a paper upon this subject. He said that a scientific set of rules could not be drawn up for the artificial feeding of children except by a study of the healthy infant born at full time. As rules for feeding a healthy workman could not be laid down by the study of a diet of an invalid, so a normal infant could not be fed by studying the difficulties or successes obtained in feeding unhealthy children. This, however, was what medical men very generally did, because they were so constantly brought into relation with invalid children. The common sense of nurses, however, had always understood that nothing could replace the milk of the mother so well as the milk of some animal. The milk of the various domestic animals, especially that of the cow and of the goat, did not differ more from the milk of a woman than the various sorts of meat differed the one from the other, such, for instance, as pork and beef, which the healthy child, like the adult, could eat alternately. The intestine of the healthy infant was capable of digesting the milk of the cow just as well as the milk of a woman. The labour of digestion, however, was greater in the former case than in the latter, for large proteid molecules required a greater digestive effort than the small hydro-carbon molecules, and cow's milk was very rich in the former, while the milk of a woman was rich in the latter. Other difficulties of artificial feeding arose from infection or decomposition to which the milk of an animal was always exposed before the child got it. As regards this danger, the sterilising of milk was one of the most important advances made during this century. There was no need to boil milk for half an hour, it was quite enough to boil it for five or ten minutes, and even if the milk was only heated for 25 minutes to 65° it appeared to be sufficiently sterilised without undergoing any disagreeable modification either in its taste or in its nutritive value. If a dyspeptic infant had to be artificially fed it was quite another affair, for the digestive power was considerably weakened. It was not so much the proteid matters of the milk which offered the greatest difficulty, but the fat. There were various ways of getting over this difficulty. The quantity of fat and of proteid substances could be lessened by diluting the milk with boiled water and adding sugar so as to bring it up to the proportions which existed in the milk of a woman—that was to say, 7 per cent.; instead of the sugar some other carbohydrate might be added, such as powdered biscuits. On another plan the milk might be peptonised. Another plan was to add skim milk or to replace the sugar of milk by another sugar—namely, maltose. These were the principal plans which had been adopted in the preparation of artificial milk.

Dr. MONTI (Vienna) read a paper upon the Scientific Principles involved in Preparing from the Milk of an Animal an Equivalent Diet to the Milk of a Woman. He pointed out that the acidity of cow's milk could be reduced to that of the milk of a woman by the addition of carbonate of potassium. Coagulation should be arranged so as to take place in the same manner in the milk of the cow as in the milk of a woman. To do this equal quantities of cow's milk and of butter-milk should be mixed together and a little carbonate of potassium added. The proportions of casein, of fat, and of sugar could all be arranged to be in the proper proportion by the use of a mixture of milk and butter-milk.

Dr. AXEL-JOHANNESSEN (Christiania) read a paper upon the Sterilisation of Milk and Mode of Use. He pointed out that to sterilise milk completely by boiling at the ordinary atmospheric pressure it would be necessary to cook it for several hours; but sterilisation could be carried quite far enough by other methods, of which the best and simplest was pasteurisation at 70° C. Great care should be taken to look after the milk-supply so that the supply of raw milk should be as free from germs as possible. The milk after pasteurisation should be cooled down to about 17° C. and used within 12 hours.

Dr. VARIOT, of the Hospital for Sick Children, Paris, read a paper upon the Sterilisation of Milk from a commercial point of view so as to be applicable to the needs of a great town. He described the plan adopted in Paris which was as follows. The milk was put in bottles holding a quarter or half a litre. It was raised to a temperature of 115° C. and the bottles were then sealed by corks covered with paraffin. Milk so treated would keep 15 days or more. At the Belleville Dispensary 150 litres of this milk were distributed per diem to poor children. The greater number of these children could take this milk without difficulty, beginning at the age of from two to three months. At an earlier age than this it must be diluted with a third or a fourth of boiled water and a little sugar added. Even wasting babies had improved by the use of this milk, and out of 800 cases there had never been an instance of Barlow's disease. Rickets was quite exceptional as well as marked constipation or anæmia.

Professor D'ESPINE (Geneva), Dr. MARFAN (Paris), Dr. CONCETTI (Rome), Dr. VIOLI (Constantinople), Dr. ESCHERICH (Gratz), Dr. SEITZ (Munich), Dr. SCHLOSSMANN (Dresden), and Dr. GRAANBOOM (Amsterdam), took part in an interesting discussion.

Gastro-Intestinal Infection in Children at an Early Age.

Dr. ESCHERICH (Gratz) read a highly technical paper upon the Part played by Microbes in Gastro-intestinal

Diseases. He pointed out that by the use of the Gruber-Widal reaction it was possible to differentiate the variety of the bacillus coli existing in one individual both from that existing in another individual and also from those which were introduced with the food. Gastro-intestinal affections due to the action of bacteria must be classified according to their etiology.

Professor A. BAGINSKY (Berlin) read a paper upon the Gastro-Intestinal Affections of Children from the point of view of pathological anatomy. These he divided into—I.—Functional troubles comprising acute dyspepsia not marked by any important anatomical changes. II.—1. Anatomical alterations: (*a*) lesions of a catarrhal nature, such as sub-acute dyspepsia, accompanied by cellular infiltration of the mucous membrane; (*b*) infantile cholera with destruction of the intestinal epithelium over a large surface; (*c*) chronic gastro-intestinal catarrh; and (*d*) intestinal atrophy. All these latter processes—namely, from *a* to *d*—were accompanied by vomiting, diarrhœa, and colic. Assimilation was impaired and the functions of the liver and of the pancreas were disturbed. 2. Anatomical lesions localised in the follicles. These might be divided into (*a*) simple follicular enteritis accompanied by a moderate degree of fever, a slight pain, and the secretion of blood; and (*b*) severe infectious follicular enteritis. In this there were destruction of the mucous membrane and the formation of abscesses. III.—Both functional troubles and the more severe morbid processes were due to infection or intoxication produced from within. Such were the direct action of the normal microbes of the intestine the virulence of which was exalted under particular circumstances. They could also be produced from without by the influence of toxins derived from the food or by microbes introduced with the food which became virulent in the intestine or finally some poison might be contained in the food. IV.—Those morbid processes which were most often developed during the heat of the summer were caused by the common saprophytes or their toxins, but these microbes were not specific. Septicæmia arising from the intestine was very rare. Cases had been reported where the infection had been localised in the kidney and where the infarct had gone on to suppuration or necrosis.

Professor FEDE (Naples) read a paper mainly dealing with the Symptoms and Treatment of Chronic Forms of Gastro-intestinal Infection. The clinical features noted were very various as they depended upon the intensity, the duration, the complications, and the atrophy which followed the disease. As to treatment, rules of hygiene and of diet came in the first rank. In very acute cases nothing should be given but water and, as a rule, artificial feeding by means of a feeding-bottle should be given up and a wet-nurse substituted. It was of great importance to clear out and to disinfect the intestine. This could be done by such drugs as castor-oil or calomel and by washing out the intestine with some disinfectant solution.

Dr. MARFAN (Paris) read a paper upon the Causes of Gastro-enteritis in Infants. He said that dyspeptic gastro-enteritis arose mainly from improper feeding, that infectious gastro-enteritis was principally caused by germs in the milk of the cow being conveyed into the digestive tract. Toxic gastro-enteritis resulted from the introduction of some chemical poison into the digestive tract. Poisoning by drugs was not uncommon, but the usual source of poisoning was milk, due to its containing toxins which had been produced by the action of germs before sterilisation. Other kinds of gastro-enteritis were consecutive to various maladies, such as, for instance, measles, influenza, or diphtheria. Infantile cholera or summer diarrhœa seemed to be due to a combination of circumstances—namely, some alterations in the digestive secretions set up by the hot weather which brought about a kind of self-poisoning, the increased growth of microbes in the milk of the cow under the influence of high temperature, and, finally, the formation of microbes of toxins before sterilisation.

Infantile Tuberculosis.

Professor D'ESPINE (Geneva) read a paper upon Prophylaxis in Infantile Tuberculosis. He said:—1. Infantile tuberculosis was a parasitic affection acquired by contagion in the child in the same way as in the adult. There were, however, exceptional cases in which the infection was congenital, being acquired by way of the placenta. 2. The source of the contagion in the immense majority of cases was from the sputum of tuberculous adults. 3. Another source of contagion was by way of the milk of cows, or very occasionally of goats, which were suffering from tuberculosis of the mammary gland. This mode of infection played a more important part in the infant than in the older child. 4. In infants up to the age of two years kissing by their mothers or nurses who were affected with phthisis appeared to be the usual mode of transmission. Sometimes contagion was carried directly by aspiration into the bronchi of saliva which contained bacilli. 5. In the child of between two and six years of age tuberculosis was very frequent and, as a rule, commenced in the bronchial glands. The greater frequency of tuberculosis between the ages of two and six years was explained by the habit which children had of putting everything in their mouths and of sucking their fingers. 6. From the age of six years up to that of puberty the frequency of tuberculosis commenced. There was a very real danger of contagion owing to the circumstances of school life, but in D'Espine's opinion this danger had been exaggerated. 7. The infection of tuberculosis occurring through the skin was very exceptional. 8. Hereditary predisposition played an important part in the production of tuberculosis in the child. It was therefore necessary that prophylactic measures should be specially applied to the children of tuberculous parents. Measures of prophylaxis might be divided into two classes—namely, those which went to diminish the danger of contagion and those which raised the resistance of the child to the infective organism. In the first class measures directed towards giving the child a supply of healthy milk might be included. Precautions must be taken that the nurse under whose care the child was placed should be free from tuberculosis. If the mother was phthisical the infant must be suckled by a healthy nurse. If the child came of a tuberculous family the general prophylactic measures recommended by the Academy of Medicine must be attended to. In schools no phthisical person should be allowed to be either a master or a mistress. Measures for raising the resistance of the children were as follows. The building of homes in the country to which poor and weakly children could be sent. Holiday camps should be provided for scholars and any predisposition to tuberculosis in its earliest manifestations should be fought against by sending children either to some mountain station or to the sea.

Dr. HUTINEL (Paris) read a paper on Heredity in Tuberculosis. He spoke as follows: Tuberculous heredity might show itself in three ways—by a transmission of the germ itself, by transmission of the predisposition, or in various nutritive trouble. 1. (*a*) Transmission of the germ at the time of conception was at present nothing more than a hypothesis; and (*b*) it was possible, however, that the fœtus could be infected before birth through the placenta. 2. Heteromorphic heredity. 3. Hereditary predisposition. 4. Prophylaxis. From the point of view of prophylaxis the part played by the medical attendant was very important. He should pay special attention to—1. The protection of tuberculous children against infection by bacilli. 2. In tuberculous children one great danger to be guarded against was the existence of latent centres of tuberculosis which were capable of giving rise to auto-infection. 3. In phthisical children all troubles incident to growth ought to be carefully attended to where there was any suspicion of a predisposition to tuberculosis.

Professor MOUSSOUS and Dr. RICHARDIÈRE (Paris) both read papers upon the Clinical Forms of Tuberculosis in Early Life. These papers tended to show that the tuberculosis of early life was usually of a generalised form, or perhaps it should be said that it started as a local disease of one organ and became generalised during the later period of its course. The favourite point of starting of the disease was the lymphatic glands. In cases of doubtful diagnosis Professor Moussous considered that the serum reaction which had been studied by Arloing and Courmont was of great value. Dr. Richardière, however, considered that at present this method could not be universally used.

Acute Non-Tuberculous Meningitis.

Dr. MYA (Florence) read the first paper upon this subject. By far the greater number of cases of meningitis of infancy, he said, were produced by the micro-organism of Weichselbaum, meningococcus intracellularis meningitidis. The clinical types of disease brought about by this micro-organism could be reduced to two—(1) the acute type characterised by stiffness of the neck, vomiting, rigidity of the muscles, and high fever. If a post-mortem examination

was made the whole surface of the brain would be found covered with a fibro-purulent exudation. The micro-organism was easily found and would bring about the typical symptoms of the disease in animals if injected into the sub-dural space. The disease generally lasted from three to 10 days. 2. The sub-acute type produced a disease which might last for some months, and the disease described by Carr as *simplex basis posterior meningitis* belonged to this category. The symptoms were much the same as in the acute disease, only generally very much less marked. The micro-organism was only very sparingly found, and if injected into animals did not produce the same symptoms. There was a form of meningitis which was only very rarely observed and which was due to the streptococcus pyogenes; but this form was almost always secondary to septicæmia developed within the cavity of the skull.

Dr. NETTER (Paris) read a paper upon the same subject. He said that a variety of cases of meningitis was due to other causes than tubercle; for instance, meningitis might arise as secondary to various diseases such as otitis, typhoid fever, or pneumonia, or it might be a primary disease such as was seen in epidemic meningitis. With regard to the diagnosis Dr. Netter said that it was impossible to put too high a value upon Kernig's sign. Cases where this sign had been met with where there was no meningitis were so rare that they were almost justified in asking whether the absence of meningitis was really definitely proved. As to treatment that by means of hot baths introduced by Anfrecht was of the greatest value.

III.—SURGERY.

GENERAL SURGERY.

Pancreatic Surgery.

Professor CECCHERELLI (Parma) arranged his conclusions under 24 headings, of which the following were the principal:—(*a*) Emaciation, presence of fat in the fæces, sugar in the urine, bronzed skin, jaundice, and pain were met with in the majority of pancreatic affections. (*b*) Complete extirpation of the pancreas was difficult on account of its deep situation and its intimate connexion with important viscera rich in vessels and nerves. (*c*) Surgical intervention was more justifiable at the small end of the pancreas than at the head. (*d*) Extirpation should not be attempted in cases of tuberculous or syphilitic lesions. In partial extirpation one of the two canals must be left. (*e*) Pancreatic tumours were generally either blood cysts following injuries or retention cysts. In the latter case surgical intervention was useful, but should be limited to excision of the cyst. It was necessary to keep in mind the question of opening Wirsung's canal and the probable discharge of pancreatic juice into the abdominal cavity. (*f*) Pancreatic calculi might be extracted. (*g*) Necrosed fragments of the pancreas might be removed. (*h*) In suppurative or gangrenous pancreatitis the rule was to do nothing during the acute stage. For the treatment of abscess or gangrene of the pancreas three routes were available—the lumbar extra-peritoneal, the transpleural, and the median supra-umbilical. (*i*) In hernia of the pancreas caused by injuries reduction and even fixation might be performed. (*j*) In contusions and wounds of the pancreas, if there were hæmorrhage it might be arrested either by sutures or by tying the bleeding vessels. Clots of blood in the abdominal cavity should at the same time be removed. (*k*) Experimental pathology justified the fixation of moveable pancreas. (*l*) If from any cause the duct between the pancreas and the duodenum became closed a new passage might be made for the pancreatic juice or a pancreatic fistula might be established. (*m*) Stitches through the pancreatic parenchyma did no harm, and were tolerated as in the kidneys, the liver, and the spleen. (*n*) In suturing the pancreatic duct the stitches should not pass into the interior of the duct, as concretions were liable to be formed on them. (*o*) Regeneration of the pancreas had been observed. (*p*) After complete extirpation of the pancreas great development of the glands of Galeati had been observed, and especially a karyokinetic increase in the epithelia, leading to the supposition that the missing gland might be thereby replaced. (*q*) The thermo-cautery or galvano-cautery ought not to be used in extirpation of the pancreas.

Mr. MAYO ROBSON (Leeds) commenced his report on the same subject by stating that he was convinced that pancreatic affections were much more common than was usually thought. He based his remarks on his personal experience, he having operated on 40 cases of pancreatic disease and having seen a considerably larger number of cases in which operation was either not consented to or not thought advisable. Under "anatomical considerations" he dwelt on the importance of posterior drainage where practicable in acute and in suppurative pancreatitis. For reaching the main pancreatic duct he had found it practicable to incise the second part of the duodenum and lay open the termination duct from the papilla.

Cancer.—In over 50 cases which he had seen he had found cancer usually to occur after 40 years of age and he believed that the cases occurring earlier in life were in many instances chronic interstitial pancreatitis, which might resemble cancer not only in the symptoms but in the naked-eye appearance after death. After describing the symptoms he remarked on the importance of distinguishing between cancer of the head and that of the body and tail of the pancreas; he then discussed the diagnosis and advised that especially in young subjects, but also at times in older patients, a hopeless prognosis should not hastily be given before surgical treatment had been tried, as if the case turned out to be chronic interstitial pancreatitis a cure might result from treatment. In describing the treatment he thought that excision of the pancreas for cancer could seldom be feasible or justifiable except in those cases where the disease was limited to the body or tail of the organ, and then only when it was caught in an early stage. Of the 15 cases on which he had operated for the relief of symptoms by cholecystotomy or cholecystenterostomy, nine recovered and lived for some time in greater comfort. The important fact, however, that some of the cases operated on and thought at the time to be cancer of the head of the pancreas, but which recovered and were now in perfect health, showing the tumours to have been chronic interstitial pancreatitis and not cancer, led Mr. Mayo Robson to advocate operation in all cases not too far advanced, especially in young or middle-aged patients, not because much good would be done if the case were truly cancer, but under the hope that the tumour might be inflammatory and not malignant.

Pancreatic cysts.—He had operated on five cases of pancreatic cyst for which as a routine treatment he advocated incision and drainage which he had performed in four cases with three recoveries. In one case the cyst was so easily enucleated that it was removed in that way and the patient made an uninterrupted recovery, but his experience, not only in his own case, but others seen under the care of his colleagues, would lead him to believe that incision could only rarely be justifiable. In none of his cases were any pathognonomic symptoms present and he thought that the diagnosis must usually be made from the physical signs.

Pancreatitis.—He drew a parallel between the inflammatory diseases of the liver, such as infective and suppurative cholangitis and chronic interstitial hepatitis and similar diseases of the pancreas and its duct. He believed he had seen functional ailments of the pancreas ending in recovery that would come under the heading of infective catarrh of the pancreatic ducts, and he adduced positive evidence of suppurative catarrh of the ducts as well as of chronic interstitial inflammation of the gland. He believed that as diagnosis became more perfected these diseases would be more frequently recognised and awarded their proper place in medicine. He assented to the pathological classification proposed by Fitz, of dividing acute pancreatitis into suppurative, hæmorrhagic, and gangrenous pancreatitis, but for clinical purposes he considered the subject under acute, subacute, and chronic pancreatitis. In discussing the etiology he laid stress on bacterial infection as being the essential and immediate cause, but enumerated a number of extrinsic causes, such as gastro-duodenal catarrh, injury, and pancreatic and biliary lithiasis. The mode of infection he believed was nearly always through the ducts. He discussed the symptoms, signs and diagnosis, and remarked that although pancreatitis was a disease without exact pathognomonic signs the diagnosis could usually be arrived at by a careful study of the history, mode of onset, and the combination of symptoms and signs. A case of acute infective pancreatitis coming under Mr. Mayo Robson's observation was related; also four cases of the suppurative form which were operated on after abscess had formed; of two, in which the pus was evacuated by an incision in the loin, recovery followed; and of two opened from the front both died. In both cases leakage of pus



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deplored the frequency of the cases in which these fractures remained ununited and long before the antiseptic era he recommended a species of cutting operation—namely, the application of his sharp hooks. Malgaigne's hooks, however, were much more dangerous than incising the skin and uniting the fragments with silver or aluminium bronze wire. Examination of recent fractures of the patella by means of the Roentgen rays disclosed three obstacles to bony union. 1. Inequality in the size of the two fragments. The upper fragment being much larger than the lower one they could only be brought into apposition by means of a suture. 2. Multiplicity of the fragments. In addition to the principal fragments there were small fragments or splinters which made their way between the principal surfaces and prevented coaptation. 3. Displacement of the fragments. One of the fragments underwent a movement of rotation, so that the fractured surface of the other fragment met it on its outer aspect and the two fractured surfaces could not be brought into contact. All these various displacements being rendered visible by the Roentgen rays it became evident that an operation was necessary to gain access to the seat of fracture, so that the conditions above enumerated might be dealt with and the fragments wired. In his clinic Professor von Bergmann had obtained perfect bony union in more than 25 cases of this kind. The operations proved that callus was of a bony and not of a fibrous nature; photographs taken with the Roentgen rays clearly showed not only this but also the firm bony union and the metallic sutures embedded in the callus. Fractures of the patella were generally treated by operation. The question of operation was different in other fractures, as, for instance, in those of the lower end of the radius, a subject which had been specially studied by Dr. E. Gallois, whose treatise, "Étude Radiographique et Expérimentale," had greatly added to their knowledge of the subject. The treatment of fractures of the patella was almost always the same, but the case was different with fractures of the lower end of the radius, the treatment of which varied according to the nature of the fracture and the displacement of the fragments. Professor von Bergmann showed in a series of photographs taken in the surgical clinic of Berlin University the most important varieties of these fractures. Fractures of the tarsal and metatarsal bones were almost unrecognised before the discovery of radioscopy. The symptoms of these fractures were attributed to an inflammatory swelling of the foot or to a contusion, and they were treated by massage which increased the displacement of the bones. When the fracture was recognised and its position ascertained it must not be disturbed, but must be immobilised completely. Professor von Bergmann showed photographs of these fractures also.

Treatment of Infected Wounds.

Dr. OSCAR BLOCH (Copenhagen) argued that from a practical point of view every wound without exception ought to be considered to be infected and that infection and its complications were due to the retention of secretions containing microbes. Antisepsis and drainage ought therefore to be the rule and in order to avoid reinfection the wound ought to be dressed rationally. Carbolic acid was, he said, the best antiseptic, and the best applications were sterilised gauze dressings containing aqueous solutions of carbolic acid, and cotton wool. He had little confidence in internal antiseptic treatment, in febrifuge treatment, or in serum treatment, including the use of anti-streptococcic serum.

Dr. FELIX LEJARS (Paris) said that every accidental wound ought to be treated as an infected wound, even though no indications of such infection might be present. The treatment ought to consist in careful cleansing at as early a period as possible, assisted if need be by excision, care being taken not to impair the vitality of the cells which form the natural defence of the living tissues and which have to be assisted in their protective actions. Sterilised water, artificial serum, and sterilised or boiled compresses fulfilled all requirements under this head. Antiseptic solutions were injurious when concentrated, and when diluted to such an extent that they did not interfere with the protective cells their action was in reality only a mechanical and cleansing one. Suppurating wounds should be exposed to the air, cleansed, drained, and dressed with some absorbent material. In cases of infected wounds, whether suppurating or not, specific serum treatment was indicated, but their resources in this respect were unfortunately very limited; anti-tetanic serum was only a prophylactic; anti-streptococcic serum had been employed chiefly in puerperal infection and erysipelas. In some foul and gangrenous wounds oxygenated water was useful. In certain cases artificial serum treatment aided the natural resisting power of the organism, increased the blood-pressure, and promoted diuresis.

Intestinal and Gastro-Intestinal Anastomoses.

Dr. ROUX (Lausanne) said that intestinal anastomosis by lateral apposition was the most practicable of these procedures. Anastomosis was preferred in cases of numerous adhesions, of inoperable tumours, and of certain inaccessible inflammatory conditions, such as tubercle and actinomycosis. It was a preliminary operation in cases of operable tumours occurring in very feeble patients and in cases of pyostercoral fistulæ it was often quite successful. Gastro-enterostomy, on account of being less dangerous, preceded pylorectomy if the state of the patient rendered it desirable. In non-malignant disease of the pylorus and stomach, for which an easy evacuation of the gastric contents was required, gastro-enterostomy was preferable to pylorectomy and pyloroplasty. It was much superior to gastroplication and gastropexy. An ordinary sewing needle was the best instrument for suturing because it was only in this way that primary union of the mucous membrane could be obtained. Murphy's button was the best contrivance of its kind; it was reserved for the cases where it was necessary to count the minutes. In all these operations there was a surprising proportion of deaths from pneumonia.

Dr. SOULIGOUX (Paris) said that in the treatment of cancer and stricture of the bowel intestinal anastomosis was the most usual principal operation or it might be a complementary operation. In cases of acute or even of chronic obstruction of the bowel the formation of an artificial anus was to be preferred. When there was retardation of the onward movement of the fæces without obstruction, if there was a moveable tumour which could be easily removed enterectomy ought to be performed, but this operation ought to conclude with an anastomosis either latero-lateral or termino-lateral. If the tumour was adherent anastomosis was the only available operation. For cicatricial stenosis of the pylorus, or of the first portion of the duodenum, or for hour-glass contraction of the stomach gastro-enterectomy was the best operation.

THE SURGICAL DISEASES OF INFANCY.

Congenital Dislocation of the Hip.

Professor HOFFA (Würzburg) read a paper upon Cutting Operations in Congenital Dislocation of the Hip. He pointed out that in cases of this deformity the operation without cutting was the one to be preferred. The cutting operation which was the best for children of from three years up to eight was that in which a new cavity was made for the head of the femur by the operation after the manner invented by Hoffa and Lorenz. This operation must be done neither too early nor too late. The best time for it was between the ages of three and eight years. That surgeon would succeed best who was able to carry out complete asepsis. The wound need not be stitched. The after-treatment was of the greatest importance as the muscles were thereby strengthened. Ankylosis did not occur except when the wound suppurated and when the operation was done at too advanced an age. Complete cure was more often obtained when the deformity was on the one side than when it was on both, and it might be said that by the Hoffa-Lorenz operation a cure was quite possible both in the anatomical and in the functional sense. There was no reason to fear any interference with the growth of the pelvis owing to the formation of the cavity in this operation. In cases of one-sided deformity in patients who had passed their eighth year osteotomy was the operation to be recommended.

Dr. ADOLPH LORENZ (Vienna) then read a paper upon the Bloodless Treatment of Congenital Diseases of the Hip-joint. This treatment, he said, was to be preferred to the operative, for the latter was not without its dangers (2 to 10 per cent. mortality according to different statistics). The ankyloses and contractures, which frequently followed, required a tedious after-treatment. The injury to, or the extirpation of, the Y-shaped cartilage of the acetabulum might result in subsequent deformity of the pelvis, on account of disturbances in development. Among the bloodless methods the treatment by means of portable apparatus could be said to be without limit; but, as a rule, without result, in spite of this fact. The gradual reduction of the head of the femur

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excised and the operation should be practised *à froid*—that was to say, when the general phenomena of infection had disappeared and when the local lesions had lost their activity. Too much hurry in operating exposed the patient to the risk of disturbing the favourable course of the disease, for the acute stage of appendicitis generally terminated by a localisation of the lesion and by its resolution when it was treated from the beginning by rest, careful diet, ice, and opium. Too hasty intervention was liable to give rise to another danger—that was to say, it was quite possible to operate upon the patient who had not got appendicitis but some of the diseases which simulated it. The only reason for intervention during the acute stage was to empty the abscess of its septic contents and to drain it very freely. In cases of very chronic appendicitis giving rise to frequent acute crises resection of the appendix was in most cases sufficient to effect a cure. In some cases, however, it would be found necessary not only to remove the appendix but to divide various bands, to free coils of intestine, or to resect portions of omentum which had become chronically inflamed.

URINARY SURGERY.

Conservative Operations in Renal Retention of Urine.

Dr. KÜSTER (Marbourg) opened the discussion on this subject. He said that renal retentions could be divided into two groups: (*a*) primary retention—i.e., cystic or sacculated kidney; and (*b*) secondary retention—i.e., suppurating kidney, of which he should say no more, as that condition almost invariably called for a radical operation. The term "sacculated hernia" was applied to all the instances of primary retention produced by any obstacle to the flow of urine, whatever be the contents of the sacs. As a general rule these obstacles were situated in the ureter and almost invariably in its upper third. Renal retention due to some obstacle in the renal pelvis should be treated by a conservative operation—i.e., the affected kidney should be preserved even if the other kidney was healthy. Conservative operations might be divided into four groups. (*a*) Fixation of a displaced kidney (nephropexy of Guyon). This simple operation must be combined with others, such as detachment of the ureter. (*b*) Formation of an anastomosis between (1) one part of the ureter and another, (2) the renal pelvis and the ureter, and (3) the renal pelvis and the bladder. All these operations should have for their end the avoidance of dead spaces, which were conducive to the formation of urinary calculi. Without this precaution the procedure was harmful. (*c*) Plastic operations with or without resection of the ureter. 1. Pyeloptychy (Israel). 2. Excision of valvular formations in the ureter and transverse suture (Fenger). 3. Resection of a kink in the ureter. Oblique resection was preferable to transverse, which might only lead to the formation of a fresh stenosis. 4. Uretero-pyelostomy (Trendelenburg and Küster). (*d*) Partial resection of the kidney. 1. Resection of the pelvis with suture (Albarran). 2. Wedge-shaped section of the renal substance in cases of hydronephrosis occurring in a horse-shoe kidney.

Dr. CHRISTIAN FENGER (Chicago) continued the discussion of the subject. Remittent or commencing retention (and all retention was, in its early stages, as a rule, remittent) was a condition in which they should always consider the possibility of saving kidney tissue by re-establishment of the free passage of the urine. The obstruction might be located in the calyces, in a branch of the ureter, in the bottom of the pelvis, or origin of the ureter, or in the ureter. Obstruction in the first two places caused a local or partial cysto-nephrosis and demanded for the relief of the condition bisection of the kidney from its convex surface and division of the partition walls. Stenosis at the exit of the ureter (valve-formation, oblique implantation from unilateral dilatation) required operations which varied in accordance with the absence or presence of stricture at the upper end of the ureter. If there was no stricture at the upper end of the ureter the valve-formation might be overcome by a trans-pelvic operation (Fenger, Mynter, Trendelenburg, Küster), or by extra-pelvic operation, which he preferred. If there was a stricture of the ureter at its exit from the pelvis, as might be expected in infected cases, they might resort to extra-pelvic plastic operation (Fenger), or to resection of the strictured end of the ureter, implantation of its upper divided end into the pelvis (Küster). If the stenosis or obstruction was located in the ureter it must be dealt with according to the laws laid down for surgery of the ureter—namely, resection and reimplantation, or Dr. Fenger's plastic operation. Were the results of these, so to speak, tentative conservative operations permanent, or did relapse eventually occur? In five of his cases no relapse occurred. The conditions were as follows:—1. Valve-formation; trans-pelvic operation; no relapse six years later. 2. Stricture at the upper end of the ureter; extra-pelvic operation; no relapse six years later. 3. Valve-formation of lower branch of the ureter; extra-pelvic operation; bisection of kidney, division of partition walls; no relapse after three years. 4. Excision of valve in the ureter by Dr. Fenger's plastic operation; no relapse after three years. 5. Stone in upper end of the ureter removed by Dr. Fenger. One year later a plastic operation on the ureter was performed by another surgeon. Six months later complete occlusion of the ureter at the site of the second operation was relieved by Dr. Fenger's plastic operation; no relapse after one year. In two cases relapse occurred under the following conditions:—1. Valve-formation without stricture, intra-pelvic operation, relapse of stenosis, occlusion of pelvic orifice; nephrectomy one year later. 2. Patient operated on by another surgeon, later by Dr. Fenger; operation was incomplete, failed, and nephrectomy was finally necessary.

M. BAZY (Paris) followed who said that renal retention was said to exist when the urine remained permanently in the renal pelvis or calices owing to some obstruction to its outflow. This obstacle might be situated in any part of the ureter, in the bladder, or in the urethra. To-day he should only consider the first named. Obstruction might be due to stricture, to a kink, or to a vicious insertion, or to a calculus. (The sites of these various obstructions were then considered.) Renal retention might be remittent, intermittent, or chronic, and, what was very important, septic or aseptic. Conservative operations were not indicated except when the kidney appeared capable of doing its work. But in a case where there was only one kidney a conservative operation was indicated whatever was the state of that kidney. Treatment would vary considerably according to the circumstance of the case. Calculi might be removed; kinks sometimes got well spontaneously or might be removed by nephropexy. Abnormal insertions were amenable to treatment by plastic operations. Strictures could be in exceptional cases dilated or got rid of by an anaplastic operation. Such operations might be performed by the transperitoneal route in aseptic cases or by the lumbar route in septic cases. Transplantations of the ureter into the bladder should be done by the abdominal route. Operations by the vaginal route should not be done. Infection of the ureter or renal pelvis was no contra-indication, but renal abscess contra-indicated any anaplastic operation.—Dr. LEGUEU (Paris), Dr. KUMMEL (Hamburg), Dr. D'ANTONA (Naples), Dr. NANU (Bucharest), and Dr. CASPER (Berlin) joined the three previous speakers in a debate.

The Value of Surgical Interference in Tuberculous Affections of the Bladder.

Dr. SAXTORPH (Copenhagen) made the first contribution at the Congress to this subject. He said that the question of surgical intervention in tuberculous disease of the bladder must be answered by a reference to the origin of the infection and its extent. Miliary tuberculosis of the bladder—if, indeed, it existed—was only a part of a general tuberculosis, was not amenable to surgical treatment, and would therefore not be considered here. Vesical tuberculosis almost always arose from an old pulmonary tuberculous focus—sometimes from a very old one. The vesical infection occurred in two ways: (1) the tubercle bacilli were carried by the blood-stream to the kidney, whence they were transmitted to the bladder and infected its mucous membrane (descending infection); and (2) the bacilli were carried in the blood-stream to the prostate, the vesiculæ seminales, the testicle, or the epididymis, whence they infected the vesical wall by contiguity (ascending infection). The bladder was apparently very resistant to the infection of tubercle and was hardly ever infected primarily by the blood-stream (hæmatogenic infection). Vesical tuberculosis, then, being always of a secondary nature there was no radical treatment except removal of the source of infection by nephrectomy and more or less total resection of the ureter or by destruction of the tuberculous foci in the genital organs. If this mode of treatment could not be carried out any attempt at radical treatment of vesical tuberculosis would be found to be as useless as attempting to divide water into pieces with a knife.

The infection centre having been removed vesical tuberculosis might either undergo spontaneous cure or might be treated surgically. Surgical treatment, whether in the male or in the female, should always be undertaken by the abdominal route. The bladder being opened the diseased mucous membrane might be removed by scissors, cautery, or curetting. The patient should be in Trendelenburg's position and the bladder sutured or drained according to circumstances. After-treatment, both general and local, was indispensable. All surgical treatment should be undertaken as soon as possible after the diagnosis had been made certain by the discovery of bacilli in the urine. If the infection centre could not be removed palliative treatment might be undertaken for the relief of pain. Thus the bladder might be opened by the abdominal route and the most diseased patches scraped. Drainage must be employed. It might be opened by the perineal route in the male and scraped and drained. In the female the bladder might be curetted through the urethra. The bladder might be washed out with a view to avoiding cystitis. The general health must be attended to.

Dr. HOGGE (Liège) followed with a paper upon the Surgical Treatment of Tuberculosis of the Urethra, Prostate, Testicles, and Vesiculæ Seminales. After discussing medicated topical applications he passed on to consider cutting operations for tubercle of the prostate. These operations, he said, had given good and lasting results in the hands of Guyon, Albarran, Zuckerkandel, and others. In tuberculosis of the testicle and epididymis total castration would appear to be from a study of the published results an operation only to be done exceptionally. The method of election was a conservative one consisting in resections. To sum up the matter, when the tuberculosis affected the prostate, the vas deferens, the vesiculæ seminales, the epididymis, or the testicle, an operation should be the rule when an abscess or fistula was present with or without fungation. The particular operation to be undertaken varied with the predilection of the surgeon, but some operation should certainly be done, as operation had a greater curative effect and was less risky for the patient than waiting and a purely medical treatment. Another element of doubt was the best stage of the disease at which to operate. Some surgeons counsel early operation in the initial phases of the disease, while others—and those the greater number—advised an expectant treatment. With regard to the extent of the operation, recent results of operations in which the disease was very widely removed would seem to show that for the future surgeons would be well advised to adopt free extirpation.

The Value of Surgical Intervention in Renal Tuberculosis.

Dr. POUSSON (Bordeaux) read a paper upon this subject. He said that surgical intervention for tuberculous disease of the kidney had hardly been in practice for more than 15 years, but operations multiplied so rapidly that from 1892 to 1895 he had been able to record an imposing series of statistics to which he had been able to add details of 161 cases collected in view of this paper.

I. *General results.*—(*a*) Immediate results. In 600 cases the mortality was 22·33 per cent. In the 161 cases which he had recently collected the mortality fell to 11·68 and in the practice of some surgeons it had further dropped to 8·95 per cent. (*b*) The operative mortality respectively of nephrotomy and nephrectomy was, taking all the cases together, nearly equal—namely, 20·8 per cent., as against 21·47 per cent. In the personal statistics of certain surgeons, however, incision of the kidney was more deadly than its extirpation in the proportion of 18·51 per cent. to 6·54 per cent. (*c*) The causes of death after either operation were suppression or deficiency of the urinary secretion. This occurred in 51 deaths out of 128. Other causes of death were shock, peritonitis, and injuries to other viscera or important vessels. Secondary results.—Of 63 cases operated upon by nephrotomy 39 died in the following year from progressive tuberculosis or other causes due to incomplete operation, and 24 were alive, of whom some were known to be living after the lapse of three, five, and even 10 years. All these patients, however, had lumbar fistulæ. Of 335 patients operated upon by nephrectomy 42 died within the year from diffuse tuberculosis and 295 others were living as follows: at the end of one year 33, from two to three years 41, at the end of five years four, at the end of six years seven, at the end of eight years two, and seven out of 105 had a fistula.

II. *Results in the different forms and clinical circumstances of the disease.*—Indications and contra-indications. (*a*) Of 10 patients operated upon for pain or hæmorrhage in the purely bacillary stage none died. The patients lived for a long time afterwards and preserved an actively working urinary apparatus. Intervention, then, having for its aim the removal of a quiet bacillary focus was undoubtedly legitimate. (*b*) In mixed infections the results were not so good. (*c*) Bilateral cases of lesion might be operated upon except when the other kidney showed very definite bacillary infection. A slight nephritis was no bar to either nephrotomy or nephrectomy. (*d*) As to the bladder the reflex pains of this organ often disappeared after operation. (*e*) The condition of the lungs and other organs and the age and sex of the patient have the same bearing upon these operations as upon any other.

III. *Results following upon different methods of operation.*—Choice of methods. (*a*) Nephrotomy should not be employed in the nodular or miliary form of tuberculosis. In the hydronephrotic form it should be always employed. So far it had been almost exclusively employed in the pyelonephrotic form, but, as a rule, only gave temporary results and even when most successful was followed by a fistula. (*b*) Primary nephrectomy was the operation of election; its mortality was only 21·79 per cent., whereas that of secondary nephrectomy was 30·76 per cent. The latter operation was, however, of considerable service. (*c*) With regard to the relative merits of the extra peritoneal and trans-peritoneal routes the former with a mortality of 21·2 was far preferable to the latter with a mortality of 34·04. (*d*) Partial nephrectomy should be altogether discarded.

The Remote Effects of Operative Treatment in Hypertrophy of the Prostate.

Professor A. VON FRISCH (Vienna) read a paper upon this subject. He said that of all the various operations for hypertrophy of the prostate only those which had for their object the complete removal of that portion of the prostate which prevented the free flow of urine offered any chance of lasting success. Such were subpubic and perineal prostatectomy, lateral prostatectomy, and Bottini's operation. The effects of all these were the more lasting in proportion as the passage was freed and remained free from cicatrisation. Operations done under the eye evidently answered best to these conditions, and such were the different prostatectomies. But they were always serious undertakings on account of the age and general feebleness of the patients in whom they were required. Bottini's operation was less dangerous, but not so free from risk as some would have them believe. Both classes of operation gave good and lasting results, even where the bladder was dilated and its muscular wall was apparently partly paralysed; a good result will follow if the obstruction be completely removed. However, no precise line of conduct could be laid down so as to assure success. The lasting effect of all these operations might be discounted by the formation of the new scar tissue or by a new hypertrophy of the gland.

Dr. F. LEGUEU (Paris) followed with a paper on the same subject. He said that there were three classes of operations for this condition: (1) operations on the testicles; (2) cystotomy; and (3) prostatectomy. 1. Of these, operations on the testicles sought to bring about atrophy of the prostate. In lieu of castration, which was considered by some to be too severe, division of the vas deferens or section of the vessels and nerves of the cord had been proposed. But all these were inferior in value to castration. As regards the remote results of double castration they were not so good as the early observations which did not take a long enough space of time into consideration would have had them believe. The prostate certainly shrunk but the patient improved to a far greater degree than could be accounted for by the diminution observed. The attacks of pain were less frequent and the contractility of the bladder improved so that the residual urine was less in quantity. But, after all, there was only amelioration and not permanent cure and comparing the results of castration with those of other methods it was doubtful whether the advantages of it were worth the sacrifice. 2. Cystotomy sought to make a meatus above the pubes. It doomed the patient, however, to incontinence of urine and the bladder could never empty itself completely. 3. Direct interference with the prostate appeared to be more and more the operation for the condition of hypertrophy. Bottini's operation could not yet be fairly judged from the point of remote results. Besides it was done in the dark and patients often relapsed owing to the new passage closing up again. Partial prostatectomy gave excellent

results in partial hypertrophy, but was of no use where the prostate was uniformly enlarged. Total prostatectomy could give very good results and apparently if undertaken by the perineal route at an early enough date before grave complications had set in seemed to be the operation of election for hypertrophy.

The Remote Effects of Structural Lesions in Urethral Stricture.

Mr. REGINALD HARRISON (London) read the first paper on this subject.[1] He summed up the conclusions to be drawn from his paper as follows. 1. That there was evidence to show that in peri-urethral strictures of the deep urethra the effects of divulsion as practised in Perrève's and Holt's operations might be limited to rupturing the dense stricture bands in the submucosa of the urethra, whilst the mucous membrane itself might escape any serious injury or laceration and was merely restored by stretching to its original dimensions. Here a permanent cure might result. On the other hand, where the mucous membrane was in itself the seat of stricture and formed part of the latter structurally, it was necessarily much torn or lacerated by the process of a sudden divulsion and the pathological condition consequently became assimilated with that of traumatisms of the urethra from external violence accidentally applied, which were followed by strictures of the most contractile and recurrent form. 2. That there was evidence to indicate that where the entire thickness of a stricture could be included within an incision of moderate dimensions made by an internal urethrotome the normal calibre of the urethra might be completely and permanently restored. Where this happened it might be concluded that all the fibres of contraction constituting the stricture were divided at the time of operation. And further that the converse was equally true. There was also evidence to show that the absence of recurrence under such circumstances was not necessarily dependent on the use of a bougie, though the latter was a precautionary measure which should invariably be advised. 3. That in the case of multiple strictures or strictures of the deep urethra of considerable dimensions either in their length or thickness treated by an internal incision of corresponding proportions, apart from other considerations, the tendency to reconstruction and recurrence with an additional amount of cicatricial material was frequent, the latter being probably due to the circumstances under which healing takes place in wounds of these dimensions so situated. 4. That lesions of the urethra demonstrated in various ways the poisonous effects that unprotected and confined urine was capable of exercising both on the body generally and on the tissues in constant contact with it, and that the liability to such effects was greatly diminished where drainage rendered these conditions of the urine impossible. 5. That in the case of recurring strictures previously treated by incision and in primary strictures of such length or extent as to require an internal section of a corresponding size, or as to which there might be doubt as to whether it would be safely possible so to include them, that for the purpose of the operation and its results such wounds should be made with due regard to other surgical principles than the one pertaining to the division of the contraction. 6. That there was direct evidence to show that the tendency to recontraction and recurrence of stricture after internal urethrotomy was largely diminished by the concurrent employment of systematic and thoroughly efficient urine-drainage, such as the combination of external urethrotomy, or perineal puncture, affords.

Dr. HERESCO (Bucharest) followed with a paper on the same subject. He said that they had to-day to consider the remote effects of internal urethrotomy, of external urethrotomy, and of resection of the urethra. Of these, internal urethrotomy was specially practised in cases of gonorrhœal stricture. Recent researches had shown that gonorrhœal stricture was really due to a sclerosis more or less complete and so simple section could not bring about a definite cure. Experiments upon animals agreed with clinical observations in man that if dilatation did not follow section of stricture cicatrisation was bound to follow. Dilatation was therefore the indispensable complement to internal urethrotomy. Internal urethrotomy, whether the incisions be superficial or deep, was bound to relapse. The date of this relapse varied according as dilatation was regularly kept up or not. He had known it occur five weeks after operation. In another patient it occurred at an interval of four months, in another at six months, and in others at one, two, and three years respectively. It had been known to occur after 30 years. External urethrotomy was practised in cases of so-called impermeable stricture, or where the stricture was complicated with fistulæ. Dilatation was indispensable, as in the case of internal urethrotomy. Relapse, however, was bound to occur, although Post, Van Buren, and Sayre have reported cases of cure lasting from 20 to 25 years after operation. Resection of the ureter was only feasible in cases of traumatic stricture. The essential condition for success was that there should be no suppuration. He would sum up his conclusions as follows. No cutting operation could bring about a lasting cure of stricture except resection of the urethra in certain conditions. Internal urethrotomy for gonorrheal stricture brought about no permanent result, it merely facilitated dilatation. Without dilatation the stricture would certainly relapse. The date of this relapse was uncertain, it might occur at any time from a few weeks to 12 years, and depended on the nature of the stricture and the regularity of the dilatation. External urethrotomy was open to the same objections as internal. But when the perineum was full of fistulæ and indurations external urethrotomy presented many advantages over the internal operation. Resection of the ureter under certain conditions brought about a permanent cure, but such conditions were rarely found. All cutting operations should be followed by persevering dilatation.

Dr. ALBARRAN (Paris) followed on the same subject. His paper may be shortly summed up as follows. In non-complicated inflammatory strictures the following methods were employed: electrolysis, dilatation, internal and external urethrotomy, resection, and autoplastic operations. Of these slow electrolysis gave better results than the rapid method, but there were not enough reported cases at present upon which to found a definite opinion as to remote results. Progressive dilatation gave good results, but had to be followed by the use of the dilating catheter. Internal urethrotomy could only be considered as the first step of dilatation. External urethrotomy was of use only in strictures of limited extent and must be followed by dilatation. Resection of the urethra in limited inflammatory strictures of the perineal region gave good results. If the stricture could be completely excised a permanent cure might be hoped for. Resection of the penile urethra might lead to curving of the penis. In inflammatory stricture complicated with fistulæ and tumours external urethrotomy should be performed. In traumatic stricture the operation of election was resection.

[1] The paper is published in full on p. 391.

IV.—OBSTETRICS AND GYNÆCOLOGY.

OBSTETRICS.

Etiology and Nature of Puerperal Septicæmia.

Dr. DOLÉRIS (Paris) read a paper on this subject. The genius of Pasteur, he said, had determined the microbic nature of puerperal septicæmia. They owed to him their notion of the existence, the virulence, and the contagiousness of puerperal pathogenic bacteria. The ordinary pathogenic germs found in puerperal septicæmia were the streptococcus, staphylococcus, gonococcus, and bacillus coli communis. Researches had shown that amongst the pathogenic organisms certain anaerobic forms, such as the bacillus putridus, must be included. A further conclusion was that some saprophytic anaerobic organisms could develop and act as true pathogenic germs, notably in cases of placental retention. The association of different species led more certainly to infection. The septicæmic condition caused death from toxic poisoning, which produced either nervous inhibition or intestinal paralysis. The staphylococcus might cause death by visceral metastases. The theory of autogenesis had recently received a new interpretation, according to which the pathogenic organisms existing in the pathological vaginal secretions should not be considered as saprophytic, and since autogenetic infection could not be distinguished from that due to saprophytic organisms this amounts to denying its existence.

Speaking on the same subject Drs. MENGE and KRÖNIG (Leipsic) understood puerperal fever as a malady of the puerperium in which pathogenic organisms infected the body as a whole. Fever might be entirely absent. They were unable to distinguish between the organisms which acted purely by their toxic properties and those which penetrated the tissues, nor could they distinguish with certainty between

a fever due to one or the other. The organisms causing puerperal fever were: streptococcus pyogenes puerperalis, staphylococcus, gonococcus, bacillus coli communis, bacillus diphtheriæ, diplococcus pneumoniæ, and certain imperfectly known organisms developing in the absence of oxygen, since they found them in puerperal lesions. The infection could be either autogenetic or heterogenetic. Gonorrhœal puerperal fever was to be regarded as due to the spread of an infectious process already existing in the body, not as an example of autogenesis. As the various organisms mentioned did not exist as saprophytes in the vaginal secretions of pregnant women an autogenetic infection by these organisms could not have as its seat of origin the vaginal secretion. Infection with anaerobic bacteria could not be denied since they were unable to distinguish with certainty between the anaerobic organisms causing puerperal fever and the anaerobic saprophytic organisms present in the vaginal secretion of pregnant women. Clinically they regarded as rare and of favourable prognosis an infection due to pathogenic organisms of saprophytic character derived from the skin of the external genitalia. The possibility of a puerperal infection being caused by organisms present as saprophytes in the cervical canal, the cavity of the uterus, or the tubes could be rejected since these cavities never contained such organisms. With regard to heterogenetic infection the number of germs present undoubtedly was a matter of importance. The difficulty in attempting to determine the varying degrees of virulence of different organisms was very great. They could only say that when an organism had lived a saprophytic existence for some time that its virulence was greatly diminished. Insufficient hæmostasis and marked lesions of the genital tract played an important part as predisposing factors. The primary seat of infection was most commonly the placental site or the endometrium; much less commonly the cervix, vagina, or perineum. The streptococcus had a great tendency to spread beyond the primary seat of infection either by the lymphatics or blood-vessels, while the staphylococcus often remained limited to the endometrium.

The Treatment of the Apparent Death of the Newly-born.

Dr. RIBEMONT-DESSAIGNES (Paris) read a paper on this subject. As a result, he said, of numerous causes which might occur during its birth the child might when born present the appearance of apparent death. Two varieties of asphyxia occurred, the blue and the white, while at times cases were met with in which both forms were present at the same time. Since in practice asphyxia was most commonly due to obstruction of the air passages by mucus or amniotic fluid charged with meconium it was necessary to (1) free the air passages, and (2) to facilitate the entrance of air into the lungs. As the mucus frequently only occupied the throat it was often sufficient to clear it out by means of the finger wrapped in a handkerchief. Cutaneous friction with or without alcohol, ether, brandy, eau de Cologne, warm baths, mustard baths, hot or cold baths, were often sufficient to excite respiratory movements. Rhythmical traction on the tongue might set up the respiratory reflex. If these procedures failed it was necessary to commence artificial respiration. Of the various methods available insufflation was the only one that fulfilled the two conditions necessary—viz., to clear the air passages and to facilitate the entrance of air. And, further, the insufflation should be instrumental. The apparatus employed should admit of aspiration of the foreign matters present, and it should not carry into the lungs a quantity of air greater than their capacity. To fulfil these conditions the instrument must be constructed upon anatomical principles. The insufflator formed upon the model introduced by him in 1877 fulfilled the necessary conditions. (1) Its introduction was easy owing to its curve and the shape of its end; (2) its curve assured its remaining in the air passages; (3) it prevented the reflux of air from the larynx; (4) it readily permitted of the aspiration of the fluid and mucus filling the bronchial canals; (5) it was easy to determine whether it was in its right position or not; and (6) the bulb attached permitted only of a quantity of air entering sufficient to distend the lungs without over-distending them.

Definition of a Still-birth.

Dr. F. H. CHAMPNEYS (London) in the next paper gave a definition of "still-birth" and divided the two stages of asphyxia into "apoplectic" and "pale, the worst cases being common when the head came last and therefore not being due to pressure on the head. Asphyxia he defined as an exaggeration of physiological "air-hunger" or "necessity for breathing," and after discussing its mode of production and the causes and consequences of premature inspiratory efforts he narrated some remarkable instances of survival of apparently dead children. The objects of artificial respiration he described as (1) removal of foreign bodies from the air-passages; (2) procuring the patency of the air-passages; (3) excitation of the circulation; and (4) ventilation of the lungs. With regard to ventilation of the lungs he considered only two methods of manipulation efficient—namely, that of Schultze and that of Silvester. The method of Silvester produced unnatural superior costal respiration and was the more powerful. The methods of Marshall Hall and Howard he considered useless for children.

Dr. SCHULTZE (Jena) also read a report on this subject. Asphyxia, he said, of newly-born children was the result of some interference with the placental circulation during the course of labour. It was therefore a species of suffocation. Treatment consisted in putting into action as soon as possible—and this was most important—pulmonary respiration. The venous condition of the blood was in a child born asphyxiated already beyond the normal; it no longer acted as a stimulus to the medulla. The spinal cord could, however, still react to other forms of irritation. One of the best of these was the application of cold. When the condition of asphyxia was still further marked the medulla no longer reacted. It was necessary then to restore its excitability. This result could best be obtained by establishing the pulmonary changes and by stimulating the circulation. By the insufflation of air it was possible to set up normal respiration but this did not improve the circulation. The best methods were those which acting upon the thoracic parietes provoked within the thorax regular variations in the atmospheric pressure. Such methods were those of Silvester, Marshall Hall, or his own method of swinging the infant. His rules for the treatment of such cases were as follows: 1. If the child was blue leave the cord uncut, clear out the mouth, and excite the cutaneous reflexes. If this prove insufficient cut the cord and plunge the infant alternately into cold and then hot water. 2. If the child be pale and flaccid cut the cord, clear out the mouth, and then proceed to artificial respiration. Commence by a forced movement of expiration. There was no better method of clearing the air passages. Repeat the movements of expiration and inspiration from eight to 10 times a minute and then place the child in a hot bath. The artificial respiration might then be repeated if necessary. If natural respiration be established but remain superficial plunge the child into cold water. A child born asphyxiated should not be considered as completely re-animated until it cried continuously and vigorously.

GYNÆCOLOGY.

The Treatment of Cancer of the Uterus.

Dr. RICHELOT (Paris) read a paper upon this subject. Total extirpation of the uterus by the vagina was, he said, a rational method, because it enabled them to deal completely with the disease and to get entirely beyond its limits. It was a relatively benign operation, the mortality of the reporter amounting to about 6 per cent. It was an efficacious operation. Ott had had cures extending over 12, 11, 10, eight, and six years; Landau after nine and a half, eight, seven, six, five, and four years; Ledentu and Pozzi after six years; Quénu, Terrier and Hartmann, and Routier after five years. The speaker had had cases alive 12½, 12, 10, nine, eight, six, four, and three years after operation. Making all allowances he was able to show at least 18 per 100 who had been definitely cured. The improvement that had occurred in technique had lead to a revival of the operation of abdominal hysterectomy. Equally to be condemned were those surgeons who advocated extensive operations of this kind both for cases of cancer where the disease had spread beyond the uterus and those who recommended them in cases where the disease was still limited to that organ, with the proviso that in either case such an operation enabled them either to remove all the affected tissue or to make sure of being well beyond the limits of the disease. No true comparison could be made between cancer of the breast and cancer of the uterus and it was impossible even by such an operation as abdominal hysterectomy to make sure of removing all the affected tissues. Cancer was primarily local and secondarily infective. A microbic origin for the disease was as yet unproved. Personally he was led to consider cancer as a trophic lesion independent of external causes. One proof amongst others

was heredity and another the relation between cancer and arthritic troubles. A hundred times he had seen cancer and arthritic troubles transmitted, coinciding or alternating in such a fashion as to convince him as to the pathological family in which they should be placed. And it was the mysterious action of the economy which determined the degree of cellular anarchy, modified its evolution, and settled its prognosis, which enabled them to see things as they really were. It was that which enabled them to combat the evil but at the same time traced out well-defined limits, which ensured their success or their failure. One knew how remarkably variable was the course of a cancer of the uterus. Another remarkable fact was the well-known better prognosis in the case of a cancer of the body of the uterus. In brief, it might be said that a cancer of the uterus passed through two periods, while it still remained limited to the uterus, and when it had passed beyond its limits, and that the duration of these two periods was influenced by some unknown condition, possibly some "morbid temperament." What, then, should be their aim? Undoubtedly to operate at a time when no cancerous cell had progressed beyond the limits of the uterus. If they succeeded in doing this and in removing all the morbid growth then they might well speak of a definite cure, and they might even neglect the predisposition of the organism to reproduce another cancer. The proper treatment of cancer at the present day was to anticipate its spread and not to attempt to overtake such spread once it had begun. And, indeed, the organism itself came to their assistance. Intervention was not always without avail even when it appeared to be a little late. Such cases were difficult to recognise. It was justifiable, however, to adopt the abdominal operation in the presence of a limited spread of the cancer to the vaginal wall, rendering a vaginal operation impossible, but not indicating any real diffusion of the cancer. The operation was also justifiable in the presence of a tumour of slow growth the course of which they had been able to follow for some time. In such cases he had adopted abdominal hysterectomy without regarding it as a sovereign remedy and duly recognising its limitations. He had endeavoured to show that vaginal hysterectomy was capable of obtaining definite cures and that abdominal hysterectomy was a useful resource in a small number of cases, but that applied to cancers which had already become diffused it was an imprudence, and to cancers still very limited an illusion. That was to say, he differed from those who saw in the first an operation always incomplete, merely palliative, and in the second, the only operation which removed all, the only operation which was logical and rational. He would say that that operation was truly curative which preceded the cancerous infiltration—that which pretended to pursue it was really merely palliative.

Dr. DMITRI DE OTT (St. Petersburg) came to the following conclusions on the same subject:—1. Surgical treatment was the only successful method of combating cancer of the uterus. 2. The peculiar functions and structure of the uterus required a special study of the cancers that attacked it. Conclusions drawn from cancer in other parts of the body were only applicable in certain special cases. 3. Total extirpation of the uterus should be practised in all cases of cancer of any part of the organ, since the procedure gave the greatest amount of success. Removal of the ovaries and appendages should only be practised under special conditions. Removal of the retro-peritoneal glands could only be carried out by the abdominal route. This method should not be practised as a rule since it was much more dangerous and the results were not sufficiently good. Total extirpation by the vagina was to be preferred to all other methods. Morcellement in the cases where the uterus was of large size or the case complicated by the presence of fibroids was a method of great value. In cases of pregnancy complicating cancer of the uterus vaginal extirpation should still be carried out. The operation could be practised up to the seventh month and after opening the *cul-de-sacs* and ligaturing the uterine arteries the size of the organ could be readily reduced by the removal of the ovum. If the pregnancy was still further advanced and the child viable the latter might be delivered by abdominal section and the uterus, if practicable, removed by the vagina. It was best not to close the peritoneal opening but to lightly plug it with iodoform gauze. The ultimate results of operation undertaken for cancer of the body were much better than those undertaken for cancer of the cervix. Total extirpation should be practised even in advanced cases, since it tended to alleviate the condition of the patient, and especially in view of the difficulty of making an exact diagnosis of the extent of the disease. The mortality of the operation should not exceed 2 per cent. and the proportion cured with no sign of recurrence after six years was 10 per cent., extirpation having been practised even in the most advanced cases.

Dr. THOMAS S. CULLEN (Baltimore) then briefly referred to the gradual improvement in the operation for carcinoma of the uterus, commencing with amputation of the cervix as practised by Schroeder and his contemporaries, abdominal hysterectomy as recommended by Freund, the catheterisation of the ureters as employed by Pawlick and Kelly, and the more radical operation consisting in the removal of the iliac glands as advocated by Ries, Rumpf, and Clark. He then pointed out the danger of implanting carcinomatous into healthy tissue, as was very likely to occur when the radical operation was performed. He described in detail the operation as performed by Werder of Pittsburgh. In this operation the chances of implanting carcinomatous tissue were reduced to a minimum. The various stages in the abdominal operation, where the cancer was limited to the cervix, he described as follows: (1) removal of broken-down carcinomatous cervical tissue, preferably a few days before; (2) insertion of ureteral bougies if desired; (3) ligation of the ovarian vessels and round ligaments; (4) freeing of the bladder from the uterus and broad ligaments; (5) opening of broad ligaments and freeing of the ureters to the points at which they enter the bladder; (6) ligation of the uterine vessels near their points of origin; (7) and (8) dissection of bladder free from vagina and rectum; (9) removal of pelvic lymph glands; (10) freeing of vaginal fornices; (11) closure of pelvic cavity by uniting the vesical peritoneum with that of the rectum, an assistant meanwhile making strong traction on the cervix from below; (12) closure of the abdomen; (13) ringing of the vaginal vault with a thermo-cautery or knife, thus freeing the uterus and its surrounding vaginal mucosa; and (14) application of a light gauze pack to the space left in the vaginal vault. Thus the uterus was freed on all sides, the vagina dissected loose from the bladder and rectum, and the pelvic and abdominal cavities closed before the operator came in contact with the carcinomatous cervix. Even then there was little or no danger of transplantation of carcinomatous tissue. The speaker then briefly analysed 176 cases of carcinoma of the uterus occurring in the Johns Hopkins Hospital during the last six years.

Cervical Metritis.

Dr. S. POZZI (Paris) read a paper introducing this subject. His conclusions were as follows:—1. Acute or chronic inflammation of the cervix could exist for a long time isolated and without invading the body of the uterus. 2. At times the acute lesions of the cervical mucous membranes readily invaded the mucous membrane of the body, and the chronic lesions of the cervical parenchyma of inflammatory origin (sclerotic or sclero-cystic degeneration, partial or total) in a short time produced some effect upon the nutrition and the anatomical condition of the body of the uterus. 3. The operation of trachelorrhaphy was inferior to biconical resection of the cervix and should be abandoned. 4. A large number of acute, subacute, or chronic inflammations of the cervical mucous membrane in nulliparæ were due to insufficiency of size of the external os uteri and the difficulty of drainage that resulted. The most important part of the treatment consisted in restoring by operation to a sufficient extent the patency of the external os.

Dr. DOEDERLEIN (Tübingen) followed, saying that at the present day the causes of the inflammatory diseases of the cervical canal and of the cavity of the body of the uterus were to be found in a microbic infection. Modern bacteriological researches had shown that the external os uteri formed a boundary between a lower part of the genital tract containing micro-organisms and an upper containing none. The alkaline cervical mucus proved destructive to organisms introduced from without and so formed a protection not only to the cervix but to the body of the uterus, the tubes, and the peritoneal cavity. Amongst pathogenic organisms the only two that played any important part in the production of cervical metritis were the gonococcus and the tubercle bacillus. Gonorrhœal infection of the cervix was very common, the means of defence of the cervix being unavailing against the gonococcus, but tuberculous infection limited to the part was very rare. Tuberculous, syphilitic, and diphtheritic lesions of the cervix were quite different from so-called cervical metritis. Tuberculosis

of the cervix played an important part in the production of cervical metritis. The mucous membrane of the cervical canal was disposed to hyperplasia, the formation of polypi, and to inflammatory induration or erosions. The mucous membrane of the vaginal portion was disposed to changes in the epithelium, that was to say, to papillary and follicular erosions. The etiology of cervical metritis demanded further study both from the bacteriological or clinical point of view.

Dr. MENDES DE LEON (Amsterdam), speaking on the same subject, said that the pathological lesions of the neck of the uterus, which were known as cervical metritis, were difficult to separate clinically from chronic inflammation of the body of the uterus and especially from chronic inflammation of the mucosa. One might distinguish two varieties, the form due to bacteria and that not due to bacteria. In view of the great difficulty in determining the etiology of the chronic form it was best to distinguish them by their clinical signs, and to speak of a catarrhal endometritis or of a pseudo-endometritis, the catarrhal form being characterised by the presence of leucocytes in the stroma, and the pseudo-endometritic form by an abundant glandular proliferation and augmentation of the stroma. It was only in the gonorrhœal and septic inflammations that one saw the inflammatory process penetrating into the substance of the uterus and so leading to a true metritis. In the etiology of non-infectious conditions of the endometrium hyperæmia of long duration played a most important part. With regard to the septic and specific inflammations of the uterus their origin was to be found in the presence of organisms of various kinds which had found their way into the uterus either during the puerperium or through some lesion the result of an operation, or even in the case of certain specific organisms through the intact mucous membrane. With regard to the question as to whether a cervical metritis could remain limited to the cervix or not there was some divergence of opinion. In 100 cases examined with Dr. Van Tussenbroek he found only nine cases of simple cervical catarrh. On the other hand, he found 55 cases of catarrh of the body, of which 39 were circumscribed and 16 combined with cervical catarrh. It was difficult to demonstrate or to exclude the presence of any affection of the body. In the absence of erosions and when there existed a more or less abundant mucous or purulent secretion it was almost certain that they had to do with a catarrh of the body. Athough as regards etiology, &c., the two conditions were to be considered separately, it was not so with the treatment. Here, since the mucous membrane of the body was usually also affected, the common form of treatment was curettage. Amputations of the cervix alone appeared irrational, since this could have no effect upon any accompanying condition of the body of the uterus. In conclusion, he might say that it was necessary neither to consider nor to treat cervical metritis as an isolated affection, since in the great majority of cases it was accompanied by a similar condition of the body of the uterus. The term "cervical metritis" should be replaced by that of "cervical endometritis," since the inflammation of the mucous membrane was rarely accompanied by any lesion of the deeper tissues.

V.—STATE AND MILITARY MEDICINE AND SURGERY.

MILITARY MEDICINE AND SURGERY.

Lesions Produced on Man by Projectiles of Reduced Calibre.

Dr. L. A. LAGARDE (New York) read a paper in which he referred to the early history of reduced calibre rifles, the experimental evidence upon animate and inanimate objects by the surgeons of the different Governments while contemplating a change of armaments, and the general conclusions based thereon. He noted the results of gunshot wounds by the projectile of the 7-millimetre Mauser rifle in the Santiago campaign; and from such data as the office of the Surgeon-General of the United States Army was able to furnish, he discussed the stopping power, explosive effects, bone lesions, and injuries to the viscera occurring in this campaign.

Surgeon-Major VINCENT, *professeur agrégé* at Val-de-Grâce, read a paper upon

The Etiology and Prophylaxis of Typhoid Fever in Armies in the Field.

Typhoid fever, he said, was a necessary companion of every war and was far more deadly than was the fire of the enemy. The causes which brought it about were the same as in time of peace, but during the progress of a campaign the influence of these causes was very much greater. The predisposing causes were the average age of the soldier; the time of year chosen for military operations—summer or autumn; imperfect feeding and the digestive troubles which resulted therefrom; the inevitable deficiencies as to hygienic conditions as regards both the soldier's body and his clothes; a hot climate, as is the case in colonial wars; the shutting up of troops in camps or besieged towns; a very prolonged war, and the demoralisation of an army when conquered. Overwork was also a most potent factor. The immediate cause was the ubiquitous bacillus typhosus. This bacillus was able to live in a latent condition in the digestive tract and thence under favourable conditions to multiply itself and give rise to the appearance of a spontaneous epidemic. The disease might be transmitted from one man to another, but the most frequent cause was water. Food coming from infected regions could also transmit the disease. Other methods of transmission were flies and dust from infected soil. The necessities of warfare made prophylaxis very difficult. At the beginning of the campaign every man, or at the very least every officer, should be briefly instructed in the principal rules for the prophylaxis of all infectious diseases and especially typhoid fever. During the period of concentration and even during active operations overwork should, as far as is compatible with the needs of war, be avoided. For a colonial war only men of not less than 25 years of age should be chosen. Food should be as good and as varied as possible. Personal cleanliness should be attended to and the hygiene of camps should be carefully looked after. Flies, if possible, should be kept away, and above all, if possible, only filtered or boiled water should be drunk and alcohol should be avoided. Anti-typhoid inoculation, according to the method of Wright, as a special method of prophylaxis did not appear so far to have given very definite results. Troops coming from infected garrisons should, if possible, not camp with others. Sick men should be persuaded to apply for relief at the earliest moment. Patients, if seriously ill, should be treated in a special hospital. Disinfection or sterilisation of everything that came from, or had been touched by, the patient should be carried out as far as possible. A camp should not occupy the same place for a long time, and if the fever spread the camp should be abandoned.

Dysentery.

Dr. ANTONY, professor at Val-de-Grâce, read a paper upon the Treatment of Dysentery in Armies in the Field. He said that as they were ignorant of the nature of the germs of the disease secondary causes were of very special importance, such as climatic conditions, atmospheric variations, fatigue, overwork, infection, and contagion. In time of war all these causes were at work simultaneously. War exposed an army to suffering and privation of every sort. The men had to undergo exposure often without any shelter and even the most prudent commander could not always avoid overworking his troops. The food of an army could be carefully attended to except under two conditions—viz., during a siege or a retreat, in both of which the troops were exposed to very cruel privations. A wise administration would always feed an army as plentifully as possible and whenever it could be done with fresh food. The regular rations should not, as a rule, be composed entirely of preserved food. All excess should be severely prohibited. The providing of good drinking water for the troops was one of the most difficult matters to carry out in the course of a campaign. Various methods of purification had been employed, but the best way, and the most certain where it could be done, was to boil the water. In hot countries where dysentery and malaria were particularly frequent and very serious, besides these precautions troops should, if possible, not be allowed to fight during the period of the year in which these maladies were specially prevalent, and the men might also be treated with quinine as a preventive method.

Surgeon-Major SIMONIN, *professeur agrégé* at Val-de-Grâce, read a paper upon the Etiology of Dysentery in Armies in the Field. Dysentery had, he said, from all time been the inseparable companion of armies in the field. The history of ancient and mediæval wars, as well as those even of the most recent times, showed that this disease was the most constant factor in the death-rate of troops wherever they were fighting. The disease was very fatal both in temperate climates and in hot countries. The pathological

agent of dysentery had not yet been absolutely discovered, but at the present time it seemed probable that the disease called "dysentery" represented a collection of pathological conditions. Some observers said that the cause of dysentery was a certain animal parasite—viz., an amœba. Other observers put it down to some particular kind of microbe. Other observers, again, considered that the disease was due to both the microbe and the amœba. Whatever be the cause, the general tendency of modern opinion was to consider that the active agent in the production of dysentery was something common to the human economy which acquired under certain circumstances a power of growth and special virulence. They could, therefore, say that the disease proceeded from ordinary causes which affected the organism and allowed an abnormal development of germs which in the ordinary way were inoffensive. In all infectious diseases the importance of secondary causes was great, but in the case of dysentery the secondary causes were of the very highest importance, and in the case of armies in the field these influences were so many in number that they must study them in some methodical fashion. First of all there was the influence of climate and of the different seasons of the year. Heat, for instance, tended to make dysentery the special malady of troops operating in tropical countries. The influence of variations of temperature, and in particular the sudden chilling of the body, played a considerable part in bringing about attacks of diarrhœa and dysentery. A very important cause of dysentery was the influence of food of bad quality and the prolonged use of bulky or indigestible food. Intemperance, whether in food or drink, and above all in a tropical climate, had been rightly said to be a cause of dysentery. Scarcity of food, on the other hand, was also capable of producing the same effect. The fatigue and overwork which were inseparable from warfare and the accumulation in the organism of fatigue-products diminished the resistance of the body and favoured the attack of the dysenteric germs. After a war had lasted a certain time a new factor arose—viz., pollution of the soil and to a certain extent of the air. This cause arose chiefly in camps and besieged towns mainly from the accumulation of various dirty liquids and waste matters and the bodies of men and animals. When dysentery had once made its appearance under the form of a frequent diarrhœa it spread very rapidly through the army, mainly by the influence of water and of soil and of the dust of places which had been definitely polluted by the dejections of the patients. In temperate climates dysentery was generally associated with typhoid fever and in tropical climates with malaria.

The Prophylaxis of Syphilis in the Army.

Surgeon-Major FERRIER, *professeur agrégé* at Val-de-Grâce, and Dr. PANARA, the delegate of the Minister of War for Italy, read papers upon this subject. The chief means which they laid down as being effectual were (1) the giving of regimental instructions on the subject to the officers and non-commissioned officers by the medical officers, which instructions should then be handed on to the privates; and (2) the preparation of a little book for the privates containing the simple rules of hygiene. The moral level of soldiers should be raised in every possible way. M. FERRIER said that he was very pleased to see that in the French army fewer permissions were granted to soldiers to go to the theatre or to be out for one night, but that there was an increase in the number of permissions given to men to return to their homes for a certain period of time. Finally, he considered that the temperance campaign would do a great deal of good. Dr. PANARA considered that the chief method of prophylaxis must be treated as a question of public order and rules which affected only the barrack or the hospital could but treat the matter in a secondary way. He agreed with M. Ferrier as to the good which might be derived from the giving of regimental lectures, and he advised that a strict system of surveillance should be carried out in every regiment and barrack. Men should not be punished or reprimanded for applying for relief in cases of this complaint.

Extemporaneous Methods for the Purification of Water.

Surgeon-Major LAPASSET read a paper upon this subject. He pointed out that water was absolutely necessary for the soldier, and therefore in default of a good supply of drinking water it was necessary to make use of water which was more or less of a bad quality, and this had to be purified before use. The simplest method of purification was by boiling, but this method was almost impossible to carry out for an army in the field. Another method was filtration, and various filters, such as the Chamberland or the Berkefeld, gave good results. Carbon filters were dangerous to use because they got so quickly infected. Another method of purification was by means of chemicals such as permanganate of potassium. If possible, whatever be the method of purification employed, it should be under the control of an officer who should preferably be a medical officer. Any apparatus used should be a collective apparatus, and not one which was under the control of an individual.

Surgeon-Major SCHUCKING spoke on the same subject. The two chief methods of purification which he considered were filtration and purification by some chemical agent. For troops in the field, if they were in close connexion with the base, filters acted very well, but if the troops were far away from their base chemical agents were more easily employed, such, for instance, as the hyperchloride of lime.

Dr. VINCENT, *médecin de bataillon*, followed on the same subject, treating the subject with special reference to the purification of water for troops on the march. The best system, in his opinion, was that of chemical purification after the method employed by Lapeyrière. In default of this the water might be boiled.

Tropical Phagedæna.

Dr. LE DANTEC (Bordeaux), a first-class naval surgeon, read a paper upon this subject. He pointed out that in hot countries any wound of the skin rapidly passed into a state of ulceration, and that this ulceration exhibited the condition known as phagedæna, which was remarkable for its tendency to invade healthy tissues. Phagedæna appeared to be due to a bacillus which closely resembled that described in 1896 by Vincent as occurring in Madagascar. He himself had discovered this bacillus in the year 1884. The natural home of the bacillus appeared to be damp ground.

The Care of the Wounded in Naval Warfare.

Dr. FONTAN, a French naval *médecin en chef*, read a paper on this subject. They were met, he said, at the outset by the question whether the surgeon could really do his work during the progress of the fight. In France it was considered that the surgeon could not go among the wounded so as to bring them aid on the spot where they fell. He had to remain in the place which was appointed for the reception of the wounded. But could the wounded be taken to this place at every moment of the fight? Unfortunately no. It almost invariably happened that before the wounded could be moved they had to wait for the fire to slacken, and in the meantime they had to remain where they had fallen exposed to the risk of receiving a new wound without any care, and very possibly liable to die from loss of blood or from shock. These conditions could be ameliorated to some extent by instructions given to the combatants before the fight began, together with a packet of first-aid dressings. These things, together with a plentiful supply of tea with a slight admixture of alcohol, should be within the reach of all the fighting men. Supposing, however, that the time for moving the wounded had arrived, it was very difficult on board ship to move a wounded man to the appointed place where the surgeon was at work without harming him, and the best method of doing this was the use of the metal stretcher splint of Auffret. This moulded itself around the body of the wounded man, it kept him absolutely at rest, and it passed easily through very narrow passages. Once the wounded man had arrived at the place where the surgeon was stationed he was placed on the operating table and the first thing to be done was to render his wounds as aseptic as possible. This could be done by irrigation with boiled water, by the application of certain antiseptic solutions, and by dressings of antiseptic gauze. If the dressings were carefully packed in sealed parcels sterilisation in a stove was only indispensable in the case of instruments and of sutures. Bleeding must be stopped, and the loss of blood could be supplied by injections of boiled water to which a little salt had been added. Fractures should be put up in splints, and urgent operations must be undertaken, such as the ligature of arteries, the putting up of fractures, and the closing of cavities of the body which had been opened. A search for foreign bodies should always be postponed. All this treatment, however, should be simply provisional. The wounded should be landed as quickly as possible, or else transferred to a hospital ship. It was quite time that civilised nations should add to their fleets of war

a hospital ship flying the Red Cross, which could, after the battle, collect the wounded of its own nation.

Hospital Ships.

Dr. BUROT, a French naval *médecin en chef*, read a paper on the Use of Hospital Ships. He had served in the expedition to Madagascar in 1895 and came to the following conclusions :— 1. Any ship destined for use as a hospital ship should be specially fitted for that purpose. 2. It was absolutely certain that in very malarious countries situated under the torrid zone it was much better when it was possible to treat the sick and wounded on a hospital ship rather than on land. 3. For a hospital ship to render the greatest amount of service it must be a hospital ship and nothing else. 4. In the case of a war lasting for a long time it would be as well to provide at the base of operations a floating hospital large enough to put up all the sick and wounded of the expeditionary column, and at the same time to organise a fleet of quick-steaming transports specially fitted up so as to carry the wounded back to their own country. 5. A floating hospital should be able to hold at least 500 patients. Ventilation should be carefully looked after, and if this could not be done by natural means electric fans should be employed. Distilled water alone should be used, but if the apparatus was not extensive enough to give a constant supply filtration might be employed instead. The question of ice-making on board ships had not yet been finally settled, but the apparatus which gave the best results was that which worked by compressed air. 6. The most serious inconvenience on board the hospital ship occurred in the presence of infection. It was almost impossible to obtain complete isolation on board a ship, and in view of the possible occurrence of infection it would be as well to fit out, at some little distance from the hospital ship, a smaller vessel which could serve as an isolation ward.

Plague.

Dr. SIMON and Professor YERSIN read a paper on Epidemics of Plague in the Far East. These observers were of opinion that plague did not arise in any place by itself, neither did it reappear, unless it was re-imported, after a lapse of 20 years. This fact had been established by the epidemics which occurred at Constantinople, Venice, Genoa, and Messina in 1347 when the plague was imported from Jaffa, by the epidemic in Marseilles in 1720, when it came from Syria, and by that at Kutch Mandvi in 1812, when it came from Mecca. The study of recent epidemics led them to the same conclusion. They laid down as first principles (1) that plague spread from a centre in the same way as a drop of oil, that was by circular extension ; (2) that the plague could be carried from the primary centre to a distant point if there was direct and rapid communication between those points ; and (3) that contamination of distant centres was exceptional except when they were connected with the principal centre by railways or shipping lines. In the Far East plague spread from endemic centres by means of trade routes. Its march, however, was very slow, and neighbouring regions, if separated from the centre of infection by natural barriers, escaped ; thus, for instance, Yunnan in China had not affected Tonking. It was from Yunnan that the germs had gone out which were at present spreading throughout the whole world. It took 30 years, from 1850 to 1880, to attack Long-Tcheou and Pakhoi by following the course of the rivers and the various lines of communication. In 1893 English diplomacy procured the opening of the Canton river to trade. The plague started from Long-Tcheou, overran Canton and Hong-Kong, and in four years' time it was spread throughout the four quarters of the world. It was useless to discuss the origin of the plague of Bombay but it might profitably be considered how the plague passed out of India. The port of Kutch Mandvi would appear to be the point of departure. The sanitary police of Bombay and at Karachi did their work admirably, but, on the contrary, at Kutch Mandvi, where there were no Europeans, both entrance to, and exit from, the port were practically free. This port, however, was in constant relation by means of small sailing ships with Madagascar, Zanzibar, Mauritius, Jeddah, and the Persian Gulf. A cultivation of the plague bacillus which had been obtained by Yersin and Carré which killed 20 per cent. of rats that had been inoculated with it and which they called the bacillus C was next referred to. Perfect immunity was obtained in animals by inoculating with this bacillus after a period of 15 days, but experience of the method was still wanting to enable an opinion to be pronounced as to whether this immunity was lasting. Dr. Yersin had inoculated himself without any ill-effects except a slight rise in temperature.

Tetanus.

Dr. F. CALMETTE (Lille) read a paper upon the Prophylaxis of Tetanus in Hot Countries. He pointed out that tetanus was very frequent in the torrid zone, more especially on the West Coast of Africa, in Guiana, and in the Antipodes. Young children were especially affected by it, and in Indo-China many newly-born children died from it. The black races were the most easily affected, the white races took the second place, and the yellow races took the third. The infection of tetanus in hot countries arose almost always from the soiling of wounds by earth or by the dejection of animals. Tetanus in new-born children arose from an infection of the umbilical wound. The best measures of guarding against tetanus were as follows :—1. To spread throughout the colonies in hospitals, in ambulances, and in columns of troops on the march the use of anti-tetanic serum so as to prevent tetanus occurring in those whose wounds were infected either with dirt or with portions of clothing. In every case of gunshot-wound, after the first dressing had been applied, a preventive injection of 10 cubic centimetres of anti-tetanic serum should be given. 2. Throughout tropical colonies native women, both mothers and midwives, should be educated with regard to the elementary precautions necessary for women and their newly-born children. Lectures should be given in every colonial centre where there was a medical man at which simple instructions should be given with regard to the dressing of the umbilical cord, on the proper treatment of which the prevention of tetanus in newly-born children almost entirely depended.

Papers were also read by Dr. FIRKET (Liège) and Dr. CLARAC upon the Etiology and Prophylaxis of Bilious Hæmoglobinuric Fever in Hot Countries and by M. E. MARCHAUX upon the General Etiology and Prophylaxis of Hæmoglobinuric Affections.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT IPSWICH.

THE occasion of the meeting of the British Medical Association at Ipswich was utilised by the Irish Medical Schools' and Graduates' Association to hold their annual summer meeting at the Higher Grade School, Ipswich, on August 1st. In the absence of the President (Inspector-General Lloyd, M.D. St. And., R.N.) the chair was taken by Dr. H. Macnaughton Jones, ex-President. There was a large attendance of members, including Sir John W. Moore (Dublin), President of the Royal College of Physicians of Ireland, Professor W. H. Thompson (Belfast), Professor R. J. Anderson (Galway), Dr. W. J. Smyly (Dublin), and the provincial honorary secretary, Mr. James Stewart (Clifton). The Council reported the completion of the arrangements in reference to the Arnott Gold Medal which has been given by Mr. David Arnott in memory of his late father, Sir John Arnott, Bart., and which is to be awarded annually to such Irish medical graduates or diplomates as shall be decreed by the Council to have pre-eminently distinguished themselves by some act of heroism in civil, naval, or military life, or by some achievement in medicine, surgery, or medical research. The chairman, in referring to this generous gift, stated that Mr. David Arnott had most courteously complied with all the requests of the Council in reference to the legal details of the deed by which the medal had now been permanently endowed. He (the chairman) wished to emphasise the fact that those qualified for the distinction were not to be confined to members of their Association and that the medal might be awarded to any Irish medical graduate or diplomate whom their Council might adjudge worthy. The first award would probably be made before the next festival dinner. Sir John W. Moore, having remarked on the warm liberality and patriotism displayed by the son of the late

much esteemed Irishman, Sir John Arnott, in this matter and above all on the evidence which it afforded of the high estimation in which the donor held the medical profession generally, and especially the *alumni* of the Irish schools of medicine, concluded by moving: "That the heartiest thanks of the association be, and are hereby, accorded to Mr. David Arnott for his generous gift of the gold medal endowed by him in memory of his late father, Sir John Arnott, Bart." Dr. Dolan seconded the motion, which was carried with acclamation. The provincial honorary secretary having stated the views of the Council on the question of restriction of honorary appointments in certain English hospitals to the diplomates of two specially favoured colleges, and having given a *résumé* of what had already been done in the way of abolishing such out-of-date monopoly so antagonistic to the "open-door" spirit of the times, Dr. Douglas proposed, Dr. Esler seconded, and it was carried unanimously: "That this meeting hopes that the Council will as soon as possible proceed actively with their efforts to reduce the number of English public hospitals in which the Fellows (by examination) of Irish colleges are not now eligible for honorary appointments on the staff." It was announced that the Association had determined to entertain Field Marshal Lord Roberts on his return from South Africa at a special banquet to be held in London, the date to be probably in the last week of November. A vote of thanks to the chairman terminated the proceedings.

The collection made at the opening service at St. Mary-le-Tower was stated last week to be destined for the British Medical Benevolent Fund. We learn that this fund receives half the collection, the other half being given to the Royal Medical Benevolent College, Epsom.

On the evening of Wednesday, August 1st, Mr. W. A. Churchman, the Mayor of Ipswich, received the members of the British Medical Association at a garden fête held in the grounds of Christchurch House. This beautiful old Elizabethan mansion belongs to the town, but on the above evening the general public were excluded. The grounds were illuminated by Chinese lanterns and small oil lamps while the windows of the front of the house were outlined in the same manner. Music was provided by the band of the Norfolk Regiment and the evening being beautifully fine the fête was a great success. During the evening a firework display was carried out under the direction of Mr. Paul Aggio of Colchester. The set piece showed the words "Welcome to the British Medical Association," the letters appearing in changing colours. Altogether the entertainment was a great success.

On the afternoon of the same day a garden party was given by Mr. Felix Cobbold of The Lodge, Felixstowe. Some 300 guests were present. Music was provided by the band of the Brantham Works augmented by some players from the Ipswich Artillery Band. The magnificent conservatories and hothouses were seen at their best.

On Thursday, August 2nd, members were invited to a garden party given by Captain and Lady Beatrice Pretyman at Orwell Park, and in the morning Mr. J. S. Corder conducted a party over Christchurch mansion and the Ancient House, besides demonstrating sundry other of the antiquities of Ipswich, such as Wolsey's Gateway.

The annual dinner of the Association was held on the evening of Thursday in the Town-hall. In addition to the President and the other officers of the Association there were present the Mayor of Ipswich, the High Sheriff of Suffolk, Sir Charles Dalrymple, M.P., Professor Simon Flexner of New York, Professor Nicolaysen of Christiania, Professor John Berg of Stockholm, Professor Lenader of Upsala, Professor Thoma of Aix-la-Chapelle, and some 250 members. After the usual loyal toasts the High Sheriff of Suffolk proposed "The Navy, Army, and Imperial Forces." The substitution of the word "imperial" for the usual one of "reserve" was significant of the knitting together of the empire by recent events. The responses, however, were given in the usual manner. Surgeon-General J. B. Hamilton responded for the army, Inspector-General A. Turnbull, R.N., for the navy, and Lieutenant-Colonel Andrew Clark for the reserve forces. Other toasts were "The Mayor of Ipswich," proposed by Sir John Moore; "The British Medical Association," proposed by Sir Charles Dalrymple, M.P.; "The President," proposed by Dr. Pye-Smith; and "The Guests," proposed by Dr. Buzzard. During the evening a reception was held by the ladies of the East Anglian Branch in the Museum.

THIRD GENERAL MEETING.

The third general meeting was held in the Central Hall of the Higher Grade School on August 2nd.

The PRESIDENT called upon Mr. FREDERICK TREVES to deliver his address in Surgery. This address was published in THE LANCET of August 4th, p. 312. At the conclusion of the address, which was most cordially received, a vote of thanks was moved to Mr Treves by Mr. T. R. JESSOP (Leeds) and seconded by Dr. WARD COUSINS. MI. TREVES briefly returned thanks.

Dr. ROBERTS THOMSON, the President of the Council, then rose to present to the meeting the list of the names of those who had been nominated by the Council that morning to serve on the committee to consider the reconstitution of the Association. These were:—for South Africa, Surgeon-General J. B. Hamilton; for the East Indies, Mr. James Cantlie; for Ireland, Sir John Moore; for Scotland, Dr. J. C. McVail; and for England. Dr. Roberts Thomson, Dr. Radcliffe Crocker, Mr. T. Jenner Verrall, Dr. R. Saundby, Dr. S. Woodcock, Dr. Ward Cousins, Mr. H. T. Butlin, and Mr. Andrew Clark.

Mr. Horsley's nominations were as follows:—For the West Indies, Dr. C. G. Gooding, late of Barbados; for Australasia, Mr. C. G. D. Morier of Adelaide; for Scotland, Dr. R. C. Buist of Dundee; for Ireland, Professor J. W. Byers; for Canada, Mr. Edmund Owen; for England, Dr. A. Cox of Gateshead, Dr. William Gordon of Exeter, Dr. C. H. Milburn, Dr. A. G. Bateman, Dr. A. B. Ritchie, Mr. J. S. Whitaker, and Mr. Victor Horsley.

Dr. BERNARD O'CONNOR said that in accordance with the rules observed in the appointment of a Royal Commission the Association ought to select a chairman of the committee. That being so he proposed Mr. Victor Horsley.—This was seconded by Dr. ALFRED COX, but the CHAIRMAN said that he must rule the motion out of order.—The nominations were accepted *nemine contradicente*.

Dr. SARAT K. MULLICK rose to move the following:

(1) The present system of filling professorial chairs in the medical colleges in India, by virtue of grade rank in the Indian (Military) Medical Service, is apparently prejudicial to the interest of medical education and sanitation, and is a sinister bar to the advancement of original research in India. This meeting is of opinion that some change is necessary, and hereby appoints a sub-committee to consider the matter and report to the Council such action as it may think it proper to take.

He remarked that in deference to representations which had been made to him he had modified the terms of his motion. He continued in a well-argued speech to contend that some inquiry ought to be made, as he did not consider that his statements should be taken on his word alone.

Colonel KENNETH MACLEOD, I.M.S., while sympathising with the mover of the resolution, opposed it on the ground that it really involved an inquiry into the whole system of the government of India. After a few words from Dr. CHOWRY-MÜTHU it was eventually decided to refer the matter to the Standing Committee of the Parliamentary Bills Committee.

Mr. VICTOR HORSLEY had given notice that he would move—

That the Council be, and hereby is instructed to allot the sum of £300

for the travelling and hotel expenses of the provincial members of the committee mentioned in the foregoing motion.

This referred to the committee on the constitution.

Mr. Horsley's motion was seconded by Dr. WOODCOCK, but was finally altered so that no definite sum was mentioned, but it was agreed that provincial members should be allowed one guinea per diem for hotel expenses as well as their travelling expenses.

The meeting shortly afterwards adjourned.

FOURTH GENERAL MEETING.

The concluding general meeting was held on August 3rd in the Central Hall of the Higher Grade School at 2.30 P.M.

The PRESIDENT read a telegram which he had received from Osborne in reply to the message of sympathy with Her Majesty passed by the Association. He then called upon Dr. WILLIAM SMYLY to deliver his address in Obstetrics. The address, of which the subject was Maternal Mortality in Childbirth, will be found at p. 385.—A vote of thanks to Dr. Smyly was proposed by Professor BYERS and seconded by Dr. W. S. A. GRIFFITH.—Dr. SMYLY having replied, the PRESIDENT read out three resolutions which had been sent up from the sections. One from the section of Obstetrics dealt with the notification of puerperal fever. Two sent up from the section of State Medicine dealt with the subject of the housing of the working classes and with the use of food preservatives. These were unanimously referred to the Council.—The customary votes of thanks to the Mayor of Ipswich and others who had assisted the Association in various ways were then put and carried unanimously.—A vote of thanks to Dr. ELLISTON, the President, was proposed and carried by acclamation and the meeting terminated.

THE SECTIONS.

MEDICINE.

THURSDAY, AUGUST 2ND.

The Problems of Gastric Ulcer.

Dr. J. F. PAYNE (London) opened the discussion on this subject. He referred to the imperfection of their knowledge with regard to this affection. He had little doubt that it was becoming increasingly prevalent. In proof of this assertion he gave statistics of the number of cases of gastric and duodenal ulcer admitted into St. Thomas's Hospital in the six quinquennial periods from 1870 to 1899 and they were respectively 30, 38, 70, 103, 174, and in the last period —i.e., 1895–1899—216, or five times as many as they were 20 years ago. When allowance had been made for the fact that many cases were now sent in for operation that would probably not have been at the earlier period and also for other accidental causes of increase in the number of admissions, he still was convinced that these corresponded with an increase of the disease among the general population. Gastric ulcer shared in this respect with other digestive diseases. Thus among the continued fevers, enteric fever, a fever characterised mainly by a digestive lesion, had supplanted typhus fever, a fever of more general character, and there was a real increase in the number of cases of typhlitis or appendicitis. As to diagnosis, was it always complete and satisfactory? The principles upon which it was based had been long well known. The three cardinal symptoms were pain in the epigastrium of a peculiar character, vomiting or gastric irritability, and hæmatemesis or melæna. Age incidence was also important. Only one diagnostic sign had been added in the last 30 years—hyperacidity of the gastric juice. As to the peculiar pain he found it present in a decided minority of cases, and in some pain was not present at all. Vomiting was present in most cases. As to hæmatemesis, he had been surprised to find that out of 48 fatal cases it had occurred in only 14, while in non-fatal cases it had been present in 95 per cent. of cases under his own care and in 75 per cent. of all cases in the hospital. His explanation of this discrepancy was that many cases proved fatal by perforation, in which complication hæmorrhage was known to be uncommon, while non-fatal cases were often sent to hospital on account of that very symptom. In his opinion it was the most reliable of the above signs. Other causes of hæmatemesis were alcoholism and cirrhosis of the liver, aneurysm rarely, and direct injury or strain. In this connexion he mentioned three cases in which hæmorrhage appeared to have originated the ulcer. Hæmatemesis in men was most frequently due to cirrhosis of the liver, in women to gastric ulcer. He knew little practically about hyperacidity of the gastric fluid, as he had never been able to think that it was a justifiable proceeding to put a tube into a stomach which was the seat of ulceration. Dr. Payne then discussed the differential diagnosis between acute and chronic ulcers. Acute ulcers were those where the symptoms developed rapidly. In 48 necropsies six ulcers were found to be acute and 42 chronic. Of the cases examined 36 had had symptoms for a long time and 12 for a short time; thus six chronic ulcers had acute symptoms. As to sex incidence Fenwick estimated that the disease was present in 10 females to one male. Dr. Payne found the ratio in acute ulcer to be two to one and in chronic ulcer four and a half to one. He inquired if the classes had the same pathology or if a chronic ulcer were anything else than an acute ulcer grown older. Among suggested causes were digestion, embolism, congestion, poisonous substances, and bacteria. Digestion explained the persistence and chronicity of the ulcer, but they did not know what started the local necrosis. It was usually called a disease of the poorer classes. Had the statement any other origin than their greater relative numbers? As to mortality, more women died under the age of 30 years than women over 30 years, but if the percentage of deaths per person living at the same age was taken more deaths were found at the older periods in both sexes. Post mortem an occluded vessel was often found in the middle of the ulcer. Dr. Payne thought that this proved nothing more than that the hæmorrhage had been arrested by natural means and not that the apparent thrombosis was the cause of the disease. The main principle of treatment was to give rest to the stomach. Rectal feeding enabled this to be done. It was a doubtful point as to whether the rectum absorbed much food. He thought peptonised food the most likely to be absorbed. He always allowed a little warm water to be given by the mouth, but not for the first 24 hours after hæmorrhage. The danger of long-continued rectal feeding was that syncope sometimes came on. He thought that it might be continued safely for 14 days if water by the mouth was allowed and for seven if water was withheld. During the treatment acetone sometimes appeared in the urine; this fact, he thought, proved nothing but starvation and he thought practical starvation was also the cause of the appearance of the same substance in diabetes and chronic alcoholism. In conclusion he submitted the following problems for discussion. Was the disease increasing? Was its diagnosis accurate enough? Was the acute form essentially different from the chronic? Was its original cause known? Was the hyperacidity always present and were they justified in trying to ascertain this? Were the upper classes as much affected as the lower? Should water by the mouth be allowed during rectal feeding?

Dr. S. H. HABERSHON (London) showed two diagrams compiled from cases under the care of the late Dr. S. O. Habershon. Only the cases of patients who had had hæmatemesis or those in which the presence of ulceration had been proved by necropsy were included. They were corrected to the absolute liability of all persons living at the same age and showed that the liability of females to the disease increased rapidly up to the age of 30 years, went down slowly up to 50 years of age, and then fell rapidly to the age of 60 years, while that of males increased steadily from birth to the end of life. Dr. Habershon thought that these showed that there was still some unexplained determining cause in young females. Dr. S. O. Habershon had said that he never felt sure of the diagnosis of gastric ulcer unless hæmorrhage had been present. Difficulties of diagnosis were (1) early cases, (2) neurotic cases with much hyperæsthesia, and (3) those very rare ones in which food relieved the pain. The presence of dilatation of the organ was an assistance to diagnosis in some cases, especially in men and when the ulcer was near the pyloric end. He considered it unjustifiable to pass a stomach tube in these conditions.

Dr. W. GORDON (Exeter) said that no one had ever seen a gastric ulcer in the living body till a few years ago. He had obtained a recent specimen eight or nine years ago which, when examined microscopically, showed a digested edge, next to that an area filled with leucocytes, and deeper still a layer of cells stuffed with cocci. He reviewed the possible causes of the disease—embolism, thrombosis, submucous hæmorrhage, trophic lesion, poisoning in food, mechanical pressure as from tight-lacing, injury to the mucous membrane, and micro-organisms. He considered the last-named to be the most probable and asked that in every case

where a gastric ulcer was excised it should be preserved for the most careful bacteriological and microscopical examination.

Dr. W. CALWELL (Belfast) referred to preventive treatment.

Miss JULIA COCK (London) related two cases which had presented almost all the symptoms of gastric ulcer. The first patient had had severe hæmatemesis and vomiting and subsequently signs pointing to subphrenic abscess. She died from pneumonia and no signs of any lesions whatever could be found in the digestive tract. The second patient had had hæmatemesis and signs of perforation of the stomach. A laparotomy was done and no disease or perforation was found. Eight years after, owing to the persistence of similar symptoms, a second operation was performed. The stomach was found to be healthy but there were chronic peritonitis and many adhesions to the stomach. The peritonitis was probably a relic of the first operation.

Dr. NEWTON PITT (London) considered that hæmatemesis was more often a symptom of other diseases than of gastric ulcer. As the cases of this disease became more frequent in males up to the end of life so he believed would those among females if all those were excluded in which the diagnosis was based on the single symptom of hæmatemesis. He stated that the ulcers found in the stomach in the post-mortem room were nearly always in old people. He had made two necropsies of persons who died from hæmatemesis and had found no ulceration, and, in fact, no cause whatever for hæmorrhage. He thought that it would be as well in the future to call such cases simply cases of hæmatemesis and not gastric ulcer. They were familiar with the engorged state of the gastric mucous membrane produced by the administration shortly before death of ammonia, ether, and brandy and possibly partly by paulo-ante-mortem digestion. Might they not have similar conditions in enfeebled states of the body? Some drugs—i.e., opium—were undoubtedly secreted into the stomach after absorption causing engorgement of the vessels. Might not poisons produced in the intestine by constipation act in the same way and cause hæmorrhage as toluendiamine would do?

Mr. STUART LOW (London) thought that ulceration might be produced by loss of the normal gastric mucus.

Dr. PYE-SMITH (London) drew attention to the great discrepancy between the results afforded by the clinical and the pathological investigation of causes of gastric ulcer as to its age and sex incidence. From clinical evidence they should assert that the greater number of cases were among young women, from post-mortem room records among elderly men. This convinced him that there was much to be learnt as to the pathology of the disease and he hoped that all ulcers excised during life might be examined. With regard to the microbic theory he could only say that "confidence is a plant of slow growth in an aged bosom." While agreeing that arterial embolism was not a likely cause he thought thrombosis of veins a much more probable one. He considered the acute perforating ulcer, as described by Rokitansky, Cruvelhier, and others, very different from the ordinary cases. As to the cases where hæmatemesis was present without ulceration they had epistaxis occurring in young men, hæmaturia in both young men and young women, and why not hæmatemesis without visible lesion? He did not keep up exclusive rectal feeding for more than 24 hours.

Dr. R. SAUNDBY (Birmingham) did not like the popular view of gastric ulcer. He agreed as to the great difficulty of diagnosis, but pointed out that if Dr. Newton Pitt's views were correct they could not diagnose gastric ulcer at all. He never made a definite diagnosis of the disease unless many symptoms were present at once. If diagnosis were so difficult how much more so must be any decision as to treatment. He did not employ rectal feeding unless there was hæmorrhage and then only for from 24 to 48 hours, which was not what was usually termed exclusive rectal feeding at all, and then he gave small doses of the sulphate of magnesium and iron.

Dr. F. M. POPE (Leicester) said that in addition to allowing patients a small amount of water he gave five grains of resorcin in an ounce of distilled water three or four times a day. Whether in that dose it did or did not act as an antiseptic it gave relief to the pain.

Dr. PAYNE, in reply, said that his experience as to the difficulty of diagnosis had been borne out by the discussion. He had seen one case which to some extent supported the bacterial theory. In a post-mortem examination of a stomach two ulcers were found, one recent, the other chronic, which suggested to his mind the possibility that the former had been caused by direct infection from the latter.

Intermittent Pulse.

Professor CUSHNY (Ann Arbor, Michigan) read a paper on this subject. He said that the classification of the varieties of intermittent pulse at present employed was not in accordance with cardiac physiology. He therefore was about to propose a new method. He showed a large number of diagrams and of sphygmographic tracings. Intermissions of the pulse were of several kinds. They might have an auricular contraction without a ventricular; here the ventricle was at fault. The auricular contraction might be delayed; here the auricle was at fault. In the former of these the intermission usually had double the time of a pulse interval; in the latter it might be of any length. In a third variety the ventricle contracted too soon owing to extreme irritability and the subsequent pause was consequently longer than normal. In a fourth the auricle contracted too soon (auricular hyper-irritability). In the third form the pulse was double the pulse interval; in the fourth less than a double pulse interval. In both if the pause equalled two pulse intervals the fault lay with the ventricle and it was less than that with the auricle. In the third and fourth forms the first sound was audible if the heart was listened to. In the first and second forms no heart sound was heard. Professor Cushny explained and illustrated these views by means of his diagrams and sphygmograms and said, in conclusion, that assistance in treatment might result from the general acceptance of his conclusions, as they might expect cardiac stimulants to do good in the first and second forms due to retardation of systole, while drugs like aconite, having a restraining influence, would be more likely to be useful in the third and fourth forms.

Dr. J. BARR (Liverpool) could not accept the conclusions. The auricle was extremely irritable and could be excited to contraction for several hours after death. He did not think that it ever failed to contract and intermissions of the pulse could not be tabulated in that way. He thought that the times of the cardiac systole and diastole were always varying. Many intermissions of the pulse did not correspond to intermissions of the heart. Full contraction of the right side might coincide with imperfect contraction of the left and *vice versâ*. In some cases of fatty heart he believed that the right heart hardly contracted at all, the preliminary circulation being carried on by the aspiratory movements of the thorax and the *vis à tergo* from the systemic circulation.

Professor CUSHNY replied. He thought that the auricle could fail and doubted if independent contraction of the right and left sides of the heart did not occur. Irregularity might be due either to muscular failure or to nervous influence. The latter had been shown in animals after the administration of pilocarpine.

Professor C. R. MARSHALL (Cambridge) gave a short demonstration of Different Forms of Sphygmographs, such as Fick's and Jacquet's, which had a time-marker. The former was more complicated but eliminated error due to inertia of the lever. He also showed a recent form of Sphygmomanometer.

SURGERY.

WEDNESDAY, AUGUST 1ST.

Pyloroplasty.

Mr. L. A. BIDWELL (London) read the notes of four cases of Pyloric Obstruction in which he had performed Pyloroplasty. In one of them a "tumour" was found which was thought to be malignant and so a gastro-enterostomy was performed, but two years later, as the symptoms returned, a pyloroplasty was done and the "tumour" had disappeared. In all the cases recovery followed. He considered that pyloroplasty was the best treatment for non-malignant stenosis of the pylorus. He thought that the operation was useful even when the ulcer was not close to the pylorus. He employed a modification of Halstead's "square suture."

Professor BERG (Stockholm) did not consider pyloroplasty a satisfactory operation, although in 1896 he had published eight successful cases. He found that the stenosis returned after two or three years and therefore he preferred to perform gastro-enterostomy, and of the eight cases mentioned four had required the performance of this operation on account of recurrence.

Dr. C. H. KILNER (Bury St. Edmunds) had operated by

pyloroplasty for stenosis caused by some acid which had been swallowed. Unfortunately, the operation had been left too late, for the patient died from exhaustion although the wound of the pylorus had healed.

Mr. T. H. MORSE (Norwich) wished to know about the suitability of the operation for duodenal ulcer. He had performed it in one case for ulcer of the duodenum but without success.

Mr. BIDWELL, in reply, mentioned that he had found recurrence occur after gastro-enterostomy and therefore had employed pyloroplasty.

Cholecystocolostomy.

Mr. H. BETHAM ROBINSON (London) read the notes of a case in which he had performed this operation. The patient was a man, 33 years of age, who had had syphilis 10 years previously. Four years before he came under observation he had sudden severe epigastric pain and vomiting which recurred. A fortnight later jaundice came on with severe itching. The liver was enlarged and there was a rounded swelling below the liver edge. The paroxysms of pain became worse. An incision in the right semilunar line exposed the gall-bladder, which was much distended, and a hardness was felt in the gastro-hepatic omentum and in the head of the pancreas. This was thought to be malignant and it was decided to connect the gall-bladder with the bowel, but the duodenum could not be brought into contact with the gall-bladder so a junction was effected with the transverse colon. No stone was found in the gall-bladder. The jaundice and itching were rapidly relieved. Some iodide of potassium was then administered and the hardness at the head of the pancreas gradually disappeared, so it was probably gummatous in nature.

Non-malignant Stricture of the Rectum.

Mr. F. C. WALLIS (London) commenced his paper upon this subject by remarking that it was usually taught that syphilis was the common cause of non-malignant stricture of the rectum. He considered that septic ulceration was the real cause. This septic condition might be due to operations for hæmorrhoids or to injury in protracted labour. In many of the cases there was not the slightest history or sign of syphilis. In these cases the routine treatment by bougies was perfectly useless and Mr. Wallis described two cases in which the stricture was completely excised, in one with and in the other without a preliminary colotomy. In both the cases the peritoneal cavity was freely opened. He preferred the previous performance of colotomy, as it lessened the chance of sepsis of the peritoneum. The result in the two cases mentioned was perfect. In many of the cases a multiple synovitis was noticed.

Mr. FREDERICK TREVES (London) considered that many of these cases of non-malignant stricture of the rectum were really congenital in origin. The ordinary treatment was very unsatisfactory and he thought that Mr. Wallis's method was a distinct advance.

Mr. STANLEY BOYD agreed that some of these strictures were congenital in origin. One explanation of the frequency of non-malignant stricture in women was that the bowel was affected by discharges from the vagina.

Mr. R. J. GODLEE (London) asked Mr. Wallis if he had mentioned pelvic peritonitis as a cause. He suggested the ventral position as better for the operative treatment of these cases than the lithotomy position.

Mr. WALLIS, in reply, acknowledged that he had omitted pelvic peritonitis as a cause, but he had intended to confine his paper to strictures following on ulceration.

Oöphorectomy in Cancer of the Breast.

Mr. STANLEY BOYD (London) described the suggestion of this operation in 1896 by Beatson who relied on a theoretical analogy between the rapid multiplication of the gland-cells in lactation and in malignant disease. Whatever the value of the theory Mr. Boyd showed the striking result of the operation in certain cases. He provided a table detailing all the cases recorded up to date. These were divided into two classes; in the first were put those cases in which the beneficial effect of the oöphorectomy seemed clear and considerable; this contained 17 cases. In the other class were put the cases in which little or no effect was produced or in which the result was doubtful; these were 21 in number. In many of the cases thyroid extract was administered, but it was very doubtful if this had any beneficial effect. The best results seemed to be attained when the patient was over 40 years of age but before the occurrence of the menopause. The more slowly-growing cases were the most likely to be benefited. In some cases improvement occurred within a week. It was desirable in all cases to treat the growth directly by excision, reserving the oöphorectomy for recurrences.

Dr. G. E. HERMAN (London) completed the notes of two cases operated on by him which were included in the series of cases collected by Mr. Boyd.

The late hour precluded any discussion on this important paper.

OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, AUGUST 1ST.

Cephalotripsy of the After-coming Head.

Mr. J. H. TARGETT (London) read a paper on this subject founded on a case in which this plan was adopted. He premised that the operation was hardly referred to in ordinary text-books on midwifery and that therefore no details of the procedure were available. The occasions on which such an operation might be required were of course very rare, and even in the case which formed the subject of the paper he thought there was no doubt that Cæsarean section would have been the better method of treatment. The case was that of a rickety dwarf, aged 29 years, unmarried. She was near the end of the ninth month, and as she declined to have Cæsarean section performed it was decided to induce labour at once. This was done by hydrostatic bags, after which a leg was brought down. Delay then took place, and after some hours it was decided to extract. The trunk was delivered but the head remained in a position of flexion above the contracted brim. As no impression could be made upon it, and as pulsation in the cord had ceased, craniotomy was performed. The suboccipital region was chosen as being the most accessible. On applying the cephalotribe the lower blade came into apposition with the face of the child, but the upper blade could not be passed over the occiput owing to lateral contraction of the pelvis and incomplete dilatation of the lower segment of the uterus. The result was that the end of the blade repeatedly caught in the edge of the suboccipital perforation. This led Mr. Targett to pass the blade into the skull through this aperture and thus crush the base in its antero-posterior diameter. The plan answered admirably. The patient made a good recovery. The points on which Mr. Targett laid stress were: (1) What is the best site for perforation of the after-coming head? and (2) when crushing is necessary how should the cephalotribe be applied? He also raised the question of the supposed advantages of version before craniotomy. As to the first point he recommended the suboccipital region. The application of the cephalotribe was, he thought, best effected in the way which he had described in his case, because subsequent experiments which he had made had shown him that the best grip was obtained by inserting one blade into a suboccipital perforation, while the opposite blade was applied over the face. Dr. A. Donald of Manchester had recommended some years ago that version should be performed before doing craniotomy, and he (Mr. Targett) could testify to the fact that under these circumstances the delivery of the after-coming head presented no difficulties. The converse line of practice—viz., version after cephalotripsy—was, he imagined, very rarely adopted; but he had had occasion to carry it out in a recent case. Internal version in this case presented no special difficulties, but there was some trouble in bringing down the breech. After this, however, the rest of the delivery was surprisingly easy because the arms were completely extended by the side of the crushed head, and the mass so formed was less in bulk than the breach or the thorax. The patient did well.

The PRESIDENT (Dr. W. S. A. GRIFFITH) said that in the case of a dead child craniotomy was, in his opinion, preferable to forceps extraction in cases of contracted pelvis. But he had had such good results from Cæsarean section that in the case of living children he would be very loth to advise craniotomy.

Dr. C. E. PURSLOW (Birmingham) had in one case delivered by version when attempts to extract after perforation had failed, and he agreed with Dr. Griffith that this plan had advantages in some cases. When he had to perform craniotomy on the after-coming head he preferred perforation through the mouth to that behind the ear.

Mr. TARGETT replied.

Mdlle. CATHARINE VAN TUSSENBROEK (Amsterdam) read a short paper on Observations on Human Placentation in its Second Stage, illustrated by diagrams.

Dr. M. BEVERLEY (Norwich) and Dr. BERRY HART (Edinburgh) made some observations on the subject and congratulated Mdlle. van Tussenbroek on her excellent paper.

STATE MEDICINE.

WEDNESDAY, AUGUST 1ST.

Dr. DREW HARRIS (St. Helens) read a paper on

The Municipal Sterilisation of Milk: An Account of the Installation and Working of the System at St. Helens.

This paper was illustrated by lantern slides. The system was described in detail and results were given showing some improvement in the mortality of the children thus fed. The cost of sterilising the day's supply of milk was twopence, and the cost of installation and current expenses came to about £500, less £187 derived from the sale of the milk.

Dr. Harris's paper was discussed by Dr. J. C. THRESH (Chelmsford) and Dr. H. PECK (Chesterfield). The latter held that the proper way to begin the crusade was by a rigorous public control of the dairy farms.

Professor R. W. BOYCE (Liverpool) being absent, Dr. GRÜNBAUM read for him a paper upon the Construction of Sanatoria for Phthisis. Several continental institutions were described and illustrated by lantern slides, as was one in course of construction near Liverpool.

Dr. A. C. HOUSTON (London) read a paper bearing the title—

Can Modern Systems of Sewage Treatment be Depended upon to Remove the Bacillus Typhosus and Allied Organisms?

He showed a large number of lantern slides in illustration of his paper and confined his remarks to bacterial filters, because septic tanks in his judgment were no better from the epidemiological point of view than modified cesspools. In discussing the question of the possibility of the mechanical separation of micro-organisms in bacterial beds Dr. Houston gave good grounds for accepting his final conclusion—namely, that having regard to permanency of action and to what was feasible in practice it might be stated in general terms and with comparative safety that the mechanical separation of the micro-organisms in sewage by the use of bacterial beds was virtually impossible. In considering the possibility of the biological processes at work in the filter-beds proving inimical to pathogenic germs Dr. Houston pointed out that it was difficult, if not almost impossible, to obtain direct evidence on this important point because the mathematical chances of isolating the typhoid bacillus from ordinary sewage were so remote as to be almost infinitesimal. Consequently it was necessary to seek for indirect evidence, such as might, for example, be afforded by the enumeration of certain species of microbes in the crude sewage, and then to ascertain the fate of these same germs during the biological treatment of the sewage. Dr. Houston next gave elaborate tables proving that in the Crossness experiments bacillus coli and bacillus enteritidis sporogenes passed through the bacterial beds in practically undiminished numbers. Another microbe passing through the beds in unaltered numbers was the "sewage proteus," some strains of which were virulent to guinea-pigs. Again on occasion Dr. Houston had found bacillus pyocaneus even in so minute a quantity as $\frac{1}{1000}$ cubic centimetre of an effluent. Lastly, the subcutaneous injection of from 1 to 3 cubic centimetres of sewage effluents into guinea-pigs almost invariably produced a rapidly fatal result, but sometimes the animals apparently recovered but eventually died after the lapse of some weeks from pseudo-tuberculosis. Speaking of the deposit accumulating on the material in bacterial beds Dr. Houston showed that besides the tetanus bacillus "acid fast" bacteria were present in abundance some of which could not with certainty be distinguished morphologically from the tubercle bacillus. In one single instance he succeeded in producing tuberculosis in a guinea-pig inoculated with the deposit from a bacterial bed. Dr. Houston inferred from this that even if some of the "acid fast" bacteria collecting in the coke-beds were those of the tubercle bacillus they had for the most part lost their infective power; nevertheless, the single positive experiment recorded tended to destroy the belief that none of the bacteria in question were those of tubercle or that being tubercle they had all lost their infective power. Dr. Houston next dealt at some length with the experiments of Andrewes and Laws on the vitality of bacillus typhosus in sewage and with Klein's researches in a similar direction. The lesson Dr. Houston sought to teach from the results of these experiments was that the element of "time" or "delay" was an all-important factor and that it was doubtful if any bacterial process in practical operation at the present time "treated" or "detained" the sewage for a sufficiently long period to allow of the complete destruction of all the pathogenic germs by bacterial agencies. Dr. Houston frankly admitted that demonstration of bacillus enteritidis sporogenes and bacillus coli in sewage effluents did not of necessity prove that the typhoid bacillus and Koch's vibrio would likewise be unaffected by the biological processes at work in bacterial beds, but he urged somewhat strongly that his results showed that until positive evidence to the contrary were forthcoming it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than crude sewage. In conclusion, Dr. Houston pointed out that if streptococci, as a class, were to be thought of as derived from the intestinal evacuations of animals as delicate germs which readily lost their vitality and died, and as not unlikely to be, moreover, pathogenic, the fact that he had repeatedly isolated them from $\frac{1}{1000}$ cubic centimetre or less of the effluents from bacterial beds could not be regarded as devoid of significance. Indeed, in Dr. Houston's judgment it clearly carried the conviction that if these germs of feeble vitality passed through the filters in practically unaltered numbers it was extremely unlikely that pathogenic germs such as bacillus typhosus and the cholera vibrio which were seemingly most resistant, would be destroyed altogether during the biological processes at work in the filter beds.

Dr. A. S. F. GRÜNBAUM (Liverpool) said that the bacillus enteritidis sporogenes was almost universal. He did not think that the bacillus coli was very resistant, for it was specially susceptible to light and dryness. The great difficulty at present lay in the fact that there were no means of isolating the bacillus typhosus. Recently a cultivation medium had been published by Dr. A. T. MacConkey in THE LANCET[1]—a bile-salt agar with lactose which was inimical to nearly all bacteria but bacillus coli and bacillus typhosus. They had found that the bacillus typhosus was not present in the effluent from three feet of sand. The result of these observations pointed to the conclusion that all typhoid excreta should be sterilised. Effluents from bacterial beds must not go anywhere where they would be likely to infect drinking-water, or food, such as oysters.

Dr. COOPER PATTIN (Norwich) had endeavoured for a long time in Norwich to get excreta mixed with paraffin and burnt. As Dr. Grünbaum pointed out, the infection could not be kept out of the sewers either in early or in ambulatory enteric fever cases. Filter-beds did not clear sewage of pathogenic bacteria. He asked Dr. Houston to what extent and for what period of time must sewage be passed through soil to rid it of infection. It was a question whether the bacilli should not be subjected to treatment before filtration.

Dr. J. GROVES (Carisbrooke) said that the Local Government Board had discouraged the efforts of small authorities to establish bacterial treatment of sewage. The microbic states of effluents were most unsatisfactory. Many medical officers had been convinced that there had been an actual increase in the bacteria of the effluent from filtration beds.

Dr. J. C. THRESH (Chelmsford) said that at Whitstable, where oysters were cultivated, the question arose whether it would be safe to discharge effluents. On experimenting he found more bacteria in the effluent than in original sewage. The Local Government Board had pressed them to enlarge their filter-beds. He urged his local committee to write asking for proof that bacillus typhosus and other pathogenic germs would thereby be eliminated. The Local Government Board admitted that there was no such proof. The danger was the greater inasmuch as the effluent contained nothing offensive to the eye or the nose.

Dr. HOUSTON, in reply, said that he was pleased to find that Dr. Grünbaum did not regard the bacillus coli as a resistant organism. The general view was that the bacillus coli was more resistant than the bacillus typhosus. The new medium of Dr. MacConkey was doubtless most important. The use

[1] THE LANCET, July 7th, 1900, p. 20.

of sand as a material for efficient filtration could not be carried out in practice. Dr. Pattin's question as to what was the most efficient method of sewage sterilisation was difficult to answer. It might be said, however, that subsequent earth filtration would greatly lessen, if not remove, the infection.

THURSDAY, AUGUST 2ND.

The Provision of Cottages in Rural Districts and its Bearing upon Public Health.

A discussion was opened upon this subject by Dr. J. S. TEW, medical officer of health of the West Kent Combined Sanitary District. This subject, he said, was inseparably connected with the larger question of the housing of the working-classes throughout the country and was of paramount importance. He did not think he was claiming too much in saying that to no one was the actual condition of life among the working-classes better known than to members of their own profession and particularly to those of them who had been engaged in general practice and who had therefore seen all phases of cottagers' lives. The President of that Association last year, in his comprehensive and able address, spoke as follows: "The great hindrance to the progress of preventive medicine which we have to overcome is the overcrowded and insanitary condition of the dwellings of the working-classes. This is the field on which the great battle will have to be fought out. Our warfare will not be directly with microbic life, but rather with the conditions in which specific organisms are grown." In considering the condition and requirements of so-called rural districts, it had always appeared to him that some explanation of the term should be made. The term "rural district" might be considered, as far as the question of housing was concerned, in two ways: (1) when viewed in the light of the legal powers of its governing authority as a *rural* district—i.e., as an arbitrary division, distinguishing it from *urban* districts; and (2) when viewed as to its actual constitution—i.e., in the light of its proportion of population to area and the occupation of its inhabitants. Many large "rural districts," particularly in and near manufacturing and mining parts of the country and in districts near London and large towns, included contributory places of an urban character, and were rural only in name, and it was important to recognise their difference from purely agricultural districts. It was only reasonable that where houses for the working-classes were inadequate the consideration of building by local authorities and the nature of the dwellings most suitable to meet the local wants must be regulated by the constitution of the district and by its prevailing industries. For that purpose he proposed some such division as the following: (1) the metropolis proper, the condition of which was unique and with the exception of certain generalities beyond the scope of that discussion; (2) suburban districts, where the question of accommodation was somewhat less acute than in the actual centre of London; (3) extra-suburban districts—i.e., just beyond the immediate suburbs, often some 15 or 20 miles out, and many of which were in a transition state, but gradually losing their rural character by absorption into the suburbs of the spreading metropolis; (4) agricultural districts, where the poorer classes mainly, if not entirely, worked on the land; (5) cities and large provincial towns, where in the majority of cases special conditions of situation, staple industry, &c., made the question of the necessity for further provision of houses for the working-classes almost purely local; and (6) the suburbs of cities and large provincial towns, respecting which the conditions were extremely variable and must be dealt with on their individual merits. The districts coming under the head of rural districts would mainly be under the divisions Nos. 3, 4, and 6, and the working-people resolved themselves into three classes: 1. A section in good work and receiving wages varying from 25*s.* to 30*s.* a week, but yet where there was the greatest difficulty in obtaining a decent dwelling for a family, from 6*s.* 6*d.* to 8*s.* 6*d.* being frequently paid as house-rent alone in districts indicated as "extra-suburban." This led to the inevitable lodgers and the consequent overcrowding with the attendant evils. 2. A section mainly including the ordinary agricultural labourer, with a varying wage of about from 12*s.* to 22*s.* a week. In many cases, particularly on large estates, this class was well housed in cottages from 1*s.* to 2*s.* 6*d.* a week rent with a good garden and often a supply of milk; in others the cottages might be cheap, under 2*s.* a week, but too small for a family, damp, ill-drained, badly supplied with water, and in a bad state of repair. Many of these cottages were let with farms and the tenant farmer was the employer and sublet the cottages to the labourers. In this case if the cottage was in bad repair it was difficult or impossible for the labourer to get his master to insist on repairs, as the farmer was reluctant to request the landlord or his agent to improve the condition of the labourer's cottage, having in these days of agricultural depression many other and, in his opinion, more pressing matters on which to obtain his landlord's consideration. As a rule, however, the worst class of cottage was that owned by poor persons who had to live out of the proceeds of old cottage property, frequently mortgaged, and where practically no repairs had been done for years, and interference meant the owners becoming chargeable to the parish. Cottages owned by labourers themselves were rarely in satisfactory condition. 3. The third and, fortunately, by far the smallest section in rural districts would include those having no regular occupation and having an alternating existence between a slum cottage, the workhouse, the gaol, and the road. That was the class which so frequently came under the notice of the Society for the Prevention of Cruelty to Children and the school attendance officer and the children of whom were such active agents in the spread of infectious and parasitic diseases in our elementary schools. The bad influence which insanitary and overcrowded cottages had upon the public health could hardly be over-estimated. To his mind the foremost evil was the lowering of the individual stamina of those living under bad conditions. Next to this came those two most formidable diseases of infant life, whooping-cough and measles, which between them in the year 1899 caused in England and Wales over 19,000 deaths, the vast majority of these occurring among children of the working-classes. The obstacles to the provision of an adequate number of healthy cottages in rural districts were many and great, so great that although increased powers to provide accommodation were given ten years ago yet he believed that so far only two rural district councils in England had reached the stage of actual buildings. Proposals to adopt Part III. of the Housing of the Working Classes Act had, however, in many instances stimulated local enterprise to provide the necessary accommodation. Unfortunately, in the majority of rural districts the staff of sanitary inspectors was inadequate and only sufficient to cope with routine work and general nuisances, leaving little time for the detailed inspection of cottage property, which frequently belonged to persons with local interest who had the power to oppose the annual re-election of inspectors. With insecurity of tenure it was unlikely and unreasonable to expect that the majority of sanitary inspectors or medical officers of health would take the active steps which they otherwise would. Again, the clerks to rural authorities naturally had no great enthusiasm in the matter of adopting acts of this kind which required great attention and caused endless extra meetings, and as experience showed in the great majority of cases eventually were allowed to fall through at any earlier or later stage. When it had been fairly shown that further cottage accommodation was required fresh housing should be made before closing of insanitary property, otherwise the ejected families either overcrowded other cottages near or else left the neighbourhood. The all-important question in starting a scheme was whether the cottages would be self-supporting or become a burden on the rates. Where land was not high-priced he had every reason to believe that with care and economy, even with the present high price of material and wages, rural councils could build cottages just to pay their way; and if from exceptional local circumstances there was a slight loss on them it should be looked upon in the light of an insurance premium on the health of the place. They naturally looked with considerable expectation to the Bill now before Parliament to amend Part III. of the Housing of the Working Classes Act, 1890, but a perusal of the Bill as amended in committee gave little hope of making the mode of procedure less cumbersome for rural districts. He hoped to elicit opinions specially (1) as to the urgent necessity for better cottage accommodation in many rural districts; (2) as to the desirability of rural district councils undertaking the building of cottages; and (3) as to the insufficient air-space in crowded cottages being greatly responsible for the high death-rate among the working-classes from such diseases as measles, whooping-cough, and phthisis.

Dr. J. GROVES (Carisbrooke) said that the inspectors had

to collect information for the medical officers. In many rural districts landlords had to be dealt with directly. The landlords had often very little return and it must therefore be shown clearly that better accommodation was necessary. Cottages were often closed by the local authorities because landlords would not repair them, and the labourers were forced into the nearest towns. The duty of the medical officer was to state what was right from a sanitary point of view, but the responsibility of carrying out his recommendations rested with the local authority. Security of tenure was the only safeguard and that could be obtained only by the Local Government Board.

Dr. H. PECK (Chesterfield) related a number of instances of country persons in his district who lived in extremely bad houses. The present system of providing houses under the Housing of the Working Classes Act was far too complicated. Until that was simplified there was little chance of making any material improvement in rural housing.

Sir HUGH BEEVOR (London) said that the question should be mainly in the hands of the county medical officers. He suggested that the dampness of cottages might be ascertained in country districts and valuable data thereby afforded in the study of phthisis.

Dr. D. G. SUTHERLAND (Cambridge) suggested that rural improvement schemes might be run alongside the many that were advanced in favour of towns. The hands of the sanitarian were often stayed because he knew that if insanitary houses were condemned no others would be built in their place. The stamina of the nation was deeply involved in the question of the housing of the rural poor.

Dr. J. HADDON (Hawick) thought that medical officers of health did not fully avail themselves of existing powers. He urged that powers should be given to regulate the construction of cottages and that an isolation room should be attached to each dwelling.

Dr. H. JONES (Rhondda) lamented the insufficiency of the staff and the apathy of the Local Government Board in the matter. At the same time pressure from that body, however, was often ignored by the local authorities.

Dr. TEW, in reply, said that insecurity of tenure retarded both inspectors and medical officers. He agreed with Dr. Peck that the trouble given to the clerks by Part III. of the Housing of the Working Classes Act was most detrimental. There was no more striking feature in country cottages than the gutters, which were very often very defective and led to damp walls.

A vote of thanks to Dr. Tew was proposed by the PRESIDENT and carried unanimously.

PSYCHOLOGY.

WEDNESDAY, AUGUST 1ST.

The Bearing of Sexual Functions and Diseases of the Sexual Organs on Insanity and Crime.

Dr. MACNAUGHTON-JONES (London) opened a discussion on the Correlation between Sexual Functions and Insanity and Crime. He pointed out that various affections of the genitalia, internal and external, might have possible correlative mental disturbances and that malpositions and displacements of the uterus and adnexa, inflammatory and neoplastic lesions, and perverted sexual habits—e.g., masturbation—might give their characteristic colour to mental troubles. Insanity might arise from masturbation as well as from the changes attending the onset of sexual life (puberty and adolescence) or its close (the menopause). Psycho-pathology and gynæcology had a common meeting-ground in the sexual ailments of women, and in this field might be found the causes and conditions which in women gave rise to neurasthenia, hypochondriasis, melancholia, mania, and dementia. Hystero-psychoses had their origin in uterine and ovarian troubles, as was now almost universally recognised. Much depended upon difference of environment and upbringing. The sensitiveness of the cultured, refined, and pretty woman of society might result in mental trouble from causes which did not affect the agricultural labourer's wife, the city seamstress, or the factory hand. Special regard should be had to the importance of the period of adolescence from a medico-legal and criminological standpoint. The question of the gynæcological examination of female patients who were insane must be left to the discretion of the asylum physician. When gross lesions or tumours of the uterus and adnexa were present in such patients removal should be practised. The risk of post-operative mental derangement was slight or absent in women previously healthy, and when such derangement resulted it was not generally serious or permanent. Aberrant uterine and sexual functions when present in a woman who had committed some crime or offence should be always carefully considered because such a condition might be a determining cause, and its removal might do away with the tendency to crime or wrong-doing.

Dr. J. G. SOUTAR (Gloucester) deprecated undue gynæcological examination of female patients, especially as a routine practice, this being decidedly a disturbing process.

Dr. BERNARD O'CONNOR (London) said that the approach of the menopause should be considered as an important point in determining the criminal responsibility of women at the age of 43 or 44 years.

Dr. WYNN WESTCOTT (London) said that in his experience as a coroner at inquests on 200 women who had committed suicide he found that the majority were at the "change of life" and that the younger of these appeared to have been menstruating.

The PRESIDENT (Dr. PERCY SMITH of London) deprecated the routine vaginal examination of female lunatics and stated that some gynæcological methods tended to develop the patient's hypochrondriasis.

Dr. SEYMOUR TUKE (London) commended the coöperation of psychological and gynæcological study.

Mr. G. A. CARDEW (Cheltenham) said that gynæcological examination was unnecessary in the vast majority of cases seen by him—i.e., female school teachers and students, who suffered from amenorrhœa, but who recovered under rest, fresh air, and good diet.

Dr. MACNAUGHTON JONES briefly replied.

Epileptoid Mania.

Dr. E. S. PASSMORE, assistant medical officer of Banstead Asylum, read a paper on Epileptoid Mania. Patients suffered for some years from fits, probably from childhood, and then some day, without warning, mental symptoms of a characteristic kind supervened on a fit. The mental symptoms were confusion of ideas and loss of memory and the unconscious performance of some apparently purposive act. At a later stage maniacal outbreaks of an impulsive or homicidal character might develop, and temporary delusions might also arise as the result of hallucinations. In other cases the convulsive attacks were entirely absent, their place being taken by periodical maniacal outbursts. Clinical histories of a few cases were detailed and the conclusion reached was that the periodical convulsive attacks of epilepsy might in some patients be replaced by periodical maniacal attacks (psycho-epileptic attacks). It was also urged that so called "recurrent mania" was nothing but an epileptic insanity. For example, a female patient, aged 31 years, admitted to Banstead Asylum as suffering from acute mania in 1884, was discharged in 1887. Eight days later she was readmitted with acute maniacal symptoms. After four years she was discharged, but readmitted in five days, and had since then been a constant inmate of the asylum. Her attacks of maniacal excitement now occurred at shorter intervals than previously and between the attacks she was perfectly rational. The attacks had a comparatively sudden onset, with twitching of the facial muscles and mental confusion lasting a few hours. She then became maniacal and dangerous and exhibited murderous impulses. When this stage had subsided she was dirty and destructive in her habits and collected rubbish. The whole attack lasted a week or a fortnight and she then slowly recovered. After an interval the same cycle of events was repeated. The patient's brother and sister were insane, but no other details of family history were obtainable. In other patients similarly afflicted a family history of insanity and epilepsy was obtained. Dr. Passmore concluded that the mania associated with ordinary epileptic insanity and that known as recurrent mania showed a marked similarity in clinical symptoms, and he suggested that such cases of recurrent mania as exhibited periodical excitement in the absence of delusions should be regarded as epileptic in nature and should be designated "epileptoid mania." Of course such conditions as general paralysis, chronic alcoholism, and cerebral wasting, in which epilepsy was merely symptomatic, should not be confounded with these cases.

Mr. F. OLDFIELD (London), in discussing the above paper, said that epilepsy might be manifested by mental symptoms, especially such mental outbreaks as certain criminals were liable to and which Lombroso was one of the first to draw attention to.

Dr. LLOYD ANDRIEZEN (London) referred to the importance of classification as a scientific, practical, and economic measure, and to the places and institutions adapted for various classes of epileptic patients. Epileptic lesions might be present in idiots, imbeciles, paraphreniacs (criminals, borderland cases, &c.), and in ordinary lunatics. Psychic epilepsy led to the development of automatic states of sub-consciousness, with loss of the sense of personal identity, during which crimes might be committed. This was a point of great medico-legal importance. He could not accept the view that true recurrent mania was identical with epileptic mania. Both in pathogenesis and clinical history there were important differences.

The PRESIDENT did not consider recurrent mania as an epileptic cerebral or mental disease. Attacks of recurrent mania usually began more gradually and there were less confusion of mind and loss of memory for the occurrences than in epileptic insanity. There was some relationship to epilepsy in rare instances—e.g., in a case observed by him in which one of the maniacal attacks of a patient suffering from recurrent mania ended with a series of convulsive seizures.

Dr. J. G. SOUTAR said that in many essential particulars recurrent mania proper was different from epileptic insanity, and Dr. Passmore's contention of their identity could not be sustained. It was necessary to guard against a too great laxity towards criminals by ascribing criminal deeds to epilepsy.

The meeting was then adjourned to the next day.

PHYSIOLOGY.

WEDNESDAY, AUGUST 1ST.

The proceedings of the section opened with a debate on

The Formation and Excretion of Uric Acid in Health and Disease,

introduced by the President, Dr. W. D. HALLIBURTON, Professor of Physiology in King's College, London. He said that their more exact information on the subject dated from the work of Mares and Horbaczewski, the former of whom pointed out that the increased output of uric acid following a meal commenced too soon to be attributable to tissue metabolism, and the latter associated the production of uric acid with the liberation of nuclein. Horbaczewski's theory, though not tenable in all its original details, had been the basis of most of the more recent work. Chemists as well as physiologists had given attention to the matter, and one in particular, Fischer, had done good service in showing the possession by uric acid and the alloxuric bases of a common radicle—purine. Smith Jerome found that feeding on foods containing nuclein always increased the output of uric acid in the urine, whilst Hopkins and Hope pointed out that the insolubility of nucleins in gastric juice precluded the assumption that they furnished the whole of the uric acid immediately following a proteid meal, and further, that the quantity of uric acid produced by a *flesh* diet was too great to be wholly due to the small amount of nuclein therein contained. But flesh, though poor in nuclein, was rich in purine bases (particularly in hypoxanthine), and this, according to Smith Jerome, accounted for much of the uric acid in the urine. The uric acid of the urine was not the whole of the uric acid produced in the body. According to Kossel and Goto uric acid formed combinations with nucleic acid, at all events, *in vitro*; such might also be the case *in vivo*. Hugo Wiener found that a "surviving" liver could destroy uric acid, as could also extracts of other organs, and Parker described excretion of purine-containing substances into the bowel. Burian and Schur stated that every healthy adult excreted in urine a fairly constant quantity of purine bases characteristic of himself and apart from his food (endogenous urinary purine); and in addition, through the same channel, purine derived directly from his food (exogenous urinary purine) in quantity characteristic of the foodstuffs and not of himself. Further work on these lines promised well for the elucidation of purine problems in general and of the particular purine problem now before them—viz., that of uric acid.

Dr. A. HAIG (London) had examined his urine on nearly 3000 days and had come to the conclusion that the amounts of uric acid and urea formed in the body bore a constant ratio to one another—viz., 1 to 35. Excretion was more variable than was formation of uric acid, owing to control over the amount of uric acid ingested and over its solubility. In this country disease due to uric acid was caused rather by its ingestion than by its formation in the body.

Dr. T. H. MILROY (Edinburgh) referred to the importance of metabolism as a factor in the production of uric acid. Uric acid could certainly be produced from nucleins in food, but equally certainly from the nucleins of living cells. Nuclein-metabolism in birds was analogous to that in mammals. Dr. Milroy would speak further on the metabolic side of the question at a later meeting of the section.

Dr. F. G. HOPKINS (Cambridge) emphasised the origin of uric acid from non-nuclear sources. Administration of fruits might greatly reduce the output of uric acid and this probably rather by preventing its synthesis than by hindering its separation when formed.

Dr. W. J. SMITH JEROME (Oxford) considered it to be proven that some of the uric acid excreted was not derived directly from food, and that as much of it as did come from food was derived from alloxuric nitrogen. He commented on the supposititious nature of many statements made on the subject.

Dr. J. HADDON (Denholm) referred many disorders of nutrition to excess of food, more particularly to that of animal origin.

Dr. HARRY CAMPBELL (London) observed that attacks of gout and gravel were rarely synchronous. The quantity of food taken was as important a factor as was its quality in relation to uric acid production.

Dr. R. J. ANDERSON (Galway) considered that the nervous system was responsible for many variations in tissue activity and in activity of excretory organs.

Dilatation of the Pupil from Cortical Stimulation.

A paper was read by Dr. J. HERBERT PARSONS (London) on the above subject. Experiments on dogs and cats, he said, showed that dilatation of the pupil was not necessarily associated with deviation of the eyes or other movements. It was best obtained by excitation of the "oculomotor" and "visual" areas of the cortex and was abolished by excessive anæsthetisation. When well marked the pupillary effect was accompanied by all the usual results of stimulation of the cervical sympathetic and was usually more pronounced in the contra-lateral eye. The effect was diminished but not abolished by section of both cervical sympathetics; it was, on the other hand, completely abolished by intracranial division of the oculo-motor nerves subsequently to cutting the sympathetics. Division of the corpus callosum did not prevent the effect. Excitation of the central end of a cut afferent nerve still caused dilatation after cutting the sympathetics. This must be due to inhibition of the third nerves.

Dr. E. W. CARLIER, Professor of Physiology in the University of Birmingham, read a paper on

Changes in the Cell of the Newt's Stomach during and after Secretion.

Much of the work done on this subject was communicated to the Association at Edinburgh and the present paper was an appendix thereto. As the cell parted with its zymogen a new substance—prozymogen—was produced by the nucleus at the expense of the chromatin. This prozymogen became zymogen, which was not discharged until the nuclear chromatin was again restored. During secretion the nucleoli increased in size, were discharged into the cytoplasm, and disappeared, new ones immediately replacing them. They were probably excreta. The paper was illustrated by microscopic preparations, lantern slides, and diagrams.—Dr. R. J. ANDERSON and Dr. T. H. MILROY took part in the ensuing discussion.

Professor CARLIER also demonstrated Microscopic Preparations of the Kidney showing Cilia-like Projections from Cells lining the Convoluted Tubules. These had not previously been shown in the case of man. Analogous cells were obviously motile in amphibia but no ciliary motion had ever been seen in them in mammals.

Dr. A. G. LEVY (London) read a paper on

Fatigue of the Cerebral Cortex.

The motor cortex of the cat was excited by faradaic currents and contraction of the correlated muscle recorded. This did not fatigue the muscle itself. With sustained excitation the muscular contraction was at first tonic but became clonic as fatigue supervened. The onset of fatigue was rapid, contraction of the muscle rarely lasting for more than 30 seconds. Rest restored excitability. Cortical fatigue could also be elicited by repeated short excitations at regular

intervals. Under these circumstances irregularity of response preceded failure to react. The paper was illustrated by reproductions of tracings.

Dr. D. F. HARRIS, Lecturer on Physiology in the University of St. Andrews, read a paper on

The Inertia of Protoplasm.

Analogy might be drawn between the inertia of inanimate matter and certain properties of protoplasm. Thus one might conveniently speak of anabolic inertia of protoplasm (i.e., its resistance to excitation) and of katobolic inertia (i.e., its tendency to continue active after cessation of a stimulus). The former state was instanced by all "latent periods," the latter by the continued activity of isolated tissues. The terms also lend themselves to description of psychical states—e.g., apathy and superstition on the one hand and habit and fanaticism on the other.

OPHTHALMOLOGY.

WEDNESDAY, AUGUST 1ST.

Presidential Address.

Dr. W. A. BRAILEY, ophthalmic surgeon to Guy's Hospital, took as the subject of his address Ocular Headaches—that is, headaches in association with refractive and muscular errors. While the great majority of headaches were, he said, independent of the eyes, it was a matter of general acceptance that ocular errors produced headaches, though by no means in all cases. Were there any errors especially effective in the causation of headaches or in producing any particular form of headache? Muscular errors were by far the most important, though, of course, these must be ultimately of nervous origin. Other influences than muscles were glare and sudden irregularities in the distribution of light, such as flickering. Muscular ocular movements were intrinsic (pupillary and accommodative) and extrinsic (of the recti and obliqui muscles). The pupillary movements were unimportant except as slightly influencing glare. The accommodative movements were bound up with the great majority of ocular headaches.

It was a general law that the larger the ocular error the less the effect produced on the head, the reason being that a great defect of accommodative power led to its abandonment, the patient seeing as best he could without it. So also uncorrected presbyopia was rare as a cause of headache, except just at its commencement. It might cause strain and burning but not headache. A highly hypermetropic patient would read close with poor vision but no aching. So also patients with high hypermetropic astigmatism. Similarly great inequality of refraction gave comparatively little trouble, the worse eye being abandoned to disuse and muscular action being regulated by the better one. High degrees of myopia and myopic astigmatism produced little effect, distant objects hardly being seen, while near vision could be remedied largely by adjusting the distance. But low degrees of hypermetropia and hypermetropic astigmatism were often causes, especially when they led to an excess of effort both in amount and duration beyond that which was needed, as with weak muscles or hyper-sensitive nervous supply, this spasm of accommodation continuing in distant vision, and even under retinoscopy in the dark. But both spasm and headache were more produced by moderate inequality of refraction, especially if astigmatic and most of all by astigmatism with asymmetry of the axes. The ciliary muscle appeared to act unequally on the two sides in correcting this or a muscle even in different parts of its circuit in remedying astigmatism or asymmetry of axes. Evidence of this was seen when atropine revealed astigmatism on one side or both, increased its amount, or altered the axis of the correcting lens in amount less than 90°. So astigmatism, often unequal-sided, might become manifest when presbyopia began, and refractive defects revealed themselves to retinoscopic examination in eyes blind with fundus changes, such as optic atrophy, in proportion beyond that observed in average-seeing eyes. The above refractive errors caused aching in the eyes, often passing presently or on the following morning into the brows, immediate aching in the brows, temples, the back of the head, and occasionally also headache of the type of migraine. Treatment by appropriate glasses was of extreme value. Errors of the extrinsic muscles produced headache, but less than of the accommodative muscles, though more migraine, more giddiness, and more general distress. Here, also, the rule held that the larger the amount of error the less the disturbance, the explanation being that in considerable degrees of strabismus the image fell on the peripheral and so less acutely seeing retina.

But another potent factor in headaches was the tendency to binocular vision, and so we had another rule—the stronger the tendency to binocular vision the more headache produced by an error of the recti and obliqui muscles. Binocular vision varied much in its strength in different subjects. Possibly there were natural differences related to the centres as much as to the muscles, for he had seen such indisposition run through families. But binocular vision appeared to be generally made rather than born. Babies often squinted irregularly till after a few weeks of life they got their yellow spots gradually to accord. He had met cases where, instead of bringing them into harmony, the child had developed another retinal point to work with the opposite yellow spot in an eye congenitally squinting, though with fair concomitant movement. Rectification of such apparent squint by tenotomy would produce diplopia. Other cases were common where the two eyes remained quite independent; for example, where there was congenital want of power of both external recti from central defect diplopia was absent and the child saw to his left with the right eye, and *vice versâ*. Binocular vision was not strongly established by the early age at which ordinary concomitant squint arose; so diplopia, though present, gave no trouble, and, indeed, was little noticed even in the comparatively rare cases where each eye had normal refraction and vision. But to take the case of a paralytic strabismus—for example, of the superior oblique—suddenly arising in an adult: here was much disturbance, and the same with cases where, when the two eyes had been used for different purposes—that is one for near and the other for far—they suddenly attempted by lenses and prisms to unite the images, the results being distress, giddiness, migraine, and other headache. But extrinsic muscles might, like the ciliary, have large latent defects, and he suspected that many obscure cases of headache had their solutions here.

Besides individual tendencies other influences altered the disturbing effect of ocular errors: (1) age, the errors being most potent between the ages of 10 and 45 years; (2) sex, women being the greatest sufferers; and (3) nationality. His experience did not extend much beyond the English people and the citizens of the United States, the latter of whom were eminently affected by these errors, so that a series of medical men and operators had arisen to take charge of that special sub-section of practice. Doubtless there were other influences, such as occupation and temporary states of the nervous system.

The Treatment of Chronic Glaucoma.

In opening a discussion on this subject Mr. RICHARDSON CROSS (Bristol) said that he based his opinion not only upon general experience but upon 47 private cases which had been most carefully examined and noted. Although all were agreed as to the necessity of operating on acute cases, yet many held different views as to the desirability of treating chronic cases in the same manner. The first and most important question was the diagnosis, and he considered that the field of vision was of the utmost importance, and observation on this gave the most valuable information in distinguishing between some cases of optic atrophy and chronic glaucoma, the contraction on the nasal side being very characteristic. If the disease had progressed very far probably nothing would save the eye, but in all other cases he was strongly in favour of iridectomy, and the sooner this was done the better. It was a comparatively simple thing to perform the operation in an early stage with a quiet eye, but very different with the reverse condition present. In some few cases where the tendency to the disease was very slight it might be kept quiet and non-progressive for years by the aid of myotics only, but usually the disease was not stayed by this alone. He mentioned an interesting case of myopia of 3 D with glaucoma where the myopia increased to 12 D, but the glaucoma got no worse. He then showed various charts of fields of vision both before and after treatment with myotics and iridectomy, and in most an increase of the field followed the diminution of tension. In one case considerable improvement followed iridectomy, but it subsequently deteriorated. He thought sclerotomy a most useful operation and proferred to do it with a keratome rather than with a Graefe's knife, and in the early stages he preferred this operation to iridectomy. He also considered that blindness would

follow in any well-marked case if drugs alone were relied upon.

Dr. J. HERN (Darlington) thought that the early diagnosis was the one thing needful and he considered that the relation between glaucoma and optic atrophy was very intimate. He was much in favour of establishing a communication between the anterior chamber and vitreous by passing a knife backwards (after iridectomy) through the cornea and suspensory ligament.

Mr. WORK DODD (London) said that his experience of iridectomy was not very satisfactory and he had been led in one case to excise the superior cervical ganglion of the sympathetic with immediate benefit.

Dr. KARL GROSSMANN (Liverpool) had seen much benefit arise from the sub-conjunctival injection of normal saline solution, and he sometimes increased the strength to 2 per cent.; this could be repeated every day for a week or longer.

Mr. E. D. BOWER (Gloucester) was in favour of prolonged treatment with eserine and cocaine. His experience of iridectomy was that in many cases the disease progressed.

Mr. GEORGE A. BERRY (Edinburgh) said that he used myotics for a long time only in the very early stage of chronic glaucoma, but this sometimes lasted for a very long time and he mentioned one case in which the sight was no worse 18 years after the disease was discovered. In all other cases he advised iridectomy and the sooner it was done the better. He preferred the keratome for both sclerotomy and iridectomy.

Mr. DEVEREUX MARSHALL (London) thought that the operation proposed by Dr. Hern was a very dangerous one and that injury to the lens and ciliary body would be very likely to occur.

The PRESIDENT thought that the disease was cured when the tension was normal, but atrophy of the optic nerve might progress and cause loss of vision. He favoured very early operation in nearly all cases.

Mr. RICHARDSON CROSS briefly replied.

Dr. KARL GROSSMANN demonstrated a lantern which he had invented for the detection of low degrees of colour-blindness.

Mr. SYDNEY STEPHENSON (London) read a paper on the Etiology of Phlyctenular Affections of the Eye. He noticed that in a very large number of cases there was either eczema or tuberculous tendency.

In the absence of Mr. G. FOGGIN his paper on Epicanthus was read by the SECRETARY, Mr. W. W. Sinclair. The author pointed out that the flatness of the nose was probably due to undue tightness of the cheek-muscles and tissues preventing the proper expansion of the nasal bones. He suggested a new method of raising the flat-nose bridge by means of subcutaneous division of tissues.

DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

Dr. NESTOR TIRARD (London) introduced the subject of

The Nature and Varieties of Pneumonia in Children

in a very lucid and interesting paper. Pneumonia, he said, in adults was a very satisfactory subject to lecture about on account of its well-marked character, physical signs, and symptoms, the chief variations from type being due to more or less involvement of the lung substance or to constitutional or acquired tendencies, such as alcoholism, of the patient. There were decidedly greater difficulties in dealing with pneumonia in children. Broncho-pneumonia seemed to have attracted more attention in children, hence some of the difficulty in diagnosis. The distinction was not well defined between broncho-pneumonia and vesicular bronchitis. Broncho-pneumonia was common in children up to the age of three years, after that age many cases conformed to the true lobar or croupous kind. The extent of the lung engorgement was greater in children than in adults, and this probably was responsible for the confusion with broncho-pneumonia. A general infection was evident in considering the symptoms and signs of acute pneumonia in children. This general infection had been attributed to the action of various micro-organisms, pneumococcus, &c., hence an anti-pneumonic serum had been used; but the subject had not yet reached a satisfactory stage. It was very doubtful whether pneumonia was really contagious. Dr. Pepper, the well-known American pharmacologist, had, indeed, given a series of instances, but generally contagious pneumonia had been pneumonia closely following influenza. The cases already in a ward did not produce more cases of pneumonia in those already there for other complaints. One case was quoted of a nurse who had nursed a patient suffering from diphtheria and who developed pneumonia and died. Speaking of abnormal forms of pneumonia Dr. Tirard said that the temperature might be abnormally high, say up to 106° F., either at the beginning or just before the crisis; there might be an unusually sharp crisis and a fall of 9, 10, or 11½ degrees; and there might be wide oscillations of temperature (5 degrees of difference—e.g., between the night and the morning temperatures) which was apt to confuse diagnosis. In one case the crisis occurred as usual at the fifth day; in a second the oscillations kept on for some weeks. This keeping up of the temperature might be due to other causes, such as an attack of diarrhœa or to extension of disease to other lobes of the lung. The initial symptoms were occasionally like those of tuberculous meningitis—headache, squint, retraction of the head, and vomiting, or the sickness and delirium might suggest cerebral tumour. As to abnormal physical signs, in spite of high temperature (of tableland character), rapid respiration, and all indications that the child had pneumonia, there might be no physical signs observable. In two cases quoted the physical signs (dulness and tubular breathing) only appeared at the crisis. Dr. Tirard gave a bad prognosis in the case of anæmic infants. He suggested that the cerebral symptoms and high fever were probably due to the retention of toxins in the blood in place of their being eliminated by the lungs. The difference in type might be due to different organisms, such, for instance, as the influenzal kind, which was not quite a true lobar pneumonia. He also touched upon the gradual development of tubercle out of an attack of presumed pneumonia.

Dr. LORIMER HART (London), after congratulating Dr. Tirard on his introduction to the discussion, dealt with the various forms of broncho-pneumonia, vesicular bronchitis, and pneumonia. His explanation of the nurse's case alluded to by Dr. Tirard was that it was a true diphtheria of the lung. He had seen six cases of pneumonia (in adults) in which the patients all died from heart failure; this he suggested was due to contagion, and in these cases possibly the anti-pneumonic serum might be of service. He believed that cases of pneumonia in children which presented cerebral symptoms were nearly always cases of special disease of the lung. Further, where the physical signs were late in appearing he suggested that the explanation lay in the disease gradually spreading from the interior of the lung to the surface. He considered that it was possible to arrest the progress of the complaint, engorgement of the lung in some cases not advancing.

Dr. H. O. NICHOLSON (Edinburgh) gave some valuable information on the question of pulse and blood-pressure in this disease. After the third day the pulse was dicrotic and the blood-pressure was low. In croupous pneumonia at the onset the pulse was hard and at high pressure, and after three days or so it was dicrotic and at low pressure. The tracing was irregular and the pulse was rapid. It was in some cases very like that gained from a tracing of mitral stenosis. In broncho-pneumonia there was not the same high tension at first nor quite the same tendency to fall. In unfavourable cases the high-tension pulse persisted. The chief indication of treatment suggested by study of the pulse was to sustain the blood-pressure. Digitalis did not seem so useful as strophanthus, strychnine, and carbonate of ammonia. In the first day or two of croupous pneumonia antimony was of much value.

Dr. A. M. GOSSAGE (London) dealt with the relationship of lobar and lobular pneumonia. Both might be due to the same pneumococcus. Clinically they were not much alike. Possibly the lobar pneumonia case got infected through the blood, the lobular through the lungs, and cases were met with where there was great difficulty in assigning them to one or the other. He explained that sometimes lobar pneumonia preceded lobular pneumonia. He thought that the question of the pneumococcus as the cause of pneumonia was not quite settled yet, as the coccus was found in other conditions. He dwelt on the varieties of pneumonia, insisting on an epidemic form.

Dr. W. S. FENWICK (London) said that at the commencement occasionally there was violent abdominal pain, in cases where the pneumonia started low down in the lung and the accompanying pleurisy affected the diaphragm. He quoted one case attended by severe opisthotonos, suggesting

meningitis; on the third day there was a patch of consolidation in the lung and as this cleared up the child got well. Another method of onset was by acute gastro-intestinal catarrh. For this he gave a bad prognosis, those cases starting in this fashion being generally fatal. The prognosis of pneumonia was difficult in children; those cases wherein a rapid distension of the bowel took place were nearly always fatal.

The PRESIDENT (Dr. F. TAYLOR of London) said that if they believed, as was customary now, that pneumonia was due to the infection by a toxin, they need not be surprised at the varieties of the disease. He had had two cases (not in children) where there was most severe abdominal pain at the onset of acute pneumonia; also, dealing with the question of contagion, he mentioned that he had seen four or five children attacked almost simultaneously by pneumonia, several years before the last invasion of influenza, and he considered this due to a contagious cause in all probability. He would agree to allow that the conveyance of contagion from one person to another must be very rare. He could hardly agree with the idea of the toxins being eliminated by the lung, as the fibrin exuded into it was not all expectorated but mainly absorbed. He then dealt with the question of high type and low type and the different varieties of pneumonia. Generally speaking, if the patches were large it was lobar pneumonia, if small lobular. He described three types of temperature: (*a*) that of the sudden rise, level, and sudden fall; (*b*) long oscillating temperature lasting two or three weeks; (*c*) short oscillating temperature ending on the fifth or sixth day.

Dr. T. D. LISTER (London) had examined many cases of broncho-pneumonia in children and post mortem he had never failed to find the pneumococcus. Sometimes the staphylococcus also was present. The consolidation of the lung in children under two years of age was of the catarrhal type. In ordinary sero-fibrinous pneumonia the infection took place probably through the blood, in catarrhal pneumonia or broncho-pneumonia through the air-passages or by direct extension of disease down the bronchi and tubes.

Dr. TIRARD, in replying, said that he would differentiate between capillary and vesicular bronchitis rather by whether the child died from asphyxia before the consolidation of the lung occurred. As he suggested the toxins were not eliminated by the lung and so they were retained and gave rise to symptoms. The comparative absence of physical signs in cases with cerebral symptoms explained itself by the poison retained in the blood causing the cerebral symptoms. His experience did not make him agree that apical pneumonia was generally attended by cerebral symptoms. He was also not at all sure that deferred physical signs were due to the spread of the disease from the centre to the surface of the lung. He commented on Dr. Nicholson's pulse studies and their value as giving suggestions for treatment. He considered that contagious cases of pneumonia were really cases of influenza followed by pneumonia. He would not consider an ordinary case of pneumonia in the ward in any way a source of danger. He concluded by thanking the meeting for their attention and congratulating the President on the good discussion which had been raised.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, AUGUST 1ST.

The PRESIDENT (Dr. SCANES SPICER of London) read his address which was published in THE LANCET of August 4th (p. 369).—A discussion on

Intra-nasal Treatment in Ear Disease

was then opened by Dr. P. MCBRIDE (Edinburgh). He divided the subject into (1) the conditions of the ear liable to be affected by nasal changes, and (2) pathological conditions of the nose likely to involve the ear.—Dr. McBride was followed by Dr. CRESSWELL BABER (Brighton) and Dr. DUNDAS GRANT (London).—The discussion was continued by Dr. HERBERT TILLEY (London), Dr. JOBSON HORNE (London), Dr. WATSON WILLIAMS (Bristol), Mr. RICHARD LAKE (London), Dr. HOLBROOK CURTIS (New York), Dr. HEMINGTON PEGLER (London), and the PRESIDENT.—The openers of the discussion having replied the meeting adjourned. The time required for the discussion did not permit of any papers being taken.

In the course of the morning the section adjourned to that for Diseases of Children to take part in the discussion on a paper by Dr. J. THOMSON and Dr. LOGAN TURNER on the Causation of Congenital Stridor.

TROPICAL DISEASES.

WEDNESDAY, AUGUST 1ST.

The PRESIDENT, Colonel K. MACLEOD, called upon Dr. DUNCAN for his paper on

Quinine: its Action and Mode of Employment.

Dr. ANDREW DUNCAN, I.M.S. (ret.), opened the discussion on this subject by reading a paper in which he dealt with the several opinions declared by medical men of many nationalities. French observers generally were of the belief that in the milder form of malarial fevers quinine was valuable as a prophylactic but that in the pernicious form it was well-nigh useless. The Austrians and Russians found no advantages from the use of quinine as a prophylactic. In India several observations had been made on this subject; as an example at Peshawur in 1886 during the autumn 1203 men took quinine with an admission of 10·22 per cent. for malarial fever, whilst among 1202 men who had no quinine the admission rate for malarial fever was 27·28 per cent. During the Ashanti War of 1873 no good results were notified from taking quinine as a prophylactic and the same was recorded during the Ashanti War of 1896. An investigation on this subject was instituted on the West Coast of Africa by Mr. Chamberlain on the recommendation of Dr. Manson, with the result that quinine was considered as an efficacious protection in 87·7 per cent. of the cases tested. Dr. Duncan contrasted the action of several other drugs with quinine. Of these arsenic, nim bark, berberis, narcotine, kreat, and inderjas were the drugs employed, but the action of all was inferior to that of quinine in the time they took to effect a cure. Dr. Duncan believed that quinine probably acted by destroying the malarial organism.

Major W. J. BUCHANAN, I.M.S., superintendent of the Central Jail, Bhagalpur, Bengal, communicated a paper on the Prophylactic Issue of Quinine: a Synopsis of an Experiment on a Large Scale in Indian Jails. He discussed the arguments for and against the so called "prophylactic issue" of quinine. In 1894 the experiment of giving daily or several times a week a dose of quinine or cinchonidine to every prisoner was tried in the Punjab. During the year the experiment was tried the sickness and mortality rates for the Punjab jails were so good that it seemed as if the good results were to a great extent due to the issue of quinine.

Dr. FIELDING-OULD (Liverpool) read a paper on the Administration of Quinine with Special Reference to the Practice on the West Coast of Africa. He was of opinion that the beneficial action of quinine was due to the death and subsequent disintegration of the malarial parasite caused by the use of the drug and to the fact that quinine bound more closely to the hæmoglobin the oxygen present in it. Blood rich in malarial parasites but strongly impregnated with quinine was incapable of causing malarial infection when injected into a healthy person. Dr. Fielding-Ould objected to the use of the word "prophylactic" as applied to the exhibition of quinine. The drug could not prevent malarial infection but only attacked the parasites that were in the blood in a certain stage of their development. Unless young amœbulæ were present in the blood quinine could only do harm. In regard to treatment quinine was the sheet-anchor and might be administered by the mouth, by the rectum, or hypodermically, as occasion served.

The reading of these three papers was followed by a discussion.

Dr. PATRICK MANSON (London) remarked that quinine could only exercise its therapeutic action on the blood of persons residing in malarial infected countries when the parasite was present in the blood. To arrive at a scientific conclusion concerning the prophylactic use of quinine it would be necessary first to ascertain the kind of parasite present in the locality and then to administer the drug, as in the milder forms of malaria quinine was no doubt both prophylactic and curative, but in the pernicious forms its power was uncertain. Dr. Manson considered it important to ascertain the condition of the digestive organs before administering the drug, as in gastro-intestinal catarrh to give quinine by the mouth was to court disappointment in its action.

Lieutenant-Colonel MARSDEN, I.M.S., said that he had invariably given quinine both as a prophylactic and as a

therapeutic agent and the results were nearly always satisfactory. He mentioned one case of hæmoglobinuria positively traced to dosage with quinine, but he had only seen one case in 20 years' experience.

Mr. D. C. REES (London) gave his experience of quinine used as a prophylactic in Nigeria. He found that quinine given in five-grain doses daily, although it did not afford marked prophylaxis, served to lessen the severity and also the case-mortality of the attacks.

Dr. C. F. HARFORD-BATTERSBY (London) gave his personal experience of the use of quinine in Central Africa and came to the conclusion that it was highly efficacious. He had not seen any ill-effects from its administration.

Major E. WILSON, R.A.M.C., stated that in the Ashanti Expedition of 1895 quinine was tried for a time as a prophylactic and was discarded. He did not believe in heroic doses and had never seen blood in the urine after taking quinine.

Dr. B. S. RINGER (Canton) recorded a case in which complete blindness resulted from quinine taken in large doses. The patient, however, recovered the sight completely under iodide of potassium.

Lieutenant-Colonel MAITLAND, I.M.S., asked for information concerning treatment by methylene blue. He had had good results in his own practice from its administration. He stated that he had given quinine to pregnant women without any untoward effects.

Mr. JAMES CANTLIE (London) brought forward a case in which quinine was administered to a child aged four months by giving four grains thrice daily to the mother who was herself nursing the child and a quarter of a grain to the child with satisfactory results. He asked for information concerning the efficacy of giving the mother quinine as a means of treating fever in a child whom she was suckling.

Dr. HENDERSON (Shanghai) considered the administration of quinine to pregnant women as very likely to cause abortion. He advised opium to be given with the quinine if the state of the patient demanded quinine in the pregnant state.

Major RONALD ROSS, I.M.S (Liverpool), stated that he believed that a "secondary" fever occurred in old malarial cases, due probably to enlargement of the liver and spleen. The fever was of a continued type, was not directly due to the parasites, and was not amenable to quinine.

Dr. GUTHRIE RANKIN related a case where hæmoglobinuric fever developed in a young man in 14 months after proceeding to Central Africa. The patient had never taken quinine as a prophylactic. When he returned to Africa he took quinine as a prophylactic and had no return of the disease during a residence there of two and a half years.

Lieutenant-Colonel OSWALD BAKER, I.M.S. (ret.), was of opinion that the prophylactic dose of quinine was usually too small and advised the same dosage for prophylaxis as for curative purposes.

The PRESIDENT strongly advocated Dr. Manson's view that the nature of the parasites infecting the blood should be ascertained before or during the administration of quinine. Koch recommended microscopical examination as a means of detecting malarious infection in a community as parasites might exist in the blood without pyrexia; this, although a laborious means of dealing with the disease, was necessary if the attempt was to be made to get rid of malaria by giving quinine.

Lieutenant-Colonel J. MAITLAND, I.M.S., read a Note on the Etiology of Filariasis. The discovery of the filarial parasite in the proboscis of the mosquito by Dr. G. C. Low of the London School of Tropical Medicine was not, in his opinion, conclusive evidence that filarial disease was spread by the bite of the mosquito. He was of opinion that it was a water-borne disease in all probability, and he ascribed the immunity of Europeans in the tropics to filarial infection to the fact that they drank boiled or filtered water.

A paper was communicated by Captain J. P. JAMES, I.M.S., on the Metamorphosis of the Filaria Sanguinis Hominis in Mosquitoes, especially with reference to its Metamorphosis in the Anopheles Rossii and other Mosquitoes of the Anopheles genus. Captain James was of opinion that the period of filarial metamorphosis in the mosquito had hitherto been stated at much too short a time. He held that in those cases in which seven days had been stated as the period required, the idea had likely arisen from the fact that the mosquitoes had bitten a filarial infected person before the observations were commenced.—Dr. MANSON and Mr. REES took part in the discussion, the latter stating that some species of mosquitoes served better as hosts for the filaria than others. He believed, in opposition to both Dr. T. L. Bancroft and Captain James, that the filaria nocturna cast its sheath in the mosquito's stomach before penetrating to the thoracic muscles.

Major BUCHANAN, I.M.S., communicated a paper on the Hot Weather Diarrhœa of India in which he described a form of "choleraic diarrhœa" in India similar to cholera nostras and the summer diarrhœa met with in England. He was of opinion that in India, as in England, non-infected cases of intestinal flux might occur during the hot weather.

Dr. GEORGE THIN (London) communicated a note on a case of Blackwater Fever (with specimens). The paper was based upon the results of an examination of organs and tissues which had been sent to him from Central Africa by Dr. Douglas Gray from a patient who died from hæmoglobinuric fever. The patient had always used a mosquito net. The specimens showed melanin in the spleen, in the liver, and in the kidneys, and in the case of the kidneys degenerative and destructive changes in the secreting epithelium of the tubules as well. Dr. Thin was satisfied from the appearance of the organs that the patient had died from acute malarial fever in which the hæmoglobinuria was a concomitant symptom, and although the parasites were absent in the tissues of the spleen, liver, and kidneys the fact did not militate against this view.—Dr. MANSON and Mr. REES joined in the discussion and Mr. Rees stated that from an examination of the organs of this patient he had come to a conclusion opposite to that arrived at by Dr. Thin.

Dr. ANDREW DUNCAN read a paper on the Diseases of Goorkhas. A form of malaria peculiarly resistant to quinine was prevalent amongst Goorkhas. Phthisis, mumps, and measles were prevalent amongst soldiers in the Goorkha regiments, but enteric fever was almost unknown. The married men in the Goorkha regiments were liable to ophthalmia caused by the way in which the married women shut up their houses and from the insanitary nature of their surroundings.

THE NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, AUGUST 1ST.

The meeting opened with an address from the President which will be found at p. 371 in THE LANCET of August 4th. Inspector-General NINNIS'S address was followed by papers chiefly interesting to those engaged in the organisation of field and base hospital arrangements and the composition and *personnel* of the various corps and companies needed for removal of the wounded from the battlefield to the hospital, their services as first aid, and their subsequent care of the wounded and sick in hospital.

The first paper put down to follow the address of the President was one by Surgeon-General J. B. HAMILTON,

On the Past, Present, and Future of the Royal Army Medical Corps,

but was postponed owing to the unavoidable absence of Surgeon-General HAMILTON, and the secretary, Surgeon-Captain JAMES HARPER, V.M.S.C., read instead a paper for Surgeon-Lieutenant-Colonel J. E. SQUIRE, V.D., who was absent from the meeting. The paper was entitled

On the Augmentation of the Royal Army Medical Corps for War.

It reviewed briefly the present composition and arrangements of the Royal Army Medical Corps, its difficulties as regards adequacy of *personnel*, and pointed out how such necessary augmentation should be carried out. The author deprecated the employment of civilians intermixed with the regular forces of the Royal Army Medical Corps as tending to be subversive of discipline, as there would arise great laxity, as he no doubt supposed was the case now in South Africa. He then proceeded to point out that the civilian and auxiliary medical assistants should have such training as would entitle the War Office to call upon them from time to time with that confidence in their training and powers of maintaining discipline which a knowledge of their previous partial training would impart to the authorities.

The above paper was followed by a paper by Brigade-Surgeon-Lieutenant-Colonel GILES, V.D.,

On Volunteer Medical Organisation.

The following discussion on these two papers took place.

Mr. TREVES (London), late consulting surgeon to Her Majesty's Forces in South Africa, said that with reference to



the question of transport raised by these gentlemen in their papers it appeared that there was an impression in this country that the medical department in South Africa was deficient in transport. Now, every hospital of 100 beds had its own transport. It was very difficult indeed to make a field hospital mobile. Hospitals composed normally of 300 beds had been suddenly swelled into hospitals of 800 beds as the result of sickness, fever, &c. There was, therefore, the natural result that transport for the latter would, of course, seem inadequate, as that for a small hospital had to do duty for a larger one. Nevertheless, this most unprecedented demand on the resources of the department had been well met and the hospital work was done most efficiently. Judging from experience of the campaign in South Africa it seemed that it would be a distinct advantage if a large hospital followed an army in the field, with its situation somewhere near the general's headquarters. With regard to the working of the civilians, medical men, nurses, orderlies, &c., in South Africa, there was a distinct misconception as to their not pulling with the members of the regular forces. Everyone worked cordially for the success of the medical arrangements, and there was the utmost generosity and cordiality displayed on all sides by everyone, and whether in field or in hospital the utmost harmony prevailed. The orderly himself as an individual was an incredible difficulty. Nurses could not go into a field hospital, though the nurses worked splendidly at Colenso. He (Mr. Treves), through the great courtesy of the War Office, was himself provided with splendid transport and relays of horses and mules. He was thus able to take two nurses up country. Nevertheless, the nurses ought not to go beyond the base hospital. The orderly must therefore be depended upon. At present, as he is, he is an impossible person. He was neither man nor woman; he had to pitch and strike tents, dig trenches, act as porter, and then, perhaps, be called upon to assist at an abdominal section. Water being so scarce as it was in South Africa it frequently occurred that surgical cleanliness was not always as it ought to be, nor could it be carried out. The burning questions were, How could they obtain proper orderlies, what prizes could be given to induce proper and suitable men to come forward, and what could be done to induce them to enter the army? The formation of a reserve of properly-trained orderlies, bearer companies, and medical reserve ought not to present any difficulty. Young medical men, of whom there were a great many suitable from among those obtaining qualifications, might serve three years, one year with the colours and two years in the reserve. By the above methods he thought that the Royal Army Medical Corps, already so efficient, could be made as perfect as it was possible for human efforts to effect.

Surgeon-Major G. A. HUTTON (Leamington) said it was a wonderful thing that the Director-General could lay his hands on from 400 to 500 civilian medical men and 1500 St. John Ambulance Corps men. He wished to corroborate Mr. Treves as to the efficient manner in which the War Office and the medical department had carried out what was required of them. They must all remember that they were only human institutions and as such they could only hope for that degree of human perfection which was reasonable. He himself had been told by generals and those in authority that the Royal Army Medical Corps was splendidly represented and was most efficient. Under the circumstances more than was done was humanly impossible.

Dr. FORBES ROSS (London), speaking entirely as a civilian medical member, but from a public health point of view, wished to call attention to a point which might tend to clear up a great deal of the supposed neglect. If after such a sojourn as the troops had at Modder river, followed by exposure and continuous fighting on short rations, typhoid fever broke out, it was entirely an unforeseen matter. Now, if 10,000 men had an attack fever-rate of 5 per cent. this would give 500 enteric fever patients. This would require 500 beds and, from the nature of enteric fever, the changing of 500 pairs of sheets and blankets daily, and in addition these must be disinfected, for they were a distinct source of danger if not properly washed and stoved, for they would act as means of disseminating enteric fever among the wounded and other sick. It might also be looked at as a blessing that beds and bedding were not to hand, as by this means alone a terrible epidemic much worse than the present one might have been started. He advocated the digging of the ground over a surface of about six feet by two feet six inches, the soil thus disturbed to be broken up and raised six inches from the surrounding ground; this when spread with a waterproof sheet would provide a comfortable bed and could be changed from time to time and needed no such extensive transport as would the projecting of the amount of hospital equipment desired by those persons who forgot that this was primarily a war and not an expedition fitted out for the express purposes of treating enteric fever *al fresco* on the veldt, and ought therefore to have been equipped regardless of expense and transport, needed or available.

Surgeon-Captain J. CANTLIE, V.M.S.C., then contributed a paper on

How to Link the Militia, Yeomanry, and Volunteer Medical Services with the Royal Army Medical Corps.

He advocated the bringing into line of the Volunteer, Militia, and Royal Army Medical Corps, to do away with the word "staff" as applied to the Volunteers, and have all the branches designated as "Medical Corps." He would have the men in any of the branches freely interchangeable for purposes of service and augmentation of the Royal Army Medical Corps. Among other things he deprecated the training of medical students along with and at the same time as the men of the bearer companies, for it was not proper that these future officers should occupy this position. In no other service were the cadets compelled to go through a similar experience.

This paper was followed by a paper by Brigade-Surgeon Lieutenant-Colonel G. S. ELLISTON, V.D., on

Brigade Bearer Companies.

He recounted the troubles and difficulties he went through, and the organisational difficulties experienced in order to bring the *personnel* of the medical staff as regards training to their proper state of efficiency.

These two papers were discussed by the following gentlemen:—

Surgeon-General J. B. HAMILTON said that Surgeon-Captain Cantlie's paper brought to mind the regretted loss of the Militia Medical Service of the army. That loss was the greatest possible blow to the army. There was a loss of men with good county connexions who did recruiting work well. No one now took their place. Only two per 1000 medical officers in the militia would have been a great help in South Africa. Every officer of a militia battalion got 4*s.* per diem with the exception of the militia medical officer, but this had now been remedied. The auxiliary branches were too scattered. The Army Medical Reserve was the greatest possible humbug which was ever started. A member could wear a uniform, but when called upon for service he would hardly leave a good practice to accept £270 per annum. In the past men could not be got to train for bearer companies. The proper thing would be to have bearer companies separate from the regiment. They must form a reserve of nurses, but that proposal made by him some years ago was sat upon by the War Office, but now they were coming round in this matter. The increase of the Royal Army Medical Corps could be done by the reconstitution of the Militia Medical Service and amalgamated and employed with them if necessary. Put them in a simple uniform and recognise their rank and position.

Surgeon-Major G. A. HUTTON made a few remarks on the number of militia officers now with the forces.

Major E. M. WILSON, C.M.G., D.S.O., said that militia officers were doing excellent work side by side with the Royal Army Medical Corps.

Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, said that volunteer bearer companies were recognised and encouraged by the War Office. Their training was not satisfactory. There should be more attempts to train them in hospital duties; at present they were only trained in first aid and field duties. They should be encouraged to present themselves at the hospitals to be trained. It was unpleasant to say some things, but he was afraid many volunteers only looked upon training as a picnic. The volunteer brigades had five days' training but during that five days they learned nothing. Some few who had come to hospital for training liked it and took pleasure in it. Medical students were not desirable members of bearer companies. The civilian element was better than

persons who might afterwards become members of a superior branch of the service, as medical students often left when most efficient. Militia surgeons must be properly trained if they were to be introduced again.

Brigade-Surgeon Lieutenant-Colonel ELLISTON, V.D., said that brigade bearer companies carried out hospital duties in his department. Only last Tuesday he had 10 cases of heat-stroke and was able to provide an orderly for every case separately. The men were most efficient and this was the case with those whom he had sent to South Africa.

Surgeon-Captain J. CANTLIE proposed the following motion as the outcome of his paper:—

That the Navy, Army and Ambulance section request the council of the British Medical Association to appoint a committee to draw up a scheme to be forwarded to Government for the reorganisation of the medical services of the auxiliary forces on the basis of the system of the Royal Army Medical Corps and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

The motion as first proposed limited the committee to five members, but on the motion of Surgeon-General J. B. HAMILTON the limitation of the committee to any particular number was dropped and the motion was unanimously passed as above.

Surgeon-Captain J. HARPER, V.M.S.C., said that it was most difficult to get up *esprit de corps* among the men of a bearer company, and unless this was done no good could be done with the men. This he had tried to do with a good deal of success. He had now 20 very efficient men with the Yeomanry in South Africa.

Brigade-Surgeon G. KING also spoke.

THE ANNUAL MUSEUM.

(*Continued from p. 374.*)

II.—FOODS AND FOOD PRODUCTS.

No very novel departure could be noted in regard to special foods. One feature, however, consisted in the number of special milk preparations and milk products that were shown. During recent years strong endeavours on all sides have been made to separate the nutritious constituents of milk without injuring their nourishing properties. As a rule proteids undergo some change in the course of separation which affects their original food value, but in this direction certain successes obviating this deterioration have been met with, judging from the good physiological results obtained on administration of the proteid so separated.

Turning to milk itself there were several stalls devoted to modified specimens of this natural food which have been called into request by the teachings of modern physiological and bacteriological inquiry. No better examples of so-called humanised milk, sterilised milk, with and without cream, modified milk, &c., could be mentioned than those shown by the Aylesbury Dairy Company, Limited, who evidently conduct their business on strictly scientific lines, retaining for that purpose both chemical and bacteriological experts. Indeed, this company are prepared to supply pure milk foods exhibiting a composition in accordance with that which the medical practitioner may desire to prescribe. Of condensed milk there were several well-known brands and it is satisfactory to note that special care is taken to secure a maximum of cream in the concentrated product. The Anglo-Swiss Milk Company of 10, Mark-lane, London, E.C., exhibited amongst other things specimens of their Ideal milk which is unsweetened and sterilised and which contains a proportion of fat consistent with the degree of concentration. Besides concentrated milk Mr. Henri Nestlé of 48, Cannon-street, E.C., brought to the visitors' notice a food the composition of which shows it to contain all the elements necessary for the sustenance and growth of infants. It is worth while adding that this exhibit included also a condensed milk without the addition of sugar. The proportion of fat contained in the condensed milks of this firm is the maximum. Dry milk products were represented at several stalls. That of the Plasmon Syndicate, Limited, of 56, Duke-street, Grosvenor-square, W., attracted considerable interest, since Plasmon appears to be separated in such a way from milk as to leave the nutritive properties of the proteid unimpaired. Analysis shows plasmon to consist of the casein and albumin of milk together with the milk salts, the whole being soluble in water. According to Virchow, plasmon is not in any degree inferior in nourishing value to that of its equivalent of proteid in milk. It would thus appear that plasmon, which practically consists of the separated proteids of milk, loses no fraction of its nutrient value in the course of separation. Yet another milk product is "Protene" of the Protene Company, Limited, 36, Welbeck-street, S.W. This is again the proteid of milk separated by a special process. It provides an excellent adjuvant to most foods, raising to an important and certain degree their flesh-forming equivalent. The preparation has been analysed by ourselves, and the report appeared in THE LANCET of Nov. 5th, 1898 (p. 1207). Among the interesting preparations shown at this stall were some diabetic foods enriched with "protene," but practically free from carbohydrates while palatable to the taste. "Tropon" (Messrs. Arthur Reiner and Co., Dashwood House, Old Broad-street, London, E.C.), which is described as a natural pure albumin, is of course a product related to the separated proteid of milk, since it contains approximately the same proportion of nitrogen. We have described it fully in our analytical columns, but we may add that it forms an excellent adjuvant for enriching foods, more especially in regard to their nitrogenous value. On the other hand, "Somatose" of the British Somatose Co., Limited, of 165, Queen Victoria-street, London, E.C., is a digested albumin containing true proteoses. It is soluble in water and being a normal product of gastric digestion is readily assimilated. It may be used with advantage in conjunction with most foods and is well adapted for this purpose since it is practically tasteless. Somatose occurs combined with iron, a combination which admits of the administration of iron without gastric disturbance. The interesting dietetic products of Messrs. Fairchild Brothers and Foster of Snow Hill Buildings, London, E.C., are well known. On the present occasion the exhibit included "Pepsencia," an agreeable fluid with marked digestive properties owing to the presence of gastric enzymes extracted directly from the peptic glands. Again, "Panopepton" is prepared by an ingenious process whereby its constituents, derived from beef and wheat flour, are digested and therefore are presented in an easily assimilable form. This firm's peptogenic milk powder is designed for the purpose of extemporising fresh humanised milk in the home. Analyses have shown that by adding peptogenic milk powder to cows' milk in the proportions directed a product is obtained in remarkable conformity with the composition of human milk. The exhibit included pure "Pepsin" and "Trypsin" as well as "Zymine powders" for the preparation of peptonised milk. Messrs. Van Abbott and Son, of 104, Wigmore-street, Cavendish-square, London, W., presented to view an excellent assortment of foods for invalids and for diabetics and dyspeptics. It is remarkable with what success this firm has been able to prepare foods minus carbohydrates which yet are palatable and acceptable. The exhibit also included some nutritive beef biscuits which contain 20 per cent. of mosquera beef meal, with its finely divided fibre and unaltered albumin and peptones. The biscuits therefore are highly nutritive. In a kind of annexe Messrs. Callard and Co. of 65, Regent-street, London, W., occupied a stall devoted to diabetic foods and certain other prepared foods suitable for those burdened with obesity or troubled with gout and indigestion. Lastly, diabetic marmalade is an excellent acquisition amongst the special foods which have comparatively recently been introduced by this firm. Nearly opposite was an excellent assortment of specialities for invalids on the stall of Messrs. Brand and Co., Limited, of 11, Little Stanhope-street, Mayfair, London, W. Besides the essences of beef, mutton, veal, and chicken, this firm showed a meat juice which is derived from meat in the cold and therefore represents the most nourishing portion of this animal food. An excellent way of administering this meat juice is to mix it with effervescing mineral water. The assortment comprised a very valuable series of special foods of animal origin. An important novelty in the direction of foods is "Marvis," which is described as the new fish food consisting of a dry white powder with a pleasant fresh smell of fish which yields a soup of undoubtedly nourishing value and very palatable to the taste. The process of preparation is evidently conducted with care, since the product possesses a delicate flavour of the fish which is so generally spoilt by transit. This interesting departure is being undertaken by the Patent Fish Food Syndicate of Upper Greenock. A useful food adjunct is "Albene," a vegetable fat which has been carefully refined. For cooking purposes it is an excellent substitute for butter, as it is not

liable to change and is odourless and tasteless. This preparation appears to offer certain advantages of undoubted importance in the cooking of food which call for special remark. This attractive-looking fat is prepared by Messrs. Broomfield and Co. of 83, Upper Thames-street, London, E.C. Messrs. Cadbury Brothers, Limited, of Bourneville, near Birmingham, showed several of their noted preparations, the basis of which is pure cocoa made from high-class bean and containing absolutely no "additions." Whatever definition may be adopted as to what is pure cocoa Cadbury's cocoa will be certain to be placed well within the mark. Mellin's food for infants and invalids is well known, the feature of this food being that the starches derived from the several cereal grains are modified by diastase, which fact is much in favour of the digestibility of the preparation. The exhibit of the company (Mellin's Food, Limited, Marlborough Works, Stafford-street, Peckham, London, S.E.) included also some "food biscuits" containing a high proportion of soluble nutritives and a cod-liver oil emulsion finished in such a physical condition as to promote the easy absorption and assimilation of the powerful tonic and nutrient agencies which cod-liver oil is known to contain. A very interesting series of special foods was exhibited by Bovril, Limited, of 152–166, Old-street, City-road, London, E.C. These preparations are so well known as to call for little further remark. Mention, however, should be made of invalid bovril, which contains a rich proportion of unaltered albumin and is therefore a powerful nutrient and restorative for invalids; of bovril meat juice, which is expressed in the cold, an excellent sustainer; and of examples of the emergency rations and military foods used in the present campaigns. Virol, Limited, is now associated with the Bovril Company, the virol products being more strictly set apart for special medical requirement. Thus, virol is a powerful food and tonic because it is easily assimilated and is composed of rich food-forming material, red bone-marrow, &c. The excellent meat preparations of Liebig's Extract of Meat Company, of 9, Fenchurch-avenue, London, E.C., serve to adorn the stall of this company and trial prepared dishes were offered to the visitors. The Liebig Company's extract of beef has become such a household expression that the new word "Lemco" now adopted for the preparation should be generally known. Besides the ordinary extract now thus designated "Peptarnis" is worthy of notice. As our analysis has shown this consists mainly of peptone of a palatable, highly nourishing, and, of course, digestible character. It is a powerful restorative and food, ministering considerably to patients who have undergone loss in weight through enfeebled digestive conditions. An interesting series of foods was shown by the Worth's Food Syndicate, Limited, Cheltenham. These consisted of cereal foods more or less modified by cooking and thus rendered more soluble and easy of digestion. Though this preparatory process is an advantage in regard to foods for the dyspeptic or the invalid or the infant, yet it does not render, as is asserted, cereal flour suitable for the use of the diabetic, since the proportion of carbohydrate is absolutely unaltered by this process. The stall of Messrs. Scott and Bowne, Limited, of 95, 96, 97, and 98, Great Saffron-hill, London, E.C., was devoted to the exhibition of the various constituents concerned in the production of their cod-liver oil emulsion. We have already shown in our analytical columns that the composition of this emulsion is based on the known requirements of an enfeebled state of health and the oil occurs in the physical condition of an emulsion which secures its assimilation. The pioneer of all malt extracts was undoubtedly M. Hoff of Hamburg and of 29, New Bridge-street, E.C. This extract, though not concentrated, contains all the peculiar and valuable dietetic properties of barley malt. It is hardly distinguishable from ordinary stout except that it is quite free from undue acidity and possesses a rich malty taste and is much more digestible. Messrs. Keen, Robinson, and Co. of 6, Garlick-hill, Cannon-street, London, E.C., exhibited specimens of mustard preparations the excellence of which has long been associated with the name of this firm. In addition they showed their patent barley and patent groats, both of which preparations are undoubtedly nutritious, containing a maximum proportion of the flesh-forming and bone-forming constituents of barley and oats respectively. The patent barley prepared in the form of "Barlikos" affords an excellent hygienic summer drink. Cereal preparations were also the feature of the exhibit of the Infant and Invalid Co., Cereal Buildings, 54, City-road, London, E.C. The most important of these, perhaps, is the "I and I Food," prepared from the best of cereals and rendered more easy of assimilation by the conversion of some of its insoluble constituents into soluble constituents. The albuminoids and fat are in such excellent proportion as to indicate the selection of several kinds of cereal flour and a judicious mingling of them.

It must be admitted that the exhibition of foods and food products this year was not so representative in character as on previous occasions, nor were the exhibits under this section as great in number.

THE FIRST INTERNATIONAL CONGRESS OF THE MEDICAL PRESS HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

THE NATIONALITIES REPRESENTED.

THE third and last day of the Congress proved by far the most important and critical. This was Saturday, July 28th, and as the International Congress of Deontology had concluded on the previous evening I was now able to attend. On entering the great amphitheatre of the École Pratique de Médecine I found that there were about 40 out of the 168 members of the Congress present. The British contingent consisted of one correspondent of the *British Medical Journal* and two members of the staff of THE LANCET. There were eight Germans, seven Belgians, five or six Italians, five or six Russians, three members each from Norway, the United States of America, Ecuador, and Mexico, two members each from Spain, Portugal, and Bohemia, and one member each from Switzerland, Greece, Denmark, Cuba, and Tunis. I should mention that Dr. C. D. Sutherland represented the *Indian Medical Journal*. Numerous honorary presidents had been elected: Dr. Podwyssotzki for Russia, Dr. Schonberg for Norway, Dr. Valdez for Spain, Dr. Ehlers for Denmark, and Dr. Squire Sprigge for Great Britain; but the real and ruling president was Professor Cornil, assisted by Professor Charles Richet and the general secretary, Dr. Blondel.

THE MEDICAL PRESS IN GREECE, CUBA, AND BELGIUM.

The proceedings were opened by Dr. FONSTANOS who gave a history of the medical press in Greece. He explained that previously to the formation of the Medical Society of Athens in 1836 the country was overrun by charlatans of every description. Many medical papers had been started, but the materials were so slight and the number of medical men so limited that for the most part they came to an untimely end. To-day the two principal papers were the *Medical Progress*, published in Greek, and the *Grèce Médicale*, published in French.

Dr. JUAN SANTOS FERNANDEZ followed with a description of the medical press of Cuba. The first medical paper published in the island appeared in 1840, but did not live long. In 1861 Dr. Gutierrez founded the Academy of Medical Sciences and published its *Annals*. Seven years later there appeared the *Gazette of the Medical Sciences*, which, however, was swept away by the revolution. In 1873 some new publications appeared, and of these the *Medical and Chirurgical Chronicle* survived and may now be seen at the Exhibition. In spite of the political convulsions from which the island of Cuba had so severely suffered the medical press of Cuba now worthily represented the progress of medical science.

Dr. EMILE GIBSON (Brussels) reported on the Belgian medical press and recalled the fact that the first newspaper published in Europe was issued by Abraham Verhoeven at Antwerp in 1605. As for medical papers, one of the first to appear was the *Journal de Chimie Médicale, de Pharmacie et de Matière Médicale*, issued in Belgium in 1825. But though it was a very cheap paper for want of subscribers it did not live long. To-day, on the contrary, there were so many subscribers that there were no less than 70 journals published in Belgium dealing with medicine, surgery, or hygiene, together with the reports issued by numerous polyclinics, especially at Brussels.

At the conclusion of this report Dr. PÉCHÈRE requested the Congress to protest against the gratuitous circulation of medical papers which receive a State subvention. There were

in Belgium scientific institutions which were protected by the Government, and these employed a part of the subvention they received from the State to issue journals which they sent gratuitously to medical men, thus competing against the independent medical press.—Professor CORNIL said that in France the published reports of the proceedings of learned societies which received subventions from the State were only sent to the subscribers, and such subscriptions were often higher than those paid for ordinary medical journals.—The Congress adopted a resolution condemning the subvention by the State of medical papers which competed against the other journals.

THE MEDICAL PRESS OF THE UNITED STATES AND OF GREAT BRITAIN.

Dr. C. W. FASSETT, editor of the *American Medical Journalist*, remarked that the first journal published in America was founded at the end of the last century and it contained principally articles translated from the French. Now there were 278 medical journals in the United States. The prestige of the medical press had been greatly enhanced by the Association of Medical Journalists, which was founded 15 years ago, and by the Association of Medical Publishers, which was founded in 1893. Dr. Fassett insisted that medical journals should avoid sensational news and the discussion of vague theories, and should be so written as to be understood by general practitioners who were not specialists. The American medical papers generally acknowledged quotations and were freely exchanged. Some papers would not insert advertisements of specialities unless the composition of the preparation was clearly indicated. He concluded by urging that the next International Congress of the Medical Press should be held at St. Louis in 1903, when the forthcoming great exhibition would take place.

A paper by Dr. S. SQUIRE SPRIGGE (London) on the British medical press was then read. He gave a history of the early struggles of THE LANCET and of the successful efforts of its editor to combat the nepotism prevalent at the hospitals and medical schools. The success achieved led to the foundation of many other journals, but the only paper which had survived and which could be compared by reason of its circulation and influence with THE LANCET was the *British Medical Journal*. Dr. Sprigge gave a short history of the development of this latter journal. The Congress was most interested when he described the financial situation of THE LANCET and the *British Medical Journal*, showing that the income of these papers rendered them quite independent and supplied them with means, which they employed freely, to make original researches and investigations, to depute experienced technicians to follow armies on the field, to study epidemics in all parts of the world, to analyse all sorts of food-stuffs, &c. The results of these independent and fearless investigations had largely contributed to reform the laws of the country as they affected medical education, public health, the adulteration of food, the housing of the poor, hospital accommodation, &c. Dr. Sprigge concluded by expressing the hope that charlatanism and *réclame* would be things of the past and that the medical journalist of the future would recognise but one master, the public good. The address was warmly applauded and was generally recognised as one of the most suggestive and interesting papers submitted to the Congress.

THE GERMAN MEDICAL PRESS.

Dr. SPATZ (Munich) then spoke about the German medical press. It was only towards the middle of the century that the need of such papers was felt. In the revolutionary period of 1848 Virchow had founded at Würzburg the *Medical Reformer*, but when he went to Berlin this paper collapsed. However, he soon issued his *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin*, and from that day the development of the medical press in Germany had not ceased. In 1864 Dr. Posner founded the *Berliner Klinische Wochenschrift*, which was intended for all members of the profession throughout Germany. It was still the leading medical paper. The position of affairs in Austro-Hungary was much the same as in Germany, and the same articles, &c., were sometimes published simultaneously in both countries. The *Deutsche Medicinische Wochenschrift* first started the idea of forming an Association of the German Medical Press, and the rules of this association were very similar to those of the present Congress. The result had been a great improvement in the tone of the medical press of Germany.

THE REPRODUCTION OF SCIENTIFIC ILLUSTRATIONS.

This terminated the reports on the medical press of different countries and M. ALCAN then read his paper on the right of reproducing illustrations which I have already summarised.

In the discussion that ensued Dr. MARCEL BAUDOUIN argued that a drawing in a scientific publication should be considered as so much type. It was not a work of art; it was a hieroglyphic such as the Egyptians employed and the Chinese still use, and by which the author was better able to convey his meaning. As type could be reproduced so should the drawing or photograph which was published instead of words in type. With regard, for instance, to intestinal sutures there were some 600 drawings that had been published. Would the author of a book on the subject have to apply to the owners of these 600 illustrations? By slightly altering each design he could utilise them all and not infringe the law, but sometimes it was found that by altering the drawing it no longer agreed with the text. Then in a later edition the text was altered to make it agree with the drawing, so that in the end both drawing and text were false and incorrect. He thought that there should be greater latitude with regard to the reproduction of scientific illustrations.

Dr. REGNAULT remarked that as copyright lasted 50 years it sometimes happened that the author was dead and that his family could not be found or that the publisher was bankrupt and that his blocks and rights had been sold to no one knew whom. Publishers, he thought, should form an association like that of the society of authors so that there might be one single central place where all applications and payments should be made for the right to reproduce.

Professor RICHET remarked that the question was most complex because there could be no exact demarcation between a scientific and an artistic drawing. The latter was protected by the law of copyright. All they could do was to urge that, for the sake of scientific education, it was necessary to reproduce scientific drawings and leave to another Congress the task of formulating a scheme to facilitate such reproductions.

Dr. POSNER (Berlin) proposed to nominate a committee of three Parisian members to discuss this question with publishers, medical men, and legislators, and to study generally the question of literary property from the medical point of view. This committee would consist of Dr. de Maurens, Dr. Marcel Baudouin, and Dr. Blondel, who were well acquainted with the subject and held different opinions. This committee was thereupon elected.

THE RIGHT OF TRANSLATION AND OF REPLY.

Dr. PODWYSSOTZKI, on behalf of the Russian members, urged that the copyright in regard to papers published in periodicals should, so far as the translation of such papers was concerned, be limited to six years. Dr. JAYLE and Dr. PISTRE then reported on the right to reply. According to Article 13 of the Law of 1881 all persons mentioned by name had an unlimited right of reply. This was thought excessive, for replies might be converted into mere self-advertisements. The editor should be able to exercise his discretion; but a person whose reply had not been inserted might have the right to appeal to a tribunal which would judge whether the editor had acted unfairly.

Dr. J. NOIR then read a short paper enforcing the absolute necessity of forming an international association of the medical press, and the morning sitting concluded.

RÉCLAMES OR PUFFS.

It was at the very last sitting that the Congress ventured to tread on really delicate ground. First, Dr. G. LEVY complained that obvious puffs were written by persons who declared themselves to be medical men but gave fictitious names, thus shielding their reputation. He brought forward a motion stating

> That when the title "Doctor" was employed it should only be followed by the name inscribed on the diploma.

The Congress, however, thought that though this might be a good measure to prevent puffs, medical men who wrote articles that were not puffs were justified, so as to avoid self-advertisement, in adopting fictitious names. The discussion finally dropped without the adoption of any resolution.

Dr. ARCHAMBAND then moved

> That *réclames* and non-medical advertisements might be published in medical papers.

Without *réclames* many papers could not live and though a

réclame appeared as an article in the body of the paper everyone knew that it was paid for and was simply another form of advertisement.

Mr. ADOLPHE SMITH (London) energetically protested against this opinion. If *réclames* did not deceive anyone why were they paid for at a much higher rate than ordinary advertisements? Then it was not so much a matter of the publicity given in the one issue of the paper as the fact that what the paper had said might be reproduced and quoted on millions of labels and circulars. So far, however, as *bonâ-fide* advertisements were concerned there was no reason why a tailor or a coachbuilder should not advertise in a medical paper as well as a wholesale druggist, but all advertisements should be carefully supervised so that none should appear that were opposed to the ethics or interests of the profession.

The Congress voted by a large majority against the insertion of *réclames*.

FOUNDATION OF THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

Next came the report of Dr. LABORDE, concluding in favour of forming an International Association of the Medical Press, which was taken as read and which I have already summarised. Dr. POSNER (Berlin) argued that there should be an association of the medical press in each nation which should participate in the international congresses and that these congresses should be held frequently.

Dr. BLONDEL remarked that the local conditions of the various countries differed materially and that the Congress should first decide on the opportuneness of creating an international association. As for the statutes drawn up by Dr. Laborde they could only be considered as a scheme which it was not now necessary to discuss.

Dr. JAYLE, however, insisted that it was all very well to found an association, but they must first of all know who were going to be included in the association. Dr. Laborde, in his report, had said that the association should consist of directors, editors, and general secretaries of medical papers. Such a limited definition would have to be set aside before the proposal to form an association could be accepted, and there must instead be a distinct assertion that medical journalists were admissible.

Then followed a lengthy and at times a somewhat confused and disorderly discussion which I will not attempt to report. I will, however, try to explain the main points at issue. First we find here a good illustration of the fact that papers prepared for an international congress should be written in quite a different manner to that which is customary for a national congress. Internationally the same term has a very different meaning. In England the term "director" might be taken to mean the business manager who, as a rule, is neither a journalist nor a medical man. In France many medical papers belong to medical men who are at once managers, editors, and chief contributors of their own papers. Then the term "secretary" has no journalistic meaning in England, while in France it often means the sub-editor. On the other hand, our English word "editor" in France means publisher. These terms, therefore, in an international congress need explanation. It was, moreover, objected that if all medical journalists were admitted there were some 30,000 of them in France alone. Of course this was mere playing with words. A practitioner who once or twice in his life sends an account of a case that has come under his observation to a medical paper, for which contribution as a rule he is not even paid, cannot consider himself a journalist. As for the danger of the congresses being swamped by journalists, it is evident that no journalist would incur the expense of attending such congresses unless at least a considerable portion of his income depended on his pen. On the other hand, the proprietors and publishers of papers could more readily find the means of being present. Practically the discussion that took place was based on the question whether the proposed international association should really represent the medical press as a whole and all the interests involved, or be only an association of the owners of medical papers.—Professor RICHET protested that there was no desire to exclude journalists, but it was to be an association of employers and employed, whose interests were more intimately linked together than was generally supposed.—Dr. BLONDEL cordially endorsed this view, but wanted the details to be settled by a committee to be appointed or by future congresses.—Dr. JAYLE, on the contrary, insisted that the principle of the admission of journalists must be emphatically proclaimed now at once. Finally, Professor CORNIL put Dr. Blondel's proposals to the vote. They are worded as follows:—

> The statutes of this international association shall be submitted to the next International Congress of the Medical Press. They shall be prepared by an international committee appointed for that purpose. The members of this committee shall be elected in each country which possesses an association of the medical press convoked for that purpose. The committee of the present Congress shall act temporarily as the intermediary between the various sectional groups that have to constitute the definite international committee.

As this motion did not speak of journalists 13 members voted against it and 25 in its favour. But now Dr. JAYLE maintained that his proposal did not run counter to the resolution which had been carried and he moved it as an addendum.—Professor CORNIL agreed and thought that the Congress might now vote in favour of admitting medical journalists as members of the proposed International Association of the Medical Press, and this was adopted unanimously.

It was then decided that the second Congress should meet next year in Brussels. This with the usual vote of thanks completed the proceedings and the Congress separated, well satisfied at having established an International Association of the Medical Press. The general secretary, Dr. R. Blondel, has worked very hard to bring about this result and was naturally and warmly congratulated. In the evening the members of the Congress met at the Auberge des Nations in the Old Paris Street of the Universal Exhibition. The banquet was presided over by Professor Virchow of Berlin, and many toasts were drunk and great cordiality prevailed.

Paris, August 5th.

HEALTH CONGRESS IN ABERDEEN.

THE annual congress under the auspices of the Royal Institute of Public Health took place this year in Aberdeen. The joint Town and County Hall, which was used for the issue of tickets, was opened on Wednesday, August 1st, but the actual business did not commence till August 2nd. The general and sectional meetings were held in Marischal College buildings and extended to August 7th. Between 800 and 900 delegates from various sanitary and municipal authorities in the United Kingdom attended.

THURSDAY, AUGUST 2ND.

The general inaugural address was delivered in the Mitchell Hall by the President of the Congress, the Earl of ABERDEEN, Lord Provost FLEMING occupying the chair. Lord ABERDEEN, after alluding to the assassination of King Humbert and the death of the Duke of Saxe-Coburg and Gotha, dwelt upon the improvements brought about by sanitary reformers and called particular attention to the success of the district nursing system. At a later hour the presidents of the various sections delivered their opening addresses.

In the Section of Preventive Medicine and Vital Statistics the President, Professor W. J. R. SIMPSON (King's College, London), chose as his subject Administration and Research in Preventive Medicine. Professor Simpson, after urging the necessity of establishing a special sanitary service for India and an Imperial or Colonial sanitary service generally, adverted to the sanitary changes in Aberdeen, of which city before proceeding to Calcutta, he was medical officer of health. He then pointed out that in the bacteriological branch of preventive medicine Great Britain was not, as in other branches, in the first rank, and the absence, he said, of well-endowed laboratories for scientific research, either connected with their universities or colleges or as separate institutions, was a fatal defect in their otherwise excellent sanitary organisation. He then referred to the preparation of curative and prophylactic serums and said that investigations into comparative parasitology had also contributed much to preventive medicine and had revolutionised their ideas of malaria. The discovery of the parasite of malaria and its developmental stages in the mosquito permitted them to brush aside all vague generalities concerning the disease and the conditions which produced it. Professor Simpson concluded by referring to the question of sanitary supervision in the South African war. While expressing respect for the magnificent work done by the Royal Army Medical Corps, he said there was evidently pressure when two medical officers were required to do the work of four. This defect in their

system should be remedied at once, especially in view of the large number of troops going to China who would be exposed to much worse conditions than those in South Africa. A specialisation in the function of different departments of the Army Medical Service was required, and it was certain that without a special sanitary service disease in times of stress would not be prevented.—In the same section a paper by Dr. C. KILLICK MILLARD (medical officer of health of Burton-on-Trent) on the Notification of Measles was read in the absence of the writer and gave rise to a discussion which was taken part in by Professor W. J. R. SIMPSON, Sir CHARLES A. CAMERON, C.B. (executive sanitary officer, Dublin), and others.

The Section of Bacteriology and Comparative Pathology met in the Pathology Class Room under the presidency of Professor D. J. HAMILTON (Aberdeen University), whose opening address was on Recent Developments in Bacteriology and on the danger of spreading disease by vehicles of transport. As to tuberculosis they were all, he stated, agreed that there must exist a close relationship between the bacillus of leprosy and that of tubercle. With respect to typhoid fever Professor Hamilton remarked that the difficulty of recognising the bacillus in water still remained almost insuperable and that probably the method adopted by Hankin was the most to be depended upon for reliable results in the absence of the bacillus coli. Having referred to horse-sickness he then touched on the subject of cancer. As the evidence at present stood he was unable to form an opinion as to the parasitic theory. Cancer was a very common disease in Queensland, and the popular belief, supported by expert evidence, was that it was derived from cancerous cattle, the flesh of which was consumed in a half-cooked condition. Professor Hamilton then went on to protest against the apathy of railway companies in the matter of adopting precautionary measures against contamination and dust contagion from railway carriages. He urged the necessity for legislation on this matter, and at the same time he deplored the misery which was occasioned through the defective sanitation of schools and the evils caused by the condition of public resorts, which were rendered unhealthy through the neglect of the local authorities.—A short discussion followed, after which Professor E. F. TREVELYAN (Leeds) made some remarks on Pig Tuberculosis and showed specimens.—Dr. ALLAN MACFADYEN (director of the Jenner Institute of Preventive Medicine, London) also read a paper on the Detection of Tubercle Bacilli in Dairy Products.

In the Section of Chemistry and Meteorology there was but a small attendance. In his opening address Professor C. HUNTER STEWART (Edinburgh) devoted his remarks mainly to periodical recurrences of epidemic diseases and the meteorological conditions to which these had been attributed. After discussing the question of the carrying of micro-organisms in the air on particles of sand he pointed out the difference in the incidence of summer diarrhœa in the west of Scotland as compared with the east of that country, and alluded to the apparent connexion between the large quantity of carbonic acid in the ground air and typhoid fever. In conclusion he referred to the amount of organic matter contained in made-up soils, and urged the desirability of further investigation being made so as to ensure that the land was properly purified before being used as sites for buildings.—A paper prepared by Mr. EDWARD RUSSELL, F.I.C. (London), and Dr. A. E. PORTER (London) on an Inquiry into the Chemical and Bacteriological Condition of the Air in Board Schools was then read and gave rise to a discussion in which the artificial method of ventilation was generally condemned.—Mr. THOMAS JAMIESON, F.I.C. (city analyst of Aberdeen), then read a paper on the Effect of Organic Matter in Water on Health.

In opening the Section of Architecture and Engineering the President, Mr. JOHN HONEYMAN, R.S.A. (Glasgow), observed with respect to the construction of dwelling-houses that a point which was very much overlooked was the necessity of proper ventilation. He referred to the lack in cities of cheap houses for the poor.—A paper was read by Mr. JAMES SOUTTAR, F.R.I.B.A. (Aberdeen), on Architecture and Hygiene.—In a paper on the Architecture of the Twentieth Century Mr. BANISTER F. FLETCHER, A.R.I.B.A. (London), contended that public health would be the watchword of the new century and that architecture was the science of public health in its best and broadest sense. People would probably live to a great extent in the country, but he thought the appointment of a Minister of Public Health was an absolute necessity.

In the Section of Municipal and Parliamentary Hygiene the President, Dr. R. FARQUHARSON, M.P., delivered an address dealing with the general subject of municipal and Parliamentary hygiene. He thought that county councils had done their work well and that they should be allowed more freedom in framing by-laws regulating the health, comfort, convenience, and happiness of the people. He was of opinion that the expenses of county councillors should be paid. Resolutions in favour of the national registration of plumbers were then adopted, after which a paper was read by Mr. Fyfe, F.R.S. Edin., on Legal Stumbling-Blocks in the Housing Question.

In the afternoon, in splendid weather, an enjoyable garden party was held at Richmondhill, the residence of Lord Provost Fleming, and in the evening the official reception by the Lord Provost and Town Council took place in the Mitchell Hall and picture gallery at Marischal College, the apartments of the Students' Union being used as refreshment rooms. There was a very large and brilliant assemblage.

FRIDAY, AUGUST 3RD.

The annual meeting of the Association of Port Sanitary Authorities was held in the forenoon, when the office-bearers and council were elected. Reference was made to the recent epidemic of small-pox in Hull, and a resolution that the Local Government Board be asked to furnish forthwith to the officials of port sanitary authorities such information as it might receive as to the existence of infectious diseases, and that a deputation should wait on the President of the Local Government Board, was adopted. The tenth annual meeting of the registered plumbers in Aberdeenshire, Kincardineshire, and Banffshire was held in the evening, Professor M. HAY (Aberdeen), the President, being in the chair. The yearly report was satisfactory.

In the Section of Preventive Medicine a discussion, opened by Dr. E. W. HOPE (medical officer of health of Liverpool), took place on Municipal Laboratories as part of Health Organisations, and the following resolutions were adopted:—

That it is desirable that facilities should be acquired by sanitary authorities for bacteriological and other cognate work.

That it is desirable that the bacteriological diagnosis of disease should only be made by bacteriologists who are registered medical practitioners.

A discussion (commenced on the previous day) on the question of the notification of measles was continued and concluded. In connexion with the tuberculosis problem the following papers were read:—(1) Tuberculous Milk—Researches and Results, by Professor SHERIDAN DELÉPINE (Manchester), which was read in the absence of the writer; (2) The Dundee Sanatorium for Consumptives, by Dr. C. TEMPLEMAN (medical officer of health of Dundee); and (3) The Position of General Hospitals in Relation to the Sanatorium Treatment of Tuberculosis, by Dr. NOEL BARDSWELL (Surbiton). A brief discussion ensued, but no resolution was adopted. In a paper on Summer Diarrhœa, its Cause and Prevention, Dr. WILLIAM RUSSELL (Paisley) dwelt on the necessity of getting rid of all forms of putrefaction.

In the Section of Bacteriology and Comparative Pathology Dr. GEORGE DEAN (Jenner Institute of Preventive Medicine, London) gave a demonstration of Toxins and Antitoxins, illustrated by lantern slides, fully describing the methods of testing. The sera obtained by the use in immunising animals of living microbes, he said, were much less powerful than the antitoxic sera, but the method had been employed in such diseases as septicæmia, cholera, typhoid fever, and bubonic plague. Various theories as to the method of production of antitoxin in the animal body were touched on. Reference was made to some of the remarkable recent developments in the field of immunity, such as the production in the blood serum of animals treated with injections of rennet of a substance which neutralised the curdling of the rennet ferment on milk. Much of the work possessed at present only theoretical interest, but such investigations frequently paved the way for the discovery of practical methods of treatment and prevention of accident.—A paper by Dr. R. T. HEWLETT, (Jenner Institute of Preventive Medicine, London) was read in the absence of the writer, the subject being the Thermal Death-point of the Tubercle Bacillus. The general results of the writer's experiments were summed up as follows: Non-virulent laboratory cultures were destroyed by

an exposure to 60° C. for 10 minutes, while a temperature of 65° C. acting for 15 minutes destroyed the infective properties of tuberculous sputum. Tuberculous milk heated to 65° C. for 30 minutes lost its infective power, and tuberculous milk heated to from 65° to 68° C. for 20 minutes in the Allenbury pasteuriser likewise lost its infective power. In all probability pasteurisation, in which the milk is retained at a temperature of 65° C. for not less than 20 minutes, was efficient.—In the discussion Mr. B. BROWNING (medical officer of health of Weymouth) called attention to the fact that the laity were exposed to the danger of contracting tuberculous, enteric, and cancerous affections by receiving the sacramental wine in a cup, and he suggested to the clergy a modification of their ritual.—Papers were afterwards read upon the Serum Diagnosis of Typhoid Fever and the Bacillus Coli in Drinking Water.

In the Section of Chemistry and Meteorology the most interest was taken in a paper by Mr. JAMES HENDRICK, F.I.C. (Aberdeen), on the Question of Distillery Refuse, and in one by Dr. A. M. COWIE (Dufftown) on the Purification of Burnt Ale by the Biological Method.—Two papers on the Treatment of Sewage were also read, as was one by Dr. C. MUNRO HECTOR (Sheffield) and Dr. J. ROBERTSON (medical officer of health of Sheffield), entitled "The Estimation of the Germicidal Values of the Common Disinfectants."

In the Section of Architecture and Engineering Mr. R. MORHAM (city architect of Edinburgh) contributed a paper entitled "Suggestions on Fever Hospital Construction," in which he drew attention to the need of ample provision for fever nurses, and exhibited a block plan of the hospital now in course of erection for the city of Edinburgh.—Councillor COOPER (Aberdeen) read a paper on an Ideal Workman's Cottage, and a discussion followed on the difficulties of the problem of the housing of workmen in cities.—Papers were also read on House Drainage and on the Dangers to Public Health from Railway Carriages and Stations. The section recommended the Congress to call the attention of the various railway companies to the necessity of more efficient cleansing and the more sanitary construction of railway carriages, and also the conveniences at the smaller stations, having regard to the question of the possibility of infection to passengers.

In the Section of Municipal and Parliamentary Hygiene the Earl of ABERDEEN read a paper sent in by the Countess of ABERDEEN on Women as Members of Sanitary Authorities. At the suggestion of the section he promised to introduce in the House of Lords a Bill to amend the new Local Government Act for London so as to permit of women being elected, as before, as members of the local sanitary authority.—A paper by Dr. A. T. BEVERIDGE (Aberdeen) on Sanitation and Economics gave rise to a discussion on the advisability of working men becoming their own landlords.—Councillor DUNLOP (Glasgow) contributed a Plea for More Air Space in and Around Town Dwellings and a resolution was passed—

That this conference approves that the standard of air space for dwellers in cities and large towns be raised to 500 cubic feet for every adult and to 250 cubic feet for each child under 10 years of age.

The corporation of Aberdeen entertained the delegates to luncheon in the Music Hall, 1000 guests being present, and afterwards to a garden party in Duthie Park, where the company numbered 1200.

On Saturday, August 4th, several excursions were arranged for members of the Congress, the largest being to Balmoral, where by order of the Queen the Castle grounds were open to the visitors. The party which went to Finzean, near Banchory, were entertained to luncheon by Dr. R. Farquharson, M.P. for West Aberdeenshire.—On Sunday, August 5th, the delegates walked in procession to the West Parish Church, where the Rev. Dr. MARSHALL LANG (Principal of Aberdeen University) was preacher. There were also special services in St. Paul's (Episcopal) Church.

MONDAY, AUGUST 6TH.

Professor PERCY F. FRANKLAND, F.R.S., gave an interesting address on the subject of Recent Developments in the Purification of Sewage. The lecturer said that it was a matter for humiliation that in this country there was no proper organisation for carrying out experiments on an extensive scale. In this connexion he urged the establishment of an Imperial Board of Health.

At the annual meeting of sanitary inspectors Dr. A. T. GORDON BEVERIDGE (Aberdeen) was called to the chair.—Mr. PETER FYFE, F.R.S. Edin. (chief sanitary inspector, Glasgow), delivered the presidential address on Sanitary Inspectors and the Housing of the Poor.—Mr. GEORGE MACKAY (county sanitary inspector of Perth) read a paper on Improvement in Public Health in Scotland.—Miss MARY M. PATERSON, H.M. Inspector of Factories, then read a paper on Modern Workshops, dwelling on the necessity of cubic space and ventilation.

A conference of veterinary surgeons was thinly attended. Mr. W. WILLIAMS, F.R.C.V.S., principal of the New Veterinary College, Edinburgh, presided, and addressed the meeting on Certain Peculiarities, or rather Vagaries, in the Life-history of Microbes.

A conference of medical officers of health was held, Dr. J. C. MCVAIL (medical officer of health for Stirling and Dumbarton) presiding. The principal subject under discussion was the working of the English Vaccination Act.—Dr. FARQUHARSON, M.P., said he believed that the "conscientious objector" was a humbug and a manufactured product.

The Congress dinner was held in the evening.

TUESDAY, AUGUST 7TH.

To day, at an adjourned conference of veterinary surgeons, a paper was read by Mr. JAMES MCPHAIL (Edinburgh) on Pseudo-Tuberculosis.

The annual meeting of the Royal Institute of Public Health took place and the usual reports were adopted.

Dr. PATRICK MANSON, medical adviser to the Colonial Office, delivered an interesting address on Malaria: a Sanitary Problem, Lord ABERDEEN presiding. The members adjourned to the Pathological class-room, Marischal College, to view a number of slides illustrating the malarial parasite.

In the Section of Preventive Medicine, Dr. G. DEAN, who is in charge of the farm where the antitoxin is manufactured by the Jenner Institute of Preventive Medicine, delivered an address on the Seasonal Fluctuation in the Demand for Antitoxin. Other papers were read.

In the Section of Municipal and Parliamentary Hygiene, papers were read on Slum Property, the Necessity of Efficient Inspection of Meat and the Expediency of Erecting Compulsory Clearing Houses.

In the Section of Chemistry and Meteorology, a paper by Mr. R. GLEGG, B.Sc., and Mr. JAMES HENDRICK, B.Sc., was read on the subject of the Diurnal Variation in the Fat of Cow's Milk.

The proceedings closed with the general meeting of Congress, when various resolutions were adopted.

THE WAR IN SOUTH AFRICA.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

Since I wrote to you last I have been up to Mafeking to fetch Major Mullins who is now safely housed in one of our officers' wards here. He was so badly wounded in the backbone that we had to get a truck with sufficiently wide doors to admit the bedstead complete, and the guard's van was the only carriage that would meet the case. We also brought down Mr. Hands, the *Daily Mail* correspondent, who, too, had been wounded in the relief at the same time, so that there is not a seriously sick or wounded man now left in Mafeking. I had been suffering from a poisoned finger and the rest from work enabled it to get quite well. At the same time the trip afforded a most interesting experience. The "dug-outs" or "bomb-proof shelters" have most of them disappeared already, for their roofs were generally made of railway metals which had to be restored to their proper places before the line could be reopened. Fuel is still very scarce up there, the locomotives having to depend on wood of which they draw a huge truckful after them. Of food there is plenty and of danger there is none, though there was indeed a slight skirmish only seven miles out of Mafeking while I was there, and the passengers by the train after ours saw a couple of shells bursting not long before they reached Mafeking. There seem to be various small commandoes of the enemy moving about even in parts of the country that have for many weeks been considered disarmed; there is one such between us and Kimberley,

and another between Norval's Pont and Naauwpoort, a slight skirmish taking place the other day at the former place. But in all other respects little change has as yet come over Mafeking since it was relieved.

It is most interesting to be taken over the forts and trenches by one of those who was responsible for their making and who knows the why and wherefore of each move and of each fight. The "Brickfields" in particular might be described as a chessboard on which a most clever and spirited game had been played for several months for great stakes. There, as I daresay you know, our trenches were pushed up to within 60 yards of the Boer trenches before these were evacuated, and then our men sapped on until the two trenches joined and they could pass all the way under cover from one of our forts to one made by the Boers. This they found was deserted, but luckily before occupying it they stumbled on an electric fuse wire and cut it, and then found 250 lbs. of dynamite which was meant for their destruction. This was 1350 yards from the market square and 800 yards from the main Boer position. They were hard up in the town for some wire of this sort, so they picked up the cut end and began to haul it in before the Boers, who were ineffectually pressing the button which made the connexion which was to have blown up the fort, discovered what was happening. A tug-of-war ensued and our men got 750 yards and the Boers only 50.

"Trophies" and mementoes of the siege of all sorts are in great demand both at Mafeking itself and also down country. Siege stamps, paper money, shells, and bullets occupy the most prominent place in many people's minds, and realise most extraordinarily high prices; but Professor Chiene, who was visiting us not long ago, is the possessor of one of the most interesting mementoes in the shape of the concertina whereby, in conjunction with the noise made by a native dancing on a sheet of corrugated iron, the Boers were tempted to put up their heads when only separated from our sharpshooters by the 60 yards already mentioned. Many Boers paid for their curiosity with their lives, for the moment anything showed above the sandbags it got a bullet through it; even a cartridge case, which is only two and a quarter inches by less than half an inch, left by chance on the top of the sandbags got two bullets put through it. I dare say you know that there are some field-glasses made on such an arrangement of angles and prisms that by their aid a man in a trench can spy over the top without exposing his head. I saw one such glass which had had a Mauser bullet bang through its lens and the bullet also went through the hat of the person who was using it.

The Stadt, or native compound, is another very interesting part of the besieged area to visit. It stands separated from the town by a small river bed. The force which occupied this quarter of the outer and inner circles of forts was usually composed almost entirely of natives. Twice at least this native Stadt was the object of hot attack. On the first occasion the Boers broke through the outer circle of forts which surround the town at a radius of from about half a mile to one mile, but were repulsed at the inner forts which closely encircle the town. On the second occasion (May 12th), headed by Eloff, the Boers, as you know, got right into the Stadt and set on fire many of the native huts. They pushed on and got almost to the railway station. Reinforcements of white troops then got round behind them and cut off their retreat. Here many of them surrendered towards nightfall, but of those who tried to retrace their steps through the Stadt, it is said that some were thrown by the natives into the burning houses.

Both at Mafeking and at Ladysmith the besieged forces seem to have placed a very modest estimate upon the splendid services which they themselves had yielded. An officer who was in Ladysmith said to me the other day: "When the relief force came in we were surprised to find that we were heroes—we thought we had all been doing very badly." One whom I saw at Mafeking who on the testimony of his colleagues seemed to have taken a most active part in the fighting and, indeed, in the most dangerous parts of it, said: "Our success in keeping the enemy out is due not so much to what we did as to what the enemy failed to do."

Both the convent and the hospital were, as you know, severely damaged by shell fire. The former, which is the only two-storeyed building in the town and therefore afforded a tempting target from the Boer lines, might almost be described as a ruin, but the latter is the one building in the town which has already been repaired.

Throughout the siege they seem to have been remarkably free from sickness, despite the fact that Mafeking is as innocent as any other town in South Africa of any attempt at sanitation.

I am glad to say that sickness among the staff here has materially diminished of late. Only 21 of our orderlies are "in hospital" and they are all doing well, and so are the two medical men who are convalescent from enteric fever and a couple of sisters who are off duty through slight ailments. This most satisfactory abatement seems to be general throughout the country. The epidemic of enteric fever continues to decrease rapidly.

Colonel A. T. Sloggett, R.A.M.C., who is just back from Pretoria, whither he had to go to make arrangements for the new advanced branch of the Yeomanry Hospital, the first instalment of which is due at Cape Town to-morrow, says that there are only 400 sick and wounded in that city and only 1600 in Bloemfontein, instead of the 5000 who were there when I was there six weeks ago. He says that there are two whole general hospitals now in Kroonstad besides the Glasgow Hospital of 300 beds; but there, as at Kimberley, where I visited the hospitals on my way to Mafeking, and everywhere else that the hospital trains ply to, the report is extremely favourable, and there are vacant beds everywhere now. The difficulty of transport, however, continues. Between Kroonstad and Johannesburg it is even greater than it was, owing of course to the depredations of Christian de Wet.

We have taken in nearly 250 patients this week, including one trainload from Wynberg, half sick and half wounded and one trainload of convalescents from Pretoria, and about, 50 Yeomanry, including a batch of the Warwicks and a batch from Kimberley.

From talking to Boer prisoners it is evident that their leaders are still trying to buoy them up with the most gross misrepresentations. One said that his commando had been told that 6,000,000 Russians had been landed in Cape Town and that Cronje and all of his men had escaped from St. Helena and were invading the Cape. They say that the Boers have changed the name they apply to our troops from "rooineks" to "locusts."

On my way through Kimberley the other day I ordered and brought down with me on the return journey a marble cross for the head of the late Dr. R. T. FitzHugh's grave. By-the-bye, about a week ago the Coadjutor Bishop of Cape Town paid us a 24 hours' visit for the purpose firstly of dedicating our burial-ground, and secondly, of holding a confirmation service for which some eight or nine candidates had been prepared by our clergyman, Mr. Blackbourne.

We have experienced a day or two of really horrible weather here lately. Tremendously high winds, very cold indeed and bearing along clouds of dust and even of shingle which felt at times almost like a flight of small shot. Several of the larger tents, including the sisters' dining tent (poor souls!), were blown down, and it has been impossible yet to put them up again owing to the continued high wind. None of the tortoise- or bell-tents have been blown down, nor of course, were the huts damaged, but everything and everybody have been covered with dust.

Deelfontein, July 16th.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Liverpool Sanitary District.—Dr. E. W. Hope is looking anxiously forward to the results of the 1901 Census to ascertain the precise position of Liverpool with regard to her several death- and disease-rates. At the last census the experience of Liverpool was peculiarly unfortunate in that the discrepancy between the actual and estimated population was no less than 100,000. Small wonder that under these circumstances the medical officer of health pleads for a quinquennial census. For 1899 the estimated population of the city was 668,645, the birth-rate being 33·6 and the death-rate 24·3 per 1000. The highest district birth-rate was 44·1 and the lowest 20·1 per 1000, while as regards the district death-rate the highest was 38·7 and the lowest 10·1 per 1000. In connexion with the deaths it is an interesting point, and one

worthy of study, that the deaths which take place in workhouses and hospitals are greater in Liverpool in relation to population than is the case in any other city of England. The table below gives the rates for the four largest towns.

	1895.	1896.	1897.	1898.	1899.	Average.
Birmingham ...	16·8	14·9	14·0	15·3	16·1	15 4
Leeds...	10·9	11·9	10·8	11·8	12·4	11·6
Manchester ...	19·2	19·7	20·0	19·0	19·7	19·5
Liverpool... ...	20·7	23·8	23·1	24·7	25·3	23·5

Small-pox was introduced into Liverpool on six occasions during 1899, but, owing to the precautions taken the disease failed to spread. Of typhus fever 70 cases were brought to the notice of the sanitary authority, and of these 13 died. Dr. Hope furnishes an interesting diagram in his report showing how the disease spreads, and the importance of keeping those who have been exposed to infection under rigid observation. In discussing measles Dr. Hope deplores the fact that the deaths from this disease show no evidence of decline, and he compares the behaviour of this disease with that of such diseases as typhus fever and scarlet fever, to both of which isolation has been applied. Dr. Hope is apparently of opinion that isolation would tend to materially diminish the prevalence both of measles and whooping-cough, and in respect of the latter disease he furnishes a table showing in what manner the disease may be considered as spreading. Under the heading of Alcoholism the effect of drink upon the survival of children born of alcoholic mothers is well brought out, and it is related that out of 600 children born of inebriate mothers no less than 335 died before their second birthday. The female sanitary inspectors are making their influence felt in Liverpool, and during 1899 three additional officers were permanently added to the staff. These officers do excellent work in the direction of educating the public in some of the principles of preventive medicine. Open spaces are being provided in Liverpool by the conversion of old burial-grounds into gardens, and Dr. Hope furnishes photographs showing (*a*) converted churchyards, and (*b*) churchyards closed against further interment. As an instance of the immense overcrowding of bodies in a given grave he introduces the photograph of a gravestone completely covered with separate inscriptions indicating the persons who have been buried beneath the stone in question. Considerable space is devoted in the report before us to the subject of preservatives and colouring matter in food. It is a very interesting and important fact that the addition of such preservatives as formalin or boric acid to milk is a relatively uncommon practice in Liverpool, and, as Dr. Hope points out, it is clear that their use is not urgently called for provided proper cleanliness and cooling are practised. Dr. Hope also refers to the experiments carried out by Dr. H. E. Annett at Liverpool upon kittens, in which the evidence pointed strongly in the direction of relatively small amounts being detrimental to these animals. The tanyards of Liverpool proved during 1899 to be invaded by anthrax, and four deaths from this disease occurred during the year. The bacillus of the disease was found in the gloves used by the workmen and also in the vats used for macerating the hides. In connexion with the summer diarrhœa of infants the milk with which certain of them were being fed had been examined bacteriologically. Many putrefactive organisms were detected, and among them the bacillus enteritidis sporogenes. Some interesting observations with regard to the presence of the tubercle bacillus in milk were made by Professor R. W. Boyce. In railway-borne milk tubercle was found in 8·1 per cent. of the samples, but in the town milk only 0·6 per cent. was found to be tuberculous. Several specimens of condensed milk were not sterile, organisms being found therein; so, too, bacteria were detected in samples of "sterilised milk." No pathogenic organisms were detected in the specimens of jam examined, and many samples were quite sterile. Professor Boyce evidently views the practice of adding preservatives to jam as likely to lessen its digestibility. Certain tinned meats contained numerous organisms, but apparently none of the shellfish examined on this occasion contained disease-producing organisms. Samples of drinking-water were examined at frequent intervals, but the average number of bacteria was always below Koch's standard of 100 per cubic centimetre. The corporation of Liverpool is steadily demolishing some of the worst slum property, which has been for years past identified with disease and misery, and with death-rates of between 40 to 50 per 1000; in a word, the localities where, since statistics have been collected, disease has been in a sense endemic. Of some of this miserable property and of its pale-faced inhabitants Dr. Hope supplies photographs, while by way of contrast he adds a picture of some of the buildings erected by the corporation. Whether or not the occupants of the slums destroyed find a home in the model dwellings there must be at least some advantage in sweeping the worst slums out of existence.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 6889 births and 4564 deaths were registered during the week ending August 4th. The annual rate of mortality in these towns, which had increased from 14·5 to 19·4 per 1000 in the four preceding weeks, further rose to 20·5 last week. In London the rate was 20·1 per 1000, while it averaged 20·8 in the 32 provincial towns. The lowest death-rates in these towns were 8·0 in Burnley, 9·4 in Cardiff, 11·1 in Wolverhampton, and 11·4 in Halifax; the highest rates were 26·2 in West Ham, 30·0 in Salford, 33·5 in Sheffield, and 34·6 in Liverpool. The 4564 deaths in these towns included 1329 which were referred to the principal zymotic diseases, against 427, 555, and 944 in the two preceding weeks; of these, 1040 resulted from diarrhœa, 88 from whooping-cough, 79 from measles, 70 from diphtheria, 26 from scarlet fever, 25 from "fever" (principally enteric), and one from small-pox. The lowest death-rates from these diseases were recorded in Cardiff, Oldham, Burnley, Halifax, and Gateshead; and the highest rates in West Ham, Liverpool, Salford, Preston, and Sheffield. The greatest mortality from measles occurred in Brighton, Derby, Huddersfield, Leeds, and Sunderland; from whooping-cough in West Ham; from "fever" in Portsmouth; and from diarrhœa in West Ham, Liverpool, Salford, Preston, and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 70 deaths from diphtheria included 24 in London, eight in Leeds, eight in Sheffield, seven in West Ham, and seven in Leicester. One fatal case of small-pox was registered in Blackburn, but not one in any other of the 33 large towns. There were seven cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 4th, against 17, 14, and 11 at the end of the three preceding weeks; no new case was admitted during the week, against four, one, and three in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1827, against 1877 and 1859 on the two preceding Saturdays; 156 new cases were admitted during the week, against 208, 222, and 207 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 140 to 196 in the four preceding weeks, declined again last week to 136, and were 43 below the corrected average. The causes of 53, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Bolton, Newcastle, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Huddersfield, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·0 and 17·5 in the two preceding weeks, further declined to 17·2 per 1000 during the week ending August 4th, and was 3·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Dundee and 13·5 in Perth to 19·3 in Paisley and 19·5 in Glasgow. The 533 deaths in these towns included 60 which were referred to diarrhœa, 19 to measles, 12 to whooping-cough, 11 to "fever," five to diphtheria, two to small-pox, and not one to scarlet fever. In all 109 deaths resulted from these principal zymotic diseases, against 102 and 87 in the two preceding weeks. These 109 deaths were equal to an annual rate of 3·9 per 1000, which was 2·1 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 38 and 36 in the two preceding weeks, further increased last week to 60, of which 37 occurred in Glasgow,

seven in Paisley, five in Dundee, three in Edinburgh, and three in Aberdeen. The deaths from measles, which had risen from 17 to 24 in the three preceding weeks, declined again to 19 last week, and included 14 in Glasgow and four in Edinburgh. The fatal cases of whooping-cough, which had been 22 and nine in the two preceding weeks, rose again last week to 12, of which nine were registered in Glasgow and two in Greenock. The deaths referred to different forms of "fever," which had been 11 and six in the two preceding weeks, rose again to 11 last week and included six in Glasgow and four in Edinburgh. The fatal cases of diphtheria, which had been four, six, and one in the three preceding weeks, rose again last week to five. The deaths from small-pox, which had been two in each of the two preceding weeks, were again two last week, and were both registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 80 and 67 in the two preceding weeks, increased again to 73 last week, and were 21 in excess of the number in the corresponding period of last year. The causes of 30, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·4 and 18·3 per 1000 in the two preceding weeks, rose again to 24·0 during the week ending August 4th. During the past four weeks the death-rate in the city has averaged 21·0 per 1000, the rate during the same period being 17·9 in London and 17·1 in Edinburgh. The 161 deaths belonging to Dublin registered during the week under notice were 38 in excess of the number in the preceding week, and included 14 which were referred to the principal zymotic diseases, against eight, 13, and five in the three preceding weeks; of these, nine resulted from diarrhœa, three from whooping-cough, two from "fever," and not one either from small-pox, measles, scarlet fever, or diphtheria. These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 5·7 in London and 2·2 in Edinburgh. The deaths referred to diarrhœa, which had been four in each of the two preceding weeks, increased to nine last week. The 161 deaths in Dublin last week included 33 of infants under one year of age and 43 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a considerable excess over the numbers recorded in the preceding week. Eight inquest cases and four deaths from violence were registered; and 59, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: Hugh P. Turnbull to the *Duke of Wellington*; Edward T. P. Eames to assist Board of Medical Officers in examination of candidates for commissions in Royal Marines; and Malcolm Cameron to the *Northampton* for *Cleopatra*.

ROYAL HORSE GUARDS.

Surgeon-Captain Hugh Rayner to be Surgeon-Major, in succession to Surgeon-Lieutenant-Colonel J. S. Forrester, deceased.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be Captains: Stevenson Lyle Cummins, Joseph McArdle, Charles Hensley Hopkins, Lewis Julius Christopher Hearn, Peter McKessack, John McDonald McCarthy, Ernest Brodribb, John Poe, Henry Lawrence Weekes Norrington, Hamilton George Frampton Stallard, Robert Dalkeith Jephson, and Arthur Winniett Nunn Bowen. Lieutenant-Colonel Abraham Walker Browne is placed on temporary half-pay on account of ill-health.

VOLUNTEER CORPS.

Royal Engineers: 2nd West Riding of Yorkshire (Leeds): Surgeon-Lieutenant H. Waite to be Surgeon-Captain. *Rifle:* 5th Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant J. R. I. Raywood to be Surgeon-Captain. 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant G. Black to be Surgeon-Captain and to remain supernumerary. 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Captain Charles Henry Newby resigns his commission and is appointed Surgeon-Lieutenant. 1st Volunteer Battalion Princess Charlotte of Wales's (Royal Berkshire Regiment): Surgeon-Captain A. G. Paterson resigns his commission. 2nd London: Surgeon-Captain W. A. Bond resigns his commission. 15th Middlesex: Surgeon-Lieutenant James Godding resigns his commission and is appointed Lieutenant. 19th Middlesex: John James Rickard Macleod to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Surgeon-Major W. Coates to be Surgeon-Lieutenant-Colonel on increase of establishment and to command under paragraph 55A Volunteer Regulations. Surgeon-Captain J. J. K. Fairclough to be Surgeon-Major.

TRANSVAAL WAR NOTES.

It has been decided to send out at once to South Africa a large reinforcement of trained men of the Royal Army Medical Corps.

Major J. Meek, R.A.M.C., has been appointed Principal Medical Officer of the American hospital ship *Maine*.

Major Raymond, R.A.M.C., Captain Mason, R.A.M.C., Lieutenant-Colonel Barker, R.A.M.C., Captain Butler, R.A.M.C., Captain Stalkartt, R.A.M.C., and Civil Surgeon Parker are reported on their way home from South Africa invalided.

THE CRISIS IN CHINA.

A third brigade, to consist of the 4th and 20th Punjabis, the 6th Bengalis, and one regiment of Hyderabad Infantry is to proceed to China. The transport *Canning*, with the 4th Battalion of the 1st Goorkhas, the 66th Native Field Hospital, details, and supply column, and the transport *Nation*, with ordnance park, transport mules, the 39th Native Field Hospital, native general hospital, and special service details, has arrived at Hong-Kong.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The fortieth class for the instruction of medical officers in the subjects of the proficiency examination will be held at the headquarters of the Prince of Wales's Own, 12th Middlesex (Civil Service) Volunteer Rifles, Somerset House, Strand, W.C., by permission of Lieutenant-Colonel H. B. H. Tytheridge, commanding that regiment, and will last five days, commencing on Monday, Sept. 24th, at 2.30 P.M. precisely, and concluding on Friday, Sept. 28th, at 5.30 P.M. The instruction will include all the subjects of the examination, also the duties of medical officers generally in camps, quarters, bivouacs, with brigade bearer-companies and other units, on the line of march and elsewhere. Practical instruction in bearer company drill will form an important part of the work of the class. Officers who are unable to attend this class can obtain instruction by correspondence. These classes will be under the instruction of Surgeon-Captain E. M. Callender, 40, Connaught-square, Hyde-park, London, W., to whom all officers should apply who intend to join either class or who wish for further information, at the same time stating their rank and corps.

Correspondence.

"Audi alteram partem."

"PROFESSOR LUSTIG'S PLAGUE SERUM."

To the Editors of THE LANCET.

SIRS,—Your special Indian correspondent, fully appreciating the importance of the subject, made a point of reporting periodically to your readers on the progress of the experiments which were initiated with Professor Lustig's curative plague serum in 1898 by the municipality of Bombay. Evidently possessed by the conviction that he could advance best the cause of humanity and science from the comfortable standpoint of absolute negation he has from the beginning been eager to assert that the results obtained were utterly fallacious and wholly due to the selection of the cases which

was practised at first. He, moreover, for reasons religiously kept to himself did not approve of the method of the manufacture of the serum.

Such condemnatory verdict, pronounced in a leading medical journal, did not necessarily tend to lessen the already existing difficulties in carrying on the experiments, for the successful termination of which, however, the authorities and the public were equally desirous. Fortunately his arguments betrayed a lack of personal information and an overflow of imagination surprising even in a special Indian correspondent, and they failed to convince the responsible persons who were on the spot and knew the real facts. The experiments, therefore, were allowed to proceed on the lines laid down by the experimenters in spite of his scathing criticism. Thus it happened that in April last I was in the position, as one of the medical officers entrusted by the municipality for some time past with the manufacture of the serum, to lay the following statistical details based on official records before a special meeting of the Bombay Medical Union:—1. From March 13th, 1898, till May, 1899, 403 "selected" patients were treated with the serum at the Arthur-road Hospital and had a recovery-rate of 33·2 per cent., whereas the 1190 patients who were excluded from the serum treatment and treated by ordinary methods had a recovery-rate of 19·5 per cent. This rate of the excluded patients was found to be identical with the recovery-rate of the other large plague hospitals, and gives, therefore, the proof that the increase on the serum side was real and not due to the selection. That is further corroborated by the fact that the total recovery-rate at the Arthur-road Hospital was 4·5 per cent. higher than in other hospitals. 2. From April, 1899, till April, 1900, 361 patients were treated with the serum at the same hospital and had a recovery-rate of 33·8 per cent. These patients were *not* selected but taken alternately as they were admitted, an equal number remaining as controls under the ordinary treatment. The controls had a recovery-rate of 21·3 per cent., this rate being again identical with that of the other hospitals. The total recovery-rate of the Arthur-road Hospital was consequently 6 per cent. higher than that of the other hospitals. On the strength of these statistics and various other evidence I felt myself entitled to conclude: (*a*) that the experimental stage of the serum treatment was over; (*b*) that the curative properties of the serum had been established beyond reasonable doubt; (*c*) that they were represented at present by the improvement of 12·5 per cent. obtained in the patients taken alternatively for treatment; (*d*) that they were satisfactory in themselves; and (*e*) that they were certain to be improved upon with the increasing experience in the manufacture and application of the serum.

The medical practitioners attending the meeting—foremost amongst whom was the President of the Bombay Medical Union, Sir Balchandra Krishna, whose distinguished services in combating the plague won him the knighthood—certainly the best judges of the facts placed before them, accepted the statistics and conclusions as correct, unanimously considering "that the serum was the only curative remedy against plague of some potency at present known to the scientific world, the cures effected by it being at present 12 per cent. more than cures with the ordinary treatment," and passed unanimously the following resolution to be brought before the Corporation of Bombay for favourable consideration:

1. That this meeting of the local medical profession is of opinion that the treatment of plague with Professor Lustig's curative serum has given encouraging results, even under the unfavourable circumstances of hospital treatment, and that its use should be extended for the benefit of patients allowed to be treated at their houses by private practitioners. 2. That greater facilities than those given hitherto should be afforded to private practitioners in order to encourage the use of the serum in private practice. 3. That the President be requested to communicate this resolution to the President of the Corporation and the Municipal Commissioner, and to enter into such correspondence with them on the subject as seems to him necessary.

This resolution was considered by the corporation at their meeting of May 28th last, and forwarded to the Municipal Commissioner for favour of remarks. The Commissioner thereupon took immediate steps to comply with the contents of the resolution and rules for the use of the serum in private practice were framed under the supervision of Lieutenant-Colonel J. S. Wilkins, I.M.S., D.S.O., the Special Medical Officer, Plague Operations, appointed by Government, who as the result of his observations in the plague hospitals under his charge has become a keen supporter of the serum treatment.

Considering that the views entertained by your correspondent had thus been proved to be at variance with those of the responsible authorities in Bombay and with the facts, one might rightly have expected that he would have hastened to correct the wrong impression he had forced upon your readers and not have hesitated to admit the errors he had fallen into. But instead of reporting on the gratifying and promising conclusion of the experiments with Professor Lustig's serum, as would have been his duty, your correspondent reiterates *ad nauseam* his flimsy arguments in your issue of June 2nd, p. 1608, discussing the paper I read before the meeting of the Bombay Medical Union in the confused, illogical, and contradictory style quite his own—at least whenever he has occasion to write on Professor Lustig's serum treatment of plague. By an ingenious juggling once more with the bugbear of the selection of cases and by dismembering and misquoting my statements he almost succeeds in conveying the idea that the 12 per cent. claimed as improvement for the treatment have also been obtained in selected cases. And not content with this achievement he gives the last touch to the performance by doubting my figures and by deliberately insinuating that the improvement of 12 per cent. as shown by me is not real and has been arrived at by an ambiguous arrangement of figures.

I do not intend to disprove in any way your correspondent's assertions, as in doing so I would be compelled to violate the etiquette so strictly observed in controversies—viz., never to call in question the *bona fides* of arguments or statements. But what I would permit myself to say here is that anyone who has read my paper on Lustig's serum—and I trust that you, Sirs, on receipt of this will take the opportunity of reading it—and who has also read the comments of your correspondent upon it in your issue of June 2nd, must arrive at the conclusion that he either did not read my paper or did not understand it or did not want to understand it. Little flattering as the first two alternatives might be for a special correspondent and an English medical man, they are no doubt to be preferred to the third. It is much to be regretted that in a matter of great public and scientific interest which not only concerns the poor inhabitants of India, but may also at any moment concern our own families and fellow countrymen in Europe, one of the foremost medical papers of Great Britain should have to depend for its information on a correspondent who is unable to give an unbiased statement of the facts, and who, without possessing the requisite knowledge, criticises unfairly the facts and figures brought forward to show the results of the treatment of plague cases with Professor Lustig's serum.

I am, Sirs, yours faithfully,

A. MAYR, M.D.

Municipal Laboratory, Parel, Bombay, July 6th, 1900.

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to an article on Professor Lustig's serum which appeared in THE LANCET of June 2nd, written by your Special Correspondent in India. As one other amongst the advocates of this serum than Dr. Mayr I must call your attention to the inaccuracies which this article contains. Dr. Mayr himself is answering the various errors of your correspondent and I fully concur in what he states. As far as I am concerned in the matter I may say that as special medical officer in charge of all the plague hospitals in Bombay I have had full opportunity of seeing for myself the value of the experiments carried on at the Arthur-road Hospital with this serum and cannot understand how your correspondent could mislead you and your readers in the way he has done. As Dr. Mayr has gone into the subject fully I need not occupy any more of your space except to say that the first experiments up to May, 1899, were carried on with selected cases; since May, 1899, and up to the present time we have had every alternate case of plague admitted to this hospital treated with the serum and have nearly reached 500 on either side. On a visit of Professor Schotteleus of Freibourg University last cold weather to study the plague in Bombay he was so much interested in the results of the serum treatment that on his return to Europe he very kindly obtained for us some curative serum from the Pasteur Institute. When this arrives I propose to use it on every alternate case with Lustig's serum—i.e., one case treated with Roux's and one with Lustig's serum.

I am, Sirs, yours faithfully,

JAMES S. WILKINS, Lieut.-Col., I.M.S.,
Special Medical Officer, Plague Hospitals, Bombay.

Lansdowne House, Bombay, July 6th.

"THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE."

To the Editors of THE LANCET.

SIRS,—We have seen with much surprise that the special general meeting of governors and subscribers "to consider and determine the following questions—that is to say (1) whether the demand of the medical and surgical staff for direct representation upon the board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital" has been fixed by the board of management for Saturday, August 11th. That date has been selected, according to the secretary-director, as representing "the earliest day permitted by the rules." Unfortunately, it falls in the very heart of the holiday season, when it will be impossible for any large proportion of the governors to attend the meeting. The great majority of the medical staff will also be away from town. Under these circumstances, feeling that a full and fair consideration of the questions is impossible at this time, we have requested the board of management to postpone the meeting till the end of October when an adequate attendance of governors can be secured, and have intimated to him that it is not possible for the medical staff to be represented at the meeting on August 11th, or to take any part in it. We would point out that any decision arrived at on Saturday next cannot be regarded as final and that we shall be ready, at a meeting summoned at an appropriate time, to place fully before the governors our view of the questions at issue.

We cannot venture to trespass on your space to the extent which would be necessary to point out all the statements in the letter of the secretary-manager in the *Times* of August 3rd which are calculated to mislead; but it appears to us distinctly necessary to object to what is represented as the "clear issue," and also to the apparent intention to limit the scope of the inquiry to the present condition of the hospital. What is needed is as described by us in our letter of July 27th,[1] "a full and searching inquiry into the constitution and management of the hospital, to be carried out by an independent and, at the same time, competent body."

We are, Sirs, your obedient servants,

J. HUGHLINGS JACKSON, M.D. St. And., F.R.C.P. Lond., F.R.S.,
THOMAS BUZZARD, M.D., F.R.C.P. Lond., Consulting Physicians to the Hospital.
R. BRUDENELL CARTER, F.R.C.S. Eng., Consulting Ophthalmic Surgeon.
H. CHARLTON BASTIAN, M.D., F.R.C.P. Lond., F.R.S.,
W. R. GOWERS, M.D., F.R.C.P. Lond., F.R.S.,
DAVID FERRIER, M.D. Edin., F.R.C.P. Lond., F.R.S.,
J. A. ORMEROD, M.D. Oxon, F.R.C.P. Lond., Physicians to In-patients.
CHARLES E. BEEVOR, M.D., F.R.C.P. Lond.,
HOWARD H. TOOTH, M.D., F.R.C.P. Lond.,
JAMES TAYLOR, M.D. Edin., F.R.C.P. Lond.,
J. S. RISIEN RUSSELL, M.D. Edin., F.R.C.P. Lond., Physicians to Out-patients.
W. ALDREN TURNER, M.D. Edin., F.R.C.P. Lond.,
FREDERICK E. BATTEN, M.D. Cantab., M.R.C.P. Lond., Assistant Physicians.
FELIX SEMON, M.D. Berlin, F.R.C.P. Lond., Physician for Diseases of the Throat.
VICTOR HORSLEY, F.R.C.S. Eng., F.R.S.,
CHARLES A. BALLANCE, F.R.C.S. Eng., Surgeons.
R. MARCUS GUNN, F.R.C.S. Eng., Ophthalmic Surgeon.
A. E. CUMBERBATCH, F.R.C.S. Eng., Aural Surgeon.

(The names of absent members have been added by authority.)

August 6th, 1900.

"ADDISON'S DISEASE AND LEUCODERMA."

To the Editors of THE LANCET.

SIRS,—With reference to the interesting and valuable remarks of Sir Samuel Wilks on Addison's Disease and Leucoderma, together with Sir W. T. Gairdner's letter thereon, may I be permitted to refer to a case bearing on the point under discussion, mentioned by Heller in his recent paper on Morbus Addisonii.[1] This writer states he has seen one case of Addison's disease with symmetrical leucodermic areas, but he gives no details.

I am, Sirs, yours faithfully,

GEORGE PERNET.

Upper Gloucester-place, Dorset-square, N.W., August 6th, 1900.

[1] THE LANCET, August 4th, 1900, p. 351.

THE COVENTRY PROVIDENT DISPENSARY.

To the Editors of THE LANCET.

SIRS,—At the general meeting of the British Medical Association no doubt many of the members present were surprised at the attitude of Dr. Saundby in supporting the medical men holding appointments in the Coventry Provident Dispensary and condemning any attack upon that institution. It is plain that an ex-president of Council in supporting such an institution has not made himself conversant with the facts of the case, seeing that it has been condemned by the ethical branch of the British Medical Association, THE LANCET, the *British Medical Journal*, and the *General Practitioner*, and was condemned also at the annual meetings at Edinburgh and Portsmouth, and that the institution is entirely without a wage-limit, and accepts members without any regard to their social position. This dispensary is one of glaring abuse and has been severely criticised by various committees of the Association; in addition, it has been closely investigated by a Special Commissioner of THE LANCET, who represented it as being one of the most abused institutions in the kingdom. Under these circumstances the Association will stultify itself if it takes no action in the matter, after the strong expression of opinion at the annual meetings. The profession in Coventry would suggest that the Council should appoint a special delegate (not a Birmingham consultant) to visit Coventry and report upon the whole question in dispute.

I am, Sirs, yours faithfully,

EDWARD PHILLIPS.

Coventry, August 7th, 1900.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Small-pox and Raw Cotton.

AN outbreak of small-pox in the urban district of Littleborough is giving some anxiety. It seems that all the persons who were attacked were employed in the card-room of one of the mills. Dr. G. C. Pitcairn, the medical officer of health of Littleborough, suggested that the manipulation of infected raw cotton started the four first cases. Precautionary measures were strictly enforced and isolated cottages secured as soon as possible for the convalescent cases until thorough disinfection could be carried out. The matter was discussed at the last meeting of the Lancashire County Council when some members considered that the suggestion as to its origin was based on surmise, and that the matter should have been more fully investigated before being printed in an important report, as it was "a most serious thing for Lancashire." Of course it is, and hence it is all the more necessary that it should be thoroughly investigated. That small-pox should occasionally be conveyed in cotton bales does not seem improbable, but it must occur so rarely that no great scare need arise. On the face of it the history of the cases certainly points to a common source of infection.

The Port Sanitary Authority.

At the meeting of the Manchester City Council on August 1st it was agreed to request the Local Government Board "to make an order constituting a permanent port sanitary authority out of all the councils abutting on the port, giving them adequate representation and desiring them to contribute proportionately to the expenses of the authority." So far the expenses have been borne by Manchester, Salford, and Stretford, but other towns,

[1] Encyklopädie der Haut- und Geschlechts-Krankheiten, p. 11. Edited by Lesser. Leipsic, 1900.

Ellesmere Port, Runcorn, and Warrington, for instance, have important commercial interests on the Ship Canal and ought to pay their share. So far they have not agreed as to the proportion they should bear. The Local Government Board are, therefore, to be asked to formulate an equitable scheme "as a mutual reciprocal arrangement seemed impossible."

Pollution of Gore Brook.

One of the most attractive and picturesque open spaces possessed by Manchester, Birch Park—or Birch Fields, as it used to be called—is traversed by a flowing brook which ought to add to the scene a beauty of its own. But the stream is black and its odour abominable, and Mr. McDougal, as alderman of the Rusholme ward of the city of Manchester, has again brought the matter before the Joint Rivers Committee. He states that although the city council have taken temporary measures to deodorise the water it is still "a source of danger and annoyance to residents in the neighbourhood and others who visit Birch Park." It was pointed out 12 months ago by a deputation representing the inhabitants of Rusholme that the stream was polluted almost from its source by a part of the sewage of Audenshaw, Droylsden, and Gorton. Promises of amendment were made by the various authorities, but only to be broken, for practically no purification has taken place. The usual excuses are made—more time required, plant not completed, &c. In the meantime the sewage flows on, and being heavily charged with a chemical precipitant all the settlement takes place in the stream itself. One of the committee said that he had seen upwards of 50 children wading in this open sewer, and "he could hardly think that the Parks Committee of the Manchester Corporation had done their duty in the matter." Proceedings are to be taken against two of the authorities, and in the meantime this unsavoury tributary of the Ship Canal flows on unchecked till its foulness is lost in the still greater foulness of the canal itself.

The Blackburn Guardians and Vaccination.

At the meeting of the Blackburn board of guardians on August 4th it was reported that Dr. James Wheatley, medical officer of health for the borough, had written saying that he thought it advisable, owing to the prevalence of small-pox in the town, that all the inmates of the workhouse should be revaccinated. It was decided to take no notice of the letter but to stop visiting at the workhouse. This decision means apparently that the guardians deny the inmates of the workhouse the protection from small-pox afforded by revaccination. Are paupers not entitled to such protection if they wish to have it? Shut off very much from the outer world and more ignorant possibly than the guardians, they may know but little of the danger of their contracting small-pox owing to its prevalence in the town, but in practically denying them protection the guardians take upon themselves the responsibility of any cases of small-pox that may occur among them.

The Medical Officership of Crewe.

The Town Council of Crewe and the Local Government Board have been in correspondence as to the stipend of the medical officer of the borough. Dr. Alfred Greenwood of Stockport has been appointed as successor to Dr. Meredith Young at a commencing salary of £300. The Local Government Board, no doubt considering that this was too little to pay to a gentleman who was to give his whole time to the service of such a populous and important town, suggested that his salary should not be less than £500. But—showing how old sins bring their Nemesis—the Council were able to retort that in the case of a former medical officer the Board had sanctioned £300 as the salary. The Board, therefore, finally stated that, "while they would have preferred" a salary of £500 a year, they would be ready to sanction an appointment at £300 a year, "on the understanding that, while giving his whole time to the council in other respects, he should be at liberty to supplement his income by acting as a consultant in cases of infectious disease if invited to do so by any other medical practitioner, by performing analyses and other laboratory work, and by receiving qualified medical men as pupils for instruction in sanitary science, and in other public work of a similar character not involving the ordinary work of a general practitioner." This is a remarkable compromise on the part of the Local Government Board.

August 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Graduation Ceremonial at Edinburgh University.

THE summer graduation ceremonial of Edinburgh University was held in the McEwan Hall on July 28th. As usual the majority of the degrees conferred were in the Faculty of Medicine. Mr. John Philip Wood, W.S., professor of conveyancing in Edinburgh University, was the only recipient of an honorary degree—that of Doctor of Laws. The degree of Doctor of Medicine was conferred on 53 gentlemen. Gold medals were awarded to three of these—viz., Walter William Chipman (B.A.), Canada, M.B., C.M., 1895; David James Galloway, Scotland, M.B., C.M., 1884 (in absentiâ); and David Waterston (M.A.), Scotland, M.B., C.M. (with second-class honours), 1895. The degrees of Bachelor of Medicine and Master of Surgery were conferred in 10 cases and the degrees of Bachelor of Medicine and Bachelor of Surgery in 158 cases. The Cameron Prize in Therapeutics was awarded by the Senatus Academicus to Mr. W. M. Haffkine, C.I.E., in acknowledgment of the great practical importance of his researches on the prevention of plague by inoculation. The address to the graduates was delivered by Professor Hunter Stewart.

University of St. Andrews.

At a meeting of the University Court of St. Andrews held on July 28th the Lord Rector announced that he had received a letter from the law agent of the Marquis of Bute informing him that the Marquis of Bute proposes to offer to the University of St. Andrews the sum of £20,000 to be held as a fund for endowing a chair of anatomy, under the following conditions: 1. That the said sum of £20,000 shall be paid to the University not later than 10 years hence. The exact date cannot be specified, as it will depend on the completion of certain works at Cardiff. Interest at 3 per cent. will be payable to the University from the time of the appointment of the first professor until they receive the principal sum. 2. That the first presentation to the chair shall be in favour of Dr. Dusgrove, the present holder of the lectureship in anatomy in St. Andrews. 3. That the lectures shall be given exclusively in St. Andrews. 4. That the course shall meet the requirements of the two first "anni medici." 5. That before the beginning of the University session of 1901-1902 the approval of the Universities Committee of the Privy Council to the establishment of the chair under the foregoing conditions be obtained; and that the approval of Lord Bute or his representatives be obtained to any further conditions embodied in the ordinance instituting the chair. A postscript explained that the letter was written on the understanding that the University was prepared to make adequate arrangements for completing the permanent provision in St. Andrews of teaching necessary for the first two "anni medici." It was unanimously resolved to send the very hearty thanks of the Court to Lord Bute for his generous offer, also to print and circulate his letter and to consider the subject at a special meeting of the Court to be held on Saturday, Sept. 1st.

July 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Apothecaries' Hall of Ireland.

AT the annual meeting of the General Council of the Apothecaries' Hall of Ireland on August 1st the following were duly balloted for and elected to hold office for the ensuing year, ending July, 1901:—Governor: H. A. Auchinleck, F.R.C.S. Irel. Deputy Governor: G. Stritch, L.R.C.S. Edin. Directors: Francis G. Adye-Curran, M.D. T.C.D., F.R.C.S. Irel.; A. Atock, M.D., M.S., R.U.I.; John Evans, L.R.C.S. Irel.; W. V. Furlong, L.R.C.S. Irel., L.R.C.P. Edin.; John A. Johns, M.D. T.C.D.; Robert Montgomery, M.R.C.S. Eng.; Robert J. Montgomery, M.B. Dub., F.R.C.S. Irel.; R. G. O'Flaherty, M.B. T.C.D., L.R.C.S. Irel.; Christopher M. O'Brien, M.B. Durh., L.R.C.S., L.R.C.P. Irel.; Joseph A. Ryan, L.R.C.S. Edin.; James Raverty, L.R.C.S. Edin.; James Shaw, L.R.C.S. Irel.; and C. R. C. Tichborne, L.R.C.S. Irel. Representative on the General

Medical Council: C. R. C. Tichborne, L.R.C.S. Irel., D.P.H., &c. Secretary: Robert Montgomery, M.R.C.S. Eng.

Irish Women and University Education.

At the recent matriculation examination of the Royal University of Ireland 150 of the 555 successful students were women, a sufficient indication of the practical interest taken in university education by women.

The Belfast Hospital for Diseases of the Skin.

From the annual report submitted to the supporters of this charity on July 26th I find that 894 patients were treated during the year, of whom 37 were admitted into the wards. There is a balance in hand of £77 8*s.* 6½*d.* Special reference was made to the loss which the institution had sustained in the death of its President, the late Professor Hodges, M.D. R.U.I., who for such a lengthened period took the deepest interest in its work. Dr. H. S. Purdon, who for 35 years has been closely connected with the hospital, was appointed President in place of Professor Hodges.

Rainfall in July.

The rainfall in the past month amounted to 4·50 inches, there being 20 days on which rain fell, and the total rainfall for the year now amounts to 23·88 inches. This has been the wettest July since 1896 and the rainfall for the present year is 2½ inches over the average and 4½ inches more than last year.

The Outbreak of Typhoid Fever in Belfast.

At a meeting of the City Council of Belfast held on August 1st a report from the joint committees of improvement and public health was read in regard to typhoid fever in Belfast which has been already referred to in THE LANCET. It appears that the normal death-rate from typhoid fever in the city of Belfast is 4·46 per 10,000, while in Manchester it is 1·17 and 2·16 in Birmingham—that is, Belfast has about twice as much typhoid fever as a well-regulated manufacturing city should have. As to the causes, reference was made to the water-supply, sewerage, houses with bad privy and ashpit arrangements, presence of polluted old streams, and arrangements have been made to combat these causes. In the discussion which followed one of the speakers referred to the report of the new city analyst on the Belfast water which said among other things: "Judged by the ammonia process none of these waters (samples) can be considered high-class; they all contain more volatile solids than are usually found in Belfast water. The organic or albuminoid ammonia is rather high in all the samples, but is sufficiently high in Nos. 56, 36, 35, and 57 to place them among what may be called 'suspicious waters.' Nearly all the samples contained a good deal of matter in suspension, clearly indicating inefficient filtration." The same speaker said that a report by the city analyst made two years ago for the Water Commissioners was to the effect that the water was quite unimpeachable. On the day after the council meeting (viz., August 2nd) at a meeting of the Public Health Committee Dr. Lorrain Smith's report on the bacteriological examinations (which he has made for the committee) of the water-supply was received. He examined six samples of water with the following results: (1) yielded nothing; (2) gave negative results; (3) the colonies planted out from the residue directly and after cultivation in Parietti's medium were all found after examination to belong to ordinary water bacteria; (4) plates made from filter residue directly and from the growth in Parietti's medium were carefully examined but none of them stood the tests of detailed examination; (5) gelatin plates gave an average of 90 colonies per cubic centimetre; plates from the residue directly and from Parietti tubes yielded no colonies that stood the further tests; and (6) gelatin plates gave an average of 61 colonies per cubic centimetre. Plates from the residue directly and after cultivation in Parietti's medium gave no suspicious colonies. Dr. Lorrain Smith has in his possession the record of a series of observations made during 28 weeks of the spring and summer, 1899, extending from April to October. The highest number of colonies per cubic centimetre was 250, the lowest was 50, and the average was 119 cubic centimetres. The results of the present examination are very similar to those obtained in 1899, and in the number and quality of the microbes present the water now compares favourably with that supplied two years ago at the time of the general typhoid fever epidemic. "My examination now," says Dr. Lorrain Smith, "has failed to show that there is any recent increase in contamination or that the improvement observed during last summer has not been maintained." This report clearly shows that the water-supply as a cause of the present outbreak of typhoid fever may be excluded and that the question of its origin must be considered as arising from other causes, such as bad drainage, polluted soil, and defective sanitary arrangements as present in so many Belfast houses.

August 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Anæsthesia during Labour produced by Injection of Cocaine into the Lumbar Arachnoid.

M. Doléris and M. Malartic have presented to the Academy of Medicine a very interesting communication on this subject. Their observations were made at the Maternity of Boucicaut on five women to four of whom cocaine was given for abnormally severe labour pains and in one case for the application of forceps. Although too few in number for the formation of a definite opinion, the result of these cases suggested the following conclusions:—(1) The uterine contractions became painless in from five to 10 minutes with doses of from one to two centigrammes (one-sixth to one-third of a grain); (2) with a dose of three quarters of a centigramme (one-eighth of a grain) they did not cease to be felt but they were painless for 27 minutes; (3) complete analgesia lasted one hour and 28 minutes, one hour and 47 minutes, and two hours and 15 minutes with doses of from one to two centigrammes; (4) the uterine contractions were more energetic, more frequent, and more prolonged after than before the injections; (5) in the interval between the contractions the uterus remained in a state of partial contraction for a variable period, on which account until further knowledge is gained it would be prudent not to use this method of inducing anæsthesia when turning might be required; (6) the loss of blood appeared to be less than usual, and in a case of placenta praevia the bleeding stopped spontaneously before the rupture of the membranes; (7) no effect was produced on the fœtus; (8) there was no ill consequence of any importance, the principal one being slight vomiting which soon passed off; and (9) in addition to its analgesic effect the injection of cocaine seemed to increase the contractility of the uterus and to act as a vaso-constrictor of the uterine vessels.

Tuberculosis in the Police.

Another example of tuberculosis incidental to occupation has been discovered similar to that occurring among attendants on the sick, post-office employés, and laundresses. M. Landouzy has just been examining the statistics of invaliding and death from tuberculosis registered during the last 10 years in the Paris police force. The number of officers of the Municipal Police varied from 8153 in 1894 to 7943 in 1899. Among an average annual strength of 7678 men there were in 10 years 825 cases of invaliding, and 230 of these, or 28 per cent., were on account of tuberculosis. During these 10 years there was a total of 491 deaths, of which 249 were due to pulmonary phthisis—namely, 49 per cent., or almost exactly one-half. When it is considered that the police are picked men, specially selected firstly, when they enter the army, and secondly, by the medical officers of the police at the time of their engagement, it will be seen that the police taken altogether suffer at least as much from tuberculosis as the post-office and telegraph employés, who show 25 per cent. of tuberculous diseases. The causes in fact are the same—namely, the unhygienic state of the police buildings where the men after their hours of duty come to rest in the midst of bacteria-laden dust brought in and scattered by the trampling of many feet. Several prophylactic measures have been already taken by M. Lépine, such as the providing of spittoons containing fluid in the police buildings, damp cleaning of the floor twice a day, and washing with plenty of water once a week. But it is in the internal arrangements of the police buildings that alterations are most required, for the rooms are low, dark, ill-ventilated, and overcrowded.

Sanatoria for Tuberculosis.

Seven years ago the Parisian sanatorium of Angicourt (Oise), the first and only sanatorium for tuberculous patients undertaken by the Assistance Publique, was commenced. It is not yet finished and its opening, which was to have coincided with the International Congress of Medicine, is



indefinitely deferred. Its cost is said to be going to be 7,000,000 francs. In contrast to this, the sanatorium of Hauteville-en-Bugey (Ain), built privately on an excellent mountain site under the auspices of the Lyons Association for the Tuberculous Poor, will be opened on August 23rd. Patients desirous of admission must present themselves at the Hôtel Dieu at Lyons on Monday, August 20th. The tuberculous poor of Paris, however, must wait.

August 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Bacteriology of Scarlet Fever.

Professor Baginsky and Dr. Sommerfeld of the Kaiser Friedrich Hospital in Berlin have made some important bacteriological observations on the bodies of children who had died from scarlet fever. In an article published in the *Berliner Klinische Wochenschrift* they report the result of the post-mortem examination of the blood and internal organs of 42 children; they also examined the blood of a living child in whom venesection was performed on account of dyspnœa, and the fluid obtained from another patient by puncture of the spinal canal. In the case of the deceased children the blood was taken from the heart immediately after death, and, moreover, pieces of the bone-marrow, the lungs, the spleen, the kidneys, the glands, the contents of the gall-bladder were examined. Cultures were made on bouillon and on agar, the result being that a streptococcus was found to be present in every instance, sometimes growing like a pure culture in the blood taken from the heart as well as in the bone-marrow. The presence of the streptococcus was independent of the character of the disease; it appeared in the very malignant cases, where death occurred within a few days, as well as in those in which death took place at a later stage from complications. The streptococci grew in series of from three to fifty individuals, the form varying according to the culture medium. Sometimes diplococci were found. They were easily stained with anilin colours and they retained the colour with Gram's stain. They grew on alkaline bouillon, agar, blood-serum, &c., and did not liquefy gelatin; the colonies were like those of the other species of streptococci. Experiments on animals showed that the cultures differed greatly in virulence; sometimes small quantities were sufficient to kill animals, in other cases the inoculations were harmless. The virulence of the streptococci could be augmented by repeated inoculations. The animals died with symptoms of septicæmia, swelling of the spleen, and hyperæmia of the kidneys and intestines, and pure growths of the streptococcus were found in their organs. The virulence of the cultures decreased after a few days, but when the cultures were preserved by ice it remained unimpaired for four or five weeks. The media in which the cocci were cultivated became very virulent, injections of pepton-bouillon killing animals within 24 hours. Professor Baginsky and Dr. Sommerfeld in their *résumé* do not assert that this coccus is the specific cause of scarlet fever, although they attach importance to the fact that it was found in all 42 cases examined. It would be possible to recognise a case as scarlet fever if this streptococcus were present in the body.

Intermittent Swelling of the Joints.

Dr. Theodor Benda has drawn attention to certain morbid conditions of the joints termed by him "hydrops articulorum intermittens." The characteristic symptom of this disease is that a joint, especially the knee-joint, becomes swollen at periodical intervals which are, as a rule, very regular. The swelling sometimes occurs every eighth, sometimes every eleventh, day, and so on. In a few instances the swelling appeared every day at the same time and lasted for about an hour. In the majority of cases the swelling was not very painful nor was the patient's state altered. Fever seldom occurred. The affection was sometimes the sequel of a traumatic lesion. The prognosis was very uncertain. In one instance the disease continued for 20 years; in another instance it terminated in recovery after 13 years. Complete recovery was obtained in about 33 per cent. of the cases, but in about 50 per cent. no alteration was perceptible, whilst in the remaining cases the attacks became less frequent. A great many remedies have been tried, but the results of treatment have not been satisfactory. Injections of iodoform and carbolic acid into the joint, and the administration of quinine and arsenic were tried, while electricity and balneological treatment were successful in one case and unsuccessful in another. Opinions differ very much as to the nature of the affection. Dr. Benda has found 55 cases described in the medical literature of different countries, not including two patients observed by himself. The efficacy of quinine in some cases has been ascribed to a connexion with malaria; rheumatic fever, syphilis, menstruation, and other causes have also been alleged. The majority of the writers on the subject are of opinion that the fits are due to a neurosis of the vaso-motor nerves, as some of the patients also suffered from other nervous symptoms, such as paralysis, epilepsy, hysteria, &c. Dr. Benda says that the etiology of the affection is not yet known. The causes of the periodicity which is the characteristic symptom of the disease are just as obscure as those of other periodical phenomena such as hemicrania and recurrent insanity.

Medical Congresses.

The German Association of Naturalists and Medical Men will meet this year at Aix-la-Chapelle. This town has been chosen as it is situated on the direct line of communication between North Germany and Paris and so that members returning from the Paris Exhibition may find it easy to attend the meeting. Aix-la-Chapelle has a considerable number of British visitors who may perhaps feel an interest in some of the subjects discussed. Papers will be read by the celebrated chemist Professor van 'tHoff on Inorganic Nature, by Professor Hertwig on the Development of Biology, and by Professor Naunyn on the Present Position of Clinical Medicine. Dr. von Drigalski will deliver an address on the expedition to the South Pole, and Dr. Haussmann will discourse on some problems connected with cells and their importance for organotherapy, &c. In the medical section the theory of neurons will be discussed.—Professor Virchow was elected honorary president of the International Congress of the Medical Press held in Paris from July 26th to 28th. The Association of the German Medical Press was represented by Professor Posner, editor of the *Berliner Klinische Wochenschrift*.

August 6th.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At recent sittings of the Scottish Conjoint Board held at Glasgow the following candidates passed the respective examinations:—

First examination (five years' course).—Ernest Gaunt, Yorkshire College, Leeds; John Clegg Pickup, Glasgow University; Archibald Frank Spinks, Anderson's College; Percival Henderson, University College, Liverpool; William Wallace Dempster, Queen's College, Belfast; Michael Joseph J. De Jong, Ceylon Medical College; William Arthur Magill, Queen's College, Belfast; William Miller Ramsay, St. Mungo's College; J. J. F. M. O'Flaherty, Queen's College, Galway; Michael Philip Desmond, Queen's College, Cork; James B. Patterson, St. Mungo's College (with distinction); Thomas F. Murphy, Queen's College, Cork; Norman B. Watch and George Hart, Anderson's College; and John H. Roberts, St. Mungo's College.

First examination (four years' course).—Adam Ardill, Dublin Schools.

Second examination (five years' course).—Robert Calder Blyth, Archibald M. Laurie, and William Douglas Cockburn, St. Mungo's College; Walter Ball, University College, Liverpool, and Anderson's College (with distinction); Henry Raynor Helsby, University College, Bangor, and St. Mungo's College; John Forbes Webster, and Reginald Norman Macdonald, Anderson's College; Alexander Russell Young and Thomas Joseph M'Caigney, St. Mungo's College; and Michael John M'Carthy, Queen's College, Cork.

Second examination (four years' course).—Thomas B. Trotter, Anderson's College; and Honorine Forbes, Calcutta Medical College.

Third examination.—Andrew Young and John Kean, St. Mungo's College; Alice Evangeline Brown, London School of Medicine for Women; Ethelbert Hearn, Firth College, Sheffield; Robert John Roberts, St. Mungo's College; Joseph Edwin Cooper, Newcastle School of Medicine; Rudolph de Mello, Grant Medical College, Bombay; and Ernest L. M. Hackett, Queen's College, Cork.

Final examination (and admitted Licentiate of the three co-operating authorities).—Percival Horace Rainbird and George Johnstone Campbell, St. Mungo's College; Alice Miles, Queen Margaret College; Sarah Harper Smith, London School of Medicine for Women; Albert Edward Ward, Anderson's College; John Thomson Malloch and Harry Miller Roberts, St. Mungo's College; Mary Eleanor Rocke, London School of Medicine for Women; Rupert Edward Moorhead, Anderson's College and Glasgow University; Charlotte Rudd, Ceylon Medical College

Richmond Goulden, Owens College, Manchester; David Crombie and Thomas Day Bird, St. Mungo's College; Richard Henderson O. Garbutt, Newcastle School of Medicine; Andrew Asher Brown, Surgeons' Hall, Edinburgh; Richard M'Kim Wilkin, Anderson's College and Queen's College, Belfast; Abraham George Sutton, Queen's College, Cork; Alexander Scoular, Anderson's College; James T. O'Connor, Queen's College, Cork; John James Lynch, Queen's College, Cork; Francis Fernandes, Grant Medical College, Bombay; Harold Robert Loverock, Royal College of Surgeons, Ireland; John Taylor, Glasgow Schools; Samuel Graham Kinloch, Edinburgh School; Rudolph de Mello, Grant Medical College, Bombay; Albert George Meares, Melbourne University; Daniel Samuel Coto and Augustus Daniel Kearney, Melbourne University; William John Buckmaster Queen's College, Cork; Thomas Randolph Hunter, Anderson's and St. Mungo's Colleges; Thomas Baird Trotter, Aberdeen University and Anderson's College; Patrick Brady, Dublin School; and Francis Joseph Nolan, Dublin School.

UNIVERSITY OF EDINBURGH.—The following is the official list of passes at the recent examinations for degrees in medicine and surgery:—

First professional examination.—M. I. Ali Khan. John Allan, D. I. Anderson, C. T. Ayana, E. A. Aylward, J. W. H. Babington, R. B. Burnetson, J. R. Bartholomew, W. J. Basson, Benjamin Baty, W. P. Beattie, D. W. Boswell, F. T. Bowerbank, F. R. Bremner, M.A., David Brown, W. S. Murdoch Brown, L. G. Bruce, G. L. Brunton, Mary T. Cameron, T. F. Campbell, T. E. Carlyle, V. T. Carruthers, Mildred M. L. Cathels, R. A. Chapman, W. P. Chrystall, D. M. C. Church, Lizzie M. S. Clark, John Clarke, M. L. Cohen, B.A., A. G. Coullie, T. E. Coulson, James Craw (with distinction), G. A. Davies, Robert Donaldson, M.A., S. E. Douglas, C. E. Dumanoire, E. J. Elliot, Hugh Ferguson, J. M. R. Flament, W. H. Foxsyth, W. J. Fraser, N. J. H. Gavin, H. V. Goldstein, Eleanor A. Gorrie, Percy Gosnold, B.A., Thomas Gowans, J. M. Graham, William Grant, W. W. Greer, E. J. Griffiths, Elizabeth C. Gunn, T. M. Guthrie, P. A. Harry, A. W. Hogg, M. A. Huk, M. M. Huk, J. H. Hume, K. U. A Innis, Ada Jackson, John Jardine, William Jarvis, J. M. Johnston, J. H. H. Joubert, G. P. Joy, S. F. Jung, G. F. S. Landon, F. E. Larkins, S. W. S. Leary, A. G. Leitch, A. J. Lewis, C. W. Lewis, B.A., James Lochhead, M.A., D. H. C. MacArthur, S. A. M'Clintock, William M'Conaghy, J. S. MacDonald, J. W. M'Ewan, J. P. M'Gowan, M.A., H. R. Macintyre, James Mackenzie, Amy M. Mackintosh, William MacLaren, Neil M'Leod, Alexander MacRae, M. M. Mamourian, L. S. Milne, K. A. Moody-Stuart, W. M. Munby, D. S. Murray, A. W. Neill, C. D. O'Neal, Armand Pampellonne, Bernard Pickering, Florence M. S. Price, D. S. R. Rao, H. S. Reid, Margaret H. Robertson, Thomas Robertson, Joseph Robinson, B.Sc., S. C. Roy, C. S. Ryles, A. I. Shepheard-Walwyn, F. R. Sinton, L. H. Skene, C. J. Smith, E. H. Smith, G. M. Smith, R. A. L. van Someren, Patrick Steele, George Stewart, H. M. Thompson, Archibald Tedrick, Rose C. Townend, Caroline Twigge, G. H. Ussher, F. L. de Verteuil, William Waddell, Thomas Walsh, R. H. Watt, W. H. Welsh, D. W. Wilton, W. B. Wishart, Thomas Wright, and Margaret C. W. Young, M.A.

Second professional examination.—Farhat Ali, W. L. L. Alston, Lewis Anderson, W. W. Anderson, R. G. Archibald, James Arthur, Nina H. Beath, Constance A. Bennet, J. G. Briggs, W. A. Brown, G. G. Buchanan, W. C. Burton, E. E. Cassaday, R. V. Clark, M.A., Maurice Davies, A. R. Douglas, C. B. Drew, Percy El-Karey, John Fairbairn, A. B. Flett, Agnes J. Gardner, P. E. H. Guiseppi, W. L. M. Goldie, R. G. Gordon, Philip Hallam, D. J. Hamman, Frances M. Harper, A. O. Hooper, William Hume, John Hunter, Arthur Hutley, Bertha Jex-Blake, Saiduzzafar Khan, E. A. King, W. E. Knight, Hermann Kramer, Vivian Langmore, Abraham Leach, Duncan Lorimer, A. W. B. Loudon, W. F. Macdonald, Daniel Mackinnon, S. W. Maclean, J. J. M'Millan, E. L. Meynell, R. C. Monnington, A. E. Morton, E. J. Morton, P. H. Mules, R. S. Munro, Frank O'Neill, Sophie Palmer, Herdman Porter, E. C. Prichard, Agnes M. Pringle, A. M. Pryce, A. F. H. Rabagliati, J. J. Redhead, E. M. Reece, R. E. Russell, C. W. V. Rutherford, David Sandler, Meurice Sinclair, G. W. R. Skeen, G. D. Sloan, D. W. Standley, Elbert Steyn, G. C. Trotter, Philip Vickers, J. F. van de S. de Villiers, John Wallace, B.Sc., George Wright, and E. E. Wood.

Third professional examination.—D. M. Aitken, M.A., R. V. C. Ash, J. W. Barrack, E. S. Brett, D. G. Carmichael, A. W. S. Christie, R. V. Clark, M.A., H. L. Clift, W. I. Dunn, O. J. Evans, A. H. Firth, G. A. Forrest, Robert Hamilton, P. J. Hay, John Jamieson, G. A. Jolly, E. W. Lewis, C. H. Lindsay, Samuel Lyle, Harriet E. M'Cloghry, H. K. Macdonald, Wilfrid M'Farlane, N. F. MacHardy, George M'Neill, Thomas Mill, Robert Morison, William Murray, J. G. Peebles, E. T. Potts, L. T. Price, F. L. Rigby, J. S. E. Robertson, A. L. Roxburgh, G. W. R. Skeen, C. W. Somerville, B. A. Spence, C. S. Steavenson, I. S. Stewart, G. C. Strathairn, John Sullivan, H. P. Thomson, E. J. Tyrrell, A. G. Waugh, and Ada Wilkinson.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Professor A. Born of Breslau, aged 50 years. His subject was anatomy and more particularly embryology.—Dr. Moussier, surgeon to the Nantes hospitals.—Dr. Skene, formerly Professor of Gynæcology in Long Island College Hospital, Brooklyn.—Dr. Shakespeare, a well-known Philadelphian ophthalmic surgeon.—Dr. Sutuguin, formerly *docent* of Gynæcology in the St. Petersburg Medical Academy.—Dr. John Ashhurst, the well-known American surgeon. He was formerly Professor in the University of Pennsylvania.—Dr. Hermann Dohnberg, Professor of Ophthalmology in St. Petersburg, has been assassinated.—Dr. Kristeller, *privat-docent* of Gynæcology in Berlin.—Dr. B. D. Howard, formerly Professor of Surgery in the University of Vermont.

NEWTON ABBOT WORKHOUSE.—At the meeting of the Newton Abbot (Devon) Board of Guardians held on August 2nd it was reported that £19,000 had been already expended upon the new building. The guardians resolved to apply to the Local Government Board for permission to borrow an additional £5500 for the erection of a new boardroom and also for providing receiving wards and tramps' wards.

THE OWENS COLLEGE.—The council has appointed Mr. F. A. Southam to be Professor of Clinical Surgery in place of Mr. W. Whitehead, who has resigned, and Mr. G. A. Wright to be Professor of Systematic Surgery in place of the late Mr. T. Jones. These appointments are subject to the confirmation of the Court of Governors which will meet in October. The council has also appointed Mr. W. Thorburn to be Lecturer in Operative Surgery and Mr. Joseph Collier to be Lecturer in Practical Surgery.

PRESENTATION TO A MEDICAL MAN.—In connexion with the legal proceedings taken against him twelve months since (which resulted entirely in his favour), the heavy law expenditure which he incurred, and his subsequently failing health, Mr. James Joseph Tracy, M.B. R.U.I., of Cork, has just been presented with a testimonial. At a recent meeting of his professional brethren it was unanimously resolved to present Dr. Tracy with an address and a purse of sovereigns as tokens of sympathy and esteem. Dr. N. J. Hobart made the presentation on behalf of the subscribers.

INOCULATION FOR THE PLAGUE.—The annual report of the Presbyterian Mission Hospital at Miraj, under the charge of Dr. W. J. Wanless, has just been issued. In reality it deals with parts of the years 1898 and 1899. For three and a half months in 1898 and the early months of 1899 plague prevailed in the town of Miraj resulting in the practical closure of the hospital and dispensary during this time. A full 12 months' work in either year could not therefore be recorded. With regard to the plague the report says the great benefit derived from inoculation is evident from the following: there were among the once inoculated 39 attacks and 22 deaths, and among the twice inoculated two attacks and one death. The population in the town and fields of uninoculated persons from Sept. 13th, 1898, to March 13th, 1899 (six months), could not have been less than 1300. Among these uninoculated persons there were 1314 attacks and 1092 deaths, a rate (to the population) of 10·1 per cent. of attacks and a rate of 8·4 per cent. of deaths, and a percentage of 83·1 of deaths among the attacked, while among the once inoculated the rate of attacks (to the population) was 1·9 per cent., and of deaths 0·8. In the twice inoculated the rate of the attacks was 0·4 per cent., and the rate of deaths 0·2 per cent. The total number of inoculations against plague with Haffkine's prophylactic serum performed in this dispensary to Dec. 31st, 1899, was 4274.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, AUGUST 2ND.

The Vaccination Question in Scotland.

MR. EDMUND ROBERTSON asked the Lord Advocate whether his attention had been called to the recent conviction in the Dundee Sheriff Court of a number of men for failing or refusing to have their children vaccinated, and to the fact that accused pleaded conscientious objections, and on conviction preferred to go to prison rather than pay the fines imposed; whether similar cases have occurred in other parts of Scotland; and, whether, having regard to the difference now existing between the laws of England and Scotland on this matter, and to the dissatisfaction created thereby, the Government would consider the question of the assimilation of the laws of the two countries on this matter.—The LORD ADVOCATE replied: I have seen a report of the Dundee case referred to and I am aware of similar cases in Aberdeen and Kirkcaldy. I believe such cases, however, to be very few. In the six convictions at Dundee referred to five went to prison and one paid the fine. One of the five paid the fine *pro tanto* after a detention of one day. I have reason to believe that there is a great preponderance of opinion in Scotland in favour of the existing law, and the Government do not propose to consider the question of assimilating the Scotch law to the English law.

Water Filters for South Africa.

Dr. FARQUHARSON asked the Under Secretary of State for War whether, considering the spread of enteric fever in South Africa, he would consider the possibility of increasing the number of pocket Rustem filters served out to the troops on active service there.—Mr. WYNDHAM replied: No filters of the kind referred to have been issued

the troops. The only filters that have been issued are of the Berkefeld and Stack and Brownlow type.

FRIDAY, AUGUST 3RD.

Vaccination Questions.

Mr. HEDDERWICK asked the President of the Local Government Board how many calves were kept by the department as reservoirs of lymph for vaccination purposes; how many of the animals so used were sold annually as food for the people; and where the sales took place.—Mr. CHAPLIN replied: The average number of calves now vaccinated weekly at Lamb's Conduit-street is 17. All the calves from which lymph has been collected are, within the next few days, slaughtered under veterinary supervision and the calves passed on veterinary authority as sound are sold in the Central Meat Market, Smithfield.—Mr. CHANNING asked the President of the Local Government Board whether, seeing that the opinion of the law officers of the Crown, based on the case of Bramble *v.* Lowe, by which he had justified the action of the Board in treating vaccination officers as servants of the Board and not as subject to the directions of the guardians, referred only to prosecutions under Section 31 of the Act of 1867, the opinion of the law officers had been taken on the extension of this practice of ousting the power of the guardians to direct the proceedings of their vaccination officer to prosecution under Section 29 of the Act of 1867; and whether he would give the opinions of the law officers as a parliamentary paper. — Mr. CHAPLIN replied: The hon. Member is under a misapprehension in supposing that the Local Government Board have treated the vaccination officers as their servants. As the Board explained in their circular of Oct. 21st, 1898, the power and the duty of taking proceedings are vested in the vaccination officer under the Vaccination Act passed prior to the Vaccination Act of 1898 without any order of the board of direction from the guardians. The opinions which the law officers have given to this effect referred to prosecutions both under Section 29 and Section 31 of the Vaccination Act, 1867; but it would be opposed to the established practice to publish these opinions.—Mr. WOODS asked the President of the Local Government Board whether he was aware that the minimum fees fixed by the Vaccination Order, 1898, pressed heavily on the local ratepayers at Wigan and other places, and that there was paid in the Union of Wigan for the year ending Lady Day, 1898, £516 9*s.* 5*d.*; for the year 1899, £433 5*s.*; and for the year 1900, £1541 7*s.* 7*d.*; and whether, in view of these charges, he would consider the whole matter with a view of placing them on a more reasonable basis. — Mr. CHAPLIN: We have not got the figures for 1900 which show the increase in expenditure at Wigan, but the establishment of a system of domiciliary vaccination has necessarily added to the cost of vaccination, as the duties of the officers have in consequence been very considerably increased. Moreover, the amount of the fees to some extent depends on the number of successful vaccinations, and I am glad to say that this number has been largely augmented since the Vaccination Act of 1898 came into operation. In the Wigan Union there was an increase of about 60 per cent. in the number of successful vaccinations in 1899 as compared with 1898. I have, however, received other representations on this matter and I am, as I always have been, willing to consider whether an alteration should be made in the minimum fees prescribed by the vaccination order; but I think we should have some further experience before determining whether this course ought to be adopted.

Pollution of the Thames.

Viscount SANDON asked the President of the Local Government Board whether his attention had been called to a recurrence of pollution of the river Thames near the sewage pumping stations at Halfway Reach and Barking Reach; and whether he would cause the necessary steps to be taken to obtain an abatement of the nuisance as a precaution against danger to health of those engaged upon the river.—Mr. CHAPLIN replied: I have made inquiry on this subject and I am informed that it is the recent hot weather which is mainly responsible for the nuisance complained of in the part of the river referred to in the question. I learn from the London County Council that they are fully intent on further improving the condition of the river and that they have undertaken several large works with that object. The Local Government Board have no power to take any steps in the matter.—Mr. STEPHENS asked the President of the Local Government Board (1) whether his attention had been called to the fact that during the year 1899 38 sewage overflows dischargod sewage into the Thames on its northern side within the London area; and (2) seeing that such discharges of sewage were liable to take place whenever the rainfall exceeded one-tenth of an inch and that the existing obligations of law compelled local authorities to admit the combined drainage of sewage and water to their sewers, whether, in the next session of Parliament, it was his intention to introduce a Bill to enable the local authorities to keep separate, if they desired to do so, the sewage and the water drainage of their districts.—Mr. CHAPLIN replied: No, sir; my attention has not been called to the facts referred to and I have no information to show how far they are as suggested in the first paragraph of the question. With regard to the second paragraph, local authorities have the power to provide, and they have in some instances already provided, separate systems for sewage and water drainage. The further legislation suggested on the subject, it appears, would raise questions of considerable importance which would involve heavy expense, and in any case I am not prepared to give any pledge with regard to legislation next session.

Enteric Fever in South Africa.

Sir WALTER FOSTER asked the Under Secretary for War for the figures as to the number of admissions at Bloemfontein and Kroonstad for enteric fever during certain weeks and the number of deaths.—Mr. WYNDHAM replied: The figures are as follows, viz., Bloemfontein, week ended June 8th, 487 admissions, 98 deaths; week ended June 15th, 213 admissions, 64 deaths; week ended June 22nd, 221 admissions, 52 deaths. Kroonstad, week ended May 25th, six admissions, no deaths; week ended June 1st, 83 admissions, 12 deaths; week ended June 8th, 18 admissions, 18 deaths; week ended June 15th, 66 admissions, 11 deaths.

MONDAY, AUGUST 6TH.

The Remuneration of Civil Practitioners in South Africa.

Mr. ELLIS GRIFFITH asked the Under Secretary of State for War whether his attention had been called to the fact that civil medical officers in South Africa did not get colonial allowance, though such allowance was allowed to every other person now serving in the British army in South Africa; and whether he would take steps to remedy this state of affairs.—Mr. POWELL WILLIAMS, replying for Mr. WYNDHAM, said: The civil medical practitioners engaged for service in South Africa are paid according to the special terms for which they engaged—viz., pay at £1 a day, field allowance at 3*s.* 6*d.* a day, servant's allowance, Government horse with forage, and field rations while in the field, with a gratuity of two months' pay at the expiration of their contract. They accordingly receive higher emoluments than many of the officers of the Royal Army Medical Corps. The Secretary of State for War sees no reason for making any addition to their emoluments.

The South African Commission of Inquiry.

On the motion for the second reading of the Appropriation Bill Mr. BURDETT-COUTTS complained that there had been no opportunity for discussing the constitution as a whole of the Commission appointed to inquire into the care and treatment of the sick and wounded during the South African campaign, but without going into the question then the hon. Member set himself to show that the Commission was without the powers essential to bringing out the whole truth, and that the great interests involved in the inquiry would be imperilled, if not defeated, by the course which had been followed. The Commission, he said, had neither the power to take evidence on oath nor to compel the attendance of witnesses and consequently went forth at the mercy of one side and one interest in the inquiry and that the interest and side most involved in its own exculpation. The Commission had gone out to South Africa where nine-tenths of the evidence in the case was under the control of the Army Medical Department or some other department of the War Office. Their hand reached over the whole field of witnesses and of course they would organise the evidence and select the witnesses. While on the one side there would be this powerful organisation, on the other there would be absolutely nothing except the voluntary act of witnesses 99 out of 100 of whom believed, rightly or wrongly, that their future would be prejudiced by coming forward. The hon. member read to the House extracts from a number of letters by military and civil surgeons and others, in which reference was made to the apprehended consequences of coming forward with evidence, and, in conclusion, he asked the Government whether it was not still possible to increase the powers of the Commission.—Mr. BALFOUR, in reply, said that there had been few commissions with the power of taking evidence on oath and compelling the attendance of witnesses, and he pointed out that if this Commission had received such power it would have found it difficult to exercise it in self-governing colonies. As to the other issues, he thought that the hon. member was very ill-advised in raising them, especially at this time, when the Commission had embarked upon its inquiry and after the hon. member had himself been examined before the Commission.—Sir WALTER FOSTER expressed the opinion that the Government had taken too narrow a view of this inquiry. For himself he had no desire to obtain the slightest party advantage one way or the other, but he did desire that they should have a searching inquiry and get full knowledge of how it came about that their heroes in Bloemfontein were allowed to die in bell-tents in the manner described by the witnesses before the Commission. To this knowledge every citizen was entitled. With regard to the general situation he considered it was an enormous blot upon the campaign that there should have been between 16,000 and 17,000 cases of typhoid fever amongst our troops; to him that circumstance was enough to show that there had been something wrong in the administration in South Africa.—Colonel BLUNDELL, speaking as an old soldier, said that he had every confidence that the Commission would conduct a proper inquiry and arrive at a proper conclusion.—The House then proceeded to the discussion of other subjects.

TUESDAY, AUGUST 7TH.

Inoculations at the Brown Institution.

Mr. MOSS asked the Home Secretary if his attention had been called to a statement by the superintendent of the Brown Institution that the inoculations with rabies performed in that institution were of no use except for the purpose of compiling statistics; and whether, seeing that these inoculations with rabies inflict suffering on a number of animals, he would take the necessary steps to prevent their continuance in that institution in future.—Sir MATTHEW WHITE RIDLEY replied: The superintendent of the Brown Institution states that the question does not accurately represent any opinions expressed by him. He considers that the inoculations referred to afford the only means of determining the existence or non-existence of rabies in a suspected animal.

The Increase of Vaccination in England.

Sir WALTER FOSTER asked the President of the Local Government Board whether he could state the number of certificates of successful primary vaccination received by the vaccination officers during the year 1899 as compared with 1898, and the number of such certificates received for the first six months of this year as compared with the similar period of the years 1898 and 1899.—Mr. CHAPLIN replied: The number of certificates of successful primary vaccination received by vaccination officers during 1899 was 669,349 as compared with 500,314 during 1898, being an increase of 169,035 or 33·9 per cent. I have not received returns as to the number of such certificates during the first six months of the present year.

Medical Reinforcements for South Africa.

Sir WALTER FOSTER asked the Under Secretary of State for War if he could state the strength of the reinforcement of trained men of the Royal Army Medical Corps which it had been recently decided to send out to South Africa.—Mr. WYNDHAM replied that the strength of the reinforcements was 300.

The Remuneration of Civil Practitioners in South Africa.

Mr. WYNDHAM, replying to questions on this subject, said: The position of these gentlemen differs in one important particular from that of officers of the Royal Army Medical Corps. The latter receive rates of pay which are calculated with reference to the general services which they have to perform at all times and in all parts of the world. The conditions of the present war are, however, unusual as regards the specially high cost of living in South Africa, and it was therefore thought reasonable that special colonial allowances should be granted to them to enable them to meet this extra expense. The case of the civil surgeons is quite different. They made a special

contract for service in South Africa during the present war, and there is, therefore, nothing unforeseen in the conditions of their service which we feel called upon to meet by an alteration in their favour in the terms of the contract. As a matter of fact, they receive higher emoluments than many of the officers of the Royal Army Medical Corps. My attention has been called to the fact that civil veterinary surgeons are receiving colonial allowances. That is so, the reason being that they are paid at the rate of army veterinary surgeons and not at a special rate calculated with a view to the present war.

WEDNESDAY, AUGUST 8TH.

The South African Commission of Inquiry.

Mr. EDMUND ROBERTSON asked the Leader of the House whether he could give any estimate of the time when the report of the Commission on the care of the sick and wounded during the South African campaign might be expected.—Mr. BALFOUR replied that he had no authoritative estimate but he knew that the Commission did not anticipate that the South African inquiry would occupy any very considerable time.

THE SOUTH AFRICAN COMMISSION.

WEDNESDAY, AUGUST 1ST.

THE Commission appointed to inquire into the care and treatment of the sick and wounded in the South African campaign resumed their sitting, with Lord Justice ROMER in the chair, at Burlington House, this being their last meeting in London before going out to South Africa. The meeting lasted for about six hours and a large number of witnesses were examined.

The CHAIRMAN at the start made an expianatory statement with regard to the conduct of the proceedings of the Commission. So far, he said, the whole of the evidence had been taken in presence of shorthand writers and made public, and this practice would be continued except in certain circumstances. It had been stated to the Commission that some witnesses who could give useful evidence might be deterred by fear of consequences from coming forward and giving information. The Commissioners had felt some difficulty with regard to this subject, but they were determined that information should not be withheld from them on any such ground and on consideration they had come to the conclusion that the names of witnesses who felt this apprehension or the particulars by which they could be identified should not be printed or published if they so desired it. The Commissioners, however, would take care that witnesses should not be permitted to use the withholding of their names as a cloak for making personal attacks upon individuals.

Mr. R. O'CALLAGHAN said in the course of examination that he went out to South Africa as surgeon-in-chief of the Langman Hospital. At Cape Town, where they were detained for several days, he visited the base hospitals and he could say of them that they were as absolutely perfect as one could expect or wish for. They reached East London on March 26th, and though all the while they were urging the authorities to hurry them forward they did not disembark until the day after the arrival of the ship. The railway authorities at East London were quite alive to the urgency of hospital aid at Bloemfontein, for they had a special train to take forward the Langman Hospital, but all along the line they found themselves being thwarted by the military authorities whose great anxiety was to get through military stores. They had to leave East London without two of their trucks. As for those they got away, it was with the greatest difficulty that they got them forward; they had practically to sit on them and say that if the trucks did not go forward they themselves would not move. If they had not done this the trucks would have been turned into sidings. After a journey of three or three and a half days they reached Bloemfontein on April 2nd, and owing to the other stores not arriving from East London they were absolutely useless for four days. No words were strong enough to describe the dilatory fashion in which the stores of the Langman Hospital were treated, for it must be remembered that the cry for hospitals at Bloemfontein at this time was almost as urgent as the cry for help from the Legations in Peking. The Langman Hospital was intended for 100 beds, but there was such a rush of cases that they took over 50 more beds; before taking these over, however, they made it a condition that they should have utensils and nurses for them. Before leaving this country they applied to the War Office and the Director-General to be allowed to take nurses, but they were refused, though when they got to Bloemfontein they received the services of nurses. At Bloemfontein there were utensils and other things they could not get from the authorities, but fortunately Mr. Langman was with them and he went and bought the things at his own expense. That, witness thought at the time, was rather hard lines considering that they were in the enemy's country. In the hospital everything went smoothly and successfuly once it had been started, and so far as he was aware nobody had any cause for complaint. They never got all the fresh milk they wanted. He believed that if a due proportion of medical stores and equipment had been allowed to come up the railway a great deal of the criticism passed upon the medical arrangements would never have been heard. He saw two field hospitals near the Langman Hospital at Bloemfontein. They had been turned into stationary hospitals and no doubt there were overcrowding, undermanning, and want of nurses. While he said that he also said that no men could have worked harder than did the officers in these hospitals. The want of stores he put down to culpable leniency shown to the Free Staters.

Lieutenant C. A. LEE of the New South Wales Mounted Rifles gave evidence as to the excellence of the treatment he received in various hospitals whilst suffering from enteric fever. He said that he had the hospitals to thank for being able to appear before the Commission.

Captain THOMPSON of the 1st Australian Horse said that he became ill with dysentery and enteric fever in May between Kroonstad and Johannesburg and the regimental surgeon did all he possibly could for him. Witness was anxious to get on to Pretoria and he kept up the march, the surgeon being hopeful of staying the progress of the trouble. When, however, an engagement was expected witness was ordered back to Kroonstad, to which place he was conveyed in a Scotch cart with another officer. They found the hospital full and they were accommodated in a hotel which was turned into a hospital. There were 100 odd officers in this hotel, which had two surgeons, two trained orderlies, and some convalescent men who assisted in attending the patients. When they left Bloemfontein nobody thought there would be so large a number of cases of enteric fever and dysentery. The patients got all the care and attention they could reasonably expect under the circumstances. They had fresh milk when it could be got and always condensed milk. He knew of cases of beds, mattresses, and other things in the houses of the town being requisitioned. What struck him most of all was the wonderful amount of work got through by the medical men. Many regimental surgeons, especially after an engagement, were out all night with the wounded and on the following day they were employed with their batches of sick. Witness was in command of a squadron of cavalry attached to General French's division, and he really thought the medical men were too solicitous about the men's health and unnecessarily reduced the commands.

Mr. RUDYARD KIPLING, the next witness, said that he landed at Cape Town on Feb. 5th, and from then until the end of the month he was generally in and out of the Cape Town hospitals. He talked with the medical officers, asking them amongst other things whether they had everything they required for their patients. They replied that there was no particular strain upon the hospitals and that they had everything they wanted. When he spoke to the nurses and said that he could get things from the Absent-Minded Beggar Fund, they said that they wanted pyjamas very badly, but they added "Don't send them to the store issue department, for they will never come out; bring them to the back door." They were taken to the back door in a Cape cart and given over quietly to the nurses, and thus they reached the patients without any delay. In this way pyjamas were also supplied to the hospital train. It was reported to him indirectly that there was no medicine in the Maitland Hospital beyond a little boric acid and some quinine pills, and from the Absent-Minded Beggar Fund he sent over a few pounds' worth of medicines. They were sent privately, in the same fashion as the pyjamas, but, of course, they were given not to the nurses but to the surgeons. What he did was with the object of saving time. He saw the wounded in a hospital train coming down from the front. There was nothing bad there and everybody seemed to be working very hard. When he got to Bloemfontein, the enteric fever was only beginning and there was no strain upon the medical arrangements. He could see, of course, that there was no enthusiasm about sick cases; they were slow and uninteresting, whilst wound cases were interesting and quickly cured. When he returned to Cape Town, he went over the hospitals again. He found them perfectly clean and everybody was working very hard, but there was always this quiet complaint about the persistent slowness in getting what was required. He did not visit the Woodstock Hospital; he saw it from a distance, and the place was simply unspeakable; the air was foul and stank.

Colonel MULCAHY, the officer in charge of the Royal Army Clothing Department, presented to the Commission a series of tables showing the quantities of supplies of hospital clothing sent out to South Africa. These tables, the CHAIRMAN said, he and his brother Commissioners would examine and study during the voyage out. With regard to stationary and general hospitals Colonel MULCAHY said that in every case they shipped with them 50 per cent. of reserve in addition to the equipment. If the complement of gowns for a stationary hospital was 100 they put 150 on board. The only case where in the tables it might appear there was delay in meeting requisitions was a case where certain shirts were wired for on March 25th and a portion of these shirts were not sent out until July 21st. That meant that the particular pattern of shirt used in the hospital was not sent out, but other patterns were sent out to the number of over half a million. What were sent out were not hospital pattern shirts, but others which were practically as useful. The requisitions were quickly answered. Where they could not supply the exact article asked for they substituted other items. For instance, when a certain number of gowns could not be supplied they sent waistcoats instead. Pyjamas were not a recognised article of military hospital clothing: they had not been approved by the authorities at home; but a flannel shirt and a pair of drawers were the regulation for the military hospital and these could be used as pyjamas, and ample supplies of both articles had been sent to South Africa.

Mr. J. A. MORRISON, M.P., lieutenant in the Grenadier Guards, gave an account of his hospital experiences at Modder river and Wynberg, his general comment being that he noticed nothing deserving of complaint.

Mr. G. L. CHEATLE said that he arrived at the Modder river on Jan. 31st and found the hospitals there working perfectly. He saw no patients lying on the floor or without beds. He was there two months altogether. Lord Roberts put a hospital in his hands with the object of treating the cases of the more severely wounded. He saw the wounded from Paardeberg and Kimberley. On one day 779 cases arrived from the former place. They were all put in bed, but they were mostly afterwards sent off by train. After the first 24 hours there were no deficiencies whatever. He bought the necessary things and fed the patients, and they wanted for nothing. After the two months at the Modder river he went to Kimberley and afterwards to Bloemfontein. At the latter place he saw the Guards Brigade hospital; it had 400 patients and was very much crowded. They were a mixed lot of cases of enteric fever and dysentery, but no wounded at all. They were housed in bell-tents, marquees, and iron buildings. All the tents were entrenched and the men had mackintoshes and blankets, and in some cases red pyjamas. They complained very much of being overcrowded. They did not get any fresh milk that he knew of. The surgeons complained of the amount of work. He advanced from Bloemfontein with General Pole-Carew. When men got wounded and required treatment he stopped behind and looked after them in the Boer houses. The wounded were very well attended to in that advance and got everything which they required. Witness was with the advance to Pretoria all the time and of course passed through Kroonstad. He could only speak as to the care of the wounded; he could not speak of the typhoid fever or dysentery cases. As far as the treatment of the wounded was concerned, they had everything—plenty of dressings—and he never had any difficulty whatever. They had sufficient orderlies, and whenever they left a man behind they left with him a surgeon and an orderly. He was for two or three days outside Pretoria. Then he went on to Silvertown and brought back

the wounded to Pretoria and then he came home. At no time did he feel hampered by the want of medical equipment.

Lieutenant-Colonel F. BARROW, A.M.S., Principal Medical Officer of No. 9 General Hospital said that the hospital was equipped at the Albert Docks, London, for 500 rank and file and 20 officers and that it reached Bloemfontein about April 7th. Owing to the block in the railway service they had to wait for 10 or 12 days for the arrival of the equipment. The railway people said that they would forward it from Port Elizabeth and then it only came in driblets. What was said was, food first, then ammunition, and then medical equipment, and of course witness agreed with that view of the case. They were practically without anything to do for a fortnight. As he said, they were equipped for 520 patients, but they got 1500, 1600, and 1800 patients dumped down upon them. They had 88 marquees, and he asked for 25 more and got them; it was all they had. They had a surplus of sick mild cases. They requisitioned bell-tents for them and got them at once, and into each bell-tent they put two or three patients, but no serious cases. If cases became serious they were sent from the bell-tents to the marquees. He considered that the hospital was very fully equipped. He had been on service three or four times and he never saw a more complete hospital. They got beds made locally and on these they put mattresses in the bell-tents. All the marquees had proper spring mattresses. In the bell-tents they had the improvised local pattern of bed, with locally provided mattresses which answered very well. Their water-supply was inadequate owing to the break-down of the waterworks. They were entitled to 60,000 gallons of water per day and they found difficulty in getting 6000 gallons from two wells. They were told to boil the water, but they had no firewood and there were no trees to cut down. This state of things lasted for three weeks until they got a supply of coal and wood from the base. Naturally they ran short of regulation army stores. They had to requisition persons who were not trained orderlies, but they did their best and, indeed, did very well. He went morning, noon, and night round the tents and asked for complaints and he never heard one. He heard one patient say to General Kelly-Kenny that he had had nothing to eat for eight days, but as a matter of fact this man had had 11 pints of liquid, and because it was not solid food, which was not indicated in his case, he considered that he had had nothing to eat. What he had had consisted of bovril, beef-tea, milk, and jellies. Witness himself used to sleep in a bell-tent. He personally stopped the supply of fresh milk because of the risk of contamination owing to the dirty habits of the Kaffirs. He preferred the condensed unsweetened milk because it was impossible to contaminate it. They had tons of condensed milk, and 2000 or 3000 tins of it were used every day. As to the men's rations, there were frozen mutton and fresh meat, and very often they had to bury it because, although the ration had been drawn, the patient was unequal to eating it. War meant waste, and, no doubt there was waste in this connexion. Later he issued orders not to draw the full rations because they had milk, bovril, and medical comforts taking their place. As to the bell tents they had no overcrowding at any time in connexion with No. 9 Hospital. In fact, he never saw a thing more splendidly done by the Government, and goodness knew what the bill would be. The officers and the rank and file had exactly the same treatment as far as medical comforts were concerned. There were lots of patients who arrived with absolutely nothing the matter with them. There was one orderly to three tents, and when there was very little the matter with the patients that was quite sufficient. If there had been any water on the floor of the tents he should have seen it. The fact was they were on a slope and the site had been chosen by a board of army medical men. He had not sufficient trained men because no one had anticipated such a rush of sick. He did not see Mr. Burdett-Coutts at the hospital; if he was there he ought to have had a pass. As to the buildings in the town being taken for hospital purposes they were pesthouses. It was far better to treat a man in the open air than in an insanitary room. There could be no doubt that the houses were insanitary and the bucket system as carried out in South Africa was simply abominable. He would not put cattle into some of the houses. They had a large staff of female nurses in the marquees, and the reason why they had not them in the bell tents was that they were not required for mild cases. He confessed that they were short of utensils. As for blankets he got plenty of them; he requisitioned 2000 on one day and got them at once.

Dr. CHURCH: We have had it suggested that the officers did not like to ask for what they wanted.

Lieutenant-Colonel BARROW: If I did not get what I wanted there was a row. I never asked for anything that I did not get. I asked for transport and they said it was impossible, but I got it all the same. I got my own transport. I think that a field hospital will never be complete until it has its own transport. I got my transport after a personal interview and explaining the difficulty.

Dr. CHURCH: You had a lot of trouble about the returns?

Lieutenant-Colonel BARROW: Well, I neglected most of the returns and the statistics also. I got many urgent telegrams from Cape Town asking "where are your returns?" I took no notice of the telegrams.

The CHAIRMAN: Were they unnecessary and cumbrous?

Lieutenant-Colonel BARROW: They were necessary, but there is great difficulty in furnishing them when working at high pressure.

Dr. CHURCH: Did you ever see 10 men in a bell tent?

Lieutenant-Colonel BARROW: Never. I went round frequently in the day and dodged round and looked into them. There might be 10 in a tent from a train arriving at three in the morning, but they would not be there long after daylight.

Dr. CHURCH: Are the men afraid to make complaints?

Lieutenant-Colonel BARROW: No, they are only too anxious to make them.

Captain DUNCAN STEWART of the Royal Canadian Foot Regiment stated in the course of examination that he had an attack of malarial fever at Pretoria, went into hospital there, and could not speak too highly of the medical men and the nurses.

Mr. STROMEYER LITTLE said that he went out to South Africa not in the public service but as a visitor. As a visitor he was very favourably impressed with the hospitals, but when he came to work in one he found things were a little different. In his opinion the great bulk of the private hospitals were superior to the military hospitals. He went to Bloemfontein in the beginning of May and worked in No. 9 Hospital, where he had charge of 10 marquees. The bell tents were overcrowded, but he could not say positively how many patients there were in them because the men moved out during the day. There undoubtedly was a want of bed-pans, and many patients probably lost their lives in consequence. The condensed milk was very poor. He thought there ought to have been fresh milk.

The CHAIRMAN: But Colonel Barrow, who was in charge, told us he would not have fresh milk because it was dangerous.

Mr. LITTLE: The condensed milk was certainly liable to contamination because you had got to mix it with water, and there were millions of flies about and this water was open to them. When he got down to Port Elizabeth he found responsible people who were ready to guarantee a thousand bottles of sterilised milk per day, and he wrote to No. 9 Hospital on the subject, but received no answer.

Captain TRYON gave evidence to the effect that he had been a patient in a hospital at Bloemfontein, travelled in a hospital train, and received treatment in a hospital at Wynberg, and was fairly well looked after in all these positions.

Lieutenant-Colonel COOPER of the Irish Guards, who had been engaged as a railway staff officer, spoke as to the difficulties experienced in the transport of the sick and wounded owing to the pressure of traffic for the fighting line.

Major A. P. BLENKINSOP, R.A.M.C., said he went out with No. 20 Field Hospital. His first duty was outside Bloemfontein, where the hospital was fully equipped, and where they had 106 cases of enteric fever and dysentery. The patients were well looked after and got their food. Finding some difficulty about the fresh milk he told the farmers that if they did not supply him he would commandeer their cows and send the owners to prison in Bloemfontein, and after that there was no more difficulty about fresh milk. For sick convoy purposes he suggested that there should be made up special boxes containing medical comforts, jellies, and the like, and with regard to field hospitals he thought that they should have their own transport.

Mr. A. K. BURN of the City of London Imperial Volunteers gave evidence as to his treatment for enteric fever in one of the field hospitals.

The Commission then adjourned.

The Secretary (Major TENNANT) intimated that the visit to South Africa will probably occupy two or three months, and that on its conclusion further evidence will be taken in London.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALDERSON, WILFRED E., M.D., M.S. Durh., has been appointed Honorary Physician to the Newcastle-on-Tyne Dispensary.

ANDERSON, THOMAS MCCALL, M.D. Glasg., has been appointed Professor of Practice of Medicine in the University of Glasgow, vice Professor Sir W. T. Gairdner, retired.

ATKINSON, C. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Workhouse, East Ashford Union, vice C. S. Atkinson, deceased.

BEACHCROFT, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District and the Workhouse of the Petworth Union, vice R. J. McDermott, resigned.

BISSET, A., M.B., Ch.B. Aberd., has been appointed Resident Physician to the Royal Infirmary, Aberdeen.

BLAKISTON, F. C., L.R.C.P. Lond., M.R.C.S., has been appointed Junior Assistant Medical Officer for the Infirmary of the Wandsworth and Clapham Union, vice C. Powell.

BLYTH, M. W., has been appointed Public Analyst for the County Borough of Brighton, vice E. H. Moore, resigned.

BOYD, STANLEY, M.B. Lond., F.R.C.S., has been appointed Surgeon to the Hospital for Consumption, Brompton, vice R. J. Godlee, resigned.

COOKE, L., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Aspull Sanitary District of the Wigan Union.

COWIE, WILLIAM, M.B., C.M. Aberd., has been appointed Medical Officer for the Charlton Sanitary District of the Woolwich Union, vice J. Logie, deceased.

CROLL, W. F., M.B., Ch.B. Aberd., has been appointed Resident Physician to the Royal Infirmary, Aberdeen.

CROSSFIELD, A. K., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Dartmouth Sanitary District of the Totnes Union, vice R. W. Soper, deceased.

DAY, F. W. H. L., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health by the Hitchin Urban District Council.

ELLIS, R. SIDNEY, M.B., Ch.B. Edin., has been appointed Assistant Resident Medical Officer to the St. Mary's Children's Hospital, Plaistow, E.

GOURLAY, F. T., M.B., C.M. Edin., has been appointed Medical Officer for the Shiffnal and Stockton Sanitary Districts and the Workhouse of the Shiffnal Union, vice T. H. Keogh, resigned.

GRANT, LACHLAN, M.D. Edin., has been appointed Medical Officer to the Ballachulish State Quarries, vice Dr. Farquharson, resigned.

HANCOCK, JAMES TAYLOR, L.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer and Public Vaccinator to the Carlton and Drax District of the Selby Union.

HARDY, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent of the Sheffield City Hospital, vice A. Anderson, resigned.

HARTLEY, J. D., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Slaidburn Sanitary District of the Clitheroe Union, vice J. Sinclair.

HOPKINS, JAMES J., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Nos. 1 and 2 Castlebar Dispensary Districts, and the Electoral Division of Bellavady, in the Union of Castlebar.

JOHNSON, H. S., M.R.C.P. Irel., L.F.P.S. Glasg., has been reappointed Medical Officer by the Ashburton Urban District Council.

POLLARD, W. R., M.R.C.P. Edin., L.R.C.S. Irel, has been appointed Medical Officer to the Cottage Homes by the Cottage Homes Committee, Blackburn.

PRITCHARD, R. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Petworth Union, vice R. J. McDermott, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cab-hire, with furnished room, fire, lights, and attendance.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons to the Hospital for the Eastern Division of Bethnal Green and for South Tottenham.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer, unmarried. Salary £140, rising to £160 the second year.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Salary commencing at £125 per annum with the usual allowances.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for one year, unmarried. Salary £70, with board, lodging, and washing.

EYE, EAR, AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES, Shrewsbury.—Surgeon. Honorarium of £150 per annum will be given for three years.

GENERAL INFIRMARY, LEEDS.—House Surgeon and House Physician. The former for 12 months and the latter for six months. Board, lodging, and washing provided.

GROVE HALL ASYLUM, Bow, London, E.—Junior Assistant Medical Officer. Salary £120 per annum, with board, furnished apartments, attendance, and washing.

ISLAND OF GUERNSEY.—Medical Officer of Health. Salary £200 (British currency), with local travelling expenses. Applications to be addressed, "Board of Health," States Office, Guernsey.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road. — Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OWENS COLLEGE, Manchester.—Additional Demonstrator in Anatomy, for the Winter Session.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London.—House Surgeon. Salary at the rate of 50 guineas a year, with board and residence.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon, for one year. Salary £100, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, at the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, West Bar, Sheffield.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Apply to the Secretary, 53, Borough High-street.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Witham, in the county of Essex, at Lewisham in the county of London, and at Tyldesley, in the county of Lancaster.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. Honorarium at the rate of £20 per annum, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the hospital.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

Births, Marriages, and Deaths.

BIRTHS.

COLDSTREAM.—On August 5th, at Belford, Northumberland, the wife of George Probyn Coldstream, M.B., C.M., of a daughter.

DEMPSTER.—On August 3rd, at Winsley, South Croydon, the wife of W. T. Dempster, M.R.C.S., L.R.C.P. Lond., of a son.

FINNY.—On August 1st, at Tamesa, Kingston-hill, Rosa, the wife of William Evelyn St. Lawrence Finny, M.B. Irel., L.R.C.P. Edin., J.P., ex-Mayor of Kingston-upon-Thames, of a son.

LAWS.—On August 5th, at Car Colston, Nottingham, the wife of W. G. Laws, F.R.C.S., of a son.

MAYBURY.—On August 4th, at Hampshire-terrace, Southsea, the wife of Lysander Maybury, M.D., of a son.

QUILLER.—On August 5th, at S. Paul's-close, Clapham, S.W., the wife of Charles Turner Quiller, M.R.C.S., of a son.

SHARP.—On August 2nd, at Bagdale, Whitby, the wife of Arthur J. Sharp, M.D., F.R.C.S., of a daughter.

STABLES.—On August 2nd, at Ashby-de-la-Zouch, the wife of W. W. G. Stables, M.R.C.S., &c., of a son.

MARRIAGES.

BERRY—BRIGHOUSE.—On August 7th, 1900, at the parish church, Ormskirk, by the Rev. John Williams, M.A., curate of All Saints', Southport, assisted by the Rev. J. E. Woodrow, vicar of Ormskirk, and the Rev. J. F. Hogg-Goggin, rector of Rufford, Richard James Arthur Berry, M.D., F.R.S., F.R.C.S. Edin., to Beatrice Catherine, eldest daughter of Samuel Brighouse, Esq., solicitor, and Coroner for South-west Lancashire.

EDWARDS—JACKSON.—On July 31st, at the parish church, Reigate, Francis Henry Edwards, M.D., M.R.C.P., eldest son of Francis C. Edwards, of Blackheath, to Eleanor Margaret (Daisy), younger daughter of Geo. Jackson, of Reigate.

HUNT—EDGELL.—On Aug. 1st, at the Church of St. Nicholas, Bromham, Wiltshire, William Alfred Hunt, M.R.C.S., L.R.C.P., only son of William Hunt, Pen Villa, Yeovil, to Helen Julia, youngest daughter of the Rev. E. B. Edgell, J.P., rector of Bromham.

REISSMANN—BIRKS.—On July 31st, at Knutsford, Glenelg, South Australia, Charles Reissmann, M.A., M.B., B.Sc., of Wahroonga, New South Wales, to Edith Vause, third daughter of Charles Birks, of Glenelg, S.A.

DEATHS.

SPITTA.—On Aug. 2nd, at Clapham Common, S.W., Robert John Spitta, M.D. Lond., in his 81st year.

STUART.—On Aug. 4th, at Gloucester-terrace, W., William Johnston Stuart, Surgeon-Major (retired) H.M. Bombay Army, aged 81.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHAT IS "PROPER LODGING" UNDER THE PUBLIC HEALTH ACT?"

To the Editors of THE LANCET.

SIRS,—I am advising my council to provide isolation accommodation for a large mining district with a population of about 14,000. The miners principally live in three or four-roomed cottages (in some cases five rooms) in rows or terraces. Sec. 124 P. H. Act, 1875, says: "Any person suffering from any dangerous infectious disorder and is without proper lodging or accommodation" may be removed to such hospital. What is meant by "without proper lodging and accommodation"? If the child or a person living in the house of one of these colliers is taken ill with infectious disease (diphtheria, enteric fever, &c.), is the child without proper accommodation, and could we have the power to remove it? In the case of a "lodger" in one of these houses I presume there would be no difficulty. I should be glad if you would kindly deal with the question in one of your issues. I feel that unless we have more power than the Public Health Act gives us the hospital would not be in use half the time.

I am, Sirs, yours faithfully,

August 4th, 1900. MEDICAL OFFICER OF HEALTH.

* * The question shall have our attention.—ED. L.

THE DUNMOW FLITCH.

AT the annual Dunmow Flitch celebration which took place in the presence of a crowd of holiday-makers on August 6th, the first claimants were Mr. and Mrs. Evelyn John Evatt of Newcastle-on-Tyne. Mr. Evatt is said by the newspapers to be a medical student. When the matrimonial affairs of a medical student attract the attention of the press it is so generally because of their painful nature that we are bound to congratulate Mr. Evatt upon a publicity that has its origin in his conjugal happiness.

THE FIRST GENERAL MEETING OF THE BRITISH MEDICAL ASSOCIATION AT IPSWICH.

To the Editors of THE LANCET.

SIRS,—In your doubtless very hurried report of the first general meeting of the British Medical Association in Ipswich you insert the lines: "that THE LANCET *plébiscite* showed plainly that the feeling of the profession was against the Midwives Bill, and Mr. D. O'Sullivan." This is on p. 357, left-hand column, lines 29-30. Please note comma after Midwives Bill. There is no sense in the paragraph. And why my name was introduced I cannot understand, as any remarks I made were agreed with by the great majority of the meeting. The report also at the top of the page (same column) shows a first line which is foreign to Dr. Saundby's remarks and is evidently interpolated by carelessness. I feel that I am placed in an invidious position by the introduction of my name in the manner indicated.

I am, Sirs yours faithfully,

Southport, August 7th, 1900. DANIEL A. O'SULLIVAN.

*** We fail to see anything invidious in our report. If Mr. O'Sullivan will read the report carefully he will see that we said that he was one of the principal speakers during a certain portion of the general meeting, and it is a fact that he was so. Leaving out parenthetical clauses, the paragraph reads: "the principal speakers being Dr. Brassey Brierley, Dr. J. Haddon, Dr. A. Cox, and Mr. D. O'Sullivan."—ED. L.

"DRESSERS" FOR KUMASI.

To the Editors of THE LANCET.

SIRS,—I had occasion some two or three weeks ago to call attention to the parsimony of the Colonial Office in its attempt to obtain medical officers for an expedition to Kumasi. Whether it failed to obtain an adequate supply of qualified men for the totally inadequate remuneration offered I am not aware; but this week in your columns and in the columns of a contemporary appears an advertisement asking for "dressers." These "dressers" are offered pay at the rate of £20 a month *plus* an allowance of 5*s.* per diem, with privileges as regards passage, rations, and gratuity similar to those of the previously-advertised-for medical officer. This offer to the unqualified "dresser" appears to be as liberal as the offer to the qualified man was illiberal; the difference in the value of the services of the qualified and registered (£30 a month and no allowance) and the unqualified and unregistered (£20 a month *plus* 5*s.* a day allowance) candidate being, if the estimate of the Colonial Office is to be accepted, only some £2 10*s.* or £2 15*s.* per mensem. It was rumoured that some senior students and dressers who volunteered for service in South Africa were told off to scrub floors and clean "quarters." I do not think that these "dressers" need fear that their services will be so little appreciated, they will probably find themselves in positions of considerable responsibility. The circumstances of the case rather favour the suspicion that the previous request for medical officers at the small salary offered having elicited no very fervid response the authorities contemplate employing unqualified men under the guise of "dressers." The remuneration offered to these "dresser" candidates is ample though not extravagant, and while some "chronics" may be tempted to respond I doubt if any genuine "dresser" or "clerk" with any prospects will care to delay his curriculum and cast his chances into such a fatal lottery as a West Coast expedition.

I am, Sirs, yours faithfully,

Aug. 6th, 1900. CANTAB.

AN IMPROVED CYCLE AND MOTOR-CAR LAMP.

OUR attention has been drawn to an improved cycle and motor-car lamp which, if generally in use, would do much to prevent accidents and reduce the strain upon the nerves which accrues from riding at night. Medical men who use the cycle for night calls would find increased comfort from the use of the lamp, for there is practically no danger of being run down from behind, while the rider is able to see his pedals for mounting. The improvement is extremely simple and consists in affixing at each side of the lamp a glass prism placed in an oblique direction from above downward and forward. One of the faces of the prism is almost at right angles to the side of the lamp and throws a beam of light backward and downward. Mr. John Cassels of 76, Hall-street, Stockport, is the inventor and the lamps are sold in two qualities, at the prices of 6*s.* and 15*s.*, the high-priced lamp being an excellent production of the lamp-maker's art.

A BUST OF SIR RICHARD OWEN.

To the Editors of THE LANCET.

SIRS,—Can you kindly advise me where a bust of Sir Richard Owen would be likely to be purchased? The original was executed by the late Mr. Hodges Baily, R.A., who executed Nelson's monument on the column in Trafalgar-square, I believe, and the bust in plaster is from the original, and is the work of Mr. Baily also. It is in the possession of his granddaughters, ladies in very poor circumstances. They would accept £10 10*s.* for it—at which price, I believe, a similar bust has been previously sold. Being in Ipswich for the annual meeting of the British Medical Association has enabled me to inspect the bust, which is life-size and in good condition. It is on their behalf that I venture to ask your kind assistance in disposing of the bust, which might be much valued by a public institution.—I am, Sirs, yours faithfully,

EDGAR DUKE, M.D. Durh.

11, Wilbury-road, Hove, August 3rd, 1900.

AUTO-INTOXICATION IN PREGNANCY.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers could give me any references to literature dealing with this subject. I know Bouchard's book and also some of the more recent papers on eclampsia. I wish particularly to find an account more full than that given in ordinary obstetric text-books of the increases in tissue metabolism due to the incidence and presence of pregnancy. Trusting to receive some little assistance in the matter.—I am, Sirs, yours faithfully,

July 28th, 1900. M.A., M.B.

THE ABSORPTION OF IRON.

To the Editors of THE LANCET.

SIRS,—Several interesting experiments have, I understand, recently been made illustrative of the fact that iron is absorbed by the blood-vessels of the duodenal villi. Quincke has fed mice with cheese containing iron and has traced its course as far as the duodenum, where he found it was absorbed. I shall esteem it a favour if you can inform me of any other experiment bearing on the subject. Do you hold that these experiments prove that iron is actually absorbed in the duodenum? Again, are the organic salts of iron only, or are the inorganic salts equally well absorbed? The inorganic salts, such as ferrous carbonate (Blaud), have undoubtedly given good results in the treatment of anæmia; is there any evidence that quicker improvement has taken place when the organic salts, such as the peptonated iron and manganese, have been exhibited?

I am, Sirs, yours faithfully,

HERBERT HART, Medical Superintendent.

International Headquarters of the Salvation Army,
Queen Victoria-street, July 24th, 1900.

*** We are not aware that the theory that iron is actually absorbed in the duodenum has been generally accepted. Reduced iron has been shown (Quevenne) to be most readily absorbed. We publish the letter so that replies may be elicited from those who have made recent observations on the absorption of iron into the general circulation.—ED. L.

M.R.C.S., L.R.C.P.—Dr. William Munk's "Roll of the Royal College of Physicians"—the preliminary passages and the careers of Chambre and Linacre; and Mr. D'Arcy Power's edition of Mr. Flint South's "Memorials of the Craft of Surgery in England" will give the information required. The librarians of the two Colleges will, we are sure, give our correspondent any special information that he may require.

Legal.—The question is so legal that it must be referred to a solicitor. We do not understand if the house in question belongs to our correspondent who desires to grant a lease, or if it is his leasehold

interests which he desires to assign. But, anyhow, he should take proper professional advice.

Mr. H. C. MacQuaie will find the information he desires in the introductory matter of the Medical Directory.

Subscriber.—We cannot find the name of the distributer of the cards in the Medical Directory.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 9th, 1900.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug.	3	29·50	S.W.	0·36	108	69	60	62	61	Raining
,,	4	29·65	N.W.	..	111	69	54	58	55	Cloudy
,,	5	29·70	S.W.	0·10	79	69	52	59	57	Cloudy
,,	6	29·58	S.W.	0·20	72	69	53	58	56	Overcast
,,	7	29·52	W.	0·16	105	68	55	60	57	Cloudy
,,	8	29·83	N.	...	103	65	54	57	56	Overcast
,,	9	29·87	S.W.	...	77	62	56	60	57	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (18th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

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An Address
ON
PROFESSIONAL ORGANISATIONS.

Delivered before the South-West London Medical Society on July 18th, 1900,

BY W. G. DICKINSON, M.D. DURH., M.R.C.S. ENG., D.P.H.

GENTLEMEN,—Without presuming to criticise my predecessors or to dictate to those who will succeed me in the chair I may be allowed to express my personal opinion that it is the duty of any man who is honoured by being elected as President of this society to endeavour, as far as in him lies, to acknowledge the honour which has been done him by delivering an address either on his inauguration or on his retirement. This opinion was shared by our first President, Mr. T. S. Howell, who gave us an excellent discourse on "Our Social Position, Past and Present," and by Dr. Gilbert Richardson, who read a paper on the hospitals question. The delivery of a presidential address is also, I believe, the universal custom in all the established medical societies. A desire, therefore, to promote the interests and to extend the usefulness of this society must be my excuse for the imperfect remarks which I have to offer you to-day.

In seeking a subject for my address I have naturally found some difficulty in choosing one likely to be of interest. I have selected that of Organisation in the Profession as being the topic which (next to the now defunct Midwives Bill) has recently caused most stir in the world of medical politics. I make no apology for directing your attention to a medico-political subject, for I hold with Lord Bacon that "Every man is a debtor to his profession," and that one great means of discharging that debt is to do something towards arousing the profession from the apathy and disregard of its own interests by which it is generally characterised. What is the justification for the significant silence or the covert sneer with which any allusions to professional interests are so often met by the average well-to-do practitioner? Is he so engrossed by his own personal interests that he cannot find time for the consideration of those matters which may be injuriously affecting the profession generally? I should be sorry to think so ill of him. He usually excuses his neglect by indulging in personalities: "A. B. is a bad lot"; "C. D. is a windbag"; "Who would ever pay attention to E. F.?" Well, gentlemen, if this is so, is it not the obvious duty of our well-to-do practitioner to come forward and show A. B., C. D., and E. F. a more excellent way? In a recent article on the British Medical Association it was stated that "no member of the profession has a right to say that he takes no interest in what are called 'medical politics,' by which we understand the maintenance of the honour and the interests of the medical profession, and the consolidation and extension of its influence on public opinion and on the course of legislation in matters touching the public health, and the scientific and social interests of the profession itself. The real source of many of the disadvantages under which the profession in this country still labours is traceable to the apathy of many of its members, who cannot be roused to take a share in the determination of matters which lie a little outside the absorbing calls of actual practice or of clinical work." This has been said so often that it has become a truism, and it is a painful fact that this should be so. Is everything for the best in this best of all possible professions? Do we as a body need no remedies? Do all things go well with us? Ask the treasurers of the various professional benevolent societies and hear their reply.

After this prelude, gentlemen, I will proceed to my subject. The organisations which I propose to discuss are not those bodies which are imposed upon us by law, such as the General Medical Council, the Universities, and the Corporations. Though there is much to be said on each and all of these, I wish to consider only those voluntary associations which have from time to time been evolved by our profession for various purposes. These may be divided into several classes, such as (*a*) the benevolent; (*b*) the scientific; (*c*) those which deal with individual medical protection; and (*d*) the ethical and political. Each of these has a social side—at least to the extent of holding an annual dinner. Thus, whatever their original and main object, they all subserve the important secondary result of bringing their members together and promoting professional amenities. Many organisations, such as our own society, combine two or more of the above objects.

The benevolent bodies are four in number—the British Medical Benevolent Fund, the Royal Medical Benevolent College at Epsom, the Society for the Relief of Widows and Orphans of Medical Men, and THE LANCET Relief Fund for Members of the Medical Profession and their Widows and Orphans when in distress. The third body mentioned offers what is practically an insurance on the cheapest possible terms. A payment of two guineas per annum for a limited number of years will secure to a member's widow an annuity of from £30 to £50 and one of £10 for each child. It has always seemed to me most extraordinary that so few young professional men take advantage of this society. There are also four provincial benevolent bodies. The purely scientific organisations are too numerous to mention. Spread as they are over the whole empire, they rightly attract the chief attention of our profession. Even these, however, are mainly supported by comparatively few, and it will be safe to say that the great majority of medical men either belong to no society at all or if they do never attend a meeting. The purely scientific medical bodies in London alone number 40, besides 12 local societies such as our own, many of which deal with ethical questions. The organisations for protective purposes are of comparatively recent formation. The first was the Medical Defence Union, founded in the eighties, which for some years was indifferently supported but is now in a flourishing condition. This was followed in 1892 by the London and Counties Medical Protection Society which has steadily improved its position and membership and is now on a thoroughly stable foundation. These two bodies ought, in the opinion of the majority of their members, to unite and form one strong organisation, but owing to personal differences between their respective councils negotiations have hitherto proved unsuccessful. The responsibility for this at present rests with the Medical Defence Union, which has refused the offer of the London and Counties Medical Protection Society to submit the whole question to arbitration. Each of these unions undertakes to defend its members against actions for malpraxis, attempts at blackmailing, slanderous statements, &c., and in this they are almost uniformly successful. Their subscription is but 10*s.* per annum, and any member of the profession who does not belong to one or other of them has only himself to blame when his time of trouble comes. Another organisation of great usefulness to the profession of a somewhat similar nature is the Medical Sickness Society, which insures its members against the pecuniary loss involved by sickness and accident. 17 bodies exist in London alone for the promotion of what may be termed class interests in the profession, such as the Poor-law Medical Officers' Association of England and Wales, the Metropolitan Police Surgeons' Association, the associations of graduates of the various universities, &c. There are also, I am glad to say, an increasing number of societies both in London and the provinces for providing medical attendance on the poor under professional auspices without any lay control. One of the pioneer societies of this kind was founded in our district in 1881 under the name of the Wandsworth Medical Aid Society. The foregoing all deal mainly with the support or defence of the interests of the medical man as an individual.

We now come to those bodies which exist nominally for the purpose of promoting the interests of the profession as a whole. How far they have succeeded in fulfilling their function I propose to discuss. It is these which ought to take the chief part in the organisation of the profession.

By far the greatest and most important is the British Medical Association, which has 18,000 members and branches all over the country and in the colonies, and which publishes a weekly *Journal*. The object of the Association is stated in the Memorandum to be "the promotion of the medical and allied sciences and the maintenance of the honour and interests of the medical profession." It will be seen that the Association has a dual function. As regards the first object it has certainly done much. It holds an annual meeting at which more or less interesting scientific

papers are read and discussed, its branches meet periodically for the same purpose, it makes grants for scientific research, and its *Journal* affords the chief source of recent scientific information to thousands of medical men. As to its second, and no less important object, "the maintenance of the honour and interests of the medical profession," I do not like to say that it has done nothing, but I do say that it is extremely difficult to point out anything of consequence which it *has* done. At the best its "maintenance" of these interests has been characterised by a dignified passivity. Its *Journal* from time to time draws attention to the various reforms which have been effected since the Association came into existence, such as the enactment of the Medical Acts, the formation of conjoint boards, the partial suppression of unqualified practice, of covering, and so forth, but there is no evidence whatever to show that the British Medical Association either instituted or actively promoted any of these reforms. The reason of this is not far to seek. The Association is nominally a representative body, but its members take no interest in their representation. More than a third of them do not belong to a branch and are therefore nothing but annual subscribers to the *Journal*, and probably more than half of those who do belong to branches never attend a meeting. The Council of the Association is theoretically elected by the branches, but owing to the general apathy shown by the latter the representatives are practically coöpted year by year. The Council is further swamped by a number of vice-presidents—eminent individuals who have "passed the chair"—who are naturally satisfied with things as they are and opposed to change. The consequence of all this is that the majority on the Council is as autocratic as that of the Royal College of Surgeons of England or any other non-representative body, and instead of endeavouring to promote the honour and interests of the profession they throw cold water on any proposals having this object.

A development has recently occurred which is likely to have an important bearing on the future of the British Medical Association. The Council has always ignored any resolutions passed at general meetings which did not happen to accord with its own views. Many members have all along contended that as the Association is registered under the Companies Acts this course was illegal and that these resolutions were binding. Counsel's opinion was lately taken, and the Council has called a special general meeting for this afternoon to consider a new set of regulations for the conduct of the Association; the effect of these will be to deprive the resolutions passed at a general meeting of the validity which it is now tacitly admitted that they possess. If these regulations are carried the Council will be absolutely uncontrolled in its disposal of the resources and its direction of the policy of the Association. If they are not carried others should be substituted rendering it obligatory on the Council to refer the wishes of the members expressed in general meeting to a plebiscite of the whole body.[1] Were but a small fraction of the large income of the Association set aside for the purpose of "maintaining the honour and interests of the profession" a fund would be formed which if wisely directed would prove of incalculable benefit.

Owing to the failure of the British Medical Association to carry out this important part of its functions other organisations have arisen, having the sole object of dealing with the defence and protection of the interests of the profession at large. Of these the best known is the Incorporated Medical Practitioners' Association, which was founded in 1891, has a large membership, and now publishes a weekly *Journal* of its own. Then there are the Corporate and Medical Reform Association, recently established, which has been very active in opposing the Midwives Bill; the Hospital Reform Association, which deals with the abuses of the out-patient departments and of special hospitals; the Society of Members of the Royal College of Surgeons of England which hopes ultimately to obtain a reform of that corporation; the East Suburban Medical Protection and Medico-Ethical Society; and, latest of all, the Medical Parliamentary League started by the *Medical Times*.

In the provinces many towns have medico-ethical or protection societies. Those which have attracted most attention are the Manchester Medical Guild; the Manchester Medico-Ethical Association, founded as long ago as 1847; the County of Durham Medical Union, which has been active in supporting the colliery surgeons against the aggressions of the miners; the Coventry Public Medical Service, which is fighting a huge Dispensary, without a wage limit, embracing the greater part of the population; and the Portsmouth Medical Union. It has been for some time felt by many of those who are conscious of the desirability of effecting some practical reforms and of protecting the interests of the profession that something should be done towards bringing these various bodies into coöperation, and in May last a conference on medical organisation was held in Manchester, to which the council of this society appointed me a delegate. Unfortunately, however, I was unable to attend. Many hard things have been said about this conference, and of course criticism of any new departure is easy. As THE LANCET said at the time, the conference showed at least one thing, viz., how much the profession has need of organisation. The object of the conference, however, was an excellent one, and no doubt experience has been gained which will be useful on a future occasion. It is to be hoped that there will then be fewer papers read followed by discussions of grievances which are not thereby helped towards a remedy, and more practical work undertaken of the character indicated by the title of the conference—"Medical Organisation." One resolution appears to me to be worthy of quotation, and had I been present I should certainly have voted for it. It was as follows:—

> That this conference is of opinion that the pressing need of organisation is concentration; that the multiplication of associations other than those purely local is to be deprecated; that the size, position, and wealth of the British Medical Association make it the most suitable national medical organisation; and that the efforts of all medico-ethical associations and of the conference should be directed to the conversion of the British Medical Association into an energetic body really representative of the profession.

This seems by far the most hopeful line to take, and I should like to see every local society such as this affiliated to a reformed British Medical Association.

A paper of this kind would not be complete without some reference to the International Congress of Deontology, or medical ethics, which is to be held in Paris at the end of this month. At this Congress representatives from 27 different countries will be present, and no doubt much information as to the way in which our profession upholds its interests in other lands than our own will be gained. The price of a delegate's ticket is only 12*s*., and THE LANCET suggests that societies such as ours should be formally represented to the extent of appointing a delegate even if he should prove unable to attend.

Now, gentlemen, in conclusion, let me try to answer the question which some of you have probably been asking all the time—"What has professional organisation to do with us? We have done very well without it for a number of years, why should we trouble ourselves concerning it now?" I will reply to this question *more Scottico* by asking another, "Are we debtors to our profession or are we not?" If we are, how ought we to discharge that debt? Do we consider that the contribution of an annual guinea to the Medical Benevolent Fund or to Epsom College is a sufficient liquidation? I think that our profession has further claims upon us. It has made, and is making, great strides in scientific and intellectual advancement; we ought to see to it that in economical and ethical progress it does not lag behind. We owe this not only to our profession, but to the public which we serve. As Mr. Bryant told us long ago, our interests and those of the public are identical, and it stands to reason that the latter will be better served by a profession which is prosperous, contented, and politically free than by one a large part of which is ground down to a mere living wage and has to earn its bread in a manner which has been described as "white slavery." Men who are the fortunate possessors of good middle-class or upper-class practices do not feel the necessity for professional organisation. They may say, "Let the galled jade wince, *our* withers are unwrung." It would be worthier if they remembered the needs, and more actively supported the efforts, of a large section of their fellow practitioners, whose sole prospect of improving their lot lies in the application of the principles of coöperation and organisation.

A statement of the objects for the attainment of which the profession should organise itself in a political sense would require a separate paper. My present purpose will have been served if I have induced any who have not hitherto done so to consider professional organisation on its merits.

[1] As is now generally known, the proposed regulations were rejected by a large majority, and at the annual meeting at Ipswich a committee was appointed, half the members of which were nominated by the Council and half by the meeting, "to consider and report upon the best means of re-organising the constitution of the British Medical Association" (THE LANCET, August 4th, p. 361).

REPORT ON THE PHYSIOLOGICAL AND THERAPEUTIC ACTION OF DIGITALIS AND ITS ACTIVE PRINCIPLES.[1]

BY SIR T. LAUDER BRUNTON, M.D. EDIN., F.R.S., &c.,
LECTURER ON PHARMACOLOGY AND THERAPEUTICS AND PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL, ETC.

IN cases of heart disease digitalis is one of the most widely used remedies and it is important that we should thoroughly understand its mode of action. In the admirable treatise of Homolle and Quevenne the older literature in regard to digitalis is fully given, and both its physiological action and chemical composition are fully described as known at the date of publication. Since that time much work has been done which shows that digitalis acts on the heart, on the blood-vessels, and on the urinary secretion. The action of the drug upon frogs and mammals has been investigated. Some of the discrepancies in the opinions of different authors have, I think, arisen from considering its action upon frogs and mammals to be exactly alike. There is, no doubt, a strong general likeness between the action of the drug upon those two classes of animals, but though similar it is not identical. The effect of digitalis on the heart of the frog is to render its beats slower, its contractions more complete, and these results are obtained whether the heart be completely isolated or simply exposed and allowed to remain in the body of the animal. Not only do the beats become slower, but they become at first fuller, the heart expanding more in diastole and contracting more fully in systole. Gradually the diastolic dilatation becomes less and less until the heart stands still in systole. The stoppage of the cardiac beats is not due to paralysis, but simply to the excessive and permanent contraction of the ventricle. If it be artificially distended by allowing serum to flow in under pressure it will again begin to contract. The action of digitalis on the heart of the frog is chiefly due to its effect upon the cardiac muscle. In mammals digitalis also causes the cardiac pulsations to become slower and more powerful, but in the mammal the slowing of the heart's action is not due only to the effect of the drug upon the cardiac muscles as in the case of a frog, but is due in very great measure to stimulation of the inhibitory centre in the medulla oblongata. This stimulation may be so great that instead of the heart stopping in complete systole as in the frog it may stop in complete diastole in the dog. The slowing of the heart's action is partly due to the direct effect of the digitalis on the inhibitory centre, but it is also due to the indirect action of the drug through the rise of blood-pressure which it produces and which it is well known acts as a stimulus to the inhibitory centre. It may occur when the vagi have been divided previously to the administration of the drug, but that the slowing of the heart is in great measure due to excitation of the inhibitory centres in the medulla oblongata is shown by the fact that usually when the vagi are divided after digitalis has slowed the heart the pulsations become much quicker. That this excitation of the medulla is partly due to the rise of blood-pressure produced by digitalis is shown by the fact that when the pressure is lowered by nitrite of amyl the slowness of the heart disappears to a great extent. At the same time the inhibitory centre must be directly stimulated by the action of the drug upon it, because in some cases the heart may be greatly slowed while the blood-pressure is normal or below normal. The slowness of the heart, however, is also due to the peripheral action of digitalis upon the mechanism of the heart itself, for even in mammals the heart has been observed to be slowed by digitalis after division of the vagi, and this slowness disappears after the administration of atropine which paralyses the inhibitory mechanism. The slowness of the heart produced by small doses disappears and is succeeded by considerable acceleration when the dose is increased. This acceleration has been attributed partly to paralysis of the inhibitory power of the vagus, partly to stimulation of the accelerating nerves of the heart and partly to the increased excitability of the cardiac muscle itself. In all probability each of these factors takes part in producing the result.

There is a general consensus of opinion among pharmacologists regarding the power of digitalis to increase the strength of the cardiac contractions; but this is not the case in regard to its action on the blood-vessels, for while some maintain that its action in contracting the blood-vessels is as marked and is an important factor in the action of digitalis, others maintain that any contraction of the vessels which it produces, if any such contraction exist at all, is slight, transient, and unimportant. My own view is that contraction of the vessels produced by digitalis in mammals is very well marked, and I think it depends, just as in the case of the heart, partly upon a peripheral and partly upon a central action of the drug. I believe that digitalis has a local action on the muscular walls of the arterioles causing them to contract, and I think also it stimulates the vaso-motor centre in the medulla oblongata. By its combined action of contracting the arterioles and of increasing the power of the heart it raises blood-pressure. There can be little doubt that digitalis has the power of raising blood-pressure in the aorta by the increased action of the heart which it produces and apart from any effect upon the vessels, but in mammals we find certain phenomena connected with the rise in blood-pressure which can hardly be explained by alteration in the action of the heart alone. Thus, when the heart is stopped by irritation of the vagus the blood-pressure, as is well known, falls rapidly in a normal animal (Fig. 1), but it falls much more slowly after the administration of digitalis—an effect which I think can only be explained by contraction of the arterioles causing retention of blood in the aorta and its branches (Fig. 2). I have discussed this more fully in another place.[2] That digitalis can produce peripheral contraction of the arterioles is shown by the results of perfusion experiments in which addition of the drug to the saline solution of blood passed through an excised organ has greatly slowed the rate of flow. Whether this action is exerted entirely upon the muscular fibres of the muscles or upon local nervous mechanisms is at present uncertain. That it stimulates the vaso-motor centre in the medulla is shown by the fact that although it may sometimes raise blood-pressure after section of the cord yet it has not this effect so constantly or to so great an extent as when the cord is intact. Digitalis causes an increase to a certain extent of blood-pressure in the pulmonary circulation, though not nearly to the same extent as in the general circulation.

The diuresis which digitalis produces is probably due to increased pressure within the glomeruli of the kidneys. Digitalis causes contraction of the vessels of the kidney as well as other parts of the body, as is shown by observations of Bradford and Phillips with Roy's oncometer. At one stage of the action of digitalis, when the blood-pressure is very much raised, the secretion of urine may be completely arrested as if the renal artery were tied. As the pressure begins to fall the secretion of urine becomes greatly increased, but the urine generally shows a trace of albumin exactly in the same way as if the renal artery were first tied and then the ligature removed. If the pressure in the vessels is naturally high and the secretion of urine is abundant one could hardly expect that it would be much increased by the action of digitalis, but if the blood-pressure is low as in people with lax arteries or where the arterial system is comparatively empty in consequence of mitral regurgitation the diuretic effect of digitalis is naturally more pronounced. It acts as a local irritant when applied to the eye and causes at the same time a good deal of pain. I do not know of any experiments upon the excretion of digitalis by the stomach, but if taken for some time it certainly causes a good deal of gastric irritation with violent vomiting and loss of appetite, or even vomiting may sometimes precede any marked effect of digitalis upon the pulse when it is given in cases of heart disease.

The chemical composition of digitalis is complex and a good deal of the discordant results obtained by different observers are not only due to differences in the animals upon which they have experimented, but to differences in the physiological action of the preparations which they have employed even when these preparations have borne the

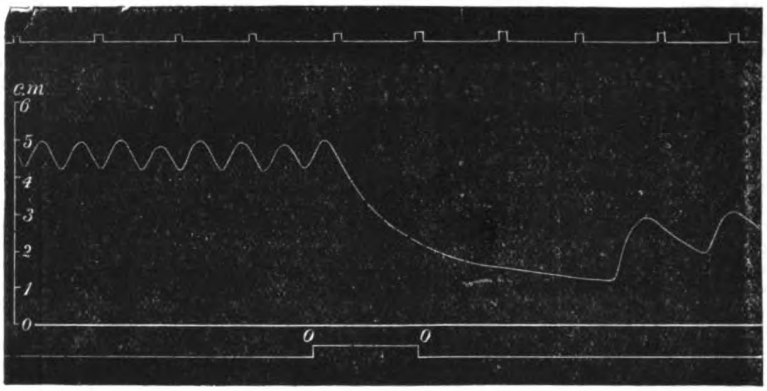
[1] Presented to the Section of Therapeutics, Pharmacology, and Materia Medica of the Thirteenth International Congress of Medicine at Paris, 1900.

[2] On the Cause of the Rise of Blood-pressure produced by Digitalis, by T. Lauder Brunton, M.D., F.R.S., and F. W. Tunnicliffe, M.D., M.R.C.P. From the Journal of Physiology, vol. xx., Nos. 4 and 5, October, 1896.

same name. According to Schmiedeberg the chief components of digitalis are digitoxin, digitalin, digitalein, digitonin, and digitin. Digitin has little or no physiological action and digitonin but little, so at present both may be dismissed from consideration. The crystallised digitalin of Nativelle consists chiefly of digitoxin, the digitalin of Homolle and Quevenne consists chiefly of digitalin, and German digitalin consists chiefly of digitalein and digitonin. The action of these drugs appears to be nearly alike in kind but different in degree, digitoxin being by far the strongest. Nativelle's digitalin, which consists chiefly of digitoxin, was found by Widal to be eight or ten times stronger than amorphous digitalin. Nativelle's digitalin in daily doses of from one to two milligrammes slows the pulse, while from three to ten milligrammes of Homolle's digitalin are required for this purpose. The German digitalin may be given in doses three times as great as Homolle's digitalin or ten times as great as that of Nativelle. The insoluble kinds of digitalin, Nativelle's and Homolle's, cause very considerable local irritation when used subcutaneously and may even lead to the formation of abscess, although the solutions are perfectly sterile. Soluble digitalin may be used subcutaneously in the form of 1 per cent. solution dissolved in equal parts of glycerine and water. From one to two cubic centimetres of this solution may be injected twice or three times a day.

The therapeutic actions of digitalis or of its active principles are (1) that they regulate the heart's action; (2) that they assist the failing circulation; and (3) that they act as diuretics. In cases of palpitation and functional irregularities of rhythm without organic disease small doses of digitalis, such as 10 minims of tincture, are sometimes very useful. The good effect of digitalis is well marked in cases of palpitation which have come on from physical strain as by lifting heavy weights, or from anxiety and worry. In cases where the palpitation arises reflexly from irritation of the stomach better results are obtained by bismuth and rhubarb than by any cardiac tonics, although the addition of nux vomica to these two drugs assists their action. In cases of aortic regurgitation where compensation is complete digitalis is quite unnecessary. Many persons suffering from aortic regurgitation are not conscious of the fact and it may only be discovered accidentally when a physician is examining them for some other complaint.

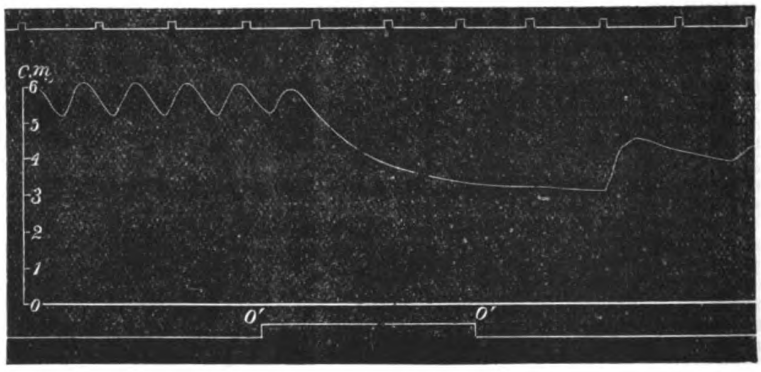
FIG. 1.



Fall of the blood-pressure during the arrest of the heart caused by irritation of the vagus nerve in the normal animal.

In aortic regurgitation with full compensation digitalis may possibly be harmful as the risk in such cases arises from fatal syncope. For the blood in the arterial system is emptied backwards into the heart in aortic regurgitation as well as forwards through the arterioles into the veins, the blood-pressure tending to become very low during the cardiac diastole. Should this diastole be prolonged the pressure may sink much below the normal and the risk of syncope is increased. But digitalis is of the utmost service when the mitral valves become incompetent either in consequence of damage to the valves themselves or in consequence of dilatation of the cardiac orifices from weakness after infective diseases such as influenza, or from failure of a hypertrophy consequent upon aortic regurgitation or renal disease (Fig. 3). Nor is it only when the heart has dilated so much as to render the mitral valves incompetent to close the dilated mitral orifice that digitalis is useful. It may be of service before this period by lessening the ventricular dilatation during diastole and thus diminishing the amount of blood which can regurgitate into it. At the same time by contracting the arterioles it lessens the onward flow and thus in

FIG. 2.



Slow fall of the blood-pressure during the arrest of the heart caused by irritation of th vagus nerve in an animal under the influence of digitalis.

a twofold manner retains the blood in the aorta during diastole, and renders the pressure of blood within it more steady, less jerking, and more nearly normal. To get the best results in severe cases the use of the drug should be associated with rest in bed and massage. The absence of exertion tends to lower the pressure which the heart has to overcome in systole and lessens the rapidity of the cardiac beats. The slowness of the pulsation produced by rest is still further increased by digitalis. Now it is during diastole that the heart has time to recuperate. It is what we might term the heart's period of rest, sleep, and repair, and by prolonging it we tend to restore the heart to its normal condition. In fact, we find that the empty

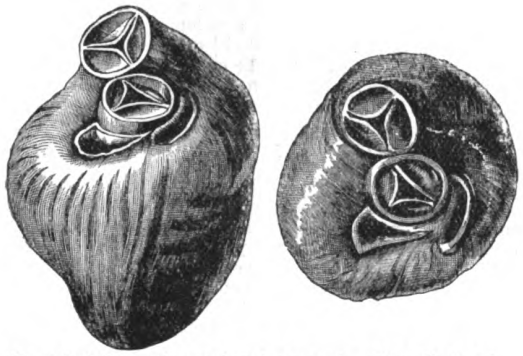
FIG. 3.



A completely dilated heart showing the insufficiency of the mitral and tricuspid valves.

arteries tend to fill, the distended veins tend to become empty, and the venous congestion which led to enlargement of the liver, indigestion, flatulence, œdema of the legs, and albuminuria, tends to disappear. The legs become normal in size, the enlarged liver becomes smaller, the digestion improves, and the urine becomes abundant and free from albumin. The pulmonary circulation also becomes freer and the shortness of breath and irritating cough become less and less and finally disappear. The dilated heart being able to contract more powerfully, the ventricular and auricular orifices become smaller and the valves, even though they may be damaged, will tend to close the orifices more completely during systole and thus lessen regurgitation (Figs. 4 and 5).

FIG. 4. FIG. 5.



Heart in full systole seen from two aspects. The mitral and tricuspid orifices are brought together by the muscular contraction so that the valves can completely close them.

In addition to this the increased force of the cardiac beats tends to oxidise the tissues more completely, for it has been shown that mechanical concussion tends to make oxyhæmoglobin give off its oxygen more freely. Moreover, the circulation in the arterioles being converted from a somewhat uniform pressure into a pulsating flow tends to lessen œdema, for it was found in Ludwig's laboratory in experiments on excised organs that when the circulation was carried on by means of steady pressure the organs tended to become œdematous and the circulation through the blood-vessels to cease, but when the natural pulsations of the heart were limited by the apparatus for artificial circulation the tendency to œdema was greatly diminished. By the use of massage in addition to digitalis a good deal of work may be taken off the heart, because, instead of having to drive the blood right round from ventricle to auricle, it will only have to drive the blood to the periphery—the movements of the masseur returning a great deal of both blood and lymph from the periphery to the heart.

Before concluding I should like to say a word or two upon the dangers of digitalis in cases of fatty heart and very high tension. It has been said with much truth that it is by no means easy to ascertain with certainty that the heart in any patient has undergone fatty degeneration, but when we find that its beats are feeble and its sounds are weak disproportionately to the size of the organ we will do well to be on our guard against possible injury from digitalis. It is evident that if digitalis causes contraction of the arterioles as well as of the heart and the heart has undergone fatty degeneration while the muscular fibres of the arterioles have not done so, the resistance to the cardiac contractions will be increased and a heart which is already hardly able to carry on the circulation may be still further hampered by the drug. In such cases, if we wish to stimulate the heart by digitalis, we ought to lessen the resistance in the arterioles by the simultaneous administration of nitrites, such as nitro-glycerine, nitro-erythrol, or ethyl-nitrite, most commonly given in the form of spirit of nitrous ether. The same precaution should be adopted in cases where the arterial tension is high and the heart is just beginning to fail, but in such cases we have also to remember the risk that may arise from the already high tension being increased and leading to a rupture of a vessel in the brain. In such cases it may be well to avoid digitalis altogether, but should it from any reason be thought advisable to use the drug, not only should nitrites be given at the same time but great attention should be paid to the condition of the bowels and liver. From pharmacological researches we learn a great deal about the action of individual drugs, but there is still an enormous field for investigation in regard to the action of drugs in combination, and although we have no definite information as to why the administration of mercury along with digitalis should greatly increase the utility of the drug there can be no doubt whatever that this is the case and that when digitalis alone fails to produce the result desired it will frequently act most efficiently if mercury be given along with it.

THE DANGER TO THE COMMUNITY OF THE WORKMEN'S COMPENSATION ACT, 1897.

BY ALBERT BENTHALL, F.R.C.P. EDIN., M.R.C.S. ENG., M. & L.S.A. LOND.

THIS Act, which was entirely a new departure, or a leap in the dark, has now been in force for over two years and there is a general consensus of opinion that its early amendment is essential. The Act, as a whole, has been in many respects a success; the working-class have derived immense benefit, employers have been able to insure at moderate rates, and therefore the trade of the country has not suffered. The Act has, however, in its working become a real danger not only to employers and workmen but to the great mass of the people, whether rich or poor; and as I understand that the Government have been watching the development of events very carefully with a view to make the Act of advantage to all without pressing unduly upon any section of the public, I think that the profession should not only exert its influence in any proposed amendment of the Act, through those members who have been brought into contact with its working, but that the whole of the profession, whether interested personally or not, should be in a position to advise upon the subject and should interest itself in a question of national importance which will influence the fortunes of the people for many years to come, if not for all time.

As many medical men of undoubted position have not

been brought in contact with the Act I propose to call their attention to its working and to the danger which will result therefrom if it is left unamended. There is the danger to all employers of largely increased insurance rates, rates which will become a serious burden upon trade. There is the danger to the working-class of loss of work, of self-respect, and of degradation to the pauper class. There is the danger to every ratepayer of having the Poor-law rates trebled, not for the advantage of the community but simply for the support of men who but for this Act would have been both able and willing to work.

The Act was intended to provide workmen with reasonable compensation for the result of any accident happening to them in the course of their employment, and skilled medical referees were appointed under it by the Home Secretary to report to county court judges and other arbitrators as to the nature of the disability in each particular case. It was naturally supposed that the Act meant what it said and that employers were only liable for the consequences of accident, and that the medical referees would protect the employers not only from malingering or exaggeration of disability but would advise the judges or arbitrators whether a disability was the consequence of accident. The working of the Act in this particular has come as an astounding surprise, for the judges have dispensed with the medical assistance provided for them and have proceeded to make a succession of haphazard judgments upon medical questions the points of which they are quite unable to appreciate. Far be it from me to animadvert on the knowledge or acumen of our judges, who are rightly looked up to as being not only absolutely impartial, but as being on legal questions fully equipped for right judgment; but no man, however brilliant, can be an expert in all subjects, and it is the peculiar province of medicine and surgery to be inexplicable to the highest trained intellects in other branches of knowledge. Even graduates in medicine and surgery practising generally, who have devoted their lives to the study of these sciences and who are excellent all-round men, call in a specialist who has had exceptional experience in some one branch when a difficult case is met with in practice. Can it be wondered at, therefore, that judges who are absolutely untrained in medicine and surgery, who have declined all advice from the impartial medical referees provided by the Act, have hopelessly failed to grasp the often intricate medical points in question and have brought the Act to its present position of a veritable danger to the community, for the reason that as it is impossible to obtain justice in the interpretation of it, employers are obliged to pay doubtful and suspicious claims rather than incur heavy law costs resulting in haphazard judgments.

The Act as it stands puts a premium on malingering and has a demoralising effect upon large numbers of workmen. The Court of Appeal, with that singular blindness which seems generally to affect laymen when asked to consider any medical subject, has by one decision altered the whole scope of the Act and enlarged it from its contemplated function of compensation for accident incurred in the course of employment to an Act compensating workmen for the effects of any pre-existing disease which may be slightly and temporarily affected by a trivial accident which would not produce any disablement in the case of a healthy man. By this decision employers are confronted with the question, Shall we employ men who are old or diseased when we know that we shall have heavy compensation to pay if a trivial accident produces death or disablement to a workman who is diseased or aged? The large employers have many of them answered this question by declining to accept the services of old men or of those suffering from any physical defect; this action will be followed by all classes of employers, and the result must be that men fully able to work and who would, barring the event of some slight accident, work for years, will be driven from employment and forced to seek relief from the Poor-law. Thus the community will be saddled with the burden of providing subsistence for men anxious and willing to work but who are unable to obtain it.

There are many points under the Act which have come into prominence, but from a medical point of view the questions of the functions of the medical referees, the assessment of the amount of disability produced by accident, and the discrimination between the effects of accident or of the results of pre-existing disease overshadow them all. On these questions I venture to hope that the profession will be solid and that each individual member will use his influence with Members of Parliament and others so that the Act may be amended and its dangers avoided.

I have appended some short notices of cases which have come under my notice and these will, I think, bring home to the profession the serious consequences which must result if the Act remains unamended. If the Government decides to leave the disease question untouched, it must be apparent that employers in the future will have either to pay very largely increased insurance rates or they will have to protect themselves by the employment of healthy and robust workmen only, but if in the amendment of the Act now in contemplation this question is dealt with and also medical referees made efficient, employers can easily bear the burden of compensation for accident only and thousands of men with families and happy homes will not be forced to the last refuge of the destitute—the Poor Law.

CASES UNDER THE WORKMEN'S COMPENSATION ACT.

Gout.—A workman in the course of his employment held a flatter for a hammerman to strike. The flatter turned and his hand was jarred. Two days afterwards gout appeared in the hand and the medical attendant stated that the man had the gouty diathesis and had had several previous attacks of gout in this same hand. The Court of Appeal held that the employer was liable, Lord Justice Collins going out of his way to explain that under this Act employers were liable just in the same way as railway companies were, where negligence was proved—that is, that they have to pay heavily for a slight injury to a weakly person when the same injury would not, perhaps, have affected a healthy one.

Bright's disease.—A bruise on the shin producing in a workman suffering from albuminuria prolonged ulceration was held to render the employer liable.

Electric shock.—A workman engaged as a bricklayer alleged that by touching a broken incandescent electric light he had sustained a shock that produced permanent disability. The hospital surgeons stated that they had not heard of any accident, but had treated the man for peripheral neuritis of alcoholic origin. The man was a typical chronic alcoholic and it was explained by medical and electrical experts that 100-ampère current could not cause the disability. The county-court judge remarked, "Oh, but they kill people by electricity," and he could not be made to see the difference between 100 ampère current working at a pressure of under 100 volts and of a current at a voltage of 3000. He was asked to feel the current of an identical lamp to the one in question, but he declined and awarded the workman £1 a week for life.

Cancer.—A workman suffering from cancer of the bladder, for which an operation had been performed, died after a further operation in the groin. Although cancer was the cause of death it was alleged that the man had accidentally wrenched his leg at a time between the two operations, and a "fatal" claim was made on the employer.

Varicose veins.—A workman with varicose veins of long standing in both legs had an accident producing a slight sprain of one ankle. When all objective signs of this sprain had disappeared he said that he could not work as his veins were much worse. Although two medical men who had watched the case all through refuted this, and although the workman did not produce any medical evidence in support of his statement, the county court judge awarded him half wages for life.

Employers have also been held to be liable in cases of phthisis where an alleged strain had been said to produce hæmorrhage; in cases of diabetes when gangrene had appeared after a trivial injury, and in cases of old age when senile gangrene had appeared after a bruise of a foot. Numberless cases have also occurred where county court judges have disregarded the medical evidence altogether and have made awards in favour of workmen who were absolutely not in any way disabled.

Cockspur-street, S.W.

MÜLLER'S ORPHAN HOUSES, BRISTOL.—The annual report of this institution has just been issued and it shows that the total amount received in the year for the various branches of the work without a single application being made for pecuniary help was £43,986. The orphans numbered 1729, of whom 14 had died. The school work, missionary work, and the Bible distributing have, as usual, been prosecuted earnestly during the year.

MEASLES, GERMAN MEASLES, AND THE "FOURTH DISEASE."

BY ROBERT CRAIK, M.D. GLASG.

CASE 1.—In April, 1899, a girl, aged nine years, had an illness the chief symptoms of which were pyrexia and a bright-red rash. On waking one morning she felt unwell and it was found that she had a rash. Her temperature was 99° F., the tongue was slightly furred, and the rash was very like that of scarlet fever, except that the naso-oral region was invaded by the rash which was more punctate and had less of the general flush than one expects in scarlet fever, especially on the face. As it was important to arrive at a definite opinion as soon as possible I asked a medical friend to see the case with me. He pronounced it to be scarlet fever. On the limbs and body it exactly resembled scarlet fever. I decided not to notify but to isolate. For a fortnight the patient was kept in bed and during the third week she remained in one room. It was in the course of the third week that I detected a fine mealy desquamation on the limbs but not on the hands or feet. In the course of the third week the patient several times mixed with the younger children in spite of my advice. No other case occurred in the family. This fact, taken along with the absence of any real sore-throat and strawberry tongue, the very mild illness and the slight desquamation, confirmed my opinion that it had not been scarlet fever. In March, 1900, I attended the same patient for a typical attack of measles of considerable severity with broncho-pneumonia. Convalescence was tedious, but satisfactory. In May, 1900, I attended her again for a typical attack of German measles with the chains of enlarged glands in the neck. As a rule Koplik's spots are present and are easily seen at an early stage in measles. I have not seen anything like them in German measles during a recent epidemic.

CASE 2.—On March 26th, 1900, a girl, aged four years, was reported to be suffering from scarlet fever. On the previous night a rash was noticed; she had been hot and restless during the night and had vomited. She had some sore-throat and the tongue was furred. I had attended her for a typical attack of measles about two months before. The rash was very like scarlet fever, and although there was no scarlet fever in the district it was decided to notify the case. The temperature had been 101° F. for over 24 hours. The patient's temperature was 99° on the evening of the 27th and it remained normal. There was no desquamation or only the very slightest.

CASES 3 AND 4.—On April 8th the brothers of the last patient, aged respectively eight years and five years, were reported to be suffering from scarlet fever. The rash had appeared during the night and the children had been hot and feverish. The younger one had bled at the nose. They both complained of sore-throat and seemed to have slight rhinitis. Their temperatures were above 100° F. for 24 hours and one had a temperature of 102°. It reached normal in about 48 hours and remained normal. Although the rash was very marked there was no desquamation.

These three children (Cases 2, 3, and 4) were sent to the Scarlet Fever Hospital and mixed freely for six weeks with six patients the subjects of typical scarlet fever with profuse desquamation who had been sent by various medical men from several districts, and not one of them developed scarlet fever. For several reasons I think that they had not scarlet fever. 1. Case 2 was the first case in the village. The children in Cases 3 and 4 did not show the rash till 13 days after the removal of their sister. The house in which they lived was a small cottage and there was no isolation. There were no other cases meanwhile as far as is known. 2. Not one of the three children had a strawberry tongue. 3. The temperature did not remain above 100° F. for 48 hours in any of the three cases and did not rise again after disappearing. 4. Although the rash was so very marked in all three cases there was no desquamation in any. 5. These cases (Cases 2, 3, and 4) proved to be the first of an epidemic of German measles. Most of the cases were typical of German measles, the tenderness in the neck giving the clue to the disease from the beginning. None of the other cases so closely resembled scarlet fever as the three under notice, but I think that they all more closely resembled scarlet fever than measles. However, it was during this epidemic that the child who was the subject of Case 1 had her third illness. 6. There was no scarlet fever in the village at the time and no probable clue to a source of infection.

Conisborough, Yorks.

PRELIMINARY RASHES IN MEASLES.

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ON April 8th, 1900, a boy, eight years of age, was admitted to the hospital with high fever. There was a history that after an illness of four or five days he had had on the previous evening a smart epistaxis. He was admitted late at night, and early the next morning he presented all the signs of a severe attack of measles, the typical rash appearing later in the day. He was at once removed to an isolation ward, and the ward in which he had spent the night was placed in quarantine. His disease ran a favourable, though severe, course and he left the hospital on April 22nd. In the cot next his was a small boy, three and a half years of age, convalescent from broncho-pneumonia. On April 9th, though otherwise well, he vomited, and three days later he had a good deal of fever, without any recurrence of the pneumonia, the temperature rising as high as 103·8° F. It came down again on April 14th and he was quite well till April 18th—i.e., 10 days from the admission of the patient suffering from measles. On this day the temperature of this boy and also of a girl in the opposite cot rose in the evening, and the boy had a slight nasal catarrh but was otherwise well. The girl, however, with a temperature of 103·6° F. was very ill, and in the evening she developed a brilliant scarlatiniform eruption round both elbows and extending some way up the back of the arm. There was no sore-throat. She was, however, isolated. On the next day she had a brilliant erythema which developed in patches over the face and trunk, and the face was scarlet with a well-marked "oral ring." The boy meanwhile presented a slight blotchiness of the face and some small discrete and easily palpable papules behind the ears and on the neck and shoulders. These eruptions in both cases had disappeared on April 21st and the boy especially appeared quite well; but on the next day—i.e., 14 days after exposure to contagion—both patients had the typical measles rash. On the next day, the fifteenth, two more cases declared themselves at the further end of the ward, and two more on the sixteenth day; the last of the series following on April 26th—i.e., the eighteenth day after exposure. Of these five three had well-marked preliminary rashes appearing in all three on the day before the true measles rash; in two cases the rash was a fine papular eruption on the face, behind the ears, and on the neck, very distinct and easily seen and felt; while the third had a scarlatiniform eruption, which was not, however, uniform, but blotchy, over the neck and shoulders. Thus out of a ward of 19 patients exposed to infection 10 had already had the disease and escaped re-infection; one died from sarcoma during the incubation period; one, a baby a few weeks old, escaped infection; and the remaining seven caught the disease. The preliminary rashes were present in five of the seven cases, and in four, apart from the temperature, were the earliest manifestation of the disease, for Koplik's spots, though carefully looked for, were not found; in the fifth the tenth day of the incubation period was signalised by an explosion of "convulsions" lasting 12 hours.

These rashes were so obvious and striking that I have thought them worth recording, more especially as I find that the majority of the text-books omit all mention of them. They receive a passing notice in Fagge's "System of Medicine" and in Dr. Caiger's article on Measles in Allchin's "Manual of Medicine," but in the other books which I have consulted I have failed to find any reference to them. I believe, however, that they are familiar to the medical officers of the hospitals of the Metropolitan Asylums Board, where they appear as cases of scarlet fever. I venture to think that they are of some importance, both as a means of diagnosing measles before the appearance of the true rash, and also because in the scarlatiniform varieties they are apt to mislead the practitioner who is not aware of their occurrence.

Bentinck-street, W.

THE HOT-AIR TREATMENT OF ECZEMATOUS, GOUTY, RHEUMATIC, AND OTHER AFFECTIONS.[1]

BY DAVID WALSH, M.D. EDIN.,
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THE free interchange of opinions and observations being at the root of medical progress there need be little hesitation in bringing forward a brief description of a comparatively new therapeutic method. In the present instance it is proposed to relate from personal experience the chief points of interest with regard to the superheated-air treatment of eczematous, arthritic, and other diseased conditions. The special treatment consists in the local application of dry hot air at an exceedingly high temperature. The therapeutic results of this increased administration of heat have been, to say the least of it, remarkable. In this way many chronic and painful conditions have been brought within the range of relief and sometimes of cure, and there can be no doubt that a new therapeutic agent of value has been placed in our hands.

The apparatus consists essentially of a cylinder in which a part of the patient's body, say an arm or a leg, is enclosed and fastened in by an air-tight curtain. Heat is applied by means of gas, oil, or electricity until the air inside the cylinder reaches the desired temperature. Before the treatment is applied the patient is stripped and wrapped in blankets, while the part placed inside the cylinder is covered with a layer of lint. After a varying period there is free acid sweating, together with increased frequency of pulse, while the body temperature is raised 2° or 3° F. In addition to these changes there is often an immediate and striking relief of pain and the range of movement is increased in stiffened joints. These two last-mentioned facts point to a deep therapeutic action beyond the obvious surface diaphoresis. It will also be observed that although the application of the heat is local yet the effects upon the body are general, as shown by the quickened pulse, the free sweating, and the raised temperature. For that reason pain in a foot may be relieved by placing an arm in the apparatus, and a stiff elbow may move more freely after local treatment of a leg. These are things that admit of definite statement. The free action of the skin is accompanied by increased elimination from the kidneys. Dr. Chrétien[2] of the Laennec Hospital in Paris has recorded the fact that in a case of long-standing gout the daily elimination of uric acid by the kidneys was found to rise from 57 centigrammes after the fourth bath to 89 centigrammes after the ninth. It is to this increased kidney action that the benefit of the superheated air in gouty conditions is doubtless to some extent due.

It will naturally be asked, What cases are suitable for superheated-air treatment? Generally speaking, the treatment is likely to do good in (1) painful nervous affections; (2) many painful and stiffened joints; (3) other diseases—e.g., anæmia and Bright's disease; (4) eczematous skin troubles; and (5) arthritic diseases, rheumatism, gout, and their allies.

1. *Nervous affections, sciatica, lumbago, writer's cramp, chorea, local atrophy.*—The relief of pain often obtained by the hot air naturally suggested the treatment of nerve-pains. It was found that some obstinate neuralgias and sciatica yielded readily to a few applications. At the same time it should be noted that a few cases of sciatica resist this, as they do every other form of treatment, from simple massage up to heroic nerve-stretching. On the other hand, the hot-air treatment now and then cures obstinate sciatica in a rapid and brilliant manner after the failure of other remedies. This uncertainty of result is probably due to the varying origin of the pain in a structural neuritis or a functional neuralgia. The effect of the hot air may be aided by passive motion to break down adhesions followed by a period of complete rest. Writer's cramp is a neurosis that in several recorded instances has been quickly cured. In one case under the author's care the patient was able to write a newspaper article after being treated a few times. Chorea, even of a severe type, may be cured with a quickness and success rarely known to drugs. At the Tallerman Free Institute a girl, aged 15 years, suffering from moderately severe chorea, showed marked improvement after a week's treatment. Three weeks later she was so far recovered as to be able to assist in housework, and, as her mother put it, "to peel potatoes." In five weeks she was cured.

2. *Painful and stiffened joints.*—The immediate relief to pain is one of the most remarkable results of the hot-air treatment. Were there no other good effect that alone would justify the existence of the cylinder. Narcotic drugs are only in a limited sense curative; they dull the perceptive centres but leave the seat of active mischief untouched, while they are apt to do a great deal of mental and bodily harm. With the Tallerman treatment, on the other hand, the relief is often rapid and permanent, and when it fails to relieve it has the great advantage of doing no harm. With regard to stiffened joints, the amount of good effected by the superheated air depends to a great extent on the nature of the limitation. Where there is bony union of course no good can be done so far as movement is concerned. Neither can much be hoped for when the joint is hopelessly disorganised, as in a Charcot's joint or in the later stages of osteo-arthritis. Where the limitation of movement, however, is due to fibrous ankylosis, to synovial thickening, or to adhesions generally in or around a joint, the results of the Tallerman treatment are often brilliant. After a single application the range of movement may be visibly increased and pain abolished. In some cases it is advisable to break down adhesions under chloroform. In dealing with joint-stiffening, therefore, it is necessary to make a careful diagnosis as to the structures that are at fault and the stage at which the diseased process has arrived. In early osteo-arthritis it is possible to arrest the malady, whereas at an advanced period when the articular surfaces are eburnated and there is a large amount of periarticular deposit all that can be hoped for is to diminish the pain which is now and then so prominent a symptom. Where the mischief in a joint is no longer active the hot-air treatment may be applied irrespectively of the origin of the malady, whether that be gouty, rheumatic, osteo-arthritic, gonorrhœal, or traumatic, and so on.

Gonorrhœal rheumatism.—As everyone knows, gonorrhœal rheumatism is often most rebellious to ordinary treatment. Under the hot-air treatment, however, it often yields in a way that is not less rapid than satisfactory. A typical case is the following:—

CASE 1.—A man, aged 45 years, presented himself at the Tallerman Free Institute on Jan. 29th, 1900, complaining of pain and stiffness in several joints. There was no family or personal history of rheumatism. He stated that he had suffered twice from gonorrhœa. The first attack was three years previously and he was treated at Guy's Hospital. In the second attack he went for some time without treatment, but was afterwards admitted to the Lock ward at Champion Hill Infirmary. After being there for two weeks he got pains in the wrists, shoulders, and feet. He was in the infirmary altogether for 13 months and had left two months before coming to the institute. During the whole of that time the pain never left the joints first attacked. At the institute his left wrist was found to be free, the right was locked, so that only a slight movement could be effected with much pain. He walked stiffly with the aid of a stick, and halted with the right foot. There was no tenderness in the knees and feet, but pain was complained of in all those joints. His improvement under the Tallerman treatment was rapid. The pain went from the shoulders and the left leg after the third treatment and after the fourth he walked without a stick. The right wrist moved more easily. Nine days later he felt so well that he went to work shovelling snow in the streets, but the pain came on in the feet and he had to return home. This recurrence soon yielded to treatment and he got rapidly well and has not since reported himself.

3. *Anæmia, Bright's disease, &c.*—Without entering into details it may be stated generally that cases of anæmia often benefit to a marked extent under the hot-air treatment. This may be to some extent due to the fact that chronic constipation is often markedly relieved by the treatment, especially when applied to the abdomen by what is known as the "hip-bath." Asthma, chronic bronchitis, dropsy, Bright's disease, dysmenorrhœa, and some forms of heart disease may be benefited by the treatment.

[1] A paper read before the Clinical Society of Great Yarmouth on May 15th, 1900.

[2] The Tallerman Treatment, A. Shadwell, M.B., p. 9.

4. *Eczematous and other troubles.*—Some most interesting results have followed in the case of symptomatic eczemas. In 1890 I drew attention to a class of skin inflammations which I ventured to call "excretory inflammation."[3] I pointed out that the direct or vicarious action of the skin as an excretory organ might lead to its irritation by the outward passage of various blood-borne irritants such as iodine or arsenic, the virus of certain diseases such as gout or rheumatism, or specific micro-organisms or their products as in various exanthems. In these various symptomatic rashes the skin was attacked as one of a system of excretory organs. If there be any truth in that theory then the removal of the underlying cause of a chronic excretory irritation would cure the concomitant rash. In the following case, an eczematous skin rash of several years' standing was cured by the Tallerman treatment unaided by external or internal medicine.

CASE 2.—A female, aged 45 years, unmarried, came to the Western Skin Hospital in Nov. 1898, complaining of an eczematous rash from which she had suffered for 16 months. She had been under a private medical man. At the hospital she was treated by various internal and external remedies and was seen by several dermatologists. She had an eczematous rash which began and persisted in the hands and at times involved the trunk and limbs. She was the subject of various diagnoses, such as masked scabies, eczema of gouty origin, and syphilis, and underwent thorough treatment. At the end of 1899, however, she appeared to be one of those chronic patients who are the despair of every skin hospital. She was at last sent to the Tallerman Institute for the hot-air treatment. The crusted, desquamating, eczematous condition of the right hand is shown in the illustration (Fig. 1), and the left hand was almost as severely affected. The right hand only was put in the cylinder and after 11 exposures was practically free from the eczema, which remained slightly over the metacarpo-phalangeal region of the right hand. After a further series of baths both hands became perfectly normal. There was a slight recurrence in the right hand which, however, soon got well, and the patient has now remained well for some months, the illustration showing the present condition (Fig. 2).

FIG. 1.



The right hand of the patient before treatment.

This case shows in a striking way the power the superheated air has in affecting a general condition, as the left hand was cured of the eczema without having been placed once inside the cylinder. It also shows what the treatment can do in some cases where drugs have failed.

[3] Excretory Irritation, D. Walsh, M.D., 1897 (Baillière, London), p. 9.

In a second case a chronic palmar eczema of five years' duration following a burn in a rheumatic subject was rapidly cured. In this case it is interesting to note that menstruation became regular after the baths; it had not been regular for a year previously.

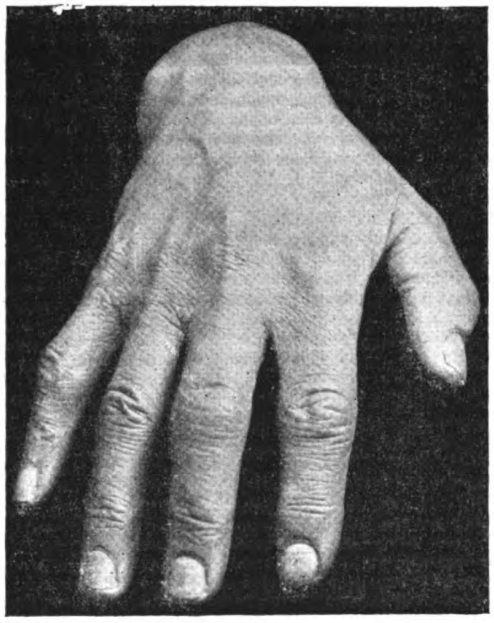
In another case still under treatment an acute eczema of the hand and forearm, attended with great œdema, has been almost cured.[4]

It may fairly be claimed, then, that the Tallerman superheated-air system has furnished a remedial agent of value in the treatment of certain obstinate inflammations of the skin. Good results have been thus obtained in various forms of seborrhœa, erythema, ichthyosis, and dry and scaly eruptions generally.

5. *The arthritic group.*—It is curious that in such well-defined diseases as gout, rheumatism, and osteo-arthritis we know so little that is definite with regard to their origin. We are agreed that an excess of uric acid is constantly present in the blood of a patient who has gout, but we cannot say whether it is produced by, or even whether it is the cause or the result of, a damaged kidney. Nor is the etiology of rheumatism less obscure although recently there has been a tendency to attribute the malady to a bacterial origin. In osteo-arthritis we are more than ever at fault, as we have a condition in which gouty, rheumatic, vascular, and nerve troubles may be present singly or together in a malady that destroys the joints progressively. Acute gout and acute rheumatism we are able to control by drugs—by colchicum and saline aperients in the one and by salicin and the salicylates in the other. Few medical men, however, would claim a definitely curative action in either case. When we come to sub-acute and chronic gout and rheumatism most of us will admit that there is little hope of controlling, and still less of curing, by means of drugs. It may be said of both diseases, as a recent writer has said of gout, "that as regards diet, exercise, and even drugs each case must be treated more or less experimentally, and later by the light of such knowledge as experience of the individual case may give."[5]

When we come to osteo-arthritis the confession of helplessness is still more emphatic. As a rule a patient attacked by that disease has nothing to look forward to but a life of progressive misery and suffering. These gaps in therapeutics are to some extent filled by the Tallerman treatment. Acute gout can be controlled by the hot-air

FIG. 2.



The right hand of the patient after treatment.

[4] Since the paper was read this patient has been completely cured.

[5] F. J. Smith, M.D.: Differential Diagnosis, p. 212.

cylinder. Acute rheumatism, so far as one knows, has not been thus treated. Sub-acute and chronic conditions of both gout and rheumatism are often either benefited or cured by the treatment. Last but not least, osteo-arthritis may be checked in its early stages, while later pain may be relieved, the movements of crippled joints restored, and the progress of the disease arrested. In making these general statements as to chronic joint stiffenings due regard must, of course, be paid to the condition of the joint. At the risk of some repetition it may be pointed out that in an advanced state of disorganisation all that can be hoped for is to relieve pain and check the progress of the disease.

CASE 3. *Chronic monarticular rheumatism.*—A man, aged 45 years, had chronic sub-acute pain of the right shoulder of about two years' duration. There was no clear family history of rheumatism or gout. The urine was normal. The pain was felt on certain movements of the joint. There was one acute attack in which the temperature ran up to 102° F., with intense articular pain and tenderness. There were occasional twinges of pain in the right forearm and wrist. The patient used to ride a good deal, and sometimes got wet while hunting, but that did not increase the joint trouble. A glass or two of champagne, however, was almost certain to be followed by pain in the shoulder within 24 hours. Treatment of all kinds proved useless so far as a cure was concerned. Courses of drugs, salicylates, iodide of potassium, and alkalies were given. Diets of various kinds, including a vegetarian course, were tried. Prolonged massage and bath treatment at various spas—Bath, Droitwich, and Baden—afforded nothing beyond temporary relief. The effect of the superheated-air bath was marked and immediate. After 11 baths the patient was almost free from pain. He had an apparatus at his own house, and after a few months he could strike out freely from the right shoulder. He was free for something like two years, when the rheumatism recurred in the left shoulder under conditions of bad living and exposure.

CASE 4.—The patient was a married woman, aged 50 years; she had 10 children living. She came to the Free Institute on March 2nd, 1900, complaining of pain and swelling of the feet. Her father died, aged 46 years, from heart disease. Her eldest brother had "rheumatism." The patient had had rheumatic fever four times; the first attack was 22 years ago; she had had three attacks within three years. Six weeks previously swelling came on in the feet with great pain which had kept her awake at night and she had had to take sleeping draughts constantly. The hands were stiff and the arms could not be lifted above the level of the shoulders which crepitated and were tender on deep pressure. The eyes were puffed in the morning and she felt "tired." The heart's action was irregular, with loud mitral systolic and double aortic murmurs. She had suffered from cough for several winters. The specific gravity of the urine was 1020; there was no albumin. A diagnosis of chronic rheumatism with valvular disease of the heart with poor prognosis was made. Improvement under the superheated air was marked and rapid. After being treated four times the patient was able to walk better and to sleep at night without draughts. On May 30th she could walk well for some distance. The movements of the hands were free and she could touch the top of her head with the left hand and almost with the right. No cardiac murmurs were heard on the last-mentioned date. Her general health was improved and she felt hungry on walking home after treatment.

The foregoing case shows that cardiac complications need not necessarily contra-indicate the application of the Tallerman treatment. It also shows the amount of good that can be effected even in most unpromising cases. A great number of further cases, illustrating the value of the treatment, might be added. The few that have been noted will serve to indicate the chief directions of usefulness of this new remedy. Many more have been placed on record by good observers, both at home and abroad, as may be seen by a reference to Dr. Shadwell's monograph on the subject.

Bentinck-street, W.

WATER-SUPPLY OF NEWPORT (MON.). — The expenditure of the Newport Corporation on the Wentwood Water Works scheme up to the present amounts to £214,798.

SMALL-POX HOSPITAL FOR BARRY.—At a meeting of the public health committee of the Barry District Council held on August 8th it was decided to erect a permanent small-pox hospital at an estimated cost of £8160.

SOME REMARKS ON CANCER OF THE BREAST.

BY SKENE KEITH, M.B., C.M., F.R.C.S. EDIN.

A VERY great deal of interest, perhaps even greater than has ever been the case before, appears at the present time to be taken in the disease cancer. The three questions usually asked by the general public are, Is it increasing? is it hereditary? and is it curable by operation? Concerning cancer of the breast I wish to bring forward some details, not new certainly, but which often do not seem to me to have had sufficient attention paid to them when the character of the operation in that region has been discussed. I make no apology for not entering into the first two questions, for it does not seem to me that we are in a position to answer either of them definitely. To answer the first, it would be necessary to have for comparison the statistics of two considerable periods of time, with—and this is of vital importance—an equal amount of knowledge on the part of those supplying the data for the statistics. Even if we were to attempt to compare the statistics of the past 10 years with those of the preceding decade we are faced with the fact that medical education has improved and more especially in the department of pathology. Although the microscope has done wonders to help us, it is not so many months ago since we had a case brought forward, by competent men, of a cure, temporary at least, of a sarcoma by the injection of Coley's fluid. The diagnosis had been made not only clinically but also by the help of the microscope. Doubt was expressed as to the correctness of the diagnosis, and after a second microscopic examination of the specimen the tumour was pronounced not to be a sarcoma. If this represents the state of our knowledge here in London how can we expect that a hard-worked practitioner in the country can always give a correct certificate in a doubtful case?

Then when we come to the question of heredity and a patient says, "It is very strange; there was never anything of the kind in my family," how does he or she know that it is not in the family? People try to hide cancer, and it is this feeling of secrecy which helps to bring patients to us too late. It must have occurred to many practitioners to meet with cases of cancer where, for one reason or another, an operation has not been advisable and where the patient has died from something else. In such a case the friends may know nothing about it, and will truthfully say that so far as they know the disease is not "in the family."

The answer to the question, Is cancer of the breast curable by operation? is, in my opinion, most certainly in the affirmative; but not every case, even when it is apparently favourable in itself for operation. One life insurance office quite recently did not recognise as a cure a case where there was no return after seven years. The first thing to be decided, if possible, is what is a cure. A reasonable definition appears to be that the patient dies from some other disease than cancer, there being no sign of return. Within the scope of this definition a cure might be claimed if a patient died from any acute disease a few weeks after operation. This would be a true but not a legitimate claim, and it shows the difficulty of defining what is a cure, under the circumstances. The question of time, therefore, comes in, but it does not come in satisfactorily; because if a patient died 20 or 25 years after a cancerous breast had been removed no one could say positively that the disease might not have returned if she had lived another year. There must always be this doubt, and there may therefore be those who honestly hold that a cure cannot be obtained by operation. A space of three years has been arbitrarily fixed by some as the time after which a cure may be claimed. This is undoubtedly too short a time, but even suppose one fixed it at five years, there would still be some, though much less, doubt. Every year increases the patient's safety, and at the same time increases the difficulty of keeping track of the cases. The only positive gain in fixing a certain length of time as a cure is that it will cut out the patients who die from some other disease before the time limit is reached. There is another way of looking at this question of cure, and that is, can a cancerous growth which appears after, say, five or six years be reasonably called a recurrence of the original growth, or is it not a disease originating *de novo*? But this

brings us back to the heredity and predisposition question. Speculations and theories of this kind do not do anything for the patient, and while I consider that many patients can be cured, there will be, with our present knowledge, always some doubt in the patient's mind after operation. A time limit may be sufficient for statistics, but it is not long enough for the patient.

Within the past 10 years I have seen four cases where operations had been performed on the mamma for malignant disease and where the whole of the gland had not been removed. To be quite correct it would be better to say that the patients had been told that the disease was cancer. In three of these four cases there was a return, and in the fourth there has not been, so far, any return, though I was consulted as to the propriety of a third operation, which had been proposed. As it is now five years since the second operation, performed 10 weeks after the first and more than three since I first saw the case, and as the patient has still two considerable pieces of breast, which I was informed swelled up considerably after a confinement, it is probable that the disease was of a benign nature. This, however, does not affect the statement that four cases have been seen in 10 years where apparently no effort had been made to remove the whole of the mammary gland when operated on for cancer.

It might be supposed that these operations had been performed by surgeons of little experience, but this was not the case. In one the operator was a surgeon to a general hospital in a large provincial town, and in two the operations were performed by two hospital surgeons in London. In the fourth case my father was consulted, and I do not know who the operator was. This one I simply saw as a curiosity, my father never having met with anything of the kind before. This may be a unique experience, and it may be rash to argue from such a small foundation, but when we hear so much of the very formidable operations advocated at present and see the patients come as they do, when the operation has failed to cure, with the evidence of an enormous scar to show how extensive the operation has been, are we not justified in thinking that there may be something not quite right? Have the operations in the past been performed as well as they might? and—what everyone knows but what seems to be kept in the background—is it not that there are many varieties of malignancy in what appear to be ordinary cases of cancer of the breast? To take the second question first, it may be, and at least ought to be, flogging a dead horse. Compare the case of a florid, clear-skinned young woman, 35 years of age, with a hard mass in the breast, which has been noticed for a month or six weeks and which is increasing in size, with that of a thin old woman 75 years of age, who has noticed a lump for some time, she does not exactly remember for how long. Microscopically the structure of these two growths may be very much the same, but in the first the patient will be dead in a year after the operation, no matter how extensive it be; and in the second five or even ten years may show but little increase in the size of the growth. Nor is it only in the very old that we sometimes see comparatively slow growth of a scirrhous tumour, though the answer to this may be that all slow-growing tumours have been originally simple. This answer hardly holds for a case such as the following. A patient, 48 years of age, consulted me nearly six years ago on account of a hard mass in the left breast situated at the upper and inner part. The history of the tumour was that it had been known of for about six years, as a medical man had been consulted at that time. My diagnosis of scirrhous cancer was corroborated by the late Sir James Paget, and also after the removal of the breast. Rather more than a year ago there had been no return. As there had not been any perceptible increase in size in six years it is at least very improbable that the tumour was cancerous from the beginning. A case like this demonstrates also the difficulty of a time limit. Three years would undoubtedly be too short, when the tumour had been growing for at least double that length of time.

The average duration of life after a cancer of the breast has been discovered has been variously estimated at from about three to four years. This means, of course, that a certain number would die before the average time was reached, or, in other words, that the malignancy in these cases was greater than in the others, and that consequently the tendency to return would be greater in them.

To come back to the question of the possibility of some of the operations in the past having been performed without sufficient care, we must clear up the question of return of the disease. A local return—that is to say, one close to where the disease had been removed or in direct communication with the surrounding lymphatics—must be differentiated from the reappearance of cancer in some other part of the body. The reason for the return in the first is, or at least may be, that the disease has not been removed with sufficient care or extensively enough. When the disease reappears in some other part of the body no blame can possibly be attached to the way in which the operation has been performed. An example of the first was a lady, 45 years of age, whose breast I removed for a scirrhous growth, the presence of which the patient had known of for at least two years. Barely 12 months afterwards a small growth of about the size of a pea was noticed under the skin and some distance from the scar. It was supposed to have come as the result of a kick while playing with a child. I removed it freely, and also another at the end of the second year, which also was put down to a blow. Since this third operation the three-years limit has been passed. An example of the second was a case where the breast was removed and within five months there was deposit in the lungs, everything else being healthy. In the first there was a local recurrence because I had evidently not removed as much apparently healthy tissue as was necessary; in the second there was surely a centre of disease unconnected with the breast. Had one or both pectorals been removed in the first case the disease would have returned, because the deposit was in the fat superficial to the edge of the breast, and a similar operation would not have prevented the appearance of the disease in the lungs in the second case.

The Halsted operation is one which must have, from its severity, a certain amount of mortality in weak subjects, while the removal of the breast and axillary glands is an operation unaccompanied by risk to life, except the accidental risk common to all operations, no matter how trivial. What is more necessary than the removal of one or both pectoral muscles is the careful removal of the fat superficial to the breast. It may be different in hospitals now, but 20 years ago it was common to see a fairly large piece of skin excised, and little or no precaution taken to remove the fat superficial to the remainder of the breast and so, when the wound was drawn together, a thick layer would often be seen to have been left behind. Comparatively recently it has been shown that the lymphatics do pass freely into the superficial fat, and it may be that if extra attention is paid to this part during the course of the extensive operations practised by some, the improved results are due to this rather than to the free removal of muscle. To come back to the starting place, if a certain number of cases are operated upon where part of the gland only is removed, is it not possible that many more may not have sufficient tissue surrounding the breast removed and that it is in this way that the supposed necessity for the much enlarged and consequently more dangerous operation has come about?

Charles-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON AN UNUSUAL CASE OF SCARLET FEVER.

BY A. J. RICE OXLEY, M.D. DUB., M.R.C.S. ENG.

THE following case is of so unusual a character that it appears to me to be worthy of record.

On June 20th I was sent for to see a boy who was suffering from rash, sore-throat, and fever. The case was undoubtedly one of scarlet fever and was at once isolated. On the 26th free peeling commenced, the little patient meantime having done very well in every way. On the 30th he was allowed to sit up. On July 2nd the cervical glands, both sides, commenced to swell and become tender, although the temperature remained normal and the patient was in the best possible spirits. There was no albumin. He was, however, ordered to resume the fluid diet and was carefully kept in bed.

On the 7th, after a good night, the patient became disturbed and feverish (the temperature being 103° F.), but he made no special complaint beyond a feeling of pain in the back and the lower extremities. I found, however, slight effusion into the right knee-joint. On the 8th, whilst generally examining the patient, I found a circular patch of extravasated blood on the left side just above the crest of the ilium. This was at first reddish but rapidly turned to purple. The nurse, an experienced one, assured me that this patch was not present a short time prior to my visit. A few hours afterwards the whole of the gluteal region and the inner thigh were found to be covered by an enormous deep purple extravasation quite separate from the first one. Meanwhile the little fellow had not unexpectedly become very weak and showed signs of speedy collapse, which was combated by injections of strychnine and the administration of oxygen. Ergotin was also injected. Before long, however, a small extravasation appeared on the right side which rapidly assumed very extensive proportions, and, in spite of every effort, death soon supervened, when it was found that the left side from the nipple to the knee—on a line external to the nipple—was occupied by one vast extravasation. There was also a comparatively small one on the arm about the insertion of the deltoid. On the back extravasation extended from the folds of the nates to the lower dorsal vertebræ—a band of clear skin intervening. On the right side extravasation extended from about two inches above the knee (popliteal space) to the crest of the ilium but not invading the front part of the thigh at all. There was only slight albumin in the urine the last day and no blood.

What is the correct definition of such a case? I cannot, after pretty considerable experience, remember anything like it, nor can I find any report of so severe a type of hæmorrhagic complication, nor can my colleague, Dr. Stanley Wellby, who kindly assisted me with the case.

Streatham, S.W.

NOTE ON A CASE OF STRYCHNINE POISONING.

BY THOMAS LETTIS, M.D. DURH.,
AND
HORACE POTTS, M.R.C.S. ENG., L.R.C.P. LOND.

ON July 24th, 1900, at about 9.30 A.M., I (Dr. Lettis) received a message that a woman had taken some wrong medicine. On arriving at the house a few minutes later I found the patient on the floor in a state of tetanic convulsions and struggling violently. From the nature of the convulsions I came to the conclusion that she was suffering from strychnine poisoning and at once attempted to produce vomiting by administering mustard-and-water; failing in this I returned home for a stomach-pump, calling in at the same time Mr. Potts to help me.

On our return to the house the patient was having an exceedingly severe convulsive attack; respiration had ceased, she had become quite cyanosed, the pulse could not be felt at the wrist, the eyeballs protruded from their sockets, and the tongue was thrust half out.

It appeared to both of us that the patient was dying. Luckily the convulsion relaxed and the tube was passed down to the stomach, and with a funnel attached to the other end her stomach was repeatedly washed out both with warm mustard-and-water and plain warm water. After this had been done an immediate improvement was noted, the convulsions grew gradually slighter and slighter, until by shortly after 11 A.M. she remained quiet unless touched. We agreed to see her in an hour's time (12 noon). Then the patient stated that she was much better but complained of feelings of great giddiness with pains in the loins and numbness of the legs. When about to observe the condition of the pupils, which were somewhat dilated, merely touching the eyebrow produced a considerable amount of twitching of the whole body. Bromide of potassium was now given in small doses. By 4 P.M. the patient had so far recovered as to get up and walk up to her bedroom on another floor.

Twitching continued to a certain degree for 24 hours afterwards, otherwise her recovery was uninterrupted. The patient, a woman 67 years of age, was the widow of a herbalist and she had been in the habit of taking some of her husband's preparations when she thought fit. The substance that she took was a combination of various extracts—the extracts of strychnos Ignatii, valerian, and one or two others of no importance. Her statement was that feeling giddy in the morning she took some of these extracts, thinking they would act as a pick-me-up. She said that she took a little of the first on the end of a knife, mixed it with hot water, and drank it off. She then sat down to her breakfast, taking tea, a little bacon, and bread. She felt sick, endeavoured to vomit without effect, and slipped off her chair on to the floor and the convulsive attacks commenced.

The case seems to be worthy of reporting from two points of view. First, because cases of strychnine poisoning are not very common, and cases which recover are still less so; and secondly, because the drug used—namely, strychnos Ignatii, which is stated to have a greater percentage of strychnine than the strychnos nux vomica—is probably very rarely used in this country.

A CASE OF DISLOCATION OF THE SHOULDER-JOINT PRODUCED BY MUSCULAR ACTION ALONE.

BY J. GRIMMOND SMITH, M.D. EDIN.,
ASSISTANT MEDICAL OFFICER, LONDON COUNTY ASYLUM, CANE HILL.

THE patient was a man, aged 46 years, and was an inmate of the London County Asylum. His previous history was unknown. His mental condition was as follows. He was a congenital imbecile, was not epileptic, would not converse or only in monosyllables, and was frequently unsettled and excited, when he would rush about, violently waving his arms above his head. As to his physical condition, he was of good muscularity, short in stature (5 feet 4 inches), and his arms were abnormally long (30½ inches), but there was no undue laxness of the muscles.

On Feb. 4th, during an attack of excitement and whilst going through a series of extraordinary movements of his whole body, the arms being extended above and behind the head which was flexed on the chest, he dislocated his right shoulder-joint. On examination the head of the humerus was found in the subcoracoid position. This was reduced with some difficulty and kept at rest for a week. He has had several similar attacks of excitement since the above, but there has been no recurrence of the accident.

The rarity of a dislocation produced in this way leads me to believe that the above record may be of interest to your readers.

Purley, Surrey.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

STRATFORD-ON-AVON HOSPITAL.

A CASE OF INTUSSUSCEPTION IN AN INFANT 10 MONTHS OLD; LAPAROTOMY; RAPID RECOVERY.

(Under the care of Mr. HARRY LUPTON.)

WE have on many occasions pointed out the advisability of a primary laparotomy in intussusception, and Mr. Lupton's case is a good example of an intussusception which no inflation or injection could have reduced. There are, of course, cases in which an injection may prove effective, but the intussusception must not be above the ileo-cæcal valve and must be recent. It is often not possible, moreover, to be sure that the bowel has been completely reduced and much valuable time may be lost in fruitless efforts to reduce the intussusception by inflation or injection; the depressing effect also of these procedures must diminish in no small degree the chance of the child's recovery. Dr. F. H. Wiggin of New York has shown[1] that 75 per cent. of the cases are not reduced by injection or inflation. Mr. H. S. Collier advocates a

[1] THE LANCET, August 28th, 1897, p. 525.

combined method[2] in which injection is used, and if any intussusception remains a small incision is made over it and the bowel is reduced.

A well-nourished male infant was admitted into the Stratford-on-Avon Hospital at a late hour on July 4th with symptoms of intussusception. He had been seen by a medical man and the case had been so diagnosed. The child was very restless, and writhing after the manner of infants with abdominal pain. An enema had been given, but only a little blood-stained mucus had been passed. An attempt at examination at once threw the abdominal walls into a rigid state, and nothing definite could be made out, except, perhaps, that there was *not* any "sausage-shaped tumour" in the right flank. At a consultation of the staff it was decided to administer chloroform, to make a more complete examination, and, if considered advisable, to proceed at once to operation. Under the anæsthetic there was found complete absence of any swelling or hardness in the right flank, but on the left of the abdomen there was a fairly hard mass, terminating about an inch above and to the inner side of the iliac spine. Under the circumstances, and in view of the symptoms, it was decided to operate at once.

The abdomen was opened in the middle line in the usual manner. The swelling was readily found and it proved to be the descending colon having within it the invaginated ileum. There was some little difficulty in getting the fingers around the bowel down to the cæcum and delivering the whole through the wound, and when done the invaginated portion, at least six inches of it, was found to be very firmly held. It required a great deal of coaxing, pressure on the colon combined with gentle traction on the ileum, to free the small intestine. However, it was at length accomplished and the bowel did not look much the worse; there were no gangrenous patches, separated peritoneum, or tears.

The child was kept without food for the first eight hours when he became so restless that it appeared to be the lesser evil to begin with teaspoonfuls of tepid water and in a few hours more teaspoonfuls of the mother's milk. On the night following the operation it was deemed advisable to give a small dose of bromide and chloral, the restlessness still being great. On the same night flatus and fæces were passed and sleep was obtained. After that it was all plain sailing. The stitches were removed on the eighth day and the mother was allowed to take the child home with the abdominal wound firmly healed on the eleventh day.

Remarks by Mr. LUPTON.—This is one more case showing the great advantages of early operation and the uselessness of delay in such cases. Enemata and the time-honoured bellows could by no possibility have had any other effect than the delaying of operation—to the disadvantage of the child.

ROYAL INFIRMARY, EDINBURGH.

A CASE OF TRANSPERITONEAL LIGATURE OF THE LEFT COMMON ILIAC ARTERY FOR HÆMORRHAGE FOLLOWING EXPLORATORY INCISION OF A SARCOMA OF THE INNOMINATE BONE.

(Under the care of Mr. H. ALEXIS THOMSON.)

THE value of the transperitoneal ligature of the common iliac artery is strikingly shown in the following cases, for although the large amount of fat which was present increased greatly the difficulty of the operation, the extra-peritoneal operation would have been impossible, as the tumour would have been in the way. A thick abdominal wall and the presence of fat around the artery are obstacles whichever route be adopted. The chief advantages of the transperitoneal method are the slight disturbance of the peritoneum and the avoidance of any interference with the aneurysm or tumour on account of which the operation is required.

A stout woman, aged 54 years, was on March 1st, 1900, admitted into Professor Chiene's wards complaining of pain in the left hip and of difficulty in walking. She had been sent to the infirmary by Dr. M. Stewart of Finstown, Orkney. Her statement was to the effect that 18 months previously she began to suffer from pain in the region of the left hip; the pain had been more severe during the past six months. She had lost flesh rapidly and was only able to hobble about with the assistance of a crutch. Her ailment was regarded and treated as rheumatism, until a swelling appeared in the left buttock. On examination it was found that the gluteal swelling was part of a larger one extending upwards over the iliac crest towards the last rib and projecting also from the iliac fossa; fluctuation was readily elicited in both swellings and from one to the other. Passive movements were quite free at the hip-joint, but she herself was unable to move the limb.

To clear up the diagnosis, which lay between an hour-glass shaped abscess and a soft sarcoma growing from the pelvis, Mr. Thomson made an exploratory incision into the gluteal swelling on March 5th, being ably assisted by Dr. J. M. Reid, the house surgeon. Having pushed the knife through the skin, fat, and glutei muscles and inserted the finger, friable granulation tissue and a spiculated eroded condition of the venter ilii were encountered, so that the finger was easily passed through the latter into the iliac fossa. On withdrawing the finger from the wound blood escaped very freely and continued to do so in spite of very firm packing with sterilised gauze. Mr. Thomson did not think much of it at first, but as time went on it became serious and he decided to ligature the feeding artery without further delay. The internal iliac artery was out of the question as it was very close to, and probably involved in, the growth. To expose the common iliac artery the abdomen was opened in the middle line; an extensive incision was required from the loading of the parietes with fat. The intestines had not been completely emptied and some difficulty was experienced in displacing them; elevation of the foot of the table so that the patient occupied a modified Trendelenburg position greatly facilitated this as well as the subsequent steps of the operation. The parietal peritoneum lining the posterior abdominal wall was then divided in the line of the common iliac artery, but a very thick layer of fat had to be traversed before the pulsation of the vessel could be recognised. The artery desired being on the left side there was no difficulty with the vein. It was tied with ordinary thick catgut, passed by means of a Macewen's hernia needle. The disappearance of pulsation in the left common femoral at the brim afforded confirmation that the desired artery had been satisfactorily obliterated.

The abdominal wound was closed, the left lower extremity was wrapped up in cotton-wool, and the foot of the bed was elevated. The peculiar restlessness of the patient necessitated her being kept slightly under the influence of morphine. The bladder had to be emptied by the catheter. So far as the ligature of the artery was concerned her progress was quite satisfactory; the corresponding lower extremity retained its warmth from the first. She complained of cramps and of complete loss of power in the limb. The wound in the buttock never bled, but it was still discharging pus when she left the hospital two months later.

Three months after the operation her medical attendant wrote that her strength was holding out well, but that the tumour was increasing in size. There was no return of pulsation in the femoral artery.

Remarks by Mr. THOMSON.—All those who have practised the transperitoneal ligature of one or other of the iliac vessels refer to the ease and simplicity of the operation. When Professor Annandale tied the internal iliac artery for gluteal hæmorrhage I had the privilege of assisting him and the vessel was certainly exposed with ease and rapidity. In the case above recorded there was considerable difficulty on account of the quantity of fat in the abdomen and especially behind the peritoneum. While the transperitoneal operation is a great advance on older methods it should be pointed out that it is not quite the simple procedure it is described to be when the patient is above middle life and the abdomen is loaded with fat. The Trendelenburg position is a great advantage.

[2] THE LANCET, August 26th, 1899, p. 551.

NEW ASYLUM NEAR ABERDEEN.—The plans for this institution, to be erected by the Aberdeen City Parish Council at Kingseat, Newmachar, about 10 miles from the city, have now been completed by the architect, Mr. A. M. Mackenzie, Aberdeen, and have been approved by the Lunacy Board for Scotland. The asylum will be on the village plan, following the model of that at Alt Herbitz, Prussian Saxony, and it is estimated that the total cost of the scheme may amount to £100,000. The hospital will accommodate 700 patients and the administration block will be in three storeys. Altogether the buildings will cover a large area.

Reviews and Notices of Books.

Tuberculosis: its Nature, Prevention, and Treatment. By ALFRED HILLIER, B.A., M.D., C.M. Edin. Illustrated. London: Cassell and Co. 1900. Pp. 243. Price 7*s.* 6*d.*

TUBERCULOSIS offers many aspects for study. These have been considered under different headings and in many different volumes, but in the work now before us Dr. Hillier has dealt with all the varieties of tuberculosis affecting the several parts of the body, but pulmonary tuberculosis naturally occupies the chief place.

The clinical forms of tuberculosis are well described, Dr. Osler's able and scientific classification being adopted. The part played by micro-organisms other than that of tubercle—notably, the streptococcus and staphylococcus pyogenes aureus—in the stages of softening and cavity formation is commented on at length, and in support of the very strong views of Koch, that the pyrexia in pulmonary tuberculosis is due to the toxic products of these septic micrococci, Dr. Hillier points out that lesions which are purely tuberculous in character even when completely broken down, but to which no septic cocci have found entrance, produce little or no pyrexia. The various forms of so-called "cold abscess" with which tuberculous disease is associated are further instances corroborating Koch's views.

Dr. Hillier's description of the symptoms and physical signs of pulmonary tuberculosis is exceedingly well written, but we think he has been a little unfortunate in his account of the "Establishment of the Disease" and his remarks lay themselves open to misconception. For instance, the following is very liable to be misunderstood coming under this head: "A slight attack of hæmoptysis in an apparently healthy and robust individual may be the only cause of his seeking medical advice. Development of other clinical signs may follow rapidly or be considerably delayed." From this statement the reader might well conclude that the hæmoptysis started the tuberculous trouble, but this is by no means Dr. Hillier's opinion, for he explains two pages afterwards that in regard to "'precursory hæmorrhages' ..... there is little doubt that in the great majority of cases the disease is in existence at the time of the hæmorrhage." This is the view now adopted by nearly all observers.

Dr. Hillier's comments on heredity and communicability of pulmonary tuberculosis are also most interesting, and he strongly supports those authorities who maintain that the influence of the latter far outstrips that of the former. The statistics in favour of the hereditary character of the disease are very misleading, and, as the author remarks, "the demands which scientific criticism is entitled to make of statistics are in no way satisfied by such data as these."

The part of the work dealing with the treatment of pulmonary tuberculosis is, however, the most instructive; especial reference is, of course, made to the "open-air treatment." Dr. Hillier's experiences in South Africa entitle him to speak with authority. He discusses in an able manner the beneficial and curative effect of pure air on the patient suffering for pulmonary tuberculosis from a theoretical as well as from a practical point of view and quotes the arguments of Daremberg, Reiset, Brown-Séquard, d'Arsonval, and others in favour of the scientific basis for the open-air treatment.

We would especially draw attention to the remarks on the effects of wind, rain, and fog. Dr. Hillier wisely sets importance on the distinction between open-air and exposure, which seems to be ignored by the most ardent advocates of the sanatoria method of treatment. The Nordrach *régime* is fully described, and numerous illustrations give a good idea of the buildings, rooms, and shelters to be found at the various establishments now open.

Manuel de Gynécologie, Médicale et Chirurgicale. (*Manual of Gynæcology, Medical and Surgical.*) By A. LUTAUD. Fourth edition. With 607 Illustrations. 8vo. Paris: A. Maloine. 1900. Pp. 700.

As the author remarks in his preface anyone who compares the first edition of this book, which appeared in 1883, with this the fourth edition cannot fail to be struck with the development which it has undergone. In no other department of medicine perhaps would a text-book 17 years old be so completely out of date as in gynæcology. In those days gynæcologists were still physicians, at the present time they are to a very great degree surgeons, a change which has quite recently been recognised by the formation of a new appointment at one of the large London hospitals—viz., that of obstetric surgeon. Professor Lutaud has certainly not failed to advance with the times. We are not in a position to say what was the exact character of the first edition of this book, but as to the surgical tendency of the present edition there can be no doubt. When we remark that the author says he has preserved what he could of rational medical treatment, and when we note the large part of the book devoted to the description of various surgical procedures, we are more than ever impressed with the fact that medical gynæcology would appear to be rapidly becoming obsolete. The work, a manual of some 700 pages, is divided into eight parts. The first part treats of the anatomy, physiology, teratology, and malformations of the genital organs, matters about which little or no difference of opinion exists and which are adequately described. The various methods of examination and exploration are described in the second part. For specular examinations the author prefers one or other of the forms of bivalve speculum, such as that of Cusco. Vulliet's method of dilatation of the cervix is recommended. This consists in preliminary dilatation of the cervical canal with steel sounds followed by the introduction of tampons of iodoform gauze which are left in place for 48 hours and the number of which is gradually increased. In this way, in a time varying from nine or 10 days to five weeks, complete dilatation of the cervix can be obtained. The method is an efficient one but too slow for general use. A solution of creosote in glycerine is employed by the author for applying to the cervix after curettage. Pelvic massage is shortly described and recommended for various pelvic conditions. The statement is made that the bacillus of Koch has been found in the secretions in cases of esthiomène, but no authority for the statement is given. There is no description of tubercular disease of the vulva and it is not clear whether the author regards esthiomène as identical with this condition or not. Heredity is regarded as being a factor in the development of excessive hypertrophy of the labia minora, and Scanzoni's case of a woman and her three daughters who all presented this deformity is quoted. In the treatment of vaginismus Professor Lutaud recommends splitting the recto-vaginal septum, exposure of the sphincter vaginæ muscle, and its subcutaneous division followed by stretching.

For the purpose of influencing the endometrium in cases of chronic metritis the use of sponge tents is advocated. The tents, kept in an alcoholic solution of perchloride of mercury or naphthol, are introduced into the uterus and left in for from six to eight hours. On removal the uterus is irrigated. In cases where this method of treatment alone does not cure the tents are soaked in a solution of salicylic acid and alcohol and re-introduced. Guinard's novel method of treating inoperable cases of carcinoma of the cervix is described—viz., the introduction of a piece of carbide of calcium into the vagina, the acetylene gas set free being supposed to act upon

the growth. Professor Lutaud summarises the very important communication read by Ricard to the French Congress of Surgery, 1899, in which the advantages of the abdominal route in dealing with all cases of cancer of the uterus are strongly urged. Even when cancer of the cervix is in its early stages the glands may already be involved, and Ricard considers it the duty of the surgeon to determine with certainty whether this be so or not. This can only be efficiently done if the abdominal operation be performed. We have quoted enough to show that the book is a useful compilation of the main facts of gynæcology. The author is evidently a believer in minor gynæcology, and the description of the various minor operations and forms of treatment are especially fully described. Much of the pathology, especially that relating to uterine displacements, is not in accord with the views held in this country, and many forms of pessary are recommended for use which as far as English practice is concerned are entirely obsolete. The book would have had a greater value had the author expressed a more decided opinion upon many of the methods of treatment and operations which he describes and had he given us more fully the results of his own experience. The illustrations are numerous but of poor artistic merit.

Tropical Diseases: A Manual of the Diseases of Warm Climates. By PATRICK MANSON, C.M.G., M.D., LL.D. Aberd., F.R.C.P. Lond., F.R.S., &c. With 114 Illustrations and two Coloured Plates. Revised and enlarged edition. London, Paris, New York, and Melbourne: Cassell and Co., Limited. 1900. Price 10*s.* 6*d.*

THE first edition of this work was published in 1898 when it was reviewed in our columns.[1] During the relatively short time which has intervened between that and the present date, owing to the keen way in which the study of tropical diseases has been pursued, the progress made has been such that the need has been felt for the appearance of a revised and enlarged edition of Dr. Manson's work. The merits of this manual have been so generally recognised that we are not now called upon to dwell upon them or to make any fresh journey over the ground previously traversed by its author in 1898. It will suffice on the present occasion to say that the new edition has not only been enlarged by the addition of fresh matter but that its pages bear the marks of having been very carefully revised. To begin with the most obvious change, the volume has grown from 607 to 684 pages and contains 114 illustrations in place of 88, which was formerly the number (two coloured plates being common to both editions).

The numerous investigations which have been, and are still being, so keenly pursued into all that is comprised in the term "malaria" make up a most interesting chapter in the medical history of our time. The subject affords an excellent illustration of a point upon which Dr. Pye-Smith dwelt in his address in medicine at the annual meeting of the British Medical Association at Ipswich on "Medicine as a Science and Medicine as an Art"—namely, that medical art without science is not only unprogressive, but almost inevitably becomes quackery. For the diagnosis of malaria the practitioner in tropical countries needs to have recourse to the microscope and to know how to apply this test as much as the practitioner in this climate requires to use the stethoscope in his ordinary practice. But this is only to take one and a very limited though practical view of the subject. The researches in connexion with the malarial parasite have been conducted with a patient, refined, and subtle skill, and have led to views and conclusions which would probably a few years ago have been put down to an exercise of the scientific imagination. Some of the conclusions, however, are capable of verification and can be demonstrated as facts, while others are probable or merely tentative and conjectural but very suggestive nevertheless, and requiring further investigation. Anyway, the method that has been adopted throughout is a strictly inductive one—that of tracking the dependence of one event upon another in logical sequence. Those of our readers who have already heard, or read in THE LANCET,[2] Dr. Patrick Manson's two clinical lectures on Malaria and the Malarial Parasite delivered at the Medical Graduates' College and Polyclinic are in a good position to know how the matter stands at the present time. In addition to the section devoted to the consideration of the fevers met with in tropical and sub-tropical climates we have been more especially interested by the chapters on Beri-beri, Hill Diarrhœa, and Sprue, and by those on Filariasis and Leprosy. We may parenthetically call attention, in regard to the last-named disease, to a paper by Professor Sticker of Giessen, who was one of the German Plague Commission in India. Professor Sticker's inquiry goes to show that the nose is peculiarly the seat of leprosy. The lesion in the nose, which generally contains and discharges large numbers of bacilli, is, he says, the single constant change in all cases of leprosy in every form and stage of the disease.

We have no hesitation in saying that this revised and enlarged edition of Dr. Patrick Manson's manual is an excellent guide-book to the study of tropical diseases. It is written in a clear style and in a scientific spirit and is brought up to date; the descriptions of disease are good and well illustrated and—to mention a small but important matter for facility of reference—the book is supplied with a good index.

THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, August 7th, Dr. J. ANDREW, the President, being in the chair.

The PRESIDENT referred to the death of H.R.H. the Duke of Edinburgh and read the following telegrams which had passed between him and Sir A. Bigge:—

Please convey to Her Majesty the Queen the respectful and sincere sympathy of the President and Fellows of the Royal College of Physicians of Edinburgh on the occasion of the death of His Royal Highness Alfred Duke of Saxe-Coburg and Gotha, Duke of Edinburgh.

The President, Royal College of Physicians of Edinburgh.—The Queen desires me to convey to the President and Fellows her thanks for their kind message of sympathy.—A. BIGGE.

The SECRETARY laid on the table the annual statement by the governing board of the School of Medicine of the Royal Colleges in terms of the constitution. The statement showed that the classes of the school have been largely attended and that the management and discipline have been satisfactory. The College elected Dr. J. Andrew (President), Sir John Batty Tuke (Vice-President), Professor A. R. Simpson, Dr. P. A. Young, and Sir John Sibbald to be representatives of the College on the governing board of the School of Medicine of the Royal Colleges. Dr. Andrew was appointed by the council representative of the College on the conjoint committee of management of the triple qualification in room of Dr. J. Wyllie, resigned. Dr. G. W. Balfour was appointed Morison Lecturer for the year 1900-1901.

On a letter from the Town Clerk of Edinburgh the College agreed to express its willingness to enter into an arrangement with the Magistrates and Town Council for the bacteriological examination of suspected food-stuffs, &c., in respect of diphtheria and typhoid fever on the understanding that the proposed facilities should be made equally available to all classes of citizens.

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[1] Vide THE LANCET, June 18th, 1898, p. 1694.

[2] THE LANCET, May 19th (p. 1417) and July 21st (p. 153), 1900.

THE LANCET.

LONDON: SATURDAY, AUGUST 18, 1900.

OUR profession is not militantly political. But it is one that cannot be neglected by politicians with impunity, for it deals with human interests and social and sanitary conditions that affect greatly the welfare of the nation. Moreover, it has the political influence belonging to men of general and special education who have chiefly themselves to blame if this influence is not considerable. We do not pretend to say to which side the political bias of the medical profession leans, but it is safe to allege that if it is largely conservative in its respect for good precedents it has that admixture of progressiveness which comes from contact with the revelations of ever-advancing science. If the medical profession is estranged from the Government in any degree more than it was when they came into office, it is only because the Government have not acted up to the measure of their own strength. On two or three subjects they have deeply disappointed all medical opinion. On the vaccination question they yielded feebly, and they have since broken a promise to bring in legislation requiring revaccination. The action of Mr. RITCHIE in the matter of the Companies Bill was again very unsatisfactory. To lose the opportunity of altering the law which the Companies Bill offered so as to prevent any lay amalgamations from being used for covering unqualified practitioners in medicine was, we think, a piece of political cowardice. The medical profession is not likely soon to forgive this betrayal of its interests and the interests of the public. Mr. RITCHIE did more than lose the opportunity. He was active in his opposition and went out of his way to use the influence of the Government against the much-needed clauses, with the easy suggestion that a more convenient season would come for new legislation to prevent laymen from practising medicine. He should have known that the most convenient season for such legislation is the earliest. To give another instance of the way in which the Government have shown weakness and timidity we need only note their attitude towards proposed legislation for abating the drunkenness of the nation. In France and Russia grave efforts in this direction are being made; but all such efforts in this country, however modest or inadequate, have been met by the Government with discouragement and sometimes with cynicism.

The midwives question was dealt with in an unsatisfactory way by the Government. It should either have been taken up as a Government question and dealt with seriously and responsibly upon the definite principles formulated by the General Medical Council and the British Medical Association, or it should have been left alone. Neither course was pursued. A private Bill which contained some objectionable provisions, passed the second reading and emerged unchanged from the Standing Committee on Law. The Government had the opinion of the General Medical Council before them and knew the views of the medical profession upon the question, yet there were some indications in the late session that had this Bill been proceeded with they would, under political pressure, have made it their own. This would have been an unpardonable breach of faith. It must be clear to the Government that the assent of the profession to such legislation is strictly conditional, the condition being that the new measure shall put an end to the race of Gamps whose ignorance and uncleanness introduce terrible risks into even the most straightforward cases of labour. We should be glad to be convinced that in this matter we are wrong in doubting the good faith of the Government, but previous experiences cause us grave misgivings. It savours of deception for the Government at the outset to ascertain the views of the General Medical Council and to seem to adopt them, if at the last they intend to disregard those views. Again, a much needed measure to amend the lunacy laws, after a successful passage through the House of Lords, failed to get into the statute book, while a Bill to improve the position of medical officers of health and sanitary inspectors met a like fate through want of help from the Government.

Lastly, a Bill in passing which there should have been no difficulty—the Medical Acts Amendment Bill—was withdrawn. This was a very simple measure for making more clear and definite the power of the General Medical Council to remove from, and restore to, the Register the names of practitioners guilty of professional misconduct. We recognise that the Government had no other intention than to pass the Bill in the form suggested by the General Medical Council and virtually approved by all the universities and licensing bodies granting medical qualifications. But its postponement to the very end of the session placed it at the mercy of any unreasonable member and, though non-contentious, it had to be withdrawn. Such ineffective handling of measures of great importance, such weak support of principles which should be strongly asserted in regard to legislation affecting health and life, are very disappointing in a Government with a great following and deserve the serious condemnation of the medical profession. It is by no means clear that if the Government were to be defeated at the polls we should fare any better at the hands of any other possible Government, but it would not be easy to fare worse. It is painful to us to write in such tones of complaint and suspicion of a Government who have in some ways earned the lasting gratitude of the nation. But with every readiness to make allowance for unprecedented obstacles and anxieties we cannot excuse the complete want of consideration which has been persistently extended by the Government to the views of a highly educated and liberal-minded profession.

WE recently published[1] the Ingleby Lectures delivered at the Mason University College, Birmingham, by Dr. O. J. KAUFFMANN. The subject selected was "The Commoner Neuroses of Childhood, their Pathology and Treatment." Dr. KAUFFMANN was happy in the choice of a theme and his remarks will be read with great interest. The group of

[1] THE LANCET, June 30th (p. 1859) and July 14th, 1900 (p. 75).

maladies known as "functional nervous disorders" contains ailments of daily occurrence causing much distress to the little sufferers and much anxiety to their friends and parents. We agree with the lecturer that much is still to be learnt regarding the nature and causation of these neuroses and much in regard to their correct and complete diagnosis, and that something still remains to be done in the way of treating them successfully, to which end a true appreciation of their nature is the first essential step.

The disorders considered by Dr. KAUFFMANN are—chorea, saltatory or salaam spasm, tetany, night-terrors and dreaming, nocturnal enuresis, migraine and allied conditions, and epilepsy. Dissimilar though these diseases may at first sight appear yet they have several points in common. They occur with greatest frequency in childhood, some, as chorea and nocturnal enuresis, being almost limited to that period of life, at any rate as regards their onset; further, they are more frequent in the female sex, and where this appears not to hold true entirely, as in migraine and epilepsy, it is nevertheless a fact that females are more disposed to be the sufferers during the time of adolescence. In the course of the lectures it was demonstrated that these neuroses have still more points in common, particularly in the matter of causation. There seem to be two main groups of causes, the one being classed as "emotional," the other as being due to toxic conditions, hereditary predisposition having an important influence on each. The toxæmic element would appear to be more effective than the emotional in all these maladies excepting saltatory spasm. This is a point which hitherto has not been clearly established, but Dr. KAUFFMANN'S observations have been carried out in a thorough manner and his arguments tend to carry conviction. Several elements tend to produce the gastro-intestinal disturbances giving rise to toxæmia. Over-eating has a great effect in setting up disorder of the alimentary canal. The lecturer explained its action by contending that normally the glands which produce the digestive juices secrete them in quantities which are capable of dealing with a certain volume of food. Habitual excess of food or too frequent meals will, no doubt, stimulate the glands to yield a proportionate increase of their secretion for the time being, but such an over-strain, if long continued, is apt to end in glandular inadequacy and consequent incomplete digestion. The incomplete digestive products may be absorbed or, in the absence of a sufficient amount of the digestive fluids, bacterial decomposition of the intestinal contents takes place and the products of the same are taken up by the blood-vessels and lacteals. Food unsuitable either to the age of the patient or to his individual digestive capacity is likewise often the cause of those gastro-intestinal conditions which are found associated with the neuroses. Reference is made to the fact, generally known and accepted, that an excess of meat—and probably the same would hold good of excess of any other proteid material—is apt to be associated with dreamings, enuresis nocturna, and epilepsy. The most common predisposing cause of all the neuroses above enumerated is, in Dr. KAUFFMANN'S opinion, constipation, arising from catarrh of the intestine or faulty diet, or proceeding from mere habit and encouraged by neglect. The resulting effect is produced partly by the delayed elimination of fæcal matter, which therefore has a chance of being re-absorbed by the intestine, and partly by the encouragement which it is known that bacterial growth within the intestine receives when the fæces are retained. In obtaining a history of habitual constipation the statements of the patient's friends cannot altogether be relied upon and the child should be placed under skilled observation. The detection of indican in the urine will be of great assistance to the physician. Indol and skatol are formed in the intestines by the action of bacteria on proteids; they are partly excreted by the bowels and partly by the kidneys. Before appearing in the urine they are oxidised into indoxyl and skatoxyl, and are then conjugated with sulphuric acid, indoxyl sulphuric acid being known as indican. A very little indican is commonly present even in the urines of healthy persons, but a considerable excess of the same is always accompanied by disturbed general health. Dr. KAUFFMANN maintains, therefore, that excess of indican in the urine is always associated with toxæmia and that this toxæmia arises (with rare exceptions, in which the source is decomposing pus) from the intestinal canal. He further suggests that indol itself may possibly be toxic, in view of its origin through bacterial action and of the fact that it is unlikely to be a nutrient substance, for all the familiar organic food-stuffs contain oxygen, and indol is deficient in this element. He further points out that excepting the sign of indicanuria we have no chemical test which proves that auto-intoxication from the alimentary canal is in progress.

Accepting the views just set forth, the principles affecting the treatment of the neuroses of childhood must be in a great measure dietetic. In the majority of cases in which the feeding is at fault it is advisable to reduce the amount of meat which the child consumes. Meat once a day is nearly always sufficient. In most cases the action of the bowels also requires attention, since the prevention of an auto-intoxication from the intestine depends chiefly on regular and sufficient defecation. The so-called "intestinal antiseptics" naturally suggest themselves as adjuvants in preventing bacterial action in the bowels. Dr. KAUFFMANN states that he has tried many of them, but he cannot say that any one of them can be relied upon to remove the trouble entirely and in all cases. He has found greatest success with carbolate of soda and charcoal. This experience will probably tally with that of most physicians. Salol, β naphthol, and creasote sometimes produce admirable results, but in some cases but little good effect is seen. In addition to the general treatment thus indicated special measures are required in the various forms of the neuroses. We especially notice the remarks on the treatment of chorea—seclusion, darkness, and quiet may have to be insisted on, but the principal drug that should be given is arsenic in doses of about 15 minims of Fowler's solution twice or three times daily, as advised by Dr. MURRAY. The success of this method contrasts most favourably with that attained by arsenic in small doses and is much more quickly obtained.

There are many matters discussed in Dr. KAUFFMANN'S lectures which are of the greatest importance in actual practice, and but few controversial points are touched

upon. This by no means detracts from the general value of the lectures. The experiences of physicians who have given special attention to certain forms of disease are always valuable, and we may conclude by quoting the words used by Dr. PYE-SMITH in his address on Medicine recently delivered at Ipswich: "We must never allow theories, or even what appear to be logical deductions, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable, to take the place of the one touchstone of practical medicine—experience."

WE publish on page 551 a full report of the extraordinary meeting of the governors and subscribers of the National Hospital for the Paralysed and Epileptic, held on Saturday last. This meeting was convened for the following two purposes:—(1) to decide as to the advisability of admitting members of the medical staff of the hospital to the board of management of the hospital; and (2) to decide as to the necessity for holding an investigation into the domestic management of the institution, which has been recently impeached by the medical staff. Only 16 persons were present at the meeting, a fact which in itself prevents the one conclusion that was come to by the meeting—i.e., that no further investigation was necessary—being considered final. The meeting, however, was of considerable importance to the institution, to the medical profession, and to the public at large, and we publish the proceedings in full because it is certain that the words of some of the speakers will be made the subject of much comment when all the matters at issue between the board of management and the medical staff are fully gone into—as it appears inevitable, as well as most advisable, that they should be.

Mr. GEORGE W. E. RUSSELL, who took the chair, opened a long and neatly-worded address by dealing with the question of the advisability of holding an inquiry into the domestic side of the management of the hospital. He gave as his reason for thinking this to be quite unnecessary that a special sub-committee of the board of management had already conducted such an investigation, adding that he himself was active in visiting the wards and solicitous about the welfare of the patients within and without the hospital. Not one word that Mr. GEORGE RUSSELL said in this connexion had the slightest practical value. We are not belittling his enthusiasm or his philanthropy and we are not suggesting that he and his colleagues on the special sub-committee, Sir GERALD FITZGERALD, K.C.M.G., and Mr. JOHN PEARMAN, are not perfectly capable of conducting an investigation into the domestic management of a hospital from a lay point of view; but (and it is a large but) a special sub-committee appointed by the board of management is not the proper body to test and report on the matter, for the board is itself the accused party and cannot seriously constitute itself its own judge. Possibly this point presented itself to the minds of Mr. GEORGE RUSSELL and of his colleagues on the board, because it would seem that the board does not absolutely refuse to consider a further investigation into the domestic affairs of the hospital. It holds such investigation to be unnecessary, yet it will not oppose it if the governors think it advisable. But on the question of admitting medical men to the board of management it is solid in an uncompromising refusal. The wherefore of this attitude can be read in Mr. GEORGE RUSSELL'S speech at some length, the most important reason to his mind seeming to be that it might be the duty of the board to sit in judgment upon certain members of the staff. This is a most unfortunate argument for a board to use which has just concluded that it is itself competent to decide on its own alleged shortcomings, and surely Mr. GEORGE RUSSELL must have forgotten that the medical staff do not ask to swamp the board of management but only to be represented upon it. The board would thus be a mixed tribunal, as it should be, for the work of a hospital has its medical side and its lay side, and whereas it is equally human for the medical man and the layman to err, any tribunal made up exclusively of one party or the other might find itself in the position of its own judge. The patients, who by Mr. GEORGE RUSSELL are imagined as complaining of the medical staff, might with equal possibility complain of the secretary, of the food, of the nurses, of the bed-linen, or even (with an ingratitude which we hesitate to suggest) of the irksome nature of Mr. GEORGE RUSSELL'S visits. Mr. GEORGE RUSSELL cannot be blind to the fact that there are two sides to the work of a hospital, but he holds that all the authority should be vested in laymen, for medical men, especially those who have studied in special directions, are, in his opinion, unable to appreciate the details of the domestic management of the sick, and equally unable to master the meanings concealed under the phraseology of the Lunacy Acts and of the rules of the constitution of the charity to which they give their best work. Such limited persons as Mr. GEORGE RUSSELL'S imaginary medical staff should obviously have no authority or discretion vested in them, hence if they have anything to say to the board of management they will find in the secretary-director the most obvious channel for such communications. Mr. GEORGE RUSSELL must be contradicted flatly. The physician or surgeon who cannot understand English and who knows nothing of the nursing or feeding of his patients is a figment of Mr. GEORGE RUSSELL'S brain. The medical staff of the National Hospital for the Paralysed and Epileptic are capable citizens as well as distinguished neurologists. The secretary-director is the salaried servant of the hospital, and it is not right that he should be the only, or even the principal, medium between them and the board of management. The medical staff have the right to know that what they say and what they wish, exactly as they say it and wish it, reaches the ears of the board of management. There must be no suspicion that only such matters as are deemed by a salaried official to be worth the attention of the board are laid before the board. Everything that the medical staff have to say must be heard, and they must be the judges of whether it is worth hearing. The obviously easy way in which this can be managed is for the board to include representatives of the medical staff. A board that fears the presence at its counsels of representatives of the medical staff, lest they should become the predominating partners, must be conscious of weakness, and therefore peculiarly open to the influence of a strong secretary-director. This excellent point was made at the meeting by

Mr. MELVILLE GREEN, the only governor present who dissented in words from the board's decision to exclude absolutely the medical staff from seats at the board.

There is one other subject upon which we wish to touch. Mr. GEORGE RUSSELL, who made an excellent and impartial chairman, is an anti-vivisectionist and hinted discreetly at views which may make it impossible for him to regard with equanimity the presence upon the board of management of the National Hospital for the Paralysed and Epileptic of persons who are directly antagonistic to these views. He believes that his views are far commoner than they are, and he attributes to the working men of this country a horror of hospitals which clearly does not exist. As Sir HENRY BURDETT pointed out at this meeting, there are at the present time many thousand more hospital beds than there were before the question of vivisection was dealt with in its present ignorant and sensational manner, and for these thousands of beds there are tens of thousands of claimants. In every large town in the kingdom the question of hospital abuse is an acute one and the need for hospital accommodation is equally acute. What sort of widespread horror of hospital accommodation is it that drives these myriads of persons to consult hospitals when in many instances —too many it is to be feared—they possess the means of consulting private practitioners?

Annotations.

"Ne quid nimis."

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

BY the time that the Paris International Exhibition of 1900 closes no less than 127 International Congresses will have been held in connexion with it. Of these the most important from our point of view is, of course, the International Congress of Medicine. But in some ways the Congress of Hygiene and Demography is of equal importance; nay, possibly, it looks upon disease from an even higher plane, for its ultimate aim may be summed up in the aphorism, "Prevention is better than cure." It is utopian to expect that disease will ever be finally done away with in this life. Accidents, the stress of modern conditions of life, the artificial circumstances due to the "*fumum et opes strepitumque Romæ*" amid which so many of us live and work, and, not least, over-indulgence in eating and drinking, will all continue to produce their bounden effects, and to offer a wide field for the skill of the physician and surgeon. But when we consider what and how much hygiene and sanitation have already achieved we may well take heart and hope that at no very distant time diphtheria and scarlet fever may become as rare as typhus fever is at the present day. That is why we hope that the labours of the Congress of Hygiene just concluded may in the future meet with the success which they deserve. The subjects with which the Congress dealt were divided into eight sections. First on the list stood bacteriology, a science which has of late years made enormous advances and a thorough understanding of which is a necessary part of the foundations of preventive medicine. We need only refer to the three diseases diphtheria, typhoid fever, and tuberculosis as illustrations of this fact. Following upon—and we may say interdependent with—the first section came those of food-supply and sanitary engineering. The next section, that devoted to childhood, dealt with a matter that affects not only ourselves but generations yet to come. The children of the present will be the fathers and mothers of the future, and if that future is to produce a healthy race the children of the present must not only be reared under healthy conditions so as to become sound parents, but must also be instructed and trained in those principles of wholesome living which they will in after years have to apply to their own children. The section allotted to consider the questions of industrial hygiene and of unwholesome dwellings had no less important matters to discuss, for in great cities the problem of housing the workers is one of vast moment from every point of view. In our own country, the prosperity of which depends so much upon commerce and manufactures, the health of the workers is of vital importance not only on account of considerations of justice and humanity but also as perhaps the most valuable national asset. Other sections dealt with naval, military, and colonial hygiene, international sanitary measures, and the hygiene of means of intercommunication such as ships, railways, and tramcars. Thus it will be seen that the Tenth International Congress of Hygiene and Demography provided a programme involving momentous issues. Intercommunication among the nations is now so easy and so complicated that the effects of disease or gross disregard of the laws of hygiene occurring in one country are felt in some way or other almost throughout the civilised globe. For this reason it is fitting that experts in hygiene from all countries should meet and discuss such questions as are set out above, and we bid the just concluded Congress a very hearty farewell.

A CONTINENTAL SYSTEM OF BATHS AT SHANKLIN.

WITHIN an easy stone's throw of the sea there has recently been constructed at Shanklin, Isle of Wight, a series of baths identical in principle with those employed at the large spas on the Continent, such as at Schwalbach (Nassau) and elsewhere. Shanklin has long been known to possess a spring containing as its chief constituent iron in the unoxidised form of protocarbonate. The water flows from an aperture at the foot of the cliff into tanks which are the property of the Royal Spa Hotel Company, who have recently completed all the necessary arrangements for the supply of the water both for drinking and bathing purposes. The baths themselves were made in Homburg and the heating is conducted by a system of approved steam coils identical with the continental fashion. This heating is so arranged that during the process the water undergoes no change in regard to its saline constituents and especially in regard to its chalybeate properties. During this process, however, there is a considerable evolution of gas. This interesting installation provides also dee baths lined with marble adapted for special purposes of immersion into which salt water or fresh water, heated or unheated, may be discharged. The deep baths are modelled on the lines of those used at our leading bath resorts such as Bath and Harrogate. In short, the equipment, though it is at present not on a very large scale, leaves little to be desired so well has it been designed and constructed, and due regard further has been paid to sanitary requirements and to the comfort and convenience of patients. The installation includes also Russian baths, vapour baths, needle, and local spray baths. The enterprise is certainly worthy of all encouragement and it is the first example of its kind in this country in which the continental system of applying an unstable ferruginous water for treatment in baths has been adopted. On account of this originality of enterprise we intend shortly to give a further description of this interesting installation of ferruginous baths at Shanklin and at the same

time we propose to publish the results of a series of complete analyses of this true chalybeate water made in THE LANCET Laboratory as well as the results of analyses obtained on the spot. Since the iron is readily oxidised on exposure of the water to air the analysis of the water in regard to iron was made on the spot, with samples taken directly from the outlet. On August 14th an inaugural gathering was held at which the baths were declared open to the general public as well as to the guests of the hotel. There were a good many visitors present amongst whom were several well-known medical men and representatives of the press.

PLAGUE IN HAMBURG.

THE discovery of a case of plague on board a vessel in the port of Hamburg, as briefly mentioned by our Berlin correspondent on page 550 of our present issue, serves to show the great responsibility connected with the duties of medical officers who have to inspect shipping. Only meagre details of the case have been published, but the significance of such an event in Hamburg, a city of some 600,000 inhabitants and the most frequented seaport of continental Europe, is no doubt very great. The patient was a steward on board the ss. *Rosario* which arrived at Hamburg on July 30th. He was at first supposed to be suffering from typhus fever, but on August 4th plague was suspected and this diagnosis was confirmed by the usual tests. Death occurred on August 10th. Every precaution has, of course, been taken to prevent any extension of the disease, and the possibility of localising an outbreak was fully shown in Vienna in 1898, as described in THE LANCET[1] in that year. Our Berlin correspondent, telegraphing on August 16th, stated that no other case of plague had up to that time occurred in Hamburg.

"WHERE WE GET OUR BEST MEN."

THE author of a pamphlet bearing the above title has recently compiled from materials to be found in obituary notices, in "Men of the Reign," "Men of the Time," and "Who's Who," a list of 3068 "eminent" men belonging to the United Kingdom and to the present reign, 100 of whom he further selects as "pre-eminent," and upon these two lists he has based tables and statistics of some interest with regard to the sources, national, local, parental, and educational, from which our eminent and pre-eminent men are drawn. With possibly wise discretion he omits to print the roll of those whom he has chosen and he admits that in the works of authority that we have mentioned many names are to be found that can hardly be said to belong to eminent persons. That he has probably not been hard-hearted enough in his work of elimination is suggested by the inclusion of no less than 450 names representing literature, but on the whole, from what he tells us of his methods, we may assume, without seeing it, that his list is a fairly complete one if eminence be taken to imply a public rather than a professional reputation for excellence. On a further study of the author's tables and deductions we find that as against the 450 eminent persons with whom literature heads the list, art claims 273, the army 262, the law 244, and medicine 157, while the author gives it as his conclusion that, on the whole, of all the professions the bar and the army offer the greatest, and the medical profession the smallest, chance of success. Success is a term of not very certain meaning, and with regard to the army and the law there are well-marked stages in the military and legal careers at which admission to the pages of "Who's Who" is almost inevitable, while no such stages punctuate the life of the man of science. It might be added that the author tells us that he has placed all judges of the higher tribunals in his list and that if this definition includes all the puisné judges of the High Court of Justice several gentlemen who have neither been eminent in their profession nor even in politics are to be found in it. Of the countries that make up the United Kingdom England has produced the greatest number of eminent men with a total of 1754, as against 445 from Scotland, 254 from Ireland, and 45 from Wales; but when the contributions of the several nationalities are compared with their respective populations it is found that Scotland takes the lead, while Ireland is ousted from the third position by Wales. With regard to parentage the author has traced the fathers of about one-half of his eminent and two-thirds of his pre-eminent men, and excluding the somewhat vaguely defined class which he places under the heading "Aristocrats, Officials, &c.," we find the clergy well at the head of the breeders of eminent and pre-eminent sons, while the medical profession is sixth in each case, begetting 5 per cent. of the eminent and 7 per cent. of the pre-eminent. In another table we find that "professional men, principally medical," have been most often the parents of eminent medical men, a result which is only natural, although in the case of the army "officers" rank second to "aristocrats, officials, &c.," as fathers of eminent soldiers—a conclusion which may possibly point to the influence of interest in high places on the military career. It is a little startling to find that the public schools, of which the nation is justly proud and in which are included large day schools and grammar schools, only turn out 30 per cent. of our eminent men, the author drawing the conclusion that such schools tend to turn out a class of useful men rather than brilliant individuals, while the opinion assigned to the Iron Duke is not borne out when we find that only 8 per cent. of our eminent soldiers have been nurtured in the playing-fields of Eton. Eton, however, has been markedly successful on the whole, particularly in its contributions to "Government," while Oxford has decidedly beaten its larger rival Cambridge. Among isolated statements some will note with a smile that "insanity and poetry (at any rate, 'minor' poetry,) appear to be not unconnected with each other," and that "the few eminent men who developed alcoholic habits were Scotch and were engaged in sedentary pursuits." We were not aware that intoxication had been returned as a favourite "recreation" by any of the eminent gentlemen who have recorded their biographies in "Who's Who." We may add that while the general list of names is omitted a table of the principal contributions by separate families to the general list serves to whet our appetites to know more. That the pamphlet leads us to any definite conclusion can hardly be said, and could hardly have been expected, save, perhaps, what many realised before, that the clergy have often large families and on the whole bring them up well while with a celibate priesthood Great Britain would have lost the services of many of her most useful and brilliant sons.

THE HYGIENE OF HIGH ALTITUDES.

IT is well known that the chemical composition of the atmosphere differs but little, if at all, wherever the sample be taken, whether it be on the high Alps or at the surface of the sea, the relation of oxygen to nitrogen and other constituents is the same. The favourable effects, therefore, of a change of air are not to be explained by any difference in the proportion of its gaseous constituents. One important difference, however, is the bacteriological one. The air of high altitudes contains no microbes and is, in fact, sterile, whilst near the ground and some 100 feet above it microbes are abundant. In the air of towns and crowded places not only does the microbic impurity

[1] THE LANCET, Oct. 29th, pp. 1143, 1149, 1165, and Nov. 5th, 1898, pp. 1225, 1233.

increase, but other impurities, such as the products of combustion of coal, accrue also. Several investigators have found traces of hydrogen and certain hydrocarbons in the air, and especially in the air of pine, oak, and birch forests. It is to these bodies, doubtless consisting of traces of essential oils, to which the curative effects of certain health resorts are ascribed. Thus the locality of a fir forest is said to give relief in diseases of the respiratory tract. But all the same these traces of essential oils and aromatic products must be counted strictly speaking as impurities since they are not apparently necessary constituents of the air. As recent analyses have shown, these bodies tend to disappear in the air as a higher altitude is reached until they disappear altogether. It would seem, therefore, that microbes, hydrocarbons, and entities other than oxygen and nitrogen, and perhaps we should add argon, are only incidental to the neighbourhood of human industry, animal life, damp, and vegetation.

THE PUBLIC AND THE PROTECTION OF CHILDREN.

THE work of the National Society for the Prevention of Cruelty to Children is an increasing one. This is not to be taken as a proof that cruelty is itself increasing among our population. It is an evidence and a result of the society's growth and thus it is a proof of its vital energy. By a process resembling the reclamation of land, but far more rapid in its operation, new centres of activity are steadily being opened up and each of these represents a basis for further extension. Moreover, the work is necessitous because it is necessary. That prudent reserve which is the safeguard of ordinary business has only a strictly limited exercise in undertakings like this where the claim of charity is that of duty and is urgent. The society is still young and its maintenance must therefore for some time to come partake largely of a hand-to-mouth character. It has and deserves to have many helpers and among these we are pleased to note recorded in this month's list the names of several donors of legacies. Nevertheless the fact has also been recorded that the present year began with an overdraft of £8000, and it is feared that the burdens imposed on the public purse by the war in South Africa and the Indian famine have caused a serious reduction in the ordinary income of the society. The holiday season, usually barren for purposes not concerned with recreation, has now begun. The financial year, however, is by no means over and we trust that it will not close without some signs of reviving liberality on the part of that great majority of persons who wish well to suffering children. This society does not require our commendation. The respect in which it is held, not only by the public generally but by such competent judges as the magistrates and the police, is sufficient proof that its work is carried on with discretion and efficiency.

THE members of the expedition of the Liverpool School of Tropical Medicine now at Bonny have, it is stated, telegraphed home that they have discovered the filaria in the proboscis of the mosquito. It is some years since Dr. Manson propounded a theory as to the part played by the mosquito in the life cycle of filaria nocturna, the nematode which is the cause of elephantiasis. The mosquito did not, however, in this theory directly convey the worm to the tissues, but the discovery of the Liverpool expedition has now apparently established the fact of direct communication.

A TELEGRAM from the officer administering the Government of Mauritius to Mr. Chamberlain, received at the Colonial Office on August 10th, states that for the week ending August 9th there were six fresh cases of bubonic plague, with three deaths.

THE Colonial Office has also received a telegram from Sir H. A. Blake, Governor of Hong-Kong, dated Monday, August 13th, stating that 29 cases of bubonic plague had occurred during the previous week, with 28 deaths.

AT the last monthly meeting of the Council of Charing-cross Hospital a resolution was unanimously passed recording their unfeigned sorrow at the death of the Duke of Saxe-Coburg and Gotha, who for 21 years was President of the hospital.

DR. ROBERT JOHN COLLIE has been promoted from Honorary Associate to Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

VACCINATION AND RELIEF.—At a meeting of the Cardiff Board of Guardians held last week one of the members stated that he considered it an anomaly that parents in good positions should have their children vaccinated at the expense of the parish. The clerk, in reply, said that anyone had a right to have his children vaccinated at the public expense and added that vaccination was not relief.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—Francis Howard Humphris, M.D. Brux., M.R.C.P. Edin., M.R.C.S. Eng., of Honolulu, was admitted by ballot to the Fellowship of the College.—The following candidates were admitted to the Membership of the College after examination: George Robert Wilson, M.D. Edin., Mavisbank, Midlothian; Wilfrid Glegg, M.D. Edin., Edinburgh; Edwin Bramwell, M.B., C.M. Edin., Edinburgh; Thomas Arthur Ross, M.B., C.M. Edin., Ventnor; William Maule Alexander Smith, M.B., Ch.B. Edin., Mavisbank, Midlothian; and George Crewdson Thomas, M.B., C.M. Edin., London.—The Registrar reported that since last quarterly meeting 70 persons had obtained the licence of the College by examination.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. A. Lazarus has been recognised as *privat-docent* of Internal Medicine, Dr. L. Jacobson as *privat-docent* of Neurology and Psychiatry, and Dr. Pels-Leusden as *privat-docent* of Surgery.—*Chicago (Rush Medical College):* Dr. J. Dodson has been appointed Professor of Pædiatry.—*Genoa:* Dr. F. Badano and Dr. Gerolamo Cuneo have been recognised as *privat-docenten* of Internal Medicine.—*Halle:* Dr. Nebelthau of Marburg has been appointed Extraordinary Professor of Internal Medicine; Dr Schick has been recognised as *privat-docent* of Ophthalmology.—*Heidelberg:* Dr. Biedermann of Jena, who had been invited to fill Professor Kuhne's chair, has declined to migrate; Dr. Andolf Magnus has been recognised as *privat-docent* of Pharmacology.—*Kiel:* Dr. Paul Sick has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Oskar Samter, *privat-docent* of Surgery, has been granted the title of Professor.—*Innsbruck:* Dr. Stefan Bernheimer of Vienna has been appointed Professor of Ophthalmology.—*Lausanne:* Dr. Treyer has been recognised as *privat-docent* of Internal Pathology.—*Leipsic:* Dr. Otto von Strassen, *privat-docent* of Zoology and Comparative Anatomy, has been promoted to an Extraordinary Professorship.—*Marburg:* Dr. Ludwig Bach of Würzburg has been offered the chair of Ophthalmology; Dr. Wendel has been recognised as *privat-docent* of Surgery.—*Naples:* Dr. Arborio Marracino and Dr. Nicola Badaloni have been recognised as *privat-docenten* of Medical Pathology, Dr. Eugenio Curcio as *privat-docent* of Neuro-pathology, and Dr. Guglielmo Cantarano as *privat-docent* of Clinical Medicine.—*Paris:* Dr. Debove, Professor of Medical Pathology, has been permitted to exchange his chair for that of Clinical Medicine.—*Philadelphia (Policlinic):* Dr. J. Thorington has been appointed Professor of Ophthalmology.—*Rostock:* Dr. Ehrich has been recognised as *privat-docent* of Surgery, and Dr. U. Scheven as *privat-docent* of Psychiatry.—*Vienna:* Dr. Al. Kreidl has been promoted to an Extraordinary Professorship of Physiology.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT IPSWICH.

THE members of the Association would fail in their duty if they did not discountenance the habit of self-drugging by the public and we are sure that they will agree with us on this point. Yet this reprehensible practice is to some extent encouraged by the fact that the public are admitted to the exhibition of drugs at the annual meeting. At the meeting held at Ipswich we found that some of the exhibitors were giving away specimens of all kinds of drugs to lay men and women who were assured of such-and-such a powder being a sovereign remedy for sleeplessness, headache, sea-sickness, and so on; and these persons went away with an expression upon their faces implying that they had picked up a good thing, and the number of remedies, usually synthetics, which they carried away was enough to form a druggist's shop in miniature. Emphatically this should be stopped and the Organising Committee might bear these facts in mind on a future occasion.

An excellent demonstration illustrating the recent advances made in the application of the x-ray methods in surgery was given by Mr. Mackenzie Davidson in the lantern room of the Masonic Hall, Soane-street, on Friday, August 3rd. Difficult as it is to demonstrate x-ray phenomena to an audience, Mr. Davidson succeeded in convincing those present of the value of bringing the shadows into relief or of gaining stereoscopic effect for the purpose not only of localising foreign bodies but of making also a diagnosis of any abnormality. The simplest method, perhaps, is to view two photographs in the mirror stereoscope. The results are most instructive. But Mr. Davidson has also devised an apparatus by means of which it is possible to get directly a stereoscopic view of the interior of the human subject or other objects. For this purpose two tubes are used, and by an exceedingly ingenious mechanical arrangement an excellent stereoscopic effect is obtained which enables the operator to place the point of a probe exactly on the foreign body. This was proved by trying a probe upon a bullet hidden in a mass of soft material. It could be distinctly seen whether the needle was in front of or behind the bullet, and thus the exact locality and position of the missile could be found. Needless to say the demonstration was watched with considerable interest.

The museum of pathological exhibits was located in the chemical laboratory of the Ipswich Higher Grade School. It was a large, well-lighted room and was very suitable for the purpose. There was a fairly large number of specimens on view and nearly half of them came from the museum of the Norfolk and Norwich Hospital. They were exhibited by Dr. Sydney H. Long, physician to the hospital. Among the many interesting cases we were naturally (in view of the locality) chiefly attracted by the calculi. There was a good collection of these, and especially worthy of notice was an exceedingly large renal calculus *in situ;* this is unsurpassed by any specimen in any museum with which we are acquainted. The collection of old lithotomy instruments at one time used at the Norfolk and Norwich Hospital was also of great interest. Space does not allow a description of all the specimens from this hospital, but we may mention an excellent specimen of varix of the stomach. Dr. H. H. Brown showed some specimens from the East Suffolk and Ipswich Hospital, amongst which was a good example of a carcinoma of the cæcum. Mr. Strange Ways Pigg (London) exhibited a number of specimens from the Pathological Laboratory, Cambridge, and amongst them one showing glanders of the human lung. Miss E. M. Vaughan, M.D. Lond., showed a good series of specimens from the museum of the Royal Free Hospital, London, and of these we may refer specially to a number of preparations showing morbid conditions of the vermiform appendix. Mr. Joseph Griffiths exhibited four specimens from Addenbrooke's Hospital, Cambridge, one of these being an example of an aneurysm in a child aged 10 months, and another of a ruptured aorta in a boy 17 years of age. Dr. Patrick Manson (London) exhibited an excellent series of slides showing the malaria parasite, and another series showing the filaria sanguinis hominis. Mr. T. H. Morse (Norwich) submitted six examples of tubal pregnancy. Altogether the exhibition was fully up to the average, but we are inclined to suggest that it would be a good method to choose for each exhibition one pathological condition, or at the most two, which should be illustrated by the specimens exhibited. If this were done, the annual pathological museum would probably excite even more interest than it does at present. For instance, urinary calculi would have formed a most suitable subject for the Ipswich meeting.

THE SECTIONS.

MEDICINE.

FRIDAY, AUGUST 3RD.

Headaches and other Nervous Symptoms in Relation to Nasal Adenoids.

Dr. DAVID MCKEOWN (Manchester) read a paper on this subject. The usual explanation of the headaches, he said, and of other nervous symptoms due to this cause was that they were caused by imperfect aeration of the blood which in its turn was caused by the narrowing of the nasal respiratory channel by the encroachment of the post-nasal and pharyngeal growths. Combined buccal and nasal respiration gave plenty of oxygen during the waking hours, but it had been found that during sleep nasal respiration only was employed and even if the mouth were open no buccal respiration took place. To this Dr. McKeown objected, first that the same symptoms often occurred when the growths were clearly too small and few to cause any obstruction to respiration, and submitted these further considerations: that adenoids were only an accentuation of the normal condition of the naso-pharynx; that the symptoms were the same in many cases though the extent of the growths varied greatly; that the capacity of dilatation of the naso-pharynx determined the amount of obstruction and that this varied greatly; and that in any case the amount of adenoid growth rarely if ever prevented an amount of air reaching the lungs physiologically sufficient for the perfect aeration of the blood. He thus concluded that imperfect aeration was not the cause of the symptoms. He further stated that the headache and other symptoms were cured by operation. Immediately patients came round from the anæsthetic they said that the headache had gone. In cases where adenoids were present and no unpleasant symptoms were complained of patients still expressed themselves as feeling better after an operation for the removal of the growths. In both these instances it was hardly possible that if the symptoms were due to imperfect aeration they should have been relieved so rapidly. Again, headaches were often cured by epistaxis. The pathological connexion between the nasal fossæ and the cranial contents was an intimate one. Hyperæmia was often intense in these complaints and the nasal fossæ were very near the brain. There was headache in nasal catarrh similar to that above mentioned. Symptoms in the same case varied in degree from day to day, perhaps according to the condition of vascular engorgement of the mucous membrane. He thought the true explanation to be either reflex action or some blood change they did not understand, but not mal-oxygenation.

The Diastolic Expansion of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve.

Dr. STACEY WILSON (Birmingham) read the following paper. There was evidence, he said, that the heart had power to enlarge its chambers and fill itself (aspiration). Cohnheim

had shown that the lengthening of the striated muscle after contraction was not wholly a passive or elastic action. As direct evidence it was found that when the vagus was divided diastole was incomplete. Thus dilatation of the heart was partly a muscular movement under nervous control. Dr. Wilson had investigated this action by means of the cardiograph and he showed many cardiograms in support of his views. He allowed that these were difficult of interpretation. In those for the normal heart there was little evidence of expansion movement, but in those taken from hearts the subject of valvular disease more was to be learnt. He showed tracings taken from patients during life in whom after death the exact condition of the valves and cavities had been ascertained. He quoted one case of compensated mitral regurgitation in which, though the cavity of the ventricle was double the usual size, the cavity of the auricle was less than normal, showing that the latter was not overworked. Now, in such a heart as this if a cardiographic tracing were taken over the apex, not much deviation from the normal was seen, but if more over the auricle the down-stroke indicating that the auricle had been drawn away from the surface by the final portions of the act of contraction of the ventricle, was suddenly interrupted by an up-stroke which Dr. Wilson maintained could only be explained by an active ventricular dilatation forcing the auricle back against the chest-wall, and he was strengthened in this view by the fact that his cardiograph had a pressure of a quarter of a pound, which he considered was far too great to be overcome by a merely passive or elastic dilatation. In some cases he had found that this wave, which he called the diastolic expansion wave, was even greater than that of systolic contraction. The diastolic expansion wave immediately followed the second sound of the heart. He considered that such a view of the ventricular diastole explained the so-called third sound sometimes heard and the mid-diastolic murmur, the latter being the flapping back of the wings of the mitral valve. In aortic regurgitation there was no wave of aspiration.

A Toxin Theory of the Causation of Gout.

Dr. W. R. GORE (Whitchurch, Salop) read a paper on this subject. If gout were solely due to the uric acid present in the blood they ought to have an attack of gout whenever the percentage of uric acid reached a certain stage. There was no positive evidence that uric acid in the blood could even produce headache, and Dr. Gore could not see that any satisfactory reasons could be adduced to prove that uric acid was capable of producing the symptoms often ascribed to it. At the same time he agreed that the true cause must be a constituent of the blood and that that constituent must be formed in the digestive tract. In savage races no diet would produce gout; in civilised races any diet might produce it. The constitutional disturbance in gout was out of all proportion to the extent of the region injured. He thought the only class of substances which was likely to be able to produce not only acute articular but also irregular gout was a toxin, and thought it probable that that toxin was the product of bacilli in the intestinal canal. In favour of this they knew that long-continued digestive troubles were often the precursors of gout, that the treatment most efficacious in gout was also that which would have the effect of cleansing and clearing the intestines, while conversely such a poison as lead, which led to the retention of the intestinal contents and anæmia of the intestinal walls, favoured the production of gout.

The PRESIDENT thought the hypothesis a likely one.

Dr. S. J. BARTON (Norwich) did not consider uric acid to be the most important factor in gout. In Norfolk the excretion of uric acid in renal calculi and the like was very common, while acute arthritic gout was very rare. Fifty years ago, however, it had been very common. He attributed the change to greater common-sense and care in diet and the management of health.

Dr. W. GORDON (Exeter) said that in Devonshire they had little uric acid excretory troubles, almost no acute articular gout, but much irregular gout. He thought the results of treatment by salicylic acid were favourable to the toxin theory as he considered its action to be that of an intestinal antiseptic, an opinion strengthened by his experience that it did more good when given in the comparatively insoluble form of salol than in more soluble ones.

Mrs. GARRETT ANDERSON, M.D. (London), could not accept the theory of the toxin origin of gout, mainly because of the persistent recurrence of gouty manifestations in patients suffering from that disease. If the toxin theory were true and they cured a patient why should the disease recur? She regarded gout as a failure of eliminatory processes, a disease of dust and ashes, and treatment directed to the improvement of elimination was in her belief that which did most good, and *vice-versâ* any factors which hindered elimination favoured gout.

Dr. W. EWART (London) then read a short paper on

Subcutaneous Saline Injections in Pneumonia

by himself and Dr. PERCIVAL BEAUMONT (London). The present treatment of pneumonia was in many respects unsatisfactory. They could hardly be said to *treat* pneumonia in the real sense of the word at all. All they did in most cases was to ensure that the patient had good hygienic surroundings and good nursing. Under these circumstances he considered that any treatment which seemed likely to give the physician any decided assistance deserved a fair trial. Dr. Clement A. Penrose of Baltimore had published statistics which seemed to prove that the subcutaneous injection of normal saline solution might be such a means. This treatment had sometimes proved useful in the later stages of severe fevers and so it seemed possible that if used early it might be more useful still. Dr. Ewart would divide cases of pneumonia into three classes: first, those obviously likely to recover; second, those tolerably certain to prove fatal, such as old alcoholic cases, cases of double pneumonia, and the like; and between these two was a third class of severe cases in unhealthy and debilitated persons, especially in those over 30. It was in this latter class of cases that a measure like this seemed desirable. Fatal symptoms came on in these very suddenly and it was useless to delay treatment till a late stage. Dr. Ewart had treated six such cases. The first case was of a severe type in a debilitated female, aged 37 years. One pint of normal saline solution was injected into the subcutaneous tissue of the right subclavian region of the chest. Next day the same amount was injected in a similar situation on the left side at 11 A.M. and again at 6 P.M. Altogether there were four such injections alternately on the left and the right sides. The patient recovered. The other five cases, one of which was ordinary pneumonia, two double, one complicated with empyema, and one a case of pneumo-typhoid fever, all died. Grey hepatisation had appeared in some. The results were disappointing. All but Case 1 were fatal, but it might be said that the proceeding caused no unfavourable symptoms and in one or two appeared to have delayed the fatal issue but did no further good. It was not resented by the patients. It did not promote death. He thought it might be given a further trial.

Progress of Sanatorium Treatment in England and Wales.

Dr. JANE WALKER (London) then gave an account of Sanatorium Treatment and quoted early advocates of the principles on which such treatment was based, such as Dr. Mc Cormack and Dr. Waddington. After their for the most part unsuccessful attempts to promote a rational treatment of phthisis treatment by high altitudes was employed. Now the factor of climate was not so much insisted on. They might range climates in an ascending degree of excellency, as damp and hot, damp and cold, dry and hot, and dry and cold. Overcrowding would neutralise the effect of the best climate. After all, treatment was more important than climate. This was not sufficiently understood. Air was not enough, feeding was not enough. Careful regulation of exercise, rest, and particularly medical care, must be added. Early improvement should lead to greater care, and patients should not be allowed to leave off treatment or go to their homes for some time after apparent recovery. As to the determination of the duration of the necessary stay in a sanatorium the standard of a patient's health was as important as the state of his respiratory organs. Routine examination of chests was too much neglected. In prognosis the rate of improvement was the most valuable factor. The public had been led to expect too much from the open-air treatment of phthisis from articles in the public reviews. She hoped in time to see maternity sanatoria for consumptive pregnant women, school sanatoria, and sanatoria as preventative institutions for the children of consumptive parents.

Dr. CHOWRY-MUTHU (London) having said a few words,

Dr. BURTON-FANNING (Norwich) deplored the idea which had been given to the public that about three months' stay in a sanatorium was all that was necessary to effect a complete recovery. He pleaded for an early diagnosis and said

that when the disease had got so far as to be discoverable by the stethoscope it had reached comparatively an advanced stage. It ought to have been sent to a sanatorium earlier than that.

Dr. STCLAIR THOMSON (London) emphasised the necessity for proper medical supervision. There were some signs that the keeping of sanatoria might fall into the hands of ignorant persons. Some hopeless cases were kept too long in sanatoria. The essentials of success were not to take a patient at the wrong time and put him in the wrong place until he died, but to take him at the right time and put him in the right place till he recovered.

Consanguineous Marriages as a Factor in the Etiology of Tuberculosis.

Dr. C. A. DAVIES (Ramsey, Isle of Man) read a paper on this subject. Consanguinity in marriage, he said, had led to much illness in the offspring. The Manx people had had little crossing of races since the twelfth century. The north was separated from the south of the island by the mountains. Further, a custom existed which discouraged marriage with a person living even in another parish. Hence they had consanguinity to an extensive degree. As a result Dr. Davies found that the general death-rate from phthisis was 25·70 per 10,000—double that of England and Wales—and his contention was further strengthened by the fact that in the most isolated part, Lonan, where all the inhabitants of the parish had only three or four surnames, the rate was 41·77 per 10,000, while in Peel, where many more strangers came, it was only 15·19. He showed very carefully prepared maps and diagrams to illustrate the paper.

Dr. W. EWART then described

A Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia apparently due to Dental Caries and Stomatitis, treated by Anti-streptococcic Serum and by Saline Infusions.

The case was of the usual type. Hemiplegia was present on admission and a rough murmur, increasing in intensity from day to day, was heard over the aortic area. The mouth was foul, with many decayed stumps and a fœtor like that of dead bone. No other departures from health and no history of any wound were discoverable. Injections of anti-streptococcic serum and larger ones of saline solution were employed. The latter in one or two cases had the addition of three-quarters of a grain of cacodylate of sodium to the pint. The patient died and no other source of infection except the mouth could be discovered. Dental hæmorrhage had been noted by several writers on this disease and Dreschfeld had quoted from Brissot and Guilbert cases where stomatitis was present. This case must either be termed idiopathic or the mouth must be considered the point of entrance for the microbes. He preferred the latter view and urged that such an easily examined cavity as the mouth should not escape examination in future cases.

SURGERY.

THURSDAY, AUGUST 2ND.

The Methods at Present Available for the Treatment of Simple (Subcutaneous) Fractures.

Mr. WILLIAM H. BENNETT (London) introduced a discussion on this subject. He said that when he consented to open the discussion he was under the impression that the subject was of limited scope, but he soon found when he considered the matter that it was very wide. He had felt that what was needed was more than the experience of an individual and he had therefore sent a letter with inquiries to a large number of surgeons attached to hospitals in London and the provinces and to others who were in a position to see many fractures and he had received more than 300 replies. The questions had intentionally been rather vague, as he felt that he could not ask these surgeons to take the trouble to make elaborate statistics. At present it might be said that the treatment of fractures was in a state of transition. For many years fractures had been treated on a stereotyped plan, each institution having its own routine method. It appeared that a more rational treatment was becoming general.

The first inquiry related to the method usually adopted in the treatment of fractures of the bones of the extremities. A very few surgeons expressed the opinion that all these cases should be operated upon immediately; a few others said that under no circumstances should an operation be performed. The large majority considered that no operation should be done except under special circumstances. Up to very recent times passive movement was never used until a very late stage; now there was a distinct tendency to discard splints which do not allow of passive movements. When passive movements were used within the first two days they might be spoken of as "immediate"; when they were not commenced until from two to 14 days had elapsed they might be called "intermediate"; and when they were not employed until more than 14 days had elapsed since the fracture the use of them might be called "remote." There seemed to be little doubt that those surgeons who used movements early got the quickest recoveries. There was a general tendency to the disuse of plaster-of-Paris splints, as these tended to cause slow union and to give rise to prolonged disability. A few surgeons preferred active to passive movements, but they used movements only at a very late stage. Nearly half of all those who replied to Mr. Bennett's circular had had no experience of operative treatment for simple fractures, and generally it might be said that the opinions were adverse to operation except in special forms of fracture, as where the fracture was very oblique and difficult to retain in position or when it was spiral. The general opinion was that wire was the best uniting medium. Screws often seemed to give rise to irritation and had to be removed, and occasionally it happened that even wire appeared to act as a foreign body. In two special cases—viz., fracture of the patella and of the olecranon—inquiries were specially made as to the method employed. The answers indicated that wiring the patella was by no means so routine a method of treatment as might be thought, and also that it was by no means free from danger to life and limb. 75 per cent. of those who answered wired all their cases of fractured patella. Three surgeons who formerly employed wiring had given it up. As to when the wiring was done, it was elicited that some operated at once and some after an interval, usually about seven days. The time of recovery varied greatly; one patient played football six weeks after wiring, and one "danced on the stage" only one month after the operation. It seemed also certain that the sooner passive movement was employed after wiring the sooner was the patient able to walk. The risks of the operation were by no means small, and did not seem to depend on the method employed. Three surgeons out of 111 who gave information on this point had had fatal cases; eight had had to amputate; 16 had had suppuration in the joints with ankylosis; five had had re-fracture occur or cutting through the bone by the wire during attempts at restoring movements, necessitating a second operation; and 10 had recurrent arthritis, necessitating removal of the wire. Mr. Bennett considered that operation could not be looked upon as an ideal method of treatment, and in the future probably a rational method would be adopted with early splinting and early movement for all cases in which there was an interval between the fragments of half or perhaps three-quarters of an inch, while an operation would be performed only in special cases with wide separation. With regard to the olecranon, operation appeared from the replies to be employed only exceptionally, and though opinions seemed to vary as to the details of treatment adopted, yet in most cases bony union was complete.

One question related to the immediate use of massage. It appeared that those who had tried it were much in favour of it, and that most of the opposition was theoretical rather than practical. Some surgeons feared embolism, and one had met with it in one case, but embolism had occurred in cases of fracture where no massage had been employed. It appeared to be likely that early passive movement and massage would become more common in the future.

The next question related to the disabilities in wage-earning power resulting from fractures. Of late years much had been heard of the permanent disability resulting from fractures of the extremities among the wage-earning class. Inquiries had been made with regard to this point of colliery surgeons who were in a peculiarly favourable position to express an opinion on this subject as they had the men under observation for years. These surgeons were quite certain that the real disability was not so great as might have been expected; a fracture did not seem to have any permanent effect on the wage-earning capacity, except sometimes in old men and in compound comminuted fractures. When disability occurred it was due, not to any displacement of the bones, but to a matting together of the soft parts

about the fracture and the want of free mobility. Rotational displacement was the only form which was likely to give rise to real disability. A recent attempt had been made to introduce an "ambulatory" treatment; in some cases it gave very good results, but it was not a treatment to be adopted generally.

Mr. HOWARD MARSH (London) expressed his high opinion of the value of Mr. Bennett's paper, and considered that the Roentgen rays gave us information as to the true time of union of fractures which differed greatly from that contained in the text-books. For instance, he had seen the humerus fully united at the end of three weeks. With regard to fractures of the patella he adopted wiring as a routine practice, and though he had performed this operation between 60 and 70 times he had never seen any harm occur. Inutility after a fracture was much more frequently due to the soft parts than to the bones.

Mr. C. B. KEETLEY (London) thought that there was a tendency in Mr. Bennett's paper to underestimate the prime importance of putting the bones at once into a good position. The value of the returns obtained by Mr. Bennett was much diminished by the difficulty of answering the questions. The fact that it might be necessary to remove a piece of wire was no argument against its use, as removing a wire was a very little matter. One method of operating on fractures had not been mentioned and that was "pinning." He had some years ago devised a method which was of great value in fractures of the shafts of long bones. It consisted in using L-shaped pins driven into the fragments some little distance above and below the fracture, and then the free limbs of the pins were lashed together and a pad of wood wool was placed round the whole. Mr. Keetley mentioned that he had seen fractures unite in 14 days. While the pins were most useful in fractures of the shaft, wiring was specially adapted to fractures in and near joints. With regard to the value of massage, he considered that they ought to distinguish between massage and early exercise. He was inclined to doubt the utility of massage, but thought that they should allow the patients to move the limb at an early period.

Mr. ROBERT JONES (Liverpool) was not in favour of very early movements in fractures of long bones. He was inclined to think that fractures took longer to unite than was usually imagined. He had seen Colles's fracture easily broken down eight weeks after, and he had carefully measured the limbs of patients leaving the hospital after fractures, and he had measured them again after an interval, and often there was distinct shortening, showing that the bone had not really united. With regard to fractures in the neighbourhood of the elbow no operation was required. All that was necessary was to supinate and then flex the elbow and fix the limb against the chest. If this method were adopted, though there might be marked deformity, yet movement would be free, especially in the direction of flexion. For Colles's fracture he allowed no movement except of the fingers for four weeks. He had operated 12 times for fracture of the patella, with one death.

Mr. FREDERIC EVE (London) thought that in fracture of the patella the treatment to be adopted rested with the conscience of the surgeon. If he felt that he could guarantee asepsis, then the open method was ideal, except for cases with very slight separation of the fragments. He always advised male patients to have the operation performed, as a strong limb was thereby gained. He always began passive movements early. He had found screws much more difficult to use than wires, for the screw often pushed away the fragments, and under strain the screw might break the bone. Wires were much more satisfactory. He could see no object in commencing massage very early, for organisation of effused material did not begin before the eighth or tenth day. He was inclined to think that in some cases displacement of the fragment was a real cause of disability. Especially was this the case in separation of an epiphysis, where there was often some fracture of the shaft.

Mr. J. HUTCHINSON, jun. (London), considered that wiring would continue to be the regular method of treating fractures of the patella. He thought it much the best method if the separation were at all wide. By no other plan of treatment could the ragged edges of the torn aponeurosis be removed, or the effused blood be evacuated, or absolutely perfect apposition of the fragments be obtained. Of all the cases he had done only one was unsuccessful. In that case the man died two weeks after the operation, but the wound and the knee were perfectly healthy and the cause of death was valvular disease of the heart. He was inclined to think that massage would not entirely prevent atrophy of the quadriceps. Early massage and early passive movement were of doubtful value in fractures of the long bones. In fractures near the joints in children there was generally much effusion, but it all thoroughly disappeared in time and free movement was obtained. Even in adults much moulding of the fragments occurred in faulty union. In some fractures, such as fracture of the surgical neck of the humerus, early massage was very likely to lead to non-union.

Mr. F. F. BURGHARD (London) was in favour of immediate operation in every case of fractured patella. The case should be treated without a splint from the first, the joint merely being surrounded by a large mass of cotton-wool. In Pott's fracture and in Colles's fracture early massage was extremely useful. Disability after a fracture was chiefly due to the matting of muscles. Wire was decidedly the best medium for bone suturing.

Mr. BENNETT, in reply, denied that he opposed wiring the patella, unless the separation was less than half an inch or at the most three-quarters. He agreed that massage was not applicable to most fractures in children.

The Removal of Large Stones from the Bladder, with Notes of a Case.

Mr. S. H. BURTON (Norwich) read the notes of a case. A man, aged 33 years, had suffered for 13 years from pain on micturition, with occasional hæmaturia. He was admitted to hospital on Feb. 10th, 1900. The urine was alkaline and a large stone was felt. On Feb. 15th suprapubic lithotomy was performed, about five ounces of lotion having first been introduced and an incision three inches long having been made into the bladder. The stone was removed with some little difficulty and the wound was closed except at the lower part, where a drainage tube was left. The stone weighed over 10 ounces. A small fistula was left and in June a pyelitis of the right kidney was found and was incised, but on June 15th the patient died from the renal disease. At the present time for large stones the choice had to be made between suprapubic cystotomy and perineal lithotrity. Suprapubic cystotomy was reintroduced by Petersen of Kiel, and then Sir Henry Thompson recommended it. Mr. Burton looked upon the operation as being very simple, and by it very large stones could be removed; for instance, Sir Thomas Smith removed successfully one 24½ ounces in weight. The issue of this operation, as of most other methods of removing stones, depended chiefly on the condition of the kidneys. Perineal lithotrity might be performed in one of three ways. 1. The Forbes-Keith method. In this an incision was made in the membranous urethra, then a lithotrite was introduced, the stone was crushed, and the fragments were removed by an evacuator. 2. Delbeau's method as modified by Mr. Reginald Harrison. In this a median perineal cystotomy was made, a crushing forceps was introduced, and the fragments were removed. In the third method introduced by Milton (of Cairo) a lateral perineal incision was made, a lithoclast was introduced and the stone was crushed, and then a lithotomy forceps was used to remove the fragments. Mr. Burton thought that a stone of any size could be removed by the suprapubic operation.

53 Operations for Stone in the Bladder of Two Ounces and Upwards.

Mr. P. J. FREYER (London), who read a paper under the above title, started by assuming it as generally acknowledged that for a moderately sized stone Bigelow's operation was the only justifiable method, and in his last 400 cases there had been only 13 cutting operations. What was meant by a "large" stone depended partly on the age of the patient and partly on the experience of the operator. Of the 53 cases there were only two in boys and one in a woman. Four were treated by suprapubic cystotomy, 14 by the perineal operation, one by vaginal lithotomy, and the remainder by litholapaxy. It was necessary for large stones to have powerful lithotrites, and the aspirator must be light, free from valves, short, and with strong rubber. Stricture of the urethra was no bar to operation for a small stone, for which a single introduction of the lithotrite would be sufficient. Enlarged prostate was rarely an obstacle to the operation, but a tortuous urethra might be. Of the last 400 cases there was only one stone which the lithotrite could not crush.

Mr. W. CADGE (Norwich) thought that the very excellence of Mr. Freyer's results made it undesirable for the general

surgeon to follow his practice. For the general surgeon the suprapubic method was certainly easier; and if the stone were in the end of the ureter or if it were encysted no other method would do. He thought that the mortality of the suprapubic method would in time be very much reduced. The results of lithotrity obtained in India were not comparable with those acquired in England because the Indian stones were not so hard as the pure uric acid stones of East Anglia.

Professor NICOLAYSEN (Christiania) mentioned that urinary calculi were very rare in Norway, but he had found the suprapubic operation very easy in the case of a very hard uric acid stone.

Mr. REGINALD HARRISON (London) spoke in favour of his form of perineal lithotomy. He pointed out that the results were very good. His cases with those of Milton, whose method was nearly the same as his own, amounted to nearly 50 and out of these only one patient had died, a very good result considering that the operation was only used for large stones.

Brigade-Surgeon-Lieutenant-Colonel D. F. KEEGAN (London) said that the mortality of the suprapubic method was 50 per cent. in India, while in 1895 20 perineal lithotrities were performed in the North-West Provinces with no death. He did not think that any stone could be too hard to be broken by a suitable lithotrite.

Mr. R. C. CHICKEN (Nottingham) spoke of the facility of removing large stones from the female bladder by dilatation of the urethra, and he showed a large calculus which he had removed in this manner without any subsequent incontinence of urine.

Mr. CHESTER NANCE (Norwich) doubted the correctness of the heavy mortality of the suprapubic operation. He described a case in which he had recently removed a large calculus by that method. In the six years during which he had been house surgeon there had been eight cases in which this operation was performed and none of the patients had died.

Mr. BURTON, in reply, said that he could not understand the very great mortality from the suprapubic operation in India.

Mr. FREYER, in reply, claimed that the results of the suprapubic method in this country were equally bad.

OBSTETRICS AND GYNÆCOLOGY.

THURSDAY, AUGUST 2ND.

Mr. ALBAN DORAN (London) introduced a discussion upon

The Natural History of Fibroids and Recent Improvements in their Treatment.

He divided his subject into two divisions:—1. The natural history of fibroids. He pointed out that much was known about uterine fibroids, the disease being so common; but more knowledge was desirable. Their pathology as tumours had been worked out fairly well, but so far very little had been accurately determined as to the physiological and pathological relation of the ovaries to fibroids. These tumours were sometimes associated with menorrhagia or metrorrhagia and sometimes with normal menstruation. The precise significance of menorrhagia was not always certain in individual cases. The rate of growth varied considerably; moreover, a slow-growing fibroid might take on sudden growth, and a rapidly-growing fibroid might as suddenly cease to grow altogether; but prognosis as to growth was very uncertain in any given case. On this point more knowledge was urgently needed, for treatment depended on the question of future growth or quiescence of the tumour. It was known that fibroids tended to grow smaller about the menopause; but this rule must be accepted with certain qualifications and had many exceptions. 2. Improvements in the treatment of fibroids. The speaker eliminated from the question under discussion the subject of fibroids of the broad ligament. These tumours always demanded removal and the operation for that purpose differed surgically from hysterectomy for fibroids in several important respects. Hence statistics of hysterectomy for fibroid, which included cases of fibroid of the broad ligament, were unreliable. He held that most uterine fibroids did not require removal; discussion as to improvement in their therapeutical treatment was therefore desirable. In respect to any alleged "improvement" based on statistics with low mortality it must not be forgotten that many small fibroids that did not require removal might be taken away with relative impunity. In that case, whatever the operation might be, it was not surgery. Granting that many fibroids, under well-known conditions, undoubtedly required removal, he proceeded to discuss the methods for removing them. (*a*) The serre-nœud or elastic ligature was rejected by most authorities; some still advocated it in cases of hysterectomy for fibroid obstructing labour, as its application saved much time. (*b*) Enucleation of the fibroid and sparing of the uterus were advocated in America. (*c*) Panhysterectomy and vaginal extirpation were favoured in continental Europe. (*d*) Retro-peritoneal hysterectomy was the most popular method in the United Kingdom at present. (*e*) Removal of the ovaries for fibroids had been found to be of very doubtful value, as the hæmorrhage continued in many cases and the reduction in size of the myoma was not constant. Improvements in technical details and the question of leaving the ovaries were subjects for discussion.

Dr. BERRY HART (Edinburgh) commended the spirit of healthy scepticism which prevailed in the paper. With regard to the clamp operation he considered it as a serious and raw procedure which had played a great part in biasing surgeons and patients against the operation. The good results to be expected from the onset of the menopause had been greatly exaggerated; he had seen many bad consequences of leaving fibroids alone, such as hæmorrhage, jamming down of the tumour into the pelvis, pressure on the ureters, &c. He regarded the two chief improvements in operation as being: (1) better hæmostasis, especially by the American method; and (2) the Trendelenburg position. He believed that any ligature applied to the stump of the cervix was bad, as tending to produce sloughing. The attitude towards the subject of fibroids adopted in this country was, he thought, too conservative.

Dr. W. J. SMYLY (Dublin) said that there was no question before practitioners more difficult to answer than whether fibroids should be operated on or not. In the Address on Medicine on the previous day they had been told that the physician could tell what was going to happen and it came about; but the matter was quite otherwise with the gynæcologist. There were patients whom he advised in former years to have no operation, and in many of these cases he had since regretted his advice; in a few cases he had not regretted it. In the majority of cases his view was that myomata required operation. Many patients, if left alone, died directly from the results of fibroid tumours, others from the indirect results. The latter cases were often not recognised. With regard to method, he thought he might claim Mr. Doran as a convert to pan-hysterectomy, for he had said in his paper that the more of the cervix that was removed the better; and the most of the cervix that could be removed was the whole cervix. He did not think that any of Mr. Doran's objections to pan-hysterectomy were valid. He had lately adopted M. Doyen's methods, both vaginal and abdominal, in the treatment of fibroids, with very good results. He had done 25 cases of the vaginal operation, with one death; and six cases of Doyen's abdominal operation, also with one death. For rapidity and safety and for the avoidance of many ligatures he thought that Doyen's methods were the best.

Mr. HARRISON CRIPPS (London) had little doubt that if a woman could be told that the risk of operation was less than the risk of leaving a fibroid alone she would in most cases choose operation. But when a tumour was small and perhaps accidentally found they should not, of course, advise operation. The difficulty of decision lay in cases of an intermediate class, where a fibroid did not threaten life but caused much inconvenience; if the results of operation were only good enough, operation would no doubt be more often practised in this class of case. To guide them in their decision they required to know (1) the risk to life of fibroids if left alone; and (2) the risk of operation. It was very difficult to answer the first question. Dr. Champneys had given some statistics on this point in which he made the statement that the mortality apart from operation was three in over 2,000,000. An error must have crept in somewhere in these statistics, and as these statistics were likely to be quoted hereafter he thought that the discrepancy required explanation. All of them who had seen anything of fibroid disease of course knew that the fatality from fibroids was vastly greater than three in 2,000,000. His experience of fibroids was that the fatality was even much greater than the 2 per cent. shown by the St. Bartholomew's post-mortem cases. The chief causes of death were cystic degeneration, sloughing, pregnancy, and intestinal obstruction; out of

80 cases of fibroid he had met with 10 cases of one or other of these complications. He believed that the most important recent improvements in methods were: (1) a better knowledge of antiseptics; (2) intra-peritoneal treatment of the stump; and (3) the Trendelenburg position.

Dr. A. V. MACAN (Dublin) pointed out that statistics took no account of the thousands of women with one or more fibroids who lived and died without anyone knowing anything about them. The exact method of operation seemed to him of less importance than the maintenance of perfect asepsis.

Mr. J. H. CAMERON (Toronto) said that however frequent uterine myomata might be, and however few the women who would die from them, regarded in the aggregate, the important point for the clinician was what was going to happen in the individual patient who was consulting him. He agreed with Dr. Smyly as to the difficulty of forecasting the course of these cases. The method of operation did not seem to him at all a matter of indifference; the simplest plan was the best, and he thought that no method was better than Kelly's. The danger of many ligatures could be obviated by the plan in vogue in some places in Canada of employing powerful clamps applied for three or four minutes. The hæmostasis by this means was perfect.

Mr. ROGER WILLIAMS (Bristol) believed that surgeons had been led into a false position by comparing myomatous with ovarian tumours. There was no analogy between them, but rather a complete antithesis. With myomata not more than 1 in 2000 unoperated cases ended fatally and not more than 1 in 500 suffered serious indisposition. He calculated that there would be found to be about 1,000,000 myomatous women in their present population; about 500 women died annually from myomata which would place the mortality of myoma as 1 in 2000. Now if all the million women were operated on, the mortality of operation being 10 per cent., about 100,000 cases would be sacrificed annually.

Dr. JOHN CAMPBELL (Belfast) said that the proportion of women with harmless fibroids was of no interest to him; he had to deal with patients who consulted him because the tumours were troubling them. He emphasised the fact that the tumour should not be allowed to remain until dangerous changes had taken place in it or until the woman's state of health was such as to make the operation a matter of life and death. Good surgery consisted in the removal of tumours at a favourable time. But however often they might have to operate there were many cases in which medical treatment was for some reason essential, especially for hæmorrhage, and he strongly advocated the administration of chloride of calcium and hydrastis in combination. The former drug acted not by depositing calcium salts in the tumour or elsewhere but by favouring coagulation and checking hæmorrhage.

After some remarks by Dr. MACNAUGHTON-JONES (London) and Mr. STANMORE BISHOP (Manchester) Mrs. STANLEY BOYD, M.D. (London), referred to the presence of a concomitant salpingitis as a cause of hæmorrhage and suggested that valuable data might be obtained if statistical evidence were collected of cases operated on showing the symptoms, and especially hæmorrhage, for which the operation was undertaken and the exact pathological conditions found at operation, the position of the tumour in relation to the uterine cavity, and the state of the uterine mucosa, tubes, and ovaries. Operations were too often exploratory; the exact condition of the parts should be ascertained beforehand. With regard to the removal of one or both appendages Mrs. Stanley Boyd recommended that one ovary at least should always be left if possible, for even an atrophied ovary was probably better than none at all.

Mrs. M. A. D. SCHARLIEB, M.D. (London), classed the indications for operating as follows:—present conditions: hæmorrhage, pain, pressure symptoms, invalidism; future conditions: degenerations, especially malignant and gangrenous. Pan-hysterectomy should, she thought, be used where fibroids involved the whole uterus including the cervix; but myomectomy should always be done when it was possible to save the uterus.

Dr. ARTHUR GILES (London), referring to the mortality of fibroids when left to themselves, said that astonishing fallacies were met with in statements on this subject. Mr. Cripps had shown the errors into which so careful an observer as Dr. Champneys had been led. The mortality of unoperated fibroids at the present time could not be ascertained, because nearly all the gravest cases came under the care of the surgeon, and a large number of what would otherwise have been fatal cases were consequently removed from that category. Mr. Roger Williams stated that the mortality of unoperated fibroids was 1 in 2000 (a mortality which Dr. Giles contended was entirely below the mark), and he went on to say that if all cases of fibroids were operated upon the mortality, reckoned at 10 per cent., would amount to 100,000. This was absurd, because, as all authorities agreed, the mortality of operations undertaken for small fibroids was practically *nil;* as Mr. Doran had said, small fibroids might be taken away with relative impunity. Broadly, the question of the indications for operation could be expressed fairly simply. If a fibroid caused no symptoms no operation was needed. If symptoms occurred they must be treated, and whereas in cases where life was threatened all would agree to operation, in cases where life was not threatened the matter should be fairly placed before the patient and the choice left to her.

Dr. HENRY BRIGGS (Liverpool) laid stress on the import ance, in suturing the cervix after hysterectomy, of avoiding passing sutures through the substance of the stump and the peritoneum. The latter should be sutured separately.

After some observations by Mr. SKENE KEITH (London) the PRESIDENT said that they were all agreed that in cases with grave symptoms operation must be done, and that not only when life but also when health, which was often as precious as life, was threatened. The difficulty was with borderland cases. He thought that the death-rate of unoperated fibroids should not be very difficult to obtain because it was only within recent years that these cases were operated upon, but he did not think that the mortality was as low as Dr. Champneys had stated. It seemed to him that a wise and moderate conservatism had been shown by the various speakers on the subject.

Mr. ALBAN DORAN then briefly replied.

Mrs. SCHARLIEB read a paper on Vaginal Hysterectomy, its Immediate and Remote Results, and Dr. HENRY BRIGGS read a paper, illustrated by numerous drawings, on Vaginal Enucleation *versus* Vaginal Hysterectomy in the Treatment of some Fibroids of the Uterus, with notes of cases.

STATE MEDICINE.

THURSDAY, AUGUST 2ND.

The Action which can be Taken by Local Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk- and Meat-supplies.

The discussion on this subject was opened by Dr. HENRY KENWOOD, assistant professor of public health, University College, London. In opening the discussion he proposed first to review briefly the various general measures and then to pass to a consideration of the notification of phthisis.

Improved sanitation.—In the first place they all recognised that none of their efforts must be relaxed in the direction of removing those conditions of site, dwelling, occupation, and of food which promoted the prevalence of the disease, seeing that the work of sanitary authorities in that direction had reduced such prevalence some 40 per cent. among males and some 54 per cent. among females, from 1861–70 to 1891–98; and in dealing with the phthisis still in their midst they must more especially direct their energies towards enforcing the provisions of sanitary law (1) for the prevention of overcrowding; (2) for securing healthy homes for the lower classes; and (3) for an improved general scavenging. Mr. Shirley Murphy had taken the death-rate from phthisis in each of the five groups of London sanitary areas at several age-periods and he found that, speaking generally, the more over-crowded groups had higher death-rates at *each age-period* than the less over-crowded, and this was especially marked at those age-periods which were most susceptible to phthisis. It was seen, then, what a close relationship existed between the prevalence of phthisis and the housing of the poorer classes.

Educational measures.—So far as this essential matter of the education of the public was concerned, happily the public press in this country might be counted upon to coöperate in any public-spirited action. It had already afforded material and invaluable help and by reporting the transactions of the National Association for the Prevention of Consumption it had done much more to educate the general public on the communicability of phthisis. The annual meetings of the British Medical Association, the Sanitary Institute, the Royal Institute of Public Health, and the National Health Society directly (and indirectly through the press) did so much to educate the public on

matters of public health that it was a lost opportunity if the subject of tuberculosis in some one or other of its relations did not come up for treatment. But there was another most powerful educational factor on which they ought to be able to count. The Church, as she existed in England, with her parochial system extending to the remotest parts, was the most powerful organisation for doing good which the nation possessed. A great means of educating *the future generation* was provided through the schools. Instruction in the elements of hygiene, of healthy infant-rearing, and of infection and its prevention, should be made compulsory. In every standard it could be taught, either under composition, reading, writing (copybook headings), or as a special subject; and the education should be made to appeal directly to the scholars by means of object lessons of defective hygiene, &c. Judiciously worded handbills might be placed in the hands of nurses, district visitors, the clergy, and the heads of schools for distribution; and they might be distributed by the local authority to all parts of the district where the information was more particularly required. On these handbills of general information an offer should always be made to disinfect, free of charge, infected premises. In Manchester such handbills had been left three times at every house in the city since the year 1894. Permission might be sought for placards (brief and practical) to be hung up in workrooms, public-houses, railway-carriages and other public conveyances, theatres, and music-halls, in which the dangerous and disgusting habit of spitting everywhere and anywhere was condemned, and in which the precautions were indicated which should be taken with the expectoration coughed up by those who had coughs of long standing.

Other measures.—Arrangements might be made with the registrar of deaths to advise the medical officer of health of all deaths from phthisis as soon as possible after registration, when the house should be visited, an offer made to disinfect, and a handbill of advice left. In Stoke Newington and Finchley they had during the past two years secured satisfactory disinfection in slightly over 70 per cent. of the applications made after learning of a death from phthisis. Circular letters should always be sent asking the coöperation of medical men and nurses in advising and directing the necessary preventive measures in infected households. It was generally recognised that a great duty devolved upon the medical attendant who advised a phthisical patient, and his educational power was enormous. The employment of consumptives in the cooking or selling of food should be prohibited as far as possible, and in any case where consumptives *must* work along with healthy people the superintendent of the works should make the observance of the rules with reference to expectoration an absolute condition on all workers. In this connexion the importance of a careful selection of occupation for those who inherited a predisposition to phthisis could not be exaggerated, and since otherwise work had often to be persisted in by a phthisical patient to the detriment of his own recovery and the safety of his fellow-workers, the German measure of compulsory insurance had much to recommend it. In Germany at present all persons, male and female, engaged for wages or salary in trade or business (about 8,000,000) were compulsorily insured against sickness and death, the employer paying one-third and the employé the remaining two-thirds of the premium. This law did not include domestic servants or agricultural labours. Finally, many sanitary authorities were providing, free of charge, the means of a bacteriological examination of sputum on the condition that certain particulars of the disease, when diagnosed as phthisis, should be communicated confidentially to the medical officer of health, who did not arrange for a visit to the house if the medical attendant objected.

Isolation hospitals and sanatoria.—The provision of some measure of hospital isolation was an essential part of an effective scheme. Whatever the extent of the provision made the great majority of the sufferers from phthisis would remain outside with their families and at their work, and Dr. Kenwood agreed that it would be impossible and unnecessarily cruel to take them from their homes for purposes of compulsory isolation, save in exceptional cases; but the fact must be recognised that if a phthisical individual, by reason of his surroundings or mental habit, was, despite all their efforts in other directions, a continuous source of danger to others, he should be compelled to submit to isolation, and without this provision all their efforts to reduce the prevalence of the disease must be seriously handicapped. What, then, was more particularly wanted was an isolation home or hospital for each district, or combination of districts, where the medical officer of health and medical attendant were both able to certify that the isolation of the patient was the only measure by which others could be protected, power should be given and the means provided to secure such isolation. So far as sanatoria or curative hospitals were concerned almost without exception those located in England were designed for the benefit of the well-to-do classes and no sanatorium was yet available for poor patients. It was impossible to believe that this state of things could be allowed to continue. By making such hospital provision the authority presented a most valuable object lesson to the whole community and the more of the poorer classes who could be induced to pass through the doors of a sanatorium either for a short residence or for gratuitous advice and treatment as out-patients the more completely would the poorer section of the community be educated to the routine observance of the necessary precautions.

The notification of phthisis.—It was necessary to know where the infected homes were, and this information could be obtained by notification and by notification alone. Handbills and lectures, &c., had little educational effect compared with that which brought about the visit of the medical officer of health or his assistant who would direct and impress upon the household the necessary precautions which must be observed. This was effective education, and without notification it was impossible thus to educate and protect a large number of persons who must otherwise inevitably fall victims to the disease; that was the price which the community was paying for the failure to adopt notification. It was in the interest of the individual, the community, and the State that all communicable disease should be reduced to the lowest attainable limit, and this was impossible, so far as phthisis was concerned, without the preliminary information obtained by notification alone, and that conviction was generally shared by those who had honestly tried and experienced the limitations of all other measures. It was suggested, therefore, that a system of voluntary notification should be everywhere instituted without further delay; but not before notification was made compulsory would they obtain a sufficiently complete knowledge of cases to enable them to cope with the disease with the greatest effect. There could be no two opinions that the action which would follow upon the compulsory notification could not involve all the obligations and penalties enacted by public health legislation against the spread of the infection of those diseases already scheduled in the Infectious Diseases (Notification) Act, for (1) the average duration of infection that ultimately proved fatal was about three years; and (2) the illness fell mainly on the working periods of life (25 to 55 years of age); sufferers were, moreover, generally capable of continuing their work for many months and often for years. In fact, the action taken under compulsory notification need be little if any more than that embraced in the voluntary notification as practised at Manchester.

The Manchester scheme.—Handbills of information and advice were freely distributed as opportunity presented itself; and, as already pointed out, a handbill had been left at every house in the city on three different occasions since 1894. Placards dealing with expectoration were affixed as generally as possible in workrooms, public-houses, public conveyances, &c. All premises in which a death from phthisis had occurred as reported by the registrar were visited; advice was tendered and an offer was made to disinfect. Pending the approval of the Local Government Board to phthisis being included among the diseases compulsorily notifiable under the local Act, a voluntary system of notification was in force, medical practitioners receiving the following fees: For each report of a case not previously reported, when reported by a private medical attendant, 2*s.* 6*d.*; for each report of a case previously reported from another source, 1*s.*; for each report of a change of address of a phthisical patient, the new address being reported, 1*s.*; for each fresh case reported from a public institution, 1*s.*; and for each change of address reported from a public institution, the new address being reported, 1*s.* On receipt of the notification a visit was paid to the premises by a medical officer specially appointed and exclusively engaged in this work. In all cases reported by a private practitioner he called at the house and made a record of the circumstances requiring to be noted on the very complete inquiry form of the medical officer of health, and gave

general instructions as to the sanitation of the house, but no directions as regards the personal habits of the patient unless authorised to do so by the medical attendant. He left, however, in every case, a general paper of instructions as regards preventive measures. No visit was paid to the house in those cases in which the medical attendant expressed a decided objection, provided he was willing himself to fill in the office form, to give all necessary instructions, and to take charge of disinfection, to be carried out in the manner usually employed by the health department. The offer to disinfect and cleanse dirty premises was found to be invariably accepted. A lady health visitor or a sanitary inspector paid a fortnightly visit to each infected house with the object of seeing that the necessary measures of precaution were being carried out, and then the circumstances were reported to the medical officer of health.

The cost of notification.—The cost of the measure in the large majority of the sanitary areas of Great Britain would not exceed a few pounds; the expenditure of about £300 per annum would suffice for the needs of a community of some 100,000. Now let them follow the economist, and disregarding the mere sacredness of human life, regard it from the standpoint of its value to the State, and they would find that the above expenditure of £300, on Farr's calculation of the economical value of a human life, would be justified if it led to the saving of two lives (at £150 each) per annum.

Dr. A. HILL (Birmingham) cordially approved of the Manchester method. In Birmingham women inspectors were sent out to inquire as to the existence of cases of phthisis, handbills were distributed, and after removal or death disinfection was practised. Beyond that no powers existed. Dr. Kenwood had traversed the subject very completely.

Dr. T. F. S. CAVERHILL (Edinburgh) said that in Edinburgh they proposed to set aside 100 beds from the old Fever Hospital. As to education of the public, it was absurd to talk of such a proceeding while in all their hospitals advanced cases of phthisis were placed alongside other complaints. Under such circumstances it was useless their telling the public that phthisis was a communicable disease. There were in Scotland two sanatoria for the treatment of the poor. In one of them, at the Bridge of Weir, there were 70 beds for women, and more were to follow for men. He thought it a drawback that notification handed over the case to the sanitary inspector, which opened up an undesirable situation. He advocated the exclusion of workmen affected with phthisis from workshops: such workmen should insure their lives.

Mr. E. B. FULLER (Cape Town) said that every week in Cape Town fresh supplies of tubercle were poured in on them in the shape of advanced cases seeking health. There was no registration. In his opinion a period of voluntary notification should always precede a compulsory system. Formerly a large number of cases were taken into the wards of the Somerset Hospital. A bungalow for phthisical patients was now erected in the hospital grounds for the reception of such cases. It was the poor who spread the disease in South Africa, especially among the coloured classes; and they were infected by Europeans coming out to the Cape.

Dr. H. JONES (Rhondda) urged the desirability of early intimation of deaths from phthisis. They, as medical officers, were entitled to such information at a small cost. They were also entitled to receive from Poor-law officers a list of all persons suffering from the disease. When a medical officer of health he supplemented that information by lists obtained from the secretaries of the friendly societies. In that way he had information of about 80 per cent. of all sickness in his district. Disinfection was still very imperfect in many districts and, without that, notification was useless.

Mr. J. OLDFIELD (London) objected to any attempt to make phthisis compulsorily notifiable as regards private patients residing in their own private houses, but there were two classes where notification should be made. In the first place boarding- and lodging-houses in favourite districts like Bournemouth were often serious foci of disease. The bedding, curtains, carpets, &c., were changed but seldom and were not disinfected, and these rooms became hotbeds of infection for other invalid boarders who went there. Steps should be taken by which all such public houses should be required to notify the presence of a phthisical visitor there. In the second place all out-patients who presented themselves at a public institution for medical treatment should be subject to notification by the medical officer who diagnosed the case.

Dr. F. J. ALLAN (London) said that in his own district there existed the largest metropolitan death-rate from phthisis. He considered notification of phthisis comparatively useless when a patient was allowed to go about anywhere and everywhere distributing the seeds of infection. He found a large number of instances of personal infection. In a series of 24 families numerous members were infected from pre-existing cases. He was not a little surprised to hear from the last speaker the antiquated theory that a man's private house should shield him from sanitary control.

Sir HUGH BEEVOR (London) then read a paper on Rural Phthisis and the Insignificance of Case-to-Case Infection.

Dr. H. PECK (Chesterfield) cordially agreed with the suggestion as to the compulsory notification of phthisis, but feared that there was little prospect of getting it. As far back as 1895 the West Lancashire Rural District Council desired to add this disease to the compulsorily notifiable list but failed to obtain the sanction of the Local Government Board. Good might be done in other ways than those indicated by Dr. Kenwood; thus the Chesterfield Infants Life Society had a lady inspector who visited all houses at which a birth had taken place and gave instructions as to nursing, sterilisation of milk, and so forth, and also as to sanitary matters including that under discussion. The corporation contributed £40 a year to the funds of the society. A large reduction of the infant mortality rate had already taken place in the two years that had elapsed since the adoption of that practice, but it was too early to speak with certainty as to the effect it had on the infantile tuberculous death-rate.

Dr. J. W. COOK (Colchester) considered that the present mode of scavenging was a source of danger in the spread of phthisis. The disinfection of houses he would press to the utmost.

Dr. KENWOOD, in reply, said that with regard to the rôle of the sanitary inspector in the notification of phthisis he had simply to fill in an official report for his medical officer and to give general directions to the persons whom he visited. As to the cost of notification, his estimate was drawn up from information of many who had actual experience of the subject. Mr. Oldfield's attitude seemed to be founded on a fallacy. He wished to protect the individual against interference which the latter did not resent. The Local Government Board would act only under great pressure, but he had no doubt they would live to see a modified notification adopted in the case of phthisis.

A vote of thanks to Dr. Kenwood and Sir Hugh Beevor was proposed by Dr. THRESH and carried unanimously.

Diet in Relation to Cancer.

Mr. J. OLDFIELD read a paper on this subject. He discussed various theories of origin and the unequal incidence of the disease. While he admitted that flesh-eating was not a cause of cancer in savage tribes he thought it was otherwise among modern civilised communities. He advocated treatment by a kind of modified starvation.

Dr. G. M. SCOTT (Witham) then read a paper on Cancer Mortality in East Anglia.

PSYCHOLOGY.

THURSDAY, AUGUST 2ND.

Insanity in Lead Workers.

Dr. ROBERT JONES (Claybury Asylum) read a paper on this subject. He pointed out that among the 1050 male patients in residence at the London County Asylum at Claybury, Essex, no less than 35 owed their mental illness to lead poisoning. The occupations most prone to suffer from lead poisoning were those of painters and house decorators, glaziers, plumbers, gilders, and workers in electro-plating, smelters of lead ores, and workers in the manufacture and glazing of pottery and china. The greatest dangers of lead poisoning, however, prevailed among those engaged in white and orange lead factories. Fine particles of "dust" passed from the furnaces into the atmosphere, the "dust" containing the carbonates and oxides of lead. The inhalation of this speedily led to acute symptoms of lead poisoning and the furnaces had to be "hooded" to prevent as far as possible this metallic contamination of the atmosphere. The fumes or vapours from the furnaces where lead ores were smelted were similarly highly poisonous, foreign ores rich in carbonates being more deadly than British ores. Lead encephalopathy had since the classical work of Tanquevel

(1840) been generally recognised. In spite of many legislative enactments in Factory Acts of recent years a considerable number of cases of lead poisoning occurred yearly and many of them were attributable to the carelessness of lead workers in the factories who did not strictly conform to the rules regarding the wearing of overalls during work, the washing of hands after work, the wearing of respirators while in the factory, &c. The symptoms of lead encephalopathy in 19 patients at Claybury Asylum were varied, and amongst them were the following: partial or total blindness often of sudden or rapid onset, attacks of partial paralysis, convulsions and fits of an epileptic or hysterical nature, maniacal excitement, melancholic depression, attacks of delirium and mental confusion, and apathy and dementia. Some of the cases exhibited symptoms very like those of general paralysis of the insane. Headache and loss of memory were also not uncommon symptoms, as well as hallucinations of sight and hearing and delusions of persecution. Epileptic fits were found to occur in seven out of 19 cases and were toxic in origin like those of uræmia and eclampsia. The treatment was expectant, dietetic, and aperient. Diet should be generous and should contain abundance of proteids—milk, eggs, tropon, or other albuminous preparations, while massage, open-air exercise in suitable cases, electric baths and galvanism, and the administration of aperients (haustus sennae compositus) were also necessary. The majority of the cases benefited under the above treatment.

Dr. LLOYD ANDRIEZEN (London) referred to the selective action of lead on the spinal cord of rabbits in producing paraplegia. In the human subject there was in some cases of lead poisoning a predisposition to encephalopathy and in others to peripheral neuritis. He did not believe that lead in the former case acted on the brain indirectly by bringing about uricacidæmia and referred to several cases where lead poisoning had been followed by acute cerebral symptoms of rapid development—e.g., delirium, mental confusion, sudden focal paralysis, and even hysteriform and hallucinatory disturbances. He also referred to some unusual cases of lead paralysis, an account of which had recently appeared in THE LANCET.[1]

Dr. E. S. PASMORE (Banstead Asylum) questioned whether in cases of lead encephalopathy simulating general paralysis the action of pre-existent syphilis could be excluded. He thought that melancholia and mania following lead poisoning were but clinical stages in one and the same condition.

Dr. HARRY CORNER (London) stated that many patients suffering from acute lead encephalopathy got well under treatment in hospital after a week or ten days and did not require to be sent to an asylum. Such cases occurring in young males might simulate delirium tremens or mania transitoria, or among young females they might be mistaken for hysteria and treated accordingly with fatal results. Many of the patients had a few epileptiform fits, such cases ending fatally.

Dr. PERCY SMITH (London) referred to the toxic action of lead as compared with syphilis and alcohol. He thought it very important that in attributing some cases of general paralysis to lead encephalopathy any history of previous syphilitic infection should be first excluded.

The Pathological Histology of Acute Delirious Mania.

Dr. JOHN TURNER (Essex County Asylum) read a paper, with lantern demonstration, on Acute Delirious Mania. The bodily symptoms were those of the typhoid state. The symptoms were extreme restlessness and weakness, feeble circulation, a dry brown tongue, sordes on the lips and teeth, a slight rise of temperature (two or three degrees Fahrenheit), and occasionally a subnormal temperature. There were three divisions of cases of the disease—viz., those of alcoholic, septic, or unknown origin, the last class being probably autotoxic. Hence this last class had been included along with general paralysis and confusional insanity in a toxic group (MacPherson). The pathological changes in the brain were shown strikingly in the giant pyramidal cells of the ascending frontal convolution when stained by Nissl's method. Nissl gave seven forms of alteration of human nerve-cells of which one was acute cell disease (acute Veränderung). The changes were said by Nissl to be characteristic and diagnostic and to affect all the cortical nerve-cells. The achromatic substance became stainable. August Hoch[2] described a similar affection of the nerve-cells and from the description given it appeared to be similar to, if not identical with, the changes found in the anterior cornual cells of animals after artificial pyrexia. In Dr. Turner's own cases the changes were localised to certain cortical cells and had not the universality of distribution throughout all layers that Nissl described. In patients dying from typhoid fever examined by him similar cortical changes were found. In all 11 cases of acute delirium were studied post mortem with the Nissl method. Every one of the cases showed in greater or less degree the following cellular changes—viz., enormous accumulation of yellow pigment in the great pyramidal nerve-cell body, a large number of free nuclei from five to six micro-millimetres in diameter within the pericellular and perivascular spaces in all the depths of the cortex, dense staining of the cell bodies of the giant pyramidal cells, and a frequent shrinkage of the nucleus. As a rule, the more profoundly the cell was altered the larger was the deposit of pigment. The dendrites as a rule retained their chromatic spindles or threads. A common visceral condition in these cases was a fatty degeneration of the liver-cells at the margin of the hepatic lobules. In one case the spinal cord was examined, but no evidence was present of degeneration of nerve-fibres in the white matter. It was concluded that all forms of acute delirious mania were of toxic origin—i.e., exotoxic (e.g., alcoholic), septic, or autotoxic. The fatty degeneration of the liver was found in the last class of cases. In those cases of acute delirious mania with high delirium and a rapidly fatal termination all the cortical giant cells were profoundly affected and it was claimed that from an inspection of a properly prepared section of the cortex a tolerably accurate diagnosis could be formed of the mental condition preceding death.

Dr. C. C. EASTERBROOK (Edinburgh) thought it probable from Dr. Turner's specimens that the pigmentary masses shown in the nerve-cells were derived from the chromophilic elements of the nerve-cell body.

Dr. LLOYD ANDRIEZEN described two cases of acute delirium in which he had studied the brain post mortem with various stains (toluidine blue, aniline, and others). He found in both an excessive reddish-brown pigmentary degeneration in nearly all the cortical pyramidal and polymorphic cells and most marked in the great pyramidal cells. Pericellular hyperplasia of connective tissue cells (plasma cells) was a common feature in both cases, and in many small arterioles there were evidences of thrombosis, apparently of several hours' duration ante mortem. There were indications of an intense and persistent toxæmia; the capillaries in both instances showed a hyaloid degeneration with excessive blue staining of the endothelium. Diffuse and universal muscular twitchings (of the arms, the legs, and the face) were present for two or three days before death in one case (that of a female), and in this the cortical changes were more marked than in the other case and could be correlated to the physical symptoms. Treatment by venesection and saline injection should be considered necessary as a last resource in acute toxic cases threatening to end fatally.

Dr. PERCY SMITH was glad to corroborate the statement that cases could be clinically distinguished according to their etiology. In one case examined post mortem there was a marked dryness of the whole organs of the body and a very small quantity of blood was present in the vessels.

The Colony Treatment of Epileptics.

Dr. W. ALDREN TURNER (London) read a paper on this subject and referred to the colony at Chalfont St. Peter as an example. Open-air treatment and occupation and manual and industrial training were necessary and possible in most instances. Only sane epileptics were admitted and the institution was in a measure self-supporting. In the treatment of fits bromides were used in combination with other known and approved drugs. Moral treatment was of great importance and classes for the education of epileptic children were held with good results.

A general discussion on the classification and treatment (dietetic and medicinal) of epileptics in farm colonies followed, in which remarks were made by Dr. ROBERT JONES, Dr. HARRY CORNER, Dr. PASMORE, Dr. LLOYD ANDRIEZEN, and Mr. ANDERSON.

The Relation of the Lunacy Laws to Neuro-Psychological Diseases.

Dr. JOHN MAC CORMACK (Belfast) in a paper on this subject pointed out the risk and inconvenience to which a medical man signing a lunacy certificate might be subjected by a recovered patient bringing an action at law, though he (the practitioner) had acted in all good faith and with reasonable

[1] THE LANCET, Feb. 24th, 1900, p. 554.
[2] American Journal of Insanity, April, 1898.

care. A modification of the existing law would be desirable and even necessary. It was also urged that in all their great cities there should be established special hospitals for the treatment of mental diseases in their earliest stages and to facilitate such treatment suitable legislation should be brought about.

Brief remarks were then made by Dr. LLOYD ANDRIEZEN, Dr. DOUGLAS, Dr. SEYMOUR TUKE, and Dr. PERCY SMITH with regard to the shortcomings in the provisions of the Lunacy Act of 1890 which were certainly open to improvement.

PHYSIOLOGY.

THURSDAY, AUGUST 2ND.

Muscular Tonus in Relation to Diseases of the Nervous System.

Dr. F. W. MOTT (London) opened a discussion on this subject. He particularly regretted the absence of Professor C. S. Sherrington and Professor Victor Horsley who were announced to take part in the debate. He spoke of muscle tone as being in part muscular, in part nervous in origin, and had found, partly in conjunction with Professor Sherrington, that afferent as well as efferent nerve impulses were involved in its maintenance. He pointed out the difference between the described effects of experimental transverse division of the cord, and those due to pathological transverse lesions, and dilated on the several clinical conditions which appeared to influence muscle tone. He alluded to the work of Dr. L. J. J. Maskens, whom he was glad to see present and whose views he hoped to hear.

The President of the section, Professor W. D. HALLIBURTON (London), commented on the discordance between physiological and clinical accounts of the effect of total transverse lesions of the cord in animals and men. Perhaps this discordance was due to the effect of crushes being greater than that of clean cuts, perhaps also to the fact that man was more susceptible to shock than were the lower mammals.

Dr. L. J. J. MASKENS (Utrecht) referred to those parts of Dr. Mott's speech which bore more particularly on his own work. He instanced so-called tendon phenomena as being largely conditioned by muscular tonus. Muscular tonus, however, was not the only factor concerned, since variations in the nutrition, irritability, passive tension, and nervous relationships of the muscles produced marked alterations in their response. Muscular tonus was essentially reflex in its origin, whilst the tendon phenomenon was rather due to mechanical excitation of the muscles concerned in its production. He agreed with Westphal, Gowers, and Waller on this point and quoted an analysis of 200 cases as bearing out his view. In 66·3 per cent. of these either tendon phenomena or true reflexes were affected. In only 13·6 per cent. were both phenomena affected in the same direction, whilst in the large balance (52·7 per cent. of the total) one phenomenon was affected without any, if not with converse, variation of the other. He quoted Horsley's statement that nitrous oxide abolished the true reflexes but not the tendon phenomena. Dr. Maskens demonstrated an instrument (tonometer) designed by himself for measuring muscle tone. He had made many observations with it on the same individual under varying conditions of health and surroundings, and on different individuals under constant conditions, and regarded its indications as of value in the study of nervous disease.

Dr. W. B. WARRINGTON (Liverpool) alluded to the fact that the masticatory muscles became atonic when the sensory division of the fifth cranial nerve was cut. He suggested that the paralysis of the eye sometimes found in tabes dorsalis might be of afferent origin.

Dr. WILFRED HARRIS (London) alluded to the "tendon-reflex" in hysterical hemiplegia and paraplegia and in neurasthenia. In the former, which appeared to be due to auto-inhibition of the higher centres, the reflexes were not increased, in contra-distinction to their condition in the latter. He likened the condition of the higher centres in the former, to that of the spinal centres after a total transverse lesion.

Dr. MOTT, in reply, expressed his appreciation of Dr. Maskens's tonometer. He regarded the anterior horn-cells of the spinal cord as being in part "auto-tonic" and as in part owing their "tone" to impulses from the brain and periphery respectively. He made a few remarks on decerebrate rigidity.

Dr. W. B. WARRINGTON then read a paper on

The Condition of Nerve Cells in the Spinal Cord after Various Nervous Lesions.

It had already been shown by the speaker, in cats and in monkeys, that removal of the afferent impulses which normally reached the cells of the anterior cornua *viâ* the posterior roots caused chromatolysis in those cells. The body of a neuron was thus nutritionally dependent, not merely on its own integrity, but also on that of other neurons physiologically correlated therewith. Further experiments had been performed on puppies with the following results: (1) that extra-dural division of the posterior roots caused, in cells of the postero-lateral group in the lumbar enlargement and in the cells of Clarke's column, the same characteristic change; (2) that total trans-section of the cord was accompanied by chromatolysis followed by atrophy of the cells of Clarke's column, without change in those of the anterior horn; and (3) that division of an anterior root caused chromatolysis in most of the cells at the outer part of the anterior horn, but not in those more internally situated. The pictures of cells shown by the method of Nissl were constant under uniform circumstances, but varied with the species of the animal, its age, and the nature of the lesion. It was doubtful whether the method could be relied on to delineate nerve nuclei.

Professor E. W. CARLIER (Birmingham) asked the origin of Nissl's granula and inquired whether interruption of afferent impulses produced the same chromatolysis in a cell as did division of its own axon.

Dr. L. J. J. MASKENS asked whether regeneration followed division of the posterior roots on the central side of the ganglion. He had himself failed to find regeneration under such circumstances.

Remarks were also made by the PRESIDENT, Dr. D. F. HARRIS (St. Andrews) and Dr. F. W. MOTT.

Dr. WARRINGTON replied that he had not studied the origin and nature of the granula. He confirmed Dr. Mott's experience that cutting a posterior root did not produce chromatolysis in the cells of the posterior ganglion.

Dr. T. H. MILROY (Edinburgh) read a paper on

The Metabolism of Nucleins in Birds.

The chief end products of the disintegration of nucleins in mammals were the alloxuric bodies. In mammals assimilation of nuclein increased the amount of alloxuric bodies and phosphates both in the body and in the excreta, and disintegration of nuclein was quoted as the main source of uric acid in these animals. In birds, on the other hand, this source of uric acid had by many writers been given a secondary place, chiefly through Minkowski's experiments on the removal of the liver in geese. The birds survived the operation for so short a time only that the results of the experiments were ambiguous, and Minkowski's supposition as to the synthesis performed by the liver, although plausible, was not demonstrably complete. Dr. Milroy had introduced nucleins, nucleic acid, and alloxuric bases, both in food and subcutaneously, into sundry birds, and had found that there followed an even more pronounced increase in output of uric acid and phosphates than he had observed in mammals. He concluded from this that disintegration of nuclein was not a less important factor in uric acid production in aves than in mammalia.

The PRESIDENT commented on the result of Eck's fistula in mammals, urging that the rôle of the liver in the final stages of nitrogenous metabolism was possibly over-rated.

Dr. W. H. THOMPSON (Belfast) inquired whether Dr. Milroy had examined the output of phosphorus by the bowel.

Dr. W. E. DIXON (Cambridge) commented on the occurrence of Charcot-Leyden crystals in some cases of leucocythæmia and suggested that the said crystals might represent some of the excreted phosphate.

Dr. MILROY replied that he had invariably determined the amount of phosphate excreted by the bowel.

Dr. R. J. ANDERSON, Professor of Natural History in Queen's College, Galway, read some notes on

Respiration.

The interchange of gases between the alveolar air and the atmosphere was effected in part by bellows movements of the lungs and in part by diffusion. The former factor, since the infundibular opening was small, must produce alternate rarefaction and condensation of the alveolar air. Under ordinary circumstances these variations in intra-alveolar pressure did no harm, but when the outlet was obstructed they produced permanent change in the structure of the lung. Professor Anderson had studied the passage of gases

under varying pressures through small apertures and believed that such experiments helped one to realise what occurred in the lung. He explained the factors which governed the rate of passage under such circumstances, and thought that the passage of air into and out of the infundibula was probably slower than was generally believed.

The PRESIDENT, on behalf of Dr. M. S. PEMBREY (London), Dr. W. H. PASSMORE, and Dr. E. T. CLAYTON, read a paper on

Observations on the Temperature of Man after so-called "Heat-stroke."

Many observations had been made on the temperature of men suffering from "heat-stroke," but all had hitherto been restricted to the mouth, the rectum, and the closed axilla. The writers had supplemented these by study of the temperature of the skin, (*a*) in the normal subject, and (*b*) in cases of heat-stroke. They found in the former that the deep temperature might be experimentally raised (in some instances as much as 2° F.) by exercise without there being any corresponding increase in the temperature of the skin. In the latter, on the other hand, a rise of from 3·5° to 5·5° F. in the surface temperature had been observed. The writers hesitated to generalise until further observations were made but pointed out the frequent association of heart trouble with cases of "heat-stroke." The expenses of the observations were defrayed out of a grant from the Science Grants Committee of the British Medical Association.

PATHOLOGY.

THURSDAY, AUGUST 2ND.

Discussion on the Pathology of Cirrhosis of the Liver in Adults and Young Children.

Dr. ARTHUR VOELCKER (London), in his introduction, said that the subject chosen for discussion in that section of the British Medical Association was by no means a new one. It would be remembered that in 1895 a similar subject occupied the attention of the Medical Section of their Association meeting in London, and in 1890 Dr. Saundby read a paper before their Association on the Varieties of Hepatic Cirrhosis. At the Royal College of Physicians of London this year Dr. Cheadle took "Some Cirrhoses of the Liver" as the subject of his Lumleian Lectures. These facts showed that the subject was one of widespread interest and that it was one on which there still existed a diversity of opinion. In the short time at his disposal he should endeavour to bring before them some of the more important points concerned in the pathology of this condition and to invite their contributions to the study of this still obscure process. The term "cirrhosis" as applied to the liver was first employed by Laennec, although the condition had been described by Morgagni and was figured in Mathew Baillie's "Morbid Anatomy." The term originally had reference to the colour of the organ but it had now come to be applied to an increase in the amount of connective tissue in the organ. An increase in the amount of connective tissue in the liver was met with as the result of chronic venous hyperæmia of the organ, but this form of cirrhosis he excluded from the present discussion as it differed in no way from the fibrosis met with in other organs from the same cause. The term "cirrhotic liver" was originally applied by Laennec to the small liver having a granular surface and presenting a yellow colour. This liver, he pointed out, was associated with the presence of ascites and the condition was known as atrophic cirrhosis. Todd pointed out that there was a form of chronic inflammation of the liver which gave rise to a permanent increase in size and consistence of that organ and which was called "hypertrophic cirrhosis." These observations of Todd were confirmed by Cornil, Charcot, Hanot, and others. In 1876 Charcot and Gombault showed that by ligature of the bile-ducts in animals it was possible to produce a hypertrophic cirrhosis which they ascribed to the retention of bile, and spoke of as a biliary cirrhosis. In 1892 Hanot described a particular form of hypertrophic cirrhosis as "hypertrophic cirrhosis with jaundice," a form for which the name of "Hanot's disease" had unfortunately been suggested. Charcot and Gombault showed that in the atrophic form of cirrhosis the newly formed connective tissue was multilobular and annular in distribution, while in the hypertrophic form it was insular and monolobular in distribution. In 1874 Cornil had called attention to the presence of newly formed bile-ducts in cirrhotic livers and had pointed out that these were especially abundant in the hypertrophic form, and Charcot had considered this new formation of bile-ducts in the interlobar tissue as one of the most important features in this form of cirrhosis. Previously to Cornil's observations on the presence of these newly-formed ducts Waldeyer, Liebermeister, Klebs, and others had noted their presence in cases of acute yellow atrophy of the liver, and Wegner had observed them in the atrophic cirrhosis which he produced in animals by the administration of arsenic and phosphorus. In 1880 Ackermann advanced the view that the difference between atrophic and hypertrophic cirrhosis was not a question of a multilobular or of an insular sclerosis, but rather one of the origin of the newly-formed connective tissue. He urged that in the atrophic form the atrophy of the liver cells was the primary condition and that subsequently there was a proliferation of connective tissue starting in newly-formed blood-vessels in connexion with the hepatic artery, while in the hypertrophic form the connective tissue originated from the pre-existing connective tissue around the central and portal veins. As a consequence of this different origin of the connective tissue he explained the tendency of the former variety of connective tissue to retract and so give rise to the atrophic cirrhosis, while the latter gave rise to the hypertrophic form, having no such tendency to retract. In both varieties newly-formed bile-ducts were present. It would be noted that Ackermann's attention was directed not only to the connective tissue but also to the liver cells. He and Kundrat and others had already shown that in the cirrhotic liver the areas inclosed by connective tissue did not correspond to the lobules of the liver. They showed that in cirrhosis the lobules of the liver must be partly destroyed, because in a section there were seen fewer central veins than in a normal liver, and that if the lobules were merely compressed they should find more instead of fewer acini in a given area. Kretz, examining serial sections of cirrhotic livers, had noted that in some cases there was only one liver granule possessing a central vein where normally there should have been eight or nine. Besides this alteration in size it was to be noted that the sub-lobular vein was no longer central in position and that the hepatic cells had lost their radial arrangement. These appearances of the liver cells bearing a very close resemblance to those observed by Ponfic in his experiments on the regeneration of liver tissue after the removal of portions of the organ gave rise to the view that in cirrhosis they had to do with a destruction and regeneration of liver tissue going on side by side. With this destruction of liver tissue they found alterations in the hepatic capillaries, and according to Kretz it was these changes in the hepatic capillaries that gave rise to the portal congestion and ascites. The classification of cases of cirrhosis into multilobular, monolobular, and pericellular had been shown to be hardly exact, and Ackermann, Stadelmann, and Orth were of the opinion that there was no essential distinction between the atrophic and hypertrophic forms, or between the perilobular, pericellular, and multilobular varieties of hepatic cirrhosis. From this view, however, Rosenstein dissented. Most observers agreed that the pericellular distribution of the connective tissue led to the hypertrophic form of cirrhosis, yet Ackermann and Stadelmann denied that this distribution was peculiar to hypertrophic cirrhosis. An examination of a number of sections of cirrhotic livers left Dr. Voelcker with the impression that there was a very distinct difference between the peripheral and the intercellular forms of cirrhosis, and while it was true that in the peripheral forms of sclerosis (the multilobular and monolobular forms) there was met with a slight degree of intercellular sclerosis, and in the intercellular form a slight degree of peripheral sclerosis, yet there was never any difficulty in determining to which category to refer the chief change, though he did not think that a microscopical section would enable one to form an accurate idea of the naked-eye appearances of the organ. In this respect the liver closely resembled the kidney. An attempt to classify the various forms of cirrhosis of the liver presented as many difficulties as in the case of the kidney, but he thought that they would do best if they adopted a classification which related to the physical condition of the organ rather than to any etiological consideration or to any symptomatology; thus a classification into alcoholic and non-alcoholic cirrhoses must be unsatisfactory when they did not know what particular change alcohol would produce in a given liver. Again, a classification based on the presence or absence of jaundice

was no more rational than would be a classification of interstitial nephritis based on the presence or absence of uræmia. To the morbid anatomist the chief considerations were—what was the size, what was the character of the surface of the organ, and what were the changes in the interstitial tissue and the parenchyma of the organ? Cirrhotic livers might be large, normal, or small in size and weight; they might be smooth or granular on the surface; the fibrous tissue might be mainly in the periphery of the granules or might be chiefly intercellular, and lastly, the liver cells might be atrophied, fattily degenerated, or show regenerative processes. The processes might be acute or chronic. An example of acute cirrhosis was seen in the condition known as acute yellow atrophy in which Dr. Findlay of Glasgow had shown that in addition to a proliferation of the liver cells at the margin of the hepatic lobule there was also a condition of acute cirrhosis. This had been described by Obrzut in 1886 and claimed by him to be similar to the atrophic cirrhosis of Laennec and the hypertrophic cirrhosis of Hanot, Sabourin, and Charcot. The chronic forms they could divide into those in which the chief change occurred in the parenchyma, the fibro-fatty form, and those in which the interstitial connective tissue was more particularly affected. Of these cases there were those in which the distribution of the connective tissue and its tendency to retract gave the organ an irregular surface tending to produce the hobnailed liver, and those in which the intercellular distribution of the connective tissue caused a more uniform enlargement of the organ. Microscopical examination of a number of specimens of cirrhotic livers inclined him to the belief that the hobnailed livers, both large and small, were those in which the newly-formed connective tissue would be found to have chiefly a portal distribution, while the extremely hard, enlarged, smooth livers were those in which they found a pericellular sclerosis. The nature of the granules seen on the surface of the hobnailed liver had given rise to some discussion. At first it was thought that they were lobules of the liver which had undergone fatty change and had been compressed by the retraction of the connective tissue, but it was now recognised that the liver cells were often quite free from any fatty change and frequently showed signs of active cell division; the yellow colour was mostly the result of bile staining. It was interesting in this connexion to note that the granules seen on the surface of some cirrhotic kidneys showed similar regenerative processes. With regard to the origin of the connective tissue they had seen that Ackermann held that in the atrophic form of cirrhosis the connective tissue was derived from the newly-formed branches of the hepatic artery while in the hypertrophic form they had to deal with a hyperplasia of the normal connective tissue existing in the interlobular and intralobular hepatic areas. According to Hanot in the atrophic form the connective tissue originated from a portal cirrhosis, while in the hypertrophic form it arose around the biliary canaliculi—that was to say, that they had evidence of an angiocholitis and peri-angiocholitis. Hamilton described the formation of connective tissue from the liver cells themselves. According to de Jong the newly-formed intralobular connective tissue had its origin from the endothelium of the intralobular capillaries, while the increased perilobular connective tissue chiefly arose from the pre-existing perilobular connective tissue and the changes were perivascular. In a very able article in the *Recueil de Travaux du Laboratoire* Boerhaave de Jong figured the development of the new connective tissue from the endothelial cells of the intralobular capillaries. Liebermeister distinguished three different forms of cirrhosis: (1) a portal form in which the connective tissue originated from the portal vein; (2) a biliary cirrhosis in which it originated from the connective tissue around the bile-ducts; and (3) a mixed form in which it was derived from both sources. There was another point on which there was still a difference of opinion and that was, Was the primary change in the liver cell and was the cirrhosis secondary to this, or was the fibrosis primary and were the changes in the liver cells secondary? Ackermann held that in atrophic cirrhosis the primary change was in the liver cell and that the cirrhosis was secondary to this, but they must remember that they frequently found degenerative changes in the liver cells without any cirrhosis. Kretz pointed out that in hepatic cirrhosis after the degeneration of liver cells the residual tissue of the recognisable acini presented all stages from the framework of the vessels of the lobule up to a poorly vascularised sclerosed connective tissue containing bile-ducts. He regarded cirrhosis as a local, widespread, recurrent, chronic degenerative process, associated with regeneration of the parenchyma. Opposed to this view they had the one that the changes in the liver cells were secondary to the pressure of the connective tissue. Although it was true that they did find degeneration of the liver cells with cirrhosis, yet there was no relation between the amount of cirrhosis and the degree of degeneration. Sieveking had shown that the presence of connective tissue around liver cells was not necessarily associated with any degeneration of the cells. It seemed to Dr. Voelcker to be most reasonable to see in cirrhosis of the liver the effects of one or more poisons on the liver cells and also on the connective tissue, and the occurrence of degenerative or regenerative processes would depend on the nature of poison and on the power possessed by the liver cell to resist it. Another element present in the cirrhotic liver which might occupy their attention was the formation of new bile-ducts, the pseudo-biliary canaliculi. Charcot and Gombault considered that these newly-formed ducts were the essential change in the hypertropic form of cirrhosis, but they knew now that not only were they present in other forms of cirrhosis but that they were seen in aseptic inflammatory foci in the liver, in acute yellow atrophy, and in poisoning by phosphorus. They were met with in cases in which there was jaundice as well as in those in which jaundice was absent. It was at first thought that they were not new bile-ducts, but merely the pre-existing ones rendered visible by the atrophy of the surrounding liver cells, but this view was now abandoned. The origin of these ducts had been ascribed by some to a transformation of the intralobular bile canaliculi and by others to a direct retrogressive metamorphosis of the columns of liver cells. Ackermann thought that the epithelium of the interlobular bile-ducts proliferated and spread down into the interior of the dilated bile capillaries, thus giving rise to new canaliculi while the liver cells disappeared. De Jong, on the other hand, had traced the actual continuity of columns of liver cells and the new bile-ducts and he figured sections of imperfectly formed tubules partly lined with liver cells and partly with bile-duct epithelium. It was certainly interesting in this relation to reflect on the high degree of metaplasia with which pathologists had endowed the liver cell, for they had already been asked to accept the fibrous tissue in cirrhosis as derived from the liver cell. Dr. Voelcker confessed to a certain amount of scepticism as to the nature of these so-called ducts. They always suggested to him lymphatics or blood-vessels. He could not find any record of their having been injected from the bile-ducts. It certainly was true that in many cirrhotic livers one could see columns of liver cells especially at the margins of a granule becoming elongated and thinned out and flattened, but it was very difficult to understand how such damaged cells should give rise to bile-ducts lined with cells the staining powers of which certainly suggested very great vital activity. The etiology of hepatic cirrhosis still remained obscure although their views had considerably enlarged since the days when alcohol was regarded as the cause of cirrhosis. In the *Quarterly Medical Journal* for July, 1899, Rolleston gave an admirable summary of the origin of, and ways in which, various poisons reached the liver and set up cirrhosis. With the object of seeing if alcohol would account for the cases of hobnailed liver Dr. Voelcker had examined the notes of all the cases of hobnailed livers which he had met with in the post-mortem room at the Middlesex Hospital during the time he was pathologist and found in the 36 cases referred to below 15 in which an abuse of alcohol was acknowledged, nine in which an abuse of alcohol was denied, and 12 in which the history was not mentioned. He found that out of 2020 necropsies of which he had records there were 149 cases of cirrhosis of the liver (that was excluding those cases where the condition was evidently due to chronic venous hyperæmia). This showed a percentage of 7·3 cirrhotic livers in cases of all ages. Of these the liver was hobnailed in 36 cases—that was to say, that nearly 25 per cent. of the cirrhotic livers were hobnailed. The percentage of hobnailed livers to all the cases was 1·8 per cent. In 10 cases the liver was enlarged and smooth and in only one of these cases was there any jaundice present and it was only slight. Of these 10 enlarged livers only nine were weighed and the average weight of the nine was 104 ounces. Of the hobnailed livers he had records of the weights of only 22. The average weight was 64·4 ounces, the lightest being 44 ounces, and in only eight was the weight below 60 ounces. Jaundice was present in only 11·4 per cent. of all cases of cirrhosis, but was present in over 30 per cent. of the

hobnailed cases. The average weight of the livers in the cases in which jaundice was present was 60·2 ounces. In the hobnailed livers no relation could be traced between the size of the organ and the occurrence of jaundice. Among the 149 cases of cirrhosis there were only five occurring in children, and of these three were undoubtedly the subjects of congenital syphilis. With the object of comparing the incidence of cirrhosis of the liver in children Dr. Voelcker had examined the records of the Hospital for Sick Children and found details of 4278 necropsies on children under 12 years of age. Amongst these he could only find 23 cases of cirrhosis—that was only in 0·54 per cent. Jaundice was present in eight cases out of the 23. Hobnailing was present in 13 cases—a much larger proportion than in the adult cases. It was commonly asserted that the hobnailed liver was the result of spirit-drinking and that malt liquors caused fatty degeneration of the liver cells. He had tried from the clinical notes of the cases of hobnailed livers to see if he could confirm this and he found that he could not. It was very difficult to obtain reliable statements as to the amounts and form in which alcohol was taken and specialism in alcohol-drinking was not usually a characteristic of hospital patients. In a few cases in which beer was exclusively taken the average weight of the liver was 63·8 ounces, while when spirits alone were owned to the average weight was 66·3 ounces. These observations were made on far too few cases, but they confirmed the view expressed by Foxwell that the large livers were rather more common in spirit-drinkers than in beer-drinkers. They also showed that the "gin-drinker's liver" could be produced by beer. Alcohol undoubtedly played an important part in the production of cirrhosis of the liver, but the way in which it acted was as yet uncertain. Alcohol administered experimentally to animals produced fatty degeneration of the liver cells, and though some observers had produced cirrhosis he could find no record of the production of a hobnailed liver. Apart from alcohol they now knew of a number of substances which were credited with the production of cirrhosis and it was to be hoped that further research in this field might enable them to prevent the formation of those poisons which they must assume gave rise to the liver changes. Professor Flexner had already shown that cirrhosis could be produced by chronic poisoning with certain vegetable alkaloids. The action of these poisons had led them to look outside the liver and the intestinal canal for the source of the substances causing cirrhosis and particular attention had been drawn to the spleen. Enlargement of the spleen was very common in hepatic cirrhosis but did not bear any direct relation to the size of the liver or to the degree of ascites. Chauffard suggested that some forms of hepatic cirrhosis were splenic in origin and due to poisons formed in the spleen and in the rare disease known as the *maladie de Banti* it was stated that removal of the spleen caused an arrest of the disease. The enlargement of the spleen in hepatic cirrhosis was explained by Charrin as being due to the spleen taking on some of the antitoxic functions of the liver which were interfered with by the destruction of the liver cells. Changes had also been observed in the pancreas bearing a close resemblance to those found in the liver. In the kidneys chronic interstitial nephritis was not uncommon and Dr. Voelcker found that in nearly 10 per cent. of his cases of cirrhosis of the liver the cause of death was due to the renal and not to the hepatic condition. Of course, it must be remembered that here age played an important part, but he found that in exactly one-third of the cases of cirrhosis of the liver death took place at or before 40 years of age. This hurried review of some of the debateable points concerning the pathology of cirrhosis would, Dr. Voelcker hoped, serve as an indication of the lines along which discussion might advance their knowledge. The points which seemed to him to call more especially for discussion were:—1. Could they distinguish between the various forms of cirrhosis microscopically and macroscopically? 2. What was the source of the newly-formed connective tissue? 3. What was the nature of the so-called newly-formed bile-ducts? 4. Under what conditions could cirrhosis of the liver be experimentally produced? 5. Did cirrhosis in children differ essentially from cirrhosis in adults?

Professor SIMON FLEXNER (Philadelphia) said that Dr. Voelcker had so ably summed up their present knowledge of cirrhosis and so definitely emphasised the problems which most pressed for solution that in speaking on any topic of the discussion one could hardly avoid repetition. He himself proposed to consider three points: first, the experimental evidence that lesions of the liver cells preceded changes in the connective tissue; secondly, the nature of the new tissue formed in cirrhosis and its distribution; and thirdly, the common cause of death in the disease. Professor Flexner's experiments included the inoculation of guinea-pigs and rabbits with bacterial poisons, with poisons from higher plants, and with certain animal substances. The chief results had been obtained with ricin and abrin, and with blood-serum from the dog injected into rabbits. In these experiments the primary effects of the poison were exerted on the liver cells. Necroses, involving few or many cells and hyaline in appearance, were common. In animals which died from acute poisoning these necroses were the principal and, excepting a moderate leucocytic infiltration, the only important lesions. When the animals survived for some weeks proliferative changes in the connective tissue with the production of so-called newly-formed bile-ducts were produced. When the new growth of tissue came from the surface capsule indentation of the organ was produced, suggesting the surface granulation in atrophic hepatic cirrhosis. Whilst these results were suggestive of the part played by a primary degeneration and necrosis of the parenchyma they failed to clear up entirely the question, in that they did not exactly reproduce the morbid appearances seen in hepatic cirrhosis in man. They had been in the habit of looking upon the new connective tissue found in cirrhosis of the liver as being of the nature of white fibrous tissue. But as a matter of fact it was more complex in structure. The liver contained, normally at least, three kinds of connective tissue: (1) white fibrous tissue, in the interlobular spaces and on the surface capsule chiefly; (2) reticulated connective tissue within the hepatic lobules; and (3) elastic tissue, chiefly about the blood-vessels, and to a less extent on the walls of the bile-ducts, in Glisson's capsule, and on the surface capsule. Very rarely a trace of elastic tissue might be seen in the walls of the central veins. A study of tissues from cirrhosis after ordinary staining, then after digestion with pancreatin, and finally after staining by Weigert's method, showed that not one only but all the connective tissues enumerated were increased or altered. The most surprising result was the great amount of elastic tissue found in the perilobular new growth of connective tissue, which elastic tissue was now found also within the lobules. There were differences in the amount and method of distribution of this tissue, as well as in the alteration on the intralobular reticulum, in the "atrophic" and "hypertrophic" forms of cirrhosis which time would not allow to be discussed now. The specimens shown would enable some of the differences to be appreciated. Finally, Professor Flexner referred to the statement made by Professor Osler to the effect that "it is paradoxical but true that few of our patients die of the diseases from which they suffer." Professor Osler was more especially speaking of the causes of death in chronic diseases, recognising that in the last event it was not the sudden failure of hepatic, or renal, or of cardiac capacity that ushered in the end. In most cases, so far as they could now understand, the end was actually due to a bacterial infection. Professor Flexner's own study of several hundred cases of chronic disease which had been investigated bacteriologically had convinced him of the importance of such terminal infections. The chief micro-organisms concerned were the pyogenic cocci. They might, moreover, occur as causes of local infections—especially in inflammations of serous membranes—or they might exist in the form of a general invasion—a bacteræmia. The portal of entry might, or might not, be discoverable clinically or at the necropsy. It might be through an angina, an old ulcer (as on the leg), or as the result of a trifling surgical operation, as in paracentesis. Or it might baffle every attempt at its discovery, and then they spoke of the infection as having been cryptogenic. And it was in this way that the end often came in cases of cirrhosis.

Mr. A. G. R. FOULERTON (London) presented a contribution to the discussion from Professor LUDVIG HEKTOEN (Chicago) on Experimental Bacillary Cirrhosis. Without entering into the broad questions of the etiology and genesis of cirrhosis of the human liver Professor Hektoen wished to refer briefly to some recent demonstrations made in his laboratory of cirrhotic processes in the liver of lower animals directly induced by two different bacilli. The observations had seemed to him to be of some interest in their suggestiveness of a somewhat similar course of events in some instances of human cirrhosis.

Similar more or less acute infections in man might produce a diffuse growth of new connective tissue in the liver. Then whilst the bacteria might be destroyed and the immediate effects of their presence pass away the newly-formed tissue would remain, and as it contracted a vicious cycle would be established—the pressure of the resultant fibrous tissue causing necrobiosis of the hepatic cells and this in its turn leading to renewed, more or less slow, but progressive, connective tissue proliferation. With time, aided perchance by other superinduced factors, extensive contraction of the liver would result. One of the series of observations now referred to was conducted by Dr. G. H. Weaver, and the main results had already been published under the title of "Cirrhosis of the Liver in the Guinea-pig Produced by a Bacillus and its Products."[1] The bacillus belonged to the colon group and was isolated from a guinea-pig which had died a natural death. The bacillus lost its virulence rapidly and before sufficient experiments had been made to establish clearly the relation between the necrotic and proliferative changes on the liver. With early death only necrotic and degenerative changes were found in the liver; in animals which lived longer proliferation of connective tissue was associated with necrosis; and in others again a cirrhosis had entirely replaced the degenerative changes. These interesting changes were found only in guinea-pigs, showing well the influence of species; they were caused by the inoculation of devitalised as well as of living cultures. The second series of experiments concerned a bacillus which might be placed in the pseudo-diphtheria group. It was isolated from the lesions of a case of blastomycetic dermatitis of the hand. Inoculations in various ways with this bacillus had been found to induce with a fair degree of consistency more or less necrosis and diffuse cirrhosis of the liver in guinea-pigs. Unfortunately, this bacillus also lost its virulence before many of the experiments planned could be completed. It would have been of the greatest interest to follow up the subsequent course of the cirrhosis set up in some of the animals. After a full description of the cultural characteristics of the bacillus Professor Hektoen mentioned his experiments on animals. In guinea-pigs the subcutaneous injection of about one cubic centimetre of a bouillon culture produced in from two to four days a marked hard infiltration beneath the skin, followed by the development of more or less extensive punched-out ulcers, which usually healed up after a time. The animals became thin and died in from three to five weeks. The essential change found post mortem was necrosis with cirrhosis of the liver. The bacillus could usually be recovered from the internal organs and from the cutaneous ulceration. Occasionally the local reaction failed to take place and the animals at times recovered. In a few instances local infiltration and ulceration took place, but no other changes were found. The general results with intraperitoneal injection were similar but not so constant. Intravenous or subcutaneous injection of one cubic centimetre of bouillon culture into rabbits did not make the animals sick or produce any change in the liver. Inoculation into the anterior chamber of the eye of a full-grown, medium sized rabbit resulted in great emaciation and death after 24 days with cirrhotic and other changes in the liver. The subcutaneous injection of two cubic centimetres of bouillon culture in a dog gave rise to a huge swelling which gradually subsided. The animal was killed with chloroform six weeks after the injection. The liver was of about normal size, finely uneven, with occasional single greyish dots or groups of dots. There was a slight sensation of grating on cutting the organ. Microscopical sections showed numerous small intralobular islands of recently developed connective tissue cells as well as of small cells with deeply stained irregular nuclei. There were also branching bands of recent connective tissue along the vessels. Inoculation of a grey mouse with 0·3 cubic centimetre and of a white mouse with two cubic centimetres of a bouillon culture made the animals sick for a time. But both recovered, and when killed on the twenty-first day their livers were found to be normal. Photographs of microscopical sections were shown which demonstrated the cirrhotic change produced in the liver of the guinea-pig by both the bacilli to which Professor Hektoen had referred.

Dr. LAZARUS-BARLOW (London) said that the two chief points upon which he would like to lay stress referred to the pathology of atrophic cirrhosis in adults and in children. In the case of the atrophic cirrhosis of adult life he thought that the old idea that the condition depended chiefly upon an undue indulgence in alcohol and especially on the abuse of ardent spirits was correct, and he did not propose to enter into the question of etiology at all. But when they came to the question whether the condition was "inflammatory," as was at one time the universal idea and as was still held by some noteworthy authorities, he thought that they were on very doubtful ground. It was certainly curious that they should never have been able, supposing that the change were inflammatory, to point out a specimen as showing an early stage of the fibrosis comparable with the early stages of true inflammatory fibrosis which was so common a condition, and one which carried such a definite microscopical picture with it. That they under certain conditions met with an atrophic fibrosis which was accompanied with the presence of a small cell infiltration amongst the adventitious fibrous tissue was indubitable. Such cases were, however, in his experience extremely rare; and even then the fibrous tissue that was present was of a well-formed type, and was totally unlike the material composing a young cicatrix, for example. In these rare cases his own opinion was that they had to do with the superposition of a genuine attack of inflammation on a tissue which was already the seat of a chronic fibrosis, but he did not think that they aided them in any other than a negative manner to arrive at a conclusion upon the pathology of the underlying fibrosis itself. If they considered the fibroses as a distinct class of pathological change in which extreme chronicity was one of the predominating features they could include under one heading (*a*) senile fibroses of all kinds, (*b*) cirrhosis of the liver, (*c*) chronic granular kidney, and (*d*) the scleroses of the nervous system. Now in the case of the scleroses of the nervous system there had never been any tendency to consider the fibrotic change as inflammatory, but, on the contrary, it had always been recognised that the adventitious fibrous tissue replaced nervous tissue which had degenerated—that was to say, the essential elements of the part degenerated first and the overgrowth of neuroglia took place subsequently to fill up what they might speak of as a potential lacuna caused by the death and degeneration of the nervous elements. It was unnecessary for him to pursue this matter further; he merely wished to draw the inference that in the case of hepatic cirrhosis they had first a destruction of the hepatic cells themselves, be it as the result of the action on them of alcohol or of some of the bacterial poisons, and that subsequently there occurred an overgrowth of the normal fibrous tissue of the liver to fill up a potential lacuna. Naturally in any microscopical picture they would find these features side by side, but since the destruction of hepatic cells must be a more or less gradual process, otherwise the onset of the disease could not be so insidious as it undoubtedly was, there was every reason to expect that signs of a rapidly forming and young fibrous tissue would be wanting, and this was just what they found to be actually the case. It might of course be urged against this view that the dead and degenerating hepatic cells, being foreign bodies, acted as irritants, and that in consequence the fibrous tissue was of the same nature as the fibrous tissue of a cicatrix. To these objections he would suggest that upon this view their conception of inflammation would have to be widened until it embraced the whole of pathology with the exception of the new growths. While he would express his belief that the pathology of the fibroses was as he had indicated, he thought that this was especially likely to be the case with the atrophic fibroses of the liver. With reference to the so-called unilobular or biliary cirrhosis the matter was very difficult. He had never been able to satisfy himself of the separate existence of this variety as a distinct histological type. That large and fairly smooth livers of considerable weight in which there was a widespread and small-meshed fibrosis were met with, was true, though they were by no means common. But he had never been able to convince himself in the few cases that he had examined either that the condition was unilobular or that it had any special relationship with the bile-passages. Intercellular or pericellular cirrhosis was in a special class by itself, and that variety, too, he would leave on one side. But there was a variety of hepatic fibrosis which was usually very intense and which led to a more marked lobulation of the surface of the liver than any but the most extreme cases of adult atrophic fibrosis exhibited, and to these he would like to refer. These

[1] Transactions of the Chicago Pathological Society, 1900, iii., p. 228.

cases were not very common; they affected children at an older age than was the case with intercellular fibrosis (usually the patients were from 10 to 16 years of age), they were often associated with great ascites and with a well-marked jaundice of a greenish hue, and distension of the abdominal superficial veins was, as a rule, considerable. The cases were sometimes of long duration, at times extending into years, but they progressively became worse and ultimately the patient died in the same manner as the adult who was the subject of ordinary atrophic cirrhosis. That alcohol might play its share in the production of this variety of hepatic fibrosis was quite possible, but the view which he first heard put forward by Rolleston seemed to him to be more in accordance with the facts. Rolleston had suggested that this form of cirrhosis was really a late manifestation of congenital syphilis, not in the sense that it was a distinctly syphilitic lesion, but that the syphilitic poison when it acted upon the liver cells of the fœtus to a degree less than that which was necessary for the production of the typical syphilitic intercellular cirrhosis damaged them, and thus placed the liver in an exceptionally vulnerable position. When, then, some factor arose which would be without effect upon the healthy liver but which completed the injury commenced in intra-uterine life by the syphilitic poison, the way was laid open for the occurrence of that fibrous tissue hyperplasia which ultimately characterised the hepatic condition. The great difficulty in the way of the suggestion that had just been put forward was the fact that a syphilitic history was, in the cases which they were considering, often very poor, or, indeed, was quite wanting. Though they might say that this was just what they should expect it considerably reduced the possibility of proving the point. At times, however, as in a case which he had brought before the Pathological Society of London last year, collateral evidence was fairly strong. In any case an explanation of the pathology of this variety of hepatic fibrosis was difficult, but on the congenital syphilis hypothesis many of the difficulties vanished.

Dr. WAKELIN BARRATT (Wakefield) thought that considerable light was thrown upon the pathology of hepatic cirrhosis by the numerous attempts which had been made of late years to produce this condition experimentally in animals. Most of these experiments—such, for example, as the administration of drugs by the mouth or the alteration of an animal's usual diet—had afforded results which either were inconstant or were incapable of being carried to an extreme degree and were further open to the objection that the whole of the liver was affected and thus the general metabolism of the animal was disordered. The only means of producing hepatic cirrhosis strictly localised in extent and gradually becoming intense in degree was by ligature of one of the bile-ducts and this method alone possessed the character of being simple in so far that a fraction only of the liver was involved and that no general effects were produced, the functions of the liver being carried out without any recognisable impairment by the remaining portion of this organ. Only this mode of production of hepatic cirrhosis would therefore be considered now, since it alone possessed the constancy and certainty of effect on the one hand and the definite limitation of area on the other hand which were necessary to scientific investigation. The earliest observer who ligatured a single bile-duct in the investigation of hepatic cirrhosis was Nasse[2] who in 1894 by this means succeeded in producing increase of interlobular connective tissue. About the same time Josselin de Jong[3] performed similar experiments. When strict antiseptic precautions were used he could find no change in the liver. In 1897 Professor Vaughan Harley and Dr. Barratt had commenced to investigate the effect of ligature of a single bile-duct.[4] They were not aware at this time that other observers had worked in the same direction. Their experiments, which were aseptic throughout, were made upon cats and dogs and showed that cirrhosis always resulted in the corresponding liver area when a single bile-duct was ligatured. The general health of the animals was not impaired, though the cirrhosis, which was always limited in distribution, was slowly progressive in the affected area. Microscopic examination showed that in the area of the liver corresponding to the ligatured duct there was a development of interlobular connective tissue, rich in elongated nuclei, together with marked hyperplasia of the biliary ducts, presenting in this respect an exaggerated picture of what was seen in human hepatic cirrhosis. The larger bile-ducts were dilated and tortuous and the affected hepatic lobules were much diminished in size. Sometimes multi-nucleated cells were seen in small collections in the interstitial tissue. There was no appearance of jaundice or ascites. Their observations, which were continued over lengthened periods of time, furnished a complete demonstration of the fact that simple ligature of a single bile-duct produced cirrhosis in the corresponding liver area. Owing to the simple nature of the operative interference and the good general health which the animals subsequently enjoyed many of the disturbing factors which were present in the human subject were here absent and the problem of the mode of production of the changes in the liver was reduced to its simplest form. It was clear, also, that the processes which were effective in experimental cirrhosis must also under analogous circumstances be in operation in the human subject. After ligature of a bile-duct the functions of the corresponding area of the liver were not abolished. Bile continued to be secreted and was found in the bile-ducts, just as in the human subject bile continued to be formed, giving rise to jaundice, after complete obstruction of the ductus communis choledochus. It would appear that this continued secretion of bile after ligature was a most important factor in the production of cirrhosis. It was well known that fluids injected under increased pressure into the biliary passages found their way into the circulation. This was generally regarded as wholly osmotic in its nature, though it did not appear certain that the absence of rupture of some of the finer biliary passages could be altogether excluded.[5] When bile thus escaped from the blocked biliary passages it entered in the first instance the lymph spaces.[6] It then of necessity acted as a slow irritant, and it would appear that the interlobular fibrosis which took place in the affected area must be attributed essentially to this factor. To the increased pressure of bile in the biliary passages must also be attributed the dilatation of the larger bile-ducts and the hyperplasia of the smaller ones which was so striking a feature in experimental cirrhosis. The atrophy of the liver lobules in the ligatured area appeared to be due to the irritation of escaped bile acting upon the cells at the periphery of the lobule; it was not readily explicable as a pressure effect. The above was a short outline of the leading characters of experimental hepatic cirrhosis, due to the blocking of the biliary channels coming from a limited area of the liver, a cirrhosis which might truly be termed "biliary." Further experimental work was still required to determine the extent to which hepatic cirrhosis in the human subject was to be regarded as of the same nature as the extremely simple experimental form which had here been described. The study of hepatic cirrhosis was in fact reduced to its simplest conditions when a purely localised cirrhosis was produced by a lesion which involved a fraction of the liver only, leaving the rest of the liver, as well as distant organs, unaffected, and producing no recognisable change in the general condition of the animal.

Dr. T. D. LISTER (London) referred to the case of a boy, aged five years, who died after an illness lasting for about 13 days. The main symptoms had been vomiting and straining at stool. The stools consisted mainly of mucus and blood, and were passed frequently. The vomited matters had contained blood during the last four days of the illness. At first an intussusception had been suspected and an exploratory laparotomy was performed a week before death. The post-mortem examination showed a diffuse ulcerative colitis, intense congestion of the gastro-intestinal tract, and blood everywhere on the mucous surface of the stomach and the small and large intestines. The liver was very pale, somewhat fatty, rather firm, but gave no lardaceous reaction; there was no irregularity or thickening of the capsule, and a normal resistance to laceration. There was nowhere any evidence of congenital syphilis and the family history was good in this respect. Microscopical sections of the liver were shown. Dr. Lister considered that the case was a suggestive instance of the association of an acute interstitial hepatitis with an acute diffuse hæmorrhagic ulcerative catarrhal colitis of uncertain origin, which had caused death by hæmorrhage and exhaustion.

[2] Semaine Médicale, 1894, p. 202.
[3] Cirrhosis Hepatis, Inaugural Dissertation, Leyden, 1894.
[4] For a preliminary account vide Brit. Med. Jour., Dec. 10th, 1898.
[5] Cp. Wakelin Barratt: On the Effect on Injecting Dilute Sulphuric Acid into the Common Bile-duct, Journal of Pathology and Bacteriology, 1898, pp. 340–347.
[6] Vaughan Harley: Leber und Galle während dauernden Verschlusses von Gallen und Brustgang, Archiv für Anatomie und Physiologie, 1893, p. 291.

Dr. THEODORE FISHER (Bristol) did not agree with the view which looked upon all examples of increase of fibroid tissue in the internal organs as the result of degenerative changes in the more important elements. In acute and subacute inflammations of the kidney the interstitial tissue was often extensively affected, and although no doubt most forms of fibroid disease of the heart might truthfully be described as the consequence of degeneration there could be no doubt that in acute myocarditis the interstitial tissue sometimes suffered as severely as the muscular fibres. Some of the acute and subacute inflammations of the kidney were due to septic micro-organisms or their products, and he believed that an interstitial hepatitis might arise in the same way. Dr. Fisher had seen cases which seemed to bear out the view suggested by the experiments of Professor Hektoen, that septic infections might set up cirrhosis of the liver. In a woman, aged 22 years, who died from septicæmia two months after an operation for suppurative appendicitis, extensive acute cirrhosis of the liver was present. Not only was there active proliferation of the connective tissue, but as in the cases of inflammation of the liver produced by Professor Hektoen, a guinea-pig's, multinuclear leucocytes were present in considerable numbers in the intralobular capillaries, while other leucocytes outside the capillaries ran up between the columns of liver cells. Another interesting case was that of a woman, aged 26 years, who died after three months' illness from chronic pyæmia. The naked-eye appearances of the liver were unlike those of any other liver which he had seen, and at first sight almost suggested pictures of acute yellow atrophy of the liver. The yellow, fattily-degenerated, liver substance was cut up into areas of all shapes and sizes by fibrous tissue of peculiar translucency and of bright reddish flesh-colour. Two other interesting cases of acute cirrhosis of the liver had been met with. One was in a boy, aged four years, who had died after three weeks' illness from broncho-pneumonia (which in most instances might be looked upon in children as an evidence of septicæmia), and the other in a case of suppurative peritonitis, pleurisy, and pericarditis occurring in a boy, aged 13 years. In these cases the naked-eye evidence of cirrhosis of the liver was much less marked. In one case thread-like lines surrounded the lobules, in the other microscopical sections alone revealed the morbid changes. A case of Banti's disease occurring in a man, aged 19 years, was also referred to. It was thought that if Banti's theory of the pathology of this disease be correct it must be similar in nature to the above cases. The history of the case, taken in connexion with the view that infection took place through the spleen, was interesting. On four occasions during the space of two years the patient had been admitted to the Bristol Royal Infirmary with a raised temperature, complaining of pain over an enlarged spleen. On the fourth occasion he died. At the necropsy, in addition to the enlarged spleen, which weighed 29½ ounces, multilobular cirrhosis of the liver was present.

Dr. JAMES L. MAXWELL, jun. (London), pointed out the close resemblance in the appearance of sections of cirrhosis of the liver after ligature of one of the bile-ducts and of the changes found in sections of the liver in congenital atresia of the hepatic duct. In two cases of the latter condition which he had examined the same position of the fibrous tissue was seen and the same freedom of the unaffected hepatic cells from any intercellular cirrhosis was noted. There was a further resemblance in the multiplication of bile-channels, many of which contained inspissated bile. Dr. Maxwell also questioned the value of Dr. Voelcker's statistics of cirrhosis of the liver in children, taken as they were from the post-mortem room. He urged that very frequently in pericellular cirrhosis there was no change in the naked-eye appearance or in the shape of the liver. He mentioned two cases of extreme cirrhosis of the liver in infants with congenital syphilis which he had examined in which there were no obvious macroscopical changes. Also in stillborn children it was comparatively common to find advanced forms of cirrhosis and again without any macroscopical evidence of the changes. In these cases there was not a fibrosis in the proper sense of the word but a large increase of the connective tissue element between the individual hepatic cells. He was inclined to think that this cellular element would have developed into the ordinary fibrous tissue in such a child had it survived birth.

Dr. STUART MCDONALD (Birmingham) referred to a case of cirrhosis of the liver in a girl, aged 15 years, which terminated fatally with hæmorrhage from a rupture in a clump of varicose veins situated in the wall of the stomach close to the cardiac end. There was found post mortem a typical atrophic cirrhosis of the liver. Microscopically the distribution of the fibrous tissue was mainly perilobular, but in places the new tissue was extremely cellular and could be seen definitely to be invading the periphery of the lobules. There was also clear evidence of increased bile-duct formation. The spleen was enlarged and showed an increase of its fibrous stroma. The other organs appeared to be healthy. There was no history of any previous illness of any kind except an attack of measles some years previously. There was no evidence of alcoholism or of syphilis, congenital or acquired.

Dr. VOELCKER in his reply stated that he had brought forward his statistics derived from the practice of a general hospital with the object of showing the relative occurrence of cirrhosis of the liver. He pointed out that the chief ages at which cirrhotic livers were found were either in the first two or three years of life or between the ages of eight and 10 years, and then not again until after 25 years. From this he concluded that severe and frequent intestinal catarrh, to which children were so prone, could have little, if any, effect on the production of the cirrhosis. It was known that in enteric fever areas of necrosis of liver tissue, followed by a localised fibrosis, occurred; but again he did not think that this could play any part in the production of a cirrhosis. In the case of children it was certainly true that the microscope revealed a degree of cirrhosis often quite unexpected from naked-eye examination. In his classification of cases increased consistence of the organ had been the requisite condition. He did not share Dr. Lazarus-Barlow's aversion to including cirrhosis as an inflammatory condition, but thought that the conditions in the liver were comparable to those in the kidney and that, in spite of Professor Flexner's observations on the increase of elastic tissue which certainly did not appear to be of inflammatory origin, the increase of connective tissue was more reasonably regarded as an inflammatory process than as a mere hyperplasia, the result of an attempt to fill up the space left by the atrophy of the liver cells. With regard to the form of cirrhosis in children, he had met with both pericellular and perilobular sclerosis, and whilst he considered that syphilis was a frequent cause he did not think that it was the only cause of cirrhosis in children. The new formation of bile-ducts was still, he ventured to think, open to some doubt, but he agreed with Dr. Maxwell that in some cases of congenital obliteration of the bile-ducts there was to be seen a new formation of tubes lined apparently with altered liver cells and containing bile in the lumen. In view of the often quite unexpected occurrence of cirrhosis of the liver in the post-mortem room he thought that it was very necessary to hesitate before ascribing a causal relationship to factors such as an appendicitis or a remote suppurating focus which happened to be present at the same time. It was clear, however, that the pathology of cirrhosis of the liver must still be the subject of investigation by experiment and by observation.

OPHTHALMOLOGY.

THURSDAY, AUGUST 2ND.

Dacryo-cystitis.

Mr. KENNETH SCOTT (London) described a case of Dacryocystitis Aggravans which occurred in a woman, a native of Upper Egypt, who came to him with double dacryo-cystitis which on the left side had attained an enormous size and resembled a malignant tumour of the face. He opened it and evacuated a large quantity of pus and mucus. The patient recovered and in five weeks she was quite well.

Leuco-sarcoma of the Iris.

Mr. W. WATSON GRIFFIN (Brighton) related a case of Leuco-sarcoma of the Iris which occurred in a young woman, aged 19 years. In the left eye there was a growth visible in part to the naked eye through the pupil which pushed forward the iris at the lower and outer side. The lens was displaced inwards and was partially opaque. Mr. Griffin diagnosed a malignant growth and excised the eye. On examination it proved to be a leuco-sarcoma with very marked hyaline changes. He thought that in a case treated so early as this the prognosis should be good. The points of chief interest were the age of the patient (most cases occurring in later life), the extensive hyaline changes, and the dense white appearance.

Lacrymal Obstruction.

A discussion on Lacrymal Obstruction was then opened by Mr. G. A. BERRY (Edinburgh) who referred to the great divergences of opinion held by surgeons as to the best method of treating this affection. He was inclined to think that there was a great tendency to over-treat these cases, and this was due to the common belief that the cause of nearly all cases was obstruction in the nasal duct, whereas in reality it was catarrh of the sac and duct. He condemned the use of large probes as these frequently caused a stricture at the opening into the sac, and this was especially likely to occur when the lower canaliculus had been slit. He preferred in nearly all cases to slit the upper one, as the direction of the channel thus made lay more in a line with the duct and there was consequently less stretching at the mouth of the sac and less laceration of the surrounding parts when a probe was passed. Owing to the fact that removal of the sac generally produced but little epiphora it was obvious that faulty excretion was not the chief cause of the trouble, which was probably due to hyper-secretion of tears caused by an irritation which originated in the sac and possibly in the duct also. In early cases Mr. Berry advocated slitting the upper canaliculus and then probing at intervals of a fortnight or longer, and usually three or four probings were sufficient if the case had come under treatment early. As a rule syringing was unnecessary except in those cases in which the sac was over-distended and then this, followed by pressure over the sac, was very useful. Should an abscess develop this was best treated by opening one or both canaliculi or if necessary opening it on the cheek. In conclusion, Mr. Berry advised early interference in catarrhal conditions—viz., by slitting the upper canaliculus into the sac and then probing at not too short intervals with one of a medium size. In dacryo-cystitis free incision with good drainage was usually indicated; this must be followed by opening of the canaliculi and in some cases by probing at fairly long intervals. In chronic cases, or those frequently recurring, complete removal of the sac was probably the best treatment. Large probes, frequent probings, and the use of styles were in his opinion to be avoided, while removal of the lacrymal gland or any portion of it was altogether uncalled for.

Dr. E. H CARTWRIGHT (Maidstone) said he avoided as far as possible slitting canaliculi, as it caused needless damage and impaired their function. In advanced cases some could be cured by small probes, while for others gold styles were necessary. He thought that syringing was useful, but he had never seen any advantage arise from the use of hollow styles nor had he ever seen a case in which it was necessary to remove the lacrymal gland.

Mr. KENNETH SCOTT in cases of chronic inflammatory thickening preferred to use rather large probes and the syringe. He thought that lead styles were the best and he had never seen harm arise from slitting the canaliculus.

Dr. STCLAIR THOMSON (London) approached the subject from the standpoint of a rhinologist and in the cases he had examined he had not found any disease of the nose to account for the trouble, though he thought that the primary infection of the duct and sac might come from it. He showed a drawing of a section of the nose to illustrate the large diameter of the nasal end of the duct and also the large space between the inferior turbinate bone and the outer wall of the nose.

Mr. E. D. BOWER (Gloucester) thought that over-treatment was responsible for much that was unsatisfactory. He never used styles and very seldom probes. In acute cases he considered the best treatment was to let the pus out and allow the case to quiet down, but if this failed he preferred to dissect out the sac.

Mr. ERNEST CLARKE (London) thought that simple cases were best treated by dilating the canaliculus and syringing. He strongly condemned the use of large probes, but in cases of stricture he recommended the slitting of the lower canaliculus and the removal of its ocular surface so as to accommodate a nail-headed gold style.

Mr. RICHARDSON CROSS (Clifton) saw no harm in slitting the canaliculus and in severe cases he opened both. If a stricture existed the probe must be used, but he thought that there was no advantage in using large ones.

Mr. SYDNEY STEPHENSON (London) was convinced that in difficult cases there was nothing so good as large probes, and he preferred to dilate rapidly with Theobald's probes, the largest being four millimetres in diameter. Mucoceles in new-born children usually yielded to pressure over the sac and evacuation of its contents.

Mr. E. E. MADDOX (Bournemouth) recommended the attachment of a simple nipple to the nozzle of a Weber's syringe for the injection of cocaine. When a style was indicated he advised the use of a soft one, such as the end of a fine silk catheter, which should be worn for a few days before placing a permanent metal one in the duct.

Mr. H. C. ENSOR (Cardiff) in severe cases dilated rapidly under an anæsthetic with Couper's probes and then placed in a lead style.

Mr. H. WORK DODD (London) drew attention to the importance of attending to the general health.

Remarks were also made by Mr. C. BLAIR (London) and the PRESIDENT (Dr. W. A. BRAILEY of London).

Mr. BERRY, in reply, stated that he had never seen anything but harm arise from the use of large probes.

Cerebral Tumour with Optic Neuritis.

Mr. ERNEST CLARKE read notes of a case of Cerebral Tumour with Optic Neuritis in a man, aged 36 years. The right disc showed post-neuritic atrophy while the left was a typical choked disc with 3 D. of swelling but no hæmorrhages. The existence of a tumour in the left frontal lobe was diagnosed. As the patient became rapidly worse the skull was trephined by Mr. Arbuthnot Lane. The brain bulged greatly when the tension was relieved but the patient died the next day. At the necropsy the tumour was found where it was expected and it proved to be a psammo-glioma.

Some Forms of Optic Nerve Disease.

Dr. A. FREELAND FERGUS (Glasgow) read a paper on Some Forms of Optic Nerve Disease, probably of sympathetic origin, and related five cases in which injury to one eye was followed after a few weeks by contraction of the field of vision in the other. This contraction was always accompanied by a diminution of the visual acuteness. In only one of the cases mentioned was there anything at all resembling an ordinary sympathetic ophthalmitis. Dr. Fergus urged that in all cases of injury to one eye a close watch should be kept on the condition of the optic nerve of the other. This was to be done, not merely with the ophthalmoscope, but also by the constant examination of the field of vision and of the minimum of light sense. These two functions depended in part on the healthy condition of the optic nerve, and defects in them often showed lesions of the optic nerve before they could be detected with the ophthalmoscope.

The PRESIDENT asked if tension as a possible cause of failure of vision had been excluded.

Remarks were also made by Mr. CROSS and Mr. BERRY.

Dr. FERGUS, in reply, said that he had carefully eliminated tension as a cause of failure. He thought that possibly the onset of sympathetic ophthalmia might be predicted by observations on the field of vision.

Mr. E. E. MADDOX demonstrated a Stereoscope for the exercise of eyes after operations on the muscles, in which each eye could be shut off from sight by small screens worked by electro-magnets inside the instrument by the surgeon. He also showed some new Needles with Round Holes which could be threaded more readily than those of the ordinary pattern. For advancements he had had made some silk sutures coloured green and black.

DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

After the discussion on Pneumonia in Children which was introduced by Dr. NESTOR TIRARD, and reported in THE LANCET of August 11th, p. 449, Dr. JOHN THOMSON (Edinburgh) read a paper by himself and Dr. A. LOGAN TURNER (Edinburgh) on

The Causation of Congenital Stridor.

This paper was listened to by a considerable number of members from the Laryngological Section.

Dr. JOHN THOMSON said that he had hoped to illustrate the lecture by lantern slides. But as that was not possible, specimens of the larynges would be shown and stereoscopic slides handed round. He then described the onset soon after birth of the stridor and the character of the breathing and he discussed the various causes to which the symptoms had been attributed—adductor spasm, enlarged thymus, and the soft collapsable structure of the larynx in infants.

The site of the stridor was at the upper aperture of the larynx, in the larynx, or at the level of the thymus gland. The peculiarities of the larynx and of respiration in young infants were then noticed. As just now said the structure of the larynx in infants was softer and much more collapsable than it was in adults, so that with any sudden drawing in of air into the larynx the upper aperture changed to a slit, becoming much narrower from side to side. He then described the experiments on which the paper was founded, which showed very striking changes of the same character as just described, the sides of the upper aperture being sucked in together, the epiglottis drawn down, and the aryteno-epiglottidean folds met in the middle line. The respiration of infants was peculiar in rhythm and force. He gave an account of the conformation of the larynx in congenital stridor. The sounds were laryngeal, not in the pharynx, as the stridor persisted when the nostrils were closed and the tongue was depressed. In some cases of congenital stridor no enlarged thymus was found, and in cases where the gland did press on the larynx the stridor was expiratory. The sound was made in the larynx proper, and partly by the aryteno-epiglottidean folds. It was due to change of form (habitual) owing to the constant sucking in of the upper aperture of the larynx, a process strictly analogous to the formation of pigeon-breast. It was also a disturbance of respiratory coördination. It was not due to adenoid vegetations.

Dr. LOGAN TURNER showed an interesting set of specimens and a series of stereoscopic views of the experiments on the larynx, and comparative studies of infantile and adult larynges. One specimen showed persistence of the infantile type in an adult larynx.

The PRESIDENT (Dr. FREDERICK TAYLOR of London) briefly introduced the discussion on the paper, suggesting that years ago the cause of congenital stridor would have been paralysis.

Dr. P. MCBRIDE (Edinburgh) objected to the character of the experiments on a flaccid larynx. He thought that irritation of the adductor centre was the condition of congenital stridor, thus somewhat analogous to laryngismus stridulus.

Dr. J. DUNDAS GRANT (London) detailed a case where the stridor was incessant even under chloroform and the epiglottis was seen to be depressed. When this was lifted up the stridor disappeared. This at all events was one definite cause. In other cases possibly congenital malformations caused the stridor.

Dr. H. L. LACK (London) thought that it was impossible to have spasm so continuous as the stridor was. He considered that it was more due to stammering with the larynx, especially as it came on very soon after birth. He also did not place much confidence in the experiments related.

Dr. H. TILLEY (London) quoted three cases and agreed with the view of a congenital weakness of the upper aperture of the larynx. Adenoids or other sources of irritation had nothing to do with it.

The PRESIDENT, though he gave up belief in a paralytic origin of the stridor, was not inclined to adopt a spasmodic theory.

Dr. THOMSON, in reply, defended his and Dr. Turner's experiments. He considered that congenital stridor was an acquired functional defect.

Dr. TURNER also briefly replied.

THURSDAY, AUGUST 2ND.

Lateral Curvature of the Spine.

Mr. CHISHOLM WILLIAMS (London) read a communication based on the notes of nearly 500 consecutive cases of Lateral Curvature of the Spine. There was distinct lateral curvature in all and no cases of simple weak back were included. The chief period for the appearance of lateral curvature was from 16 to 20 years of age. From one to six years there were 35 cases; from six to 10 years there were 66 cases; from 10 to 16 years there were 121 cases; from 16 to 20 years there were 175 cases; and over 20 years of age there were 105 cases. He then briefly enumerated the various causes, such as heredity, rickets, and rheumatic arthritis. There were 131 cases of flat-foot among the lateral curvatures. One patient had had rickets and had three relatives (closest possible) with lateral curvature. The right dorsal convex was the most common curvature found. There were five triple convex cases. In 101 cases there was constant pain or backache. In 19 cases the Swedish movement cure had been practised with unfortunate results. In all cases under 25 years of age some improvement was manifested on treatment. The patients' general health was improved by hypophosphites and cod-liver oil. The spines were straightened by mechanical pressure. This pressure must be kept up. Mr. Williams then alluded to the apparatus or splint, as he preferred to call it, in use at the City Orthopædic Hospital. This had the special advantage of giving a certain amount of play to the muscles of the back while supporting the spine and not letting it go back into a worse position. It could also follow up any improvement by being braced up to it. Under five years of age a leather or gutta-percha splint was quite sufficiently strong. Special muscular exercises, massage, galvanism, &c., all came under review. To be successful in these cases required the combined willingness and coöperation of parent, friend, patient, and surgeon.

Mr. E. NOBLE SMITH (London) regarded the pathological conditions which lay at the back of these deformities as of great importance. In one class the deformities were purely mechanical, such as those due to trades and occupations and the other pathological conditions. Rickets was responsible for a considerable number of cases. There was also an undue softness of bone and tissues in many of these cases. This was an old opinion, but recently attention seemed to have been fixed almost entirely on the weakness of the muscles, and so muscular exercises were so largely prescribed to cure this muscular weakness. All adaptations of muscular exercises should be accurately carried out and the treatment should be directed in a perfectly scientific manner. Mr. Noble Smith emphasised the need there undoubtedly was for more systematic teaching on these subjects in the medical schools and dwelt on the great importance of prophylaxis, which would help to prevent the development of many of these cases.

Mr. CHISHOLM WILLIAMS gave an account of an interesting case of flat-foot suddenly commencing in a cyclist who had ridden for several years. He was racing to Brighton and back and when half-way home his feet gave way completely. There was a great deal of swelling underneath the feet and when this subsided they were typical cases of flat-feet. The feet were put up in plaster-of-Paris for five weeks and they recovered absolutely. He protested against the far too common practice of instrument-makers treating cases of spinal curvature. He gave details of a case which had been sent to him by a medical man who had had it under his observation for three years, during which time it steadily grew worse, and he said he had been fighting against the use of an instrument all that time.

Mr. W. GREEN (Portsmouth) asked about the causation of a projection often found at the junction of the two curves of lateral curvature.

Mr. E. MUIRHEAD LITTLE (London) discussed the causes of scoliosis; he was sceptical as to whether it was ever produced by shortness of one leg, &c. He had not noted any frequent association with flat-foot or knock-knee. It was so difficult to get details of results so as to investigate the best mode of treatment. He then dealt with the use of supports and proper exercises.

The PRESIDENT asked for information about fencing, whether it had a good or bad influence with regard to lateral curvature which it had been charged with producing. He also asked how heredity came in among the causes of lateral curvature.

Mr. JACKSON CLARKE, after thanking the meeting for his reception in the chair and congratulating it on the discussion, said that the prominence at the junction of the curves of lateral curvature sometimes appeared before the curves were much marked and caused some difficulty in diagnosis. There would be, however, no rigidity which would take it out of the tuberculous angular curvature, and no pain and rigidity, which would differentiate it from the swelling occasionally met with in rheumatic arthritis. The pathological condition generally of these cases of deformity was slight rickets. He quoted a case of typical flat-foot due to rickets which was cured by a judicious alteration in diet. He drew attention also to the type of instrument to be used in the treatment of lateral curvature; this helped the muscles and directed their action. Fencing, he considered, did no harm in strong healthy children. Scoliosis would not be inherited, but a tendency to it was frequent.

Mr. CHISHOLM WILLIAMS briefly and warmly again defended the use of the apparatus used at the City Orthopædic Hospital.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, AUGUST 1ST.

Treatment of Internal Hæmorrhage.

Dr. WALTER G. SMITH (Dublin), having delivered his presidential address—an abstract of which was published in THE LANCET of August 4th, p. 369—proceeded to open a discussion on the above subject. He observed that few cases of hæmorrhage from the lungs, bowels, or kidneys were in themselves fatal or imminently dangerous. Patients died after hæmorrhage but not often from it (S. West). Many attacks of hæmorrhage ceased spontaneously if only let alone, hence drug-treatment of hæmorrhage was often superfluous and sometimes mischievous. The efficacy of local styptics was undoubted and their *rationale* was quite simple. Gallic acid, however, was devoid of local steptic power, and tannic acid was excreted partly as alkali-tannate and partly as gallic acid, neither of which coagulated albumin or constricted blood-vessels, hence tannic acid was useless as a remote hæmostatic. The most rational treatment of, say, a serious case of hæmoptysis consisted simply in mental and bodily rest, the administration of morphine, and free evacuation of the bowels.

Dr. WALTER E. DIXON (Cambridge) said that in consequence of the feeble constricting power of the pulmonary vaso-motor system, as compared with that of the body generally, all general vaso-constrictors tended to cause dilatation of the pulmonary vessels. As regarded suprarenal gland extract he had found the tablets to exhibit active properties, but not the solutions. He recommended the use of this drug in the arrest of hæmorrhage from gastric ulcer. Among other drugs employed sometimes in the arrest of bleeding the speaker referred to chloride of calcium, which, according to some authors, accelerated coagulation. This observation he had been unable to confirm. Citric acid, moreover, though in the same category, undoubtedly prolonged the period up to coagulation.

Dr. W. ESSEX WYNTER (London) referred to the employment of gelatin administered subcutaneously in sterilised normal saline solution up to a strength of 5 per cent. and a maximum quantity of 250 cubic centimetres in cases of continued hæmorrhage, and as a precautionary measure before undertaking operation on specially vascular organs or in "bleeders," as suggested by the efficacy of this method in favouring coagulation in sacculated aneurysms by Dr. Lancereaux and Dr. Paulesco.

Dr. ERNEST KINGSCOTE (London) spoke of calcium chloride rather as a vaso-motor dilator than as a constituent of the Nauheim salts, and mentioned the excitement of local and general peripheral dilatation as useful in checking internal hæmorrhage.

Dr. LIVEING FENN (Colchester) referred to the value of suprarenal extract in constricting the vessels and cited a case of exophthalmic goitre so cured. He considered that the drug steadied the heart by bracing the peripheral circulation.

Dr. R. MURRAY LESLIE (London), confining his remarks to the treatment of hæmoptysis, described the method adopted at the Brompton Hospital, the indications being to lower blood-pressure and heart-action by absolute rest, morphine, and by reassuring the patient. He also recommended that the patient should be turned on to the affected side during the attack so as to prevent, as much as possible, regurgitation of blood into the sounder lung.

Professor C. R. MARSHALL (Cambridge) referred to the action of tannic acid in hæmaturia and cited one instance in which clots succeeded liquid blood in a case of hæmoptysis treated by calcium chloride in 10-grain doses.

Dr. A. REEVE MANBY (East Rudham) referring to the practice of Mr. T. H. Morse of Norwich, said that when he was called upon to operate for the relief of severe internal hæmorrhage he administered 15 ounces of hot water by the mouth and by the rectum and injected 10 ounces of saline solution and subsequently operated under a local anæsthetic.

Three papers followed on the Chemistry of the Jaborandi Alkaloids (by ProfessorH. A. D. JOWETT, D.Sc.), the Action of Extractum Jaborandi Liquidum B.P. (by Professor JOWETT and Professor MARSHALL), and the Pharmacology of the Jaborandi Alkaloids (by Professor MARSHALL). These papers described most interesting investigations into the nature and action of the alkaloids of jaborandi, and displayed particularly the variability of the different preparations, both as to the quantity and nature of their active principles, the conclusion being that nitrate of pilocarpin was really the only efficient and suitable constituent and should be prescribed in preference to any preparation of the leaf.

Dr. ERNEST KINGSCOTE read a paper on the Treatment of Asthma and Hay Fever.

THURSDAY, AUGUST 2ND.

Serum-therapy.

Mr. T. J. BOKENHAM (London) opened a discussion on this subject, touching on the various diseases which could be modified or prevented by the use of antitoxins, and specially dwelling upon some favourable results of the method in checking outbreaks of diphtheria. The remedy should be applied early and in large doses. He had used 280 cubic centimetres of anti-diphtheritic serum in four days in one case apparently moribund.

Dr. F. W. FORBES ROSS (London), on the other hand, quoted an outbreak among the Royal Fusiliers in the Tower which had been equally abruptly checked by isolation and ventilation without the aid of serum, the instances in which a pure cultivation of the Klebs-Löffler bacillus occurred being extremely mild, contrary to general experience. He had had a similar experience in an outbreak of measles and also in erysipelas with pneumonia. In the latter anti-streptococcic serum appeared to abort the pneumonia, but exerted no good influence on the erysipelas.

Dr. J. HADDON (Hawick) dwelt on the preventive power of anti-diphtheritic serum, arguing that what cured should also prevent the disease which developed from slight sore-throat to a virulent type under favouring conditions. Owing to only the severest cases being admitted hospital statistics were not a safe guide.

Dr. LORIMER HART (London) recorded the successful use of anti-streptococcic serum in three cases of erysipelas. He strongly advocated the use of appropriate sera in disease.

Diet in the Treatment of Disease.

Dr. HARRY CAMPBELL (London) then opened a discussion on Diet in the Treatment of Disease. In the course of his remarks he gave a sketch of the normal dietary and indicated where departures might be made according to the requirements of different morbid conditions without sacrificing the necessary proportions of the fundamental constituents. Commenting on the great divisions of carnal and vegetable foods the speaker suggested that it was the absence of the so-called extractives from vegetable food which accounted for its unstimulating character, and further attributed to these extractives, liberated from the muscles by action or nerve influence, the states of elation associated with muscular exertion, good tidings, or even the onset of migraine. These extractives, so abundant in most meat extracts, displacing actual proteid, were capable of unlocking energy but not of supplying it. He regarded the absence of fibrous and indigestible matter in over-civilised diet as being responsible for early caries of the teeth, adenoids, and constipation.

Dr. D. SOMMERVILLE (London) referred to the habitual overfeeding at Nordrach and other sanatoria, and gave instances of gain in weight even in progressive disease.

Dr. SARAT MULLICK (London) stated that fat prevented waste of tissue. In febrile cases he recommended the simplest food—milk, diluents, and carbohydrates, so as to build up the body at the smallest cost to the organism and at the same time to flush out toxins. He attached great value to a "dietetic ladder" by which gastric invalids could be raised by degrees to full diet, without undue strain on digestion.

Dr. HADDON likened the disorders of metabolism consequent upon a too rich and stimulating diet to the breakdown of a horse fed too freely upon oats and beans, the remedy being to turn him out to grass. He strongly insisted on the value of vegetarian diet in removing diverse and remote symptoms, especially recurring paroxysms, and instanced cases diagnosed as Ménière's disease and epilepsy as well as migraine so cured.

Dr. W. A. GORE (Whitchurch, Salop), Dr. LINDLEY M. SCOTT (London), and the PRESIDENT spoke strongly against the excess of proteid usually indulged in.

The Treatment of Gouty Eczema.

Dr. G. J. KING MARTYN (Bath) read a paper on this subject in which the following recommendations were made. The diet should be the typical gouty diet, a

minimum of meat, starch, sugar, and alcohol in their most irritating forms and total abstinence from certain articles, such as lemons, strawberries, and some other fruits. The least irritating and the warmest kinds of clothing which would also allow of ventilation were recommended. Wool for this season was bad; a thick cellular form of cotton was the best. He advocated medicinally the free use of saline aperients, such as Carlsbad water, bismuth, and alkalies. The usual gouty remedies and uric acid solvents were of little use. Arsenic should be administered in the dry chronic unirritating forms, antimony in the irritating forms, and morphia whenever acute severe eczema stopped sleep, induced scratching, and wore out the patient. For relief of the intense burning and itching a lotion or ointment containing carbolic acid should be used; for the dry forms an ointment containing liquor carbonis detergens in very small quantity; and for the acute weeping form a dusting powder of equal parts of carbonate of magnesia and Fuller's earth. The idea that all eczema must be religiously kept from water was a fallacy. Warm alkaline baths allayed the itching, loosened the scales and produced hyperæmia and turgescence of the vessels of the skin. The patient should not be hot-packed but carefully dried and powdered. In some cases Dr. Martyn added sulphur water to the natural bath water. All eczema was not so benefited by baths. Roughly speaking in the moist and inflammatory type of the condition baths should not be used. An equable warm climate was best, but never the sea coast.

Dr. J. C. M. GIVEN (Liverpool) objected to the word "gouty" in the title, saying that there was no sufficient ground for attributing this or any other skin disease to a diathesis. The attacks responded to ordinary rather than specific treatment, and were associated with neurotic types and overwork rather than with gout.

The PRESIDENT agreed with this, stating that in Dublin gout was almost unknown though eczema was as common as in this country and responded to the same treatment.

Dr. LIVEING FENN said that few people after the age of 60 years were quite free from metabolic residues due to imperfect oxidation and excretion or the absorption of imperfectly digested matters. A preliminary course of hot salines was essential to successful treatment by the ordinary methods in these cases.

Dr. F. W. TUNNICLIFFE (London) read a paper on the Nutritive Value of Casein (Plasmon) in which he described the method of preparation (a costly one) and the properties of this substance with an account of experiments *in vitro* and *in vivo*.

Dr. LINDLEY SCOTT (London) read a paper on the Preventive Treatment of Oxalate of Lime Gravel and Calculus in which he insisted on the value of magnesia in preventing deposit whether the excess was due to excessive ingestion or to faulty metabolism.—The PRESIDENT, commenting on the paper, said: "No one knows the origin of oxalic acid in the body."

Medicinal and Dietetic Treatment of Heart Failure in the Aged.

Dr. FORBES ROSS read a paper on this subject. He reviewed briefly the conditions met with in dealing with cases of heart failure in the aged, mention being made of the intrinsic cardiac degenerations, parenchymatous and valvular, and of exocardial conditions as met with in the arterial, portal, renal, and cerebro-spinal systems bearing on the therapeutical problems calling for elucidation by means of medicinal and dietary agencies. The result of strophanthus as illustrated and contrasted by cases: (1) failure, without suitable diet; (2) success in the same case, with suitable diet, after digitalis had failed to relieve; (3) the need for nervine stimulants along with the use of strophanthus, especially in cases of cerebral degeneration or in cases of epilepsy; (4) the value and successful results obtained by tonic dietary aiming at the regeneration of the nervous forces; (5) the prolonged tolerance for, and relatively harmless effect of, the lengthened administration of strophanthus on the cardiac, nervous, and digestive systems; (6) the adjuvant actions of other drugs used at the same time, as mercury, nitrates, alkalies, diffusible stimulants, nervine tonics, &c.; (7) success or failure in the use of strophanthus being governed by the absence or presence, untreated or unprovided for, of conditions outside the range of the therapeutic action of the drug, often wrongly blamed as ineffective or harmful; and (8) the peculiar actions and symptoms produced, mainly adverse, by strophanthus when administered in combination with a mineral acid, were severally considered.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, AUGUST 1ST.

Intra-nasal Treatment in Ear Disease.

A discussion on this subject was opened by Dr. P. MCBRIDE (Edinburgh), Dr. CRESSWELL BABER (Brighton), and Dr. DUNDAS GRANT (London).

Dr. MCBRIDE divided the subject into (1) the conditions of the ear liable to be affected by nasal changes, and (2) pathological conditions of the nose which might involve the ear. Under the term "nose" the naso-pharynx was also included. It was, he said, generally admitted that many forms of ear disease might be markedly improved by treatment directed to the naso-pharynx; acute otitis media might be arrested by the removal of adenoids; and in chronic non-suppurative middle-ear deafness of children, if there be no complication, such as hereditary syphilis, the effects of this operation were often little short of marvellous. In chronic non-suppurative inflammation of the middle-ear in adults the position was by no means so clear; two types were distinguishable—(1) those in which the anterior and posterior nares were either normal or were somewhat anæmic, with a very sharp differentiation of parts; and (2) those in which there was some congestion of the whole naso-pharyngeal tract including the Eustachian orifices, with perhaps some hypertrophy of the turbinals, deviation of the septum or spurs. The progressive deafness of one type was commonly due to changes in the region of the stapes often associated with a lesion of the osseous capsule of the labyrinth, while the other was ascribed to chronic middle-ear catarrh. In the former it was questionable whether operating on the nose would ever be of benefit; it might do harm. In the latter it was better to operate on a gross nasal lesion causing nasal symptoms and upon a naso-pharyngeal condition if present. Turning to the changes in the nose and naso-pharynx he said it must be a somewhat difficult matter for those who believed that nasal obstruction *per se* was capable of producing progressive deafness to account for its rare occurrence in case of nasal polypus; again, very marked hypertrophic nasal catarrh and stenosis of the nostrils due to changes in the septum frequently existed without marked impairment of hearing. With regard to gross lesions in the naso-pharynx sessile tumours were associated with deafness, but not of the same type as progressive chronic catarrh; with single pedunculated tumours deafness was rarely a pronounced symptom. Speaking of adenoid hypertrophy as a causative factor he said that when a relatively clear space remained between the margin of the adenoid tissue and the Eustachian orifices its removal did not so materially influence the ear, if it be affected, as the removal of a relatively smaller mass stretching right across from one Eustachian orifice to the other. It must be remembered that the veins of the middle-ear returned the blood to a considerable extent by way of the pharynx and that there was a similar connexion as to the lymphatics. It was therefore conceivable that interference with circulation might play an important part in certain cases of deafness from adenoids. In some instances the posterior extremities of the inferior turbinals became very much enlarged and might lead to deafness, but their removal had not in his experience given anything approaching results frequently obtained by operating on adenoids.

Dr. CRESSWELL BABER said that acute inflammation of the middle-ear, whether catarrhal or suppurative, required as a rule no intra-nasal treatment during the attack except careful cleansing of the nose with a saline solution—indeed, any other treatment would be harmful. Exceptions might, however, arise in which obstruction of the Eustachian tube might require immediate intra-nasal treatment. In the chronic cases it was important to inflate the tympanum before any nasal or naso-pharyngeal operations were undertaken to ascertain effects. When inflation improved the hearing the obstruction might be removed with benefit; when repeated inflation had no effect operative treatment was not to be recommended; it might, however, be wanted for other reasons.

Dr. DUNDAS GRANT said that from the frequency with which catarrhal affections of the ear were found in the subjects of nasal stenosis and inversely the frequency with which nasal stenosis was found in subjects of catarrhal

affections of the ears, there was no doubt that there was a great causal connexion between the two conditions. Improvement in the hearing power had been known to follow simply the removal of a nasal obstruction. This connexion did not hold good in the case of dry sclerotic catarrh of the middle-ear, but only in the moist and hypertrophic forms. In some cases of nerve deafness the removal of a nasal obstruction might bring about an improvement owing to the raising of the patient's nerve tone. In the carrying out of the nasal operations precautions must be taken to avoid inflammatory reaction with the risk of setting up suppurative inflammation in the middle-ear.

Dr. HERBERT TILLEY (London) said that intra-nasal operations for the removal of obstructions, slight or severe, in cases of chronic progressive deafness—so-called dry catarrh—were almost invariably failures. They must distinguish between the patient's expression of relief for the removal of nasal obstruction and the effect on the hearing itself. Where, however, the deafness was due to the moister forms of catarrh the removal of obvious intra-nasal lesions and obstructions might relieve the deafness.

Dr. W. JOBSON HORNE (London) said that in a routine examination of the nose and naso-pharynx in cases of deafness it was common to meet with some degree of nasal obstruction or insufficiency. The question to be decided was whether the obstruction was material and if so how it was to be dealt with. Whether the nasal obstruction was material depended in great measure, he thought, upon the width and depth of the naso-pharyngeal space; this, again, depended on the age of the patient. The inferior nasal meatus was on the same level as the orifice of the Eustachian tube. In early life, when the distance between the posterior nares and the posterior pharyngeal wall was still narrow, the inferior meatus was in direct line, and, in fact, almost continuous with the orifice of the Eustachian tube. It therefore followed that intra-nasal lesions were liable to be more important factors in ear disease in childhood than in adult life. After the removal of adenoids in children the intra-nasal obstruction, if previously present, frequently subsided; if not he was in favour of the removal of the child to a more suitable climate. The size of the naso-pharynx in adults he thought explained the absence of deafness in some cases of complete nasal obstruction occasioned by polypi, enlarged turbinals, and deviations of the septum.

Dr. WATSON WILLIAMS (Clifton) considered nasal obstruction as a causative factor in great measure hypothetical, and its treatment of little avail in improving the nasal condition.

Mr. R. LAKE (London) considered that the obstructions concerned the posterior half of the nares and the removal of enlarged posterior ends of the turbinals beneficial.

Dr. HOLBROOK CURTIS (New York) advocated intra-nasal operations in catarrhal and sclerotic cases. He objected to the term "negative pressure" that had been used by previous speakers—he preferred the term "rarefaction." He considered one might as well describe vomiting as negative swallowing.

Dr. HEMINGTON PEGLER (London) thought that it was difficult to draw a definite line between catarrhal and non-catarrhal cases. He had in cases operated upon for removal of nasal obstruction often unexpectedly obtained marked improvement in hearing.

The PRESIDENT (Dr. SCANES SPICER) in reviewing the discussion regretted that no definite conclusions had been arrived at. He admitted the difficulty in what might be regarded as mixed cases, but thought that many cases undoubtedly benefited by intra-nasal treatment and that the treatment could not be regarded as experimental.

Dr. MCBRIDE and Dr. CRESSWELL BABER replied.

THURSDAY, AUGUST 2ND.

The Pathology and Treatment of Toxic Paralyses of the Larynx.

Dr. WATSON WILLIAMS and Dr. JOBSON HORNE opened a discussion on this subject.

Dr. WATSON WILLIAMS said that the term "paralysis" was assumed to imply organic paresis or paralysis of one or more laryngeal muscles, as distinguished from mere loss of voluntary movement, paralysis of cortical origin being excluded. The inquiry extended to laryngeal paralysis resulting from direct bio-chemical influence on the lower neurons and the muscles which they subserve of substances in the blood or tissues, whether due to auto-intoxication, to the toxins resulting from micro-organisms, or to the pathological action of various drugs or other poisonous substances introduced from without. Two distinct possible methods were mentioned by which the laryngeal paralysis might arise:—(1) from the direct application of the toxic substance to the larynx, and (2) from the selective affinity of various poisons in the blood for the laryngeal nerves or their bulbar nuclei. Dr. Williams went on to say that it was remarkable that in true toxic laryngeal paralysis the postici, with few exceptions, succumbed either earlier than, or concurrently with, the adductors of the cords. It seemed probable that the majority of cases of toxic laryngeal paralyses had their foundation in peripheral neuritis. This would afford an explanation of the varying localisation of the paralysis in different territories supplied by the recurring laryngeal nerve. Thus, excluding the purely myopathic paralyses, toxic paralyses were due to inflammatory degeneration of the neuron, that was in its wider sense neuritis, and might be divided into two distinct pathogenic groups. 1. Infective neuritis, commonly occurring in the course of diphtheria, and less frequently observed in typhoid fever, typhus fever, scarlet fever, morbilli, influenza, rheumatism, tuberculosis, syphilis, and pneumonia. 2. Toxic neuritis, most frequently due to lead-poisoning, but also said to have occurred in poisoning by arsenic, copper, antimony, phosphorus, alcohol, atropine, and morphine. The treatment consisted in: (1) general treatment of the infective disease and measures directed to the removal of organic or metallic poisons in the circulation and tissues; (2) intra-laryngeal application of the faradaic or galvanic current, combined with strychnine in large doses by the mouth or into the affected muscles when feasible; and (3) the relief of dyspnœa and threatened asphyxia by intubation or tracheotomy.

Dr. JOBSON HORNE in his opening remarks, confined himself to the myopathic aspect of the subject and detailed the microscopic changes he had met with in the intrinsic muscles of the larynx in persons who had died from diseases known to be at times complicated with paralyses of the vocal cords. Although the pathology of perhaps the majority of these cases of toxic paralysis of the vocal cords might ultimately be found to consist in a peripheral neuritis he considered the changes in the muscles themselves to be deserving of further investigation.

Dr. SAMUEL LODGE (Halifax) reported two cases of Laryngeal Paralysis following lead poisoning. The first case he was unable to follow up. In the second case the voice was recovered perfectly in two months under the faradaic current.

Dr. HERBERT TILLEY narrated a case of Abductor Palsy of one cord following in a few days a septic sore-throat without any clinical likeness to diphtheria.

TROPICAL DISEASES.

THURSDAY, AUGUST 2ND.

Ankylostomiasis.

The discussion on this subject was opened by a paper communicated by Major G. M. J. GILES, I.M.S., who after dealing with the history of the disease gave an account of his researches into the life-history of the free stage of ankylostoma. He believed that he had established the fact that these rhabdites could live and multiply freely in fæcal matter—that is to say, that it was a case of heterogenesis or dimorphism. Major Giles did not enter into the old controversy as to whether the disease in the Assam plantations known as kala-azar was ankylostomiasis plus malaria or malaria plus ankylostomiasis. He himself adhered to the former belief, but Captain Leonard Rogers and Major Ronald Ross were in favour of the latter hypothesis. Major Giles said that he had demonstrated the fact that the full life-history of ankylostoma duodenale was an example of dimorphism. He had succeeded in breeding a sexually mature form in the laboratory. He found the sexually mature nematodes, the females heavy with eggs, which were absolutely identical in form and dimensions with those of the parasitic form, in ordure contained in the small cesspits attached to Assamese houses. The embryos of the parasite slowly died from want of nourishment in clean water. In large fæcal masses at a temperature of from 80° to 90° F. the embryos might develop into free sexually mature worms in four days, but under less favourable circumstances they

took a few days longer. Major Giles had had no difficulty in refuting the criticisms of Dr. Sonsino, who had attempted to cast doubt upon his observations on the grounds "that the organism was rhabdites terricola or other free nematodes," and "that the appearances were really the free form of rhabdomena intestinale." The absence of the anguillula stercoralis (the embryo of rhabdonema intestinale) was carefully noted by Major Giles in each specimen of dejecta used for observation and experiment. He dissented from the view that ankylostomiasis was a harmless affection. He pointed out that a number of observers in Assam stated and believed that because the parasite of this disease was met with in the fæces of healthy persons therefore it was harmless, and that the reduced condition of natives afflicted with ankylostomiasis was to be ascribed to other causes. The power of the parasite to produce a toxin seemed to be most probable.

Captain C. F. FEARNSIDE, I.M.S., communicated a paper entitled "Ankylostoma Duodenale," which contained an account of a careful examination of stools for the ova of the parasite. The observations were made on convicts in the prison at Rajahmundry, of whom 68·1 per cent. were found to be infected by the parasite. Captain Fearnside was of opinion that the presence of ankylostoma was not a primary cause of illness usually, but supervening on malarial cachetic states it was a serious condition. In his experience thymol was not an efficient vermicide. He found that in many cases after dosing the patients with large doses of thymol, varying from periods of 10 to 60 days, as many ova of ankylostoma were met with in the stools as at the beginning of the treatment.

Captain LEONARD ROGERS, I.M.S., communicated a paper upon the Classification and Differential Diagnosis of Ankylostomiasis with Special Reference to the Type of the Anæmia. Kala-azar, according to Captain Rogers, was not ankylostomiasis but malarial fever. The dispute as regarded the nature of the term employed by the natives in Assam to denote a disease attended with a high mortality and styled "kala-azar" had been a long one, but the observations made by Major Ronald Ross went to favour the contention of Captain Rogers as to malarial infection being the genesis of the ailment. In 66 per cent. of healthy Assamese ankylostoma was found, but Captain Rogers thought that 500 worms must be present before they could cause a marked effect. He wished particularly to differentiate between true ankylostomiasis and the fact that a few ova of the parasite were present in the stool. It was possible that 80 per cent. of the inhabitants of large provinces of India were infected in that way, but that did not stamp them as suffering from ankylostomiasis. It was only when "constitutional" effects were apparent that the disease could be held to be present.

Surgeon-Lieutenant-Colonel O. BAKER, I.M.S., in a paper entitled "Ankylostomiasis," recorded his experiences of the disease in Burmah. He found that the Burmese harboured the parasite extensively. In the Maulmain jail he seldom failed to detect the ova of ankylostoma among the prisoners, in cases not only of simple anæmia but also of anæmia associated with specific diseases. In advanced cases of ankylostomiasis the patients appeared to be suffering from extreme loss of blood. That the Burmese should readily acquire parasitic infection of their intestine was little surprising, seeing that they squatted on the floor when eating, that their bowls were set on the floor, and that they ate with their fingers. The acquisition of the ova of ankylostoma by food was therefore very possible, and it was probably by way of food rather than by water that the Burmese acquired the infection.

A discussion of these papers followed.

Dr. PATRICK MANSON (London) related cases of ankylostomiasis which he had seen in Englishmen from the West Indies and from Singapore, and although one of these patients was very ill indeed thymol in adequate doses had an immediately beneficial effect. Dr. Manson considered that thymol should be given in doses of about 30 grains every hour for four hours. Betel nut, so largely chewed in Assam, Burmah, and Indo-China, might, according to Powell, be employed on account of a belief in its prophylactic action against infection by ankylostoma. The Chinese method of allowing nightsoil to accumulate and ferment was probably fatal to ova and the embryos of the intestinal entozoa generally, and in some such way the absence of ankylostoma amongst the Chinese might be accounted for.

Major RONALD ROSS, I.M.S. (Liverpool), stated that he considered Major Giles's observations concerning a rhabditiform stage of the parasite of ankylostomiasis to be sound, and condemned Dr. Sonsino's conclusions. Captain Rogers's estimate of 500 parasites as necessary to cause ankylostomiasis was probably much above the mark, and it was obvious that the number required to produce reaction must vary inversely with the strength of the host. Fifty ankylostomata might destroy a patient already debilitated by other diseases or by starvation.

Mr. JAMES CANTLIE (London) remarked that he had never found ankylostomata or their ova in the stools of coolies in Hong-Kong suffering from beri-beri, but that in Borneo, in 100 consecutive post-mortem examinations on cases of beri-beri, Dr. J. H. Walker had found the ankylostoma in every case.

Liver Abscess.

Colonel KENNETH MACLEOD, I.M.S. (Netley), read a paper entitled "The Management of the Lung Lesions consequent on Liver Abscess." He enforced the principle that in cases of liver abscess complicated or followed by lung lesions the lung required treatment and that the liver ought to be let alone. When once an abscess had burst upwards through the diaphragm and invaded the lung a reparative process was set up in the liver, but the destructive condition proceeded in the lung. Attempts to reach the seat of the primary abscess in the liver would only be attended by failure, and there was no justification for such procedure.

Mr. JAMES CANTLIE read a paper entitled "Sub-hepatic Abscess." According to Mr. Cantlie a sub-hepatic abscess was a collection of pus, due to a lymphangitis, between the peritoneal covering of the liver and the liver substance itself. Mr. Cantlie described the results of investigations which he had made as to the depth to which the needle of an aspirator or a trocar and cannula could be introduced without wounding the inferior vena cava. He stated that in a body with a circumference of 32 inches over the region of the liver the centre of the inferior vena cava was four and a half inches distant from the surface.

Mr. W. JOHNSON SMITH (Seamen's Hospital, Greenwich), in a paper entitled "The Diagnosis and Surgical Treatment of Tropical Liver Abscess," advocated surgical treatment in all cases of liver abscess that had not burst up through the diaphragm or into a neighbouring organ. He found the x-rays likely to be of benefit in estimating the position and action of the diaphragm in inflammatory conditions in the neighbourhood of the liver. He had operated upon eight cases of liver abscess during the last five years by the transpleural route and in a single case by laparotomy.

Staff-Surgeon P. W. BASSETT-SMITH, R.N. (Haslar) communicated a paper upon a case of Abscess of the Left Lobe of the Liver with remarks particularly referring to its amœbic causation. The case was interesting inasmuch as the patient had resided in England for two years. He then developed dysentery, and subsequently a liver abscess was opened in the epigastrium and proved to be connected with the left lobe of the liver. The amœba coli was met with in the pus of the abscess to the exclusion of other pyogenic bacteria. At the necropsy cœcal ulcerations of recent date were found, with pericarditis and an abscess in the base of the right lung, although no direct communication was traceable between the abscess in the left lobe of the liver and that in the lung.

NAVY, ARMY, AND AMBULANCE.

THURSDAY, AUGUST 2ND.

On First Aid and Transport of Sick and Injured in Civil Life in Large Towns.

Surgeon-Major G. A. HUTTON (Leamington) opened a discussion on this subject. Speaking as organising commissioner to the St. John Ambulance Association, he described the primitive methods in vogue previously to the inauguration of the St. John Ambulance Association in 1877. Sir John Furley was the improviser and designer of various stretchers, litters, and horse ambulances. The Marquis of Salisbury in 1890, by command of Her Majesty, laid before Parliament the report of a commission of inquiry as to ambulances in cities of Europe and America. Surgeon-Major Hutton outlined the system in New York, where ambulance work was under the care of the police, with telephone equipment, and the expenses of which were defrayed by the city. In Birkenhead this work was done by the fire brigade with telephone aid, and in Liverpool it was under the police, also with telephone communication, and the expenses were defrayed by the Police Committee of the city council. In Liverpool the conveyance of persons who could afford to pay was done

by private enterprise. The system had won the cordial approbation of Mr. Reginald Harrison who asserted that it had saved many limbs and lives. Surgeon-Major Hutton then outlined ambulance work in various towns in the United Kingdom and stated that the proper persons to undertake ambulance work were the police, as they were on duty by day and night. It was necessary that they should be properly trained and annually inspected. He desired to draw the attention of the British Medical Association to the practical uses of the St. John Ambulance Association as an aid to those coming in constant contact with the sick and injured.

Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON, V.M.S.C., V.D., said that it was at the instance of his old friend Surgeon-Major Hutton that he had undertaken ambulance work years ago in civil life. He regretted that even now they were only just at the very beginning, so to speak, of ambulance work in civil life. The police attended classes in many towns but did not go far enough in obtaining higher certificates and too often allowed themselves to become rusty. Continuous study was absolutely necessary as well as frequent practice. The police ought to be paid and not left to do this work in their own time. At Wellingborough civil ambulance work had been put to the test in a terrible railway accident and had triumphantly vindicated its right to existence and encouragement.

The PRESIDENT (Inspector-General BELGRAVE NINNIS, M.D., R.N.) said that ambulance centres should be established in every town. The proper equipment, station, &c., required usually about £100. The inspecting officer in London where stations were fairly numerous on a bank holiday frequently travelled over 60 miles per diem.

Surgeon-Captain J. HARPER, V.M.S.C., also spoke.

On First-Aid in Civil Life.

Surgeon-Major DE ZOUCHE MARSHALL, A.M.R., sent a paper with this title which was read by one of the secretaries in his absence. He classed ambulance workers as "amateurs" and "professionals." The amateurs were usually ladies. The "professionals" were most important and should be carefully selected. Both instructors and pupils should be paid for time spent in learning and teaching. Not every medical fledgling was really able to teach ambulance work who thought that he could do so. Shepherd's "Handbook" should be re-edited by a committee of experts who would also form a school of ambulance instruction in first-aid for surgeons desirous of qualifying as instructors. No medical man should be appointed to instruct who had not a certificate of efficiency. The police should be paid and a third-class certificate ought to carry a grant of threepence per day, a second-class certificate sixpence per day, and a first-class certificate ninepence per day. Other public servants who qualified similarly should be paid at the same rate. In default of the police the St. John Ambulance Association should take the entire ambulance work under its control. All officers of merchant ships which did not carry a surgeon should be instructed in ambulance work. Lock-keepers on canals and boatmen should have courses of instruction on resuscitating the drowned.

Surgeon-Major J. INCE, I.M.S., said that the St. John Ambulance Association originally introduced the first ambulance into London.

Surgeon-Major HUTTON, in replying, said that an ambulance examination should be held with the accustomary inspection of police.

Surgeon-Major T. F. S. CAVERHILL next read a paper entitled:

On Cavalry Ambulance Service.

The salient points of the paper were the following. That the present bearer companies were on foot, therefore they could not keep up with the cavalry. This system had been condemned by experienced cavalry commanders. Major-General Sir Herbert Stewart in Egypt had described this arrangement as "absolutely unsuitable." He had, therefore, improvised a mounted bearer company which did excellent service. Surgeon-General Evatt, in 1881 in Egypt, stated that an infantry bearer company could not keep pace with the mounted men. Lord Morley's committee in 1883 recommended mounted bearer companies. The *British Medical Journal* had said, in noticing the existence of mounted bearer companies in New South Wales, that it was incredible that the same did not exist in the service of this country. Mr. Watson Cheyne had particularly complimented the New South Wales ambulance, without which the Army Medical Department would have been in difficulties. The objections to the present system were (1) tactical, (2) humanitarian, (3) surgical and medical, and (4) administrative. The wounded often hampered the movements of a cavalry general. The *matériel* should be divided into (1) indispensable and (2) reserve. He recommended the following: (1) the addition of a second surgeon to all cavalry regiments in the field; (2) that cavalry ambulances should be specially trained and equipped; (3) that *cacolets* and litters should be provided for the use of all cavalry; (4) a special pattern of light ambulance for cavalry; (5) that the inspector-general of cavalry should annually inspect the cavalry ambulance; (6) that mounted bearer companies should be formed from the Royal Army Medical Corps to act with cavalry and mounted men in the field; (7) that in certain contingencies the *cacolets* and litters of the mounted bearer companies should be made use of; and (8) that experienced surgeons and assistants should be always close in the rear of the fighting-line. The proposals should be considered under two heads: (1) regimental medical aid by trained ambulance men in each regiment, and (2) non-regimental medical aid given by a mounted bearer company of the Royal Army Medical Corps attached for duty to a cavalry regiment.

Surgeon-Major VALENTINE MATTHEWS, V.M.S.C., also contributed a paper entitled, On Cavalry Ambulance Service, based on somewhat similar lines.

The two papers were well received and were favourably discussed by the following gentlemen: Lieutenant-Colonel C. B. MAITLAND, I.M.S., Major E. M. WILSON, R.A.M.C., Surgeon-Major HUTTON, Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, and Surgeon-Major INCE.

Surgeon-Captain F. L. STEPHENSON, V.M.S.C., contributed a paper on the Cycle in the Field for Medical Service. This paper, which was also well received and was favourably commented upon by Surgeon-General O'DWYER, brought the meeting to a termination.

THE ANNUAL MUSEUM.

(*Continued from p. 454.*)

III.—SANITARY APPLIANCES, DISINFECTANTS, &c.

THE decline in the number of exhibits this year was specially noticeable in this section. In particular there did not appear to be any sanitary appliances possessing special novelty, while even the number of disinfectant preparations most commonly presented to view have very sensibly diminished. We are inclined to regard this result as meaning that the choice of a disinfectant is narrowing down to a few well-known ones. The market has been simply deluged with all sorts of new chemical, antiseptic, and disinfectant compounds, each claiming to be more powerful than others hitherto offered. We are glad that this plethora of disinfecting compounds is subsiding, for their great number is perplexing and the medical man knows quite well which antiseptic suits his purpose best and his choice is bound to relate to a few well-known preparations the efficiency of which has been established by practice and bacteriological experiment.

Amongst the best-known appliances which may be correctly described under the category of this section are the many forms of Pasteur (Chamberland) filters exhibited by Messrs. J. Defries and Sons, Limited, of 147, Houndsditch, London, E.C. At their stall were shown an improved cistern filter working without pressure, a laboratory filter for the bacteriological examination of water, and an improved filter for railway-carriages, refreshment-rooms, &c. Photographs and plans were also shown illustrating the application of this method of filtration on a large scale. The exhibit included the Equifex disinfection appliances. A number of interesting hygienic products were shown by Messrs. Paté, Burke, and Co. of 6, Wool Exchange, Basinghall-street, London, E.C. Under the distinctive title of "Petanelle" a wool is obtained which is described as a fibrous derivative of peat possessing important absorbent and deodorant properties. Surgical dressings, aseptic pads, and other sanitary fabrics, and hygienic mattresses and bedding, are made by this firm. The exhibit included "Petanelle" disinfecting powder which is efficient in use and is an excellent deodorant. The "Ronuk" preparations are well worth mentioning in their relation to sanitary application. Ronuk, Limited, of 35, Providence-place, Brighton, prepare a special sanitary "polisher and cleanser" for the floors of hospital wards; it answers

admirably. The exhibit also included a special stain for preparing ordinary deal floors for polishing. Tidman's Sea Salt is well known and the exhibit of Messrs. Tidman and Son, Limited, of Bushell-street, London, E., included a sea soap for use with the salt. The Jeyes Sanitary Compound Co., Limited, of 64, Cannon-street, London, E.C., had an excellent assortment on their stall, chief amongst which were the creolin preparations which are now well established as effective and convenient antiseptics. The exhibit included creolin gauze, creolin plaster, and an interesting preparation known as "lano-creolin." Bandages, absorbent cotton wools, and protective lint were the chief subjects of exhibit by the Liverpool Lint Co. of Mark-street Mills, Leatherfield-road, Liverpool. The "transpirable" wool undervests, body-belts, and chest protectors should be mentioned also amongst the special hygienic preparations of this firm, since these articles of clothing are claimed to allow free evaporation and not to become cold and clammy even under profuse perspiration. The Sanitary Wood Wool Co., Limited, of 26, Thavies-inn, Holborn-circus, London, E.C., had a very interesting assortment of their well-known sanitary wood-wool preparations and appliances. These comprised wood-wool tissue, wadding, pads, sanitary outfits, &c. The exhibit included a very simple form of arm-sling which gives the patient ease, comfort, and convenience while causing a minimum of disturbance during adjustment which may be accurately and readily made.

IV.—SURGICAL INSTRUMENTS AND APPLIANCES.

This section was perhaps better represented than any other department in the annual museum this year and attracted more interest in general. The room set apart for this class of exhibit was quite distinct from the main exhibition, the old museum rooms being found convenient for this purpose. There were, however, a few exhibits coming under this section in the Public Hall. Such, for example, were the surgical appliances of the O'Connor Extension Co. of 2, Bloomsbury-street, London, W.C. This exhibit included the O'Connor patent boot for cases of flat-foot, the O'Connor patent toe-raising boot, and the Clyde patent "Varus" and "Valgus" boots, which are invisible substitutes for ankle-irons. We understand that this company have supplied their patent appliances for use in South Africa. We have already remarked on the ingenuity and excellence of those appliances in particular of this firm which minister to the deformities of the leg and foot. In the exit corridor, which formed a lounge and smoking-room, a great variety of special beds for hospital use were displayed by Messrs. George Gale and Sons of Dominion Works, Birmingham, and Messrs. S. B. Whitfield and Co. of Watery-lane, Birmingham These consisted mainly of the spring bedsteads for use in fractures, &c., designed by the late Mr. Lawson Tait. Atomizers and insufflators were the feature of the stall of Mr. Frank A. Rogers of 327, Oxford-street, London, W. These appliances are excellent in design and produce a very fine spray or dust-cloud, as the case may be. The exhibit also included a number of syringes for hypodermic use and for the spraying of the oro-nasal passages. The Alione Co. of 17, The Broadway, West Norwood, London, S.E., exhibited their special clothing for infants and invalids. These clothes are so made as to be practically in one, so that the infant or the invalid may be laid flat and dressed in a few minutes. Any single part of the body can be uncovered without disturbance. The stall of Messrs. John Weiss and Son of 287, Oxford-street, London, W., was the centre of very general interest since it was simply replete with instruments and apparatus employed in modern surgery. The exhibit included an operation-table with important advantages. A special room was fitted up by Messrs. Weiss as an operating theatre. An exhibit by a local firm consisted of a complete domestic Turkish bath for use at home. The bath comprises really two baths, the one being a cabinet which folds up when not in use, and the other being a shower bath which may be made to give a supply of water at three different temperatures. The manufacturers are Messrs. R. D. and J. B. Fraser, Limited, of Princes-street, Ipswich. Close by were the milk sterilisers of the Aymard Patent Milk Steriliser Co. of St. Matthew's-street, Ipswich. The advantages of these sterilisers are indisputable, since they relate not only to economy and efficiency but to the ease with which the containers may be cleansed. The exhibit also included a simple apparatus for warming food. Special beds adapted for asylum and general hospital purposes were exhibited by Messrs. Billington Brothers of Liverpool. Bed-tables and bed-rests of very useful design and construction were also exhibited by this firm. Aseptic articles of hospital furniture, together with a very large assortment of aseptic minor and general operation instruments, were the feature of the admirably planned stall of Messrs. Down Brothers of 21, St. Thomas's-street, Borough, London, S.E. The Longford Wire Co. of Warrington showed their patent wire as applied to a mattress and to cycle saddles. The quality of the wire of the saddles may be understood from the fact that a single wire of a thickness not much greater than cotton will sustain the weight of 420 pounds, while the patent wire mattress will carry one ton without giving way. Mr. William F. Offord of 2A, Regent-street, Cambridge, showed his special orthopædic appliances. Amongst these were an apparatus for the prevention of recurring displacement of the internal semilunar cartilage of the knee, an apparatus for fixing the hip-joint in tuberculous, and one also for fixing the knee-joint in early tuberculous, disease. An improved method of applying the faradaic current for therapeutic purposes was shown in the Hodgkinson electro-neurotone. It is said that by means of this handy little instrument the change of polarity may be effected without the patient perceiving it, while there is rapidity of alternation. Mr. J. S. Montague of 101, New Bond-street, London, W., showed a number of important improvements in amputation instruments, saws, bone drills, &c., besides also some new apparatus for the administration of chloroform, "gas," or ether. We have already described the "Sentinel" patent domestic milk steriliser which by an ingenious arrangement depending upon the fusion of a metal at a comparatively low temperature works automatically, so that the temperature need never exceed a certain point and the taste of the milk does not suffer. The instruments on the stall of Messrs. Arnold and Sons of 26, 30, and 31, West Smithfield, London, E.C., were inspected with interest by the medical visitors. The exhibit included modern instruments for the surgical treatment of the throat, eye, ear, and nose, recent patterns of amputation and minor operation instruments, and certain improved forms of sterilisers and aseptic cabinets. The x ray apparatus of Harry W. Cox, Limited, of 10, 11, and 28, Cursitor-street, Chancery-lane, London, W.C., are now well-known as admirably adapted to medical and surgical requirements. This firm are the actual makers of the induction coils, and every part is of English make which enables them to guarantee the coils for two years against breaking down. This firm have supplied the hospital ships employed in the present campaign in South Africa with x ray apparatus, and the interesting demonstration given by Mr. Mackenzie Davidson at the meeting depended upon the success and efficiency of the coils of this firm. Besides many surgical instruments of modern design the Surgical Supply Association of 35, Market-street, Manchester, showed an admirable series of specimens of certain concentrated drugs. Amongst these should be mentioned as of special excellence a series of suppositories with various medications. Messrs. Browne and Sayer of Old Swan Chambers, Upper Thames-street, London, E.C., introduced to the notice of the visitors a cheap milk steriliser for infants. This simple apparatus supplies a distinct want; it is effectual and within the reach of the not well-to-do. A very useful bed for bed-fast persons and others was shown by the Aseptomechanical Bed Co., Limited, of Geneva, Switzerland. The bed provides for the comfort of the patient during any attention that may be required. The patient need not be moved and by means of a handle he can be easily raised although he may be of exceptionally heavy weight. In a room at the entrance of the old museum rooms the Dowsing Radiant Heat Co., Limited, of 24, Budge-row, Cannon-street, London, E.C., showed a model of their radiant heat and light bath. As is well known the principle of this bath depends upon the emission of both heat and light rays from the incandescing carbon filaments of electric lamps of certain design. The apparatus has been used chiefly for the treatment of rheumatism, but it has also been employed in anæmia, eczema, and disturbances of the circulation.

WATER-SUPPLY OF DURSLEY. — The Local Government Board have sanctioned the application of the Dursley (Gloucestershire) Parochial Board for permission to borrow £4500 for the purpose of carrying out the water-supply of the district.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

THE CLOSING CEREMONY.

(FROM OUR SPECIAL COMMISSIONER.)

THE closing ceremony was brief but effective; it barely lasted more than an hour. On this occasion the great hall of the Sorbonne was well filled and the proceedings were enlivened by a military band. Professor Albert, of the Vienna Faculty of Medicine, read a paper on the Architecture of the Bones of Men and of Animals. Unfortunately the band had been allowed to occupy the seats generally reserved for the press. These are placed near the desk from which such papers are read, and the journalists had consequently to go to the other end of the broad platform. The soldier-musicians were doubtless much edified by what the learned professor said, but those whose business it was to note down his observations heard hardly a word. Professor Lannelongue, President of the Congress, then delivered a somewhat lengthy speech which was intended to review and to close the labours of the Congress. He insisted on the great fact that science did not belong to any particular nation but that the learned and the wise of all countries united to promote its interests, for these were the interests not of individuals but of humanity. Further, the Congresses were the means of enabling a vast concourse of persons to judge a nation not from reading and hearsay but from actual experience. By holding the Congresses in different countries the scientific men of the world thus acquired extensive practical and cosmopolitan knowledge. Everything went to show that this was above all the century of science and freedom. Science had become the necessary foundation of almost every calling in life; but it was impossible to study science without having the fullest freedom of investigation. Thus science was useful not only by reason of the direct benefits derived therefrom, but also because it trained the mind to that form of independent critical research which could not exist but where freedom flourished. Such, I take it, was the general drift of Professor Lannelongue's remarks, of which the above is a summary and not the precise words. He then went on to deal with the great material difficulties of holding Congresses which brought together several thousands of members. Considering that it was almost impossible to entertain satisfactorily so many guests and to debate fully when there were so many speakers and so little time available, it had been suggested that the Medical Congress should be split up into numerous smaller Congresses of specialties. Doubtless specialties had helped to produce progress; but it was a mistake, a fundamental mistake, to believe that their successes were due to anything else than general knowledge of the entire subjects from which alone the special study of a particular branch could be safely undertaken. A specialty could not be compared to a healthy plant. It was not the trunk—it was but a branch from the great tree of knowledge. Separate that branch from its trunk, plant it by itself, and it would soon wither. Therefore, and if only to maintain this great teaching, the Medical Congress should remain entire and complete. He hoped they would continue to hold the Congresses as they had done in the past, the entire profession united, happy to meet again in other countries old friends and familiar faces. Consequently he did not say *adieu* but *au revoir*.

As Professor Lannelongue concluded with these words the clarions blared out and the band struck up a quick march suggesting the hurrying off to the next Congress. But it had not yet been decided where the next Congress would be held. Therefore when the band concluded Professor Julian Calleja rose. He spoke in Spanish, and soon, in response to the sonorous and dignified tones of that magnificent language, the applause began to ring out in all parts of the hall. Few persons present understood Spanish, but a knowledge of Latin helps a good deal, and it was soon gathered that the speaker was insisting on the honour he hoped the Congress would confer on Spain—how the people of that country would enthusiastically respond, how eager they were to imitate other nations and to honour the men of science of all countries. He was also particularly affected by the delicate attention shown by the band, for, by playing the national Spanish hymn, it had, as it were, proclaimed the hope that the next Congress would be held in Spain. When Professor Calleja concluded he was greeted with applause that was renewed over and over again, and he had to rise and bow his acknowledgments. Indeed, the Congress seems to have terminated in a demonstration in honour of Spain; for it was announced that the prize of £200 offered by the town of Moscow during the last Medical Congress to the author who should have produced a work contributing most benefit to the progress of medical science had just been allotted to Señor Ramon y Cajal, the learned professor of histology and pathological anatomy at Madrid. Dr. de Cortéjarena of the Madrid Academy of Medicine spoke in support of the proposal that the Congress should meet at Madrid in 1903 and to express his gratification at the marks of approbation emanating from the members of the Congress. He only said a few words, and those in French, and as there was no amendment or counter proposal Professor Lannelongue rose and declared that the labours of the Congress were concluded but that it would meet again in three years at Madrid. The band then played the members of the Congress out of the hall and thus a very busy week's work came to an end.

THE GREAT FÊTE GIVEN TO THE FOUR MEDICAL CONGRESSES BY THE PRESIDENT OF THE FRENCH REPUBLIC.

On August 10th, in the afternoon, one of the finest fêtes that has ever taken place at the Palace of the Elysée was given by M. Loubet, President of the Republic, in honour of the Medical Congresses and of the Congress of University Students. The International Congress of Hygiene concluded its opening ceremony that same afternoon as early as possible so as to enable its members to attend. The International Congress of Medicine having terminated the day before its members had no difficulty in reaching the Elysée in good time. The invitations to the Elysée which had been given to the members of the International Congress on Medical Ethics or Deontology and of the Congress of the Medical Press for the receptions which had been postponed on account of the death of the King of Italy, were made available for this day. Altogether it is said that 10,000 invitations were issued; and after my experience of a similar gathering at the Palace of the Luxembourg it was not without some apprehension of a possible crush that I made my way to the Presidential residence. For more than a quarter of a mile away from the Elysée the carriages were stopped and made to form in single file, advancing only a few steps at a time. Most of the occupants were soon tired of this slow and weary process, and as the pavement was quite dry they left their carriages or cabs and proceeded the rest of the distance on foot. Great, however, was their surprise to find that the gates of the Elysée were barred and that the street was thronged with guests who were unable to gain admittance. Though it was only half an hour after four, which was the time fixed, the number of people inside was already greater than could be managed. Still we might at least have been admitted into the yard instead of waiting in the street to the interruption of all traffic. After a while the reason for this exclusion became apparent. Soldiers appeared on the scene, an effort was made to separate the crowd, and we were told to make room, for cavalry were expected. But the pressure from behind was so great that we could not make room and in the midst of the confusion up dashed the Shah in an open carriage surrounded and followed by cuirassiers. Their bright helmets, swords, and breastplates glittered above us, their horses plunged in our midst, and we fought, scrambled, and struggled to get out of the way. The ladies screamed, the men shouted "*Assez! assez!*" by which presumably they had had enough of such a military show. Others, having failed to perceive the Shah's carriage, thought that the troops had taken us for a riotous assembly and were about to charge. Their alarm was consequently intense and they attempted a stampede. Certainly it was not necessary to have brought the whole heavy cavalry right through the crowd of guests who thronged the street from wall to wall. The greater part of the escort might have remained in the rear of the Shah's carriage which alone entered the yard of the Elysée, instead of riding past the entrance and right through the crowd from end to end. Of course, some of the horses

were frightened by the cries of terror and of protest that were raised and began to plunge about, thus greatly increasing the danger of accidents. The indignation evoked by this rough treatment was, however, soon appeased when a few minutes later the crowd were at last admitted into the Elysée, in small batches at a time. There was a terrible squeeze at the gateway, but, however great the discomfort and disorder in the street, once within the Palace the crowding ceased and perfect order prevailed. The handsome saloons of the ground floor, the walls bearing rare and beautiful tapestry, were all thrown open, and after strolling slowly through them the guests reached the great lawn and gardens behind.

It seemed as if these grounds had been laid out on purpose for the day's performance. At the farthest extremity a stage had been built, with a graceful colonnade on each side, and behind it majestic trees formed a natural enclosure. The lawn also is not flat, but concave, so that with rising ground on either side it was easy to obtain a view of the stage. Down the centre a broad carpet had been placed for those who objected to stand on the grass. At the foot of the stage there were the entire orchestra of the Grand Opéra, and then a certain number of chairs for the President, the Shah, and their retinues, and for some of the guests who arrived early enough to secure these seats. The performance had been organised for M. Loubet by M. Gaillard, the Director of the National Academy of Music, and some actors from the Comédie Française and the ballet corps of the Grand Opéra. The actors before each of the four acts recited verses which contained the argument or explanation. Through being detained so long outside I was too late to see the first act. It represented the dances of the barbarians who first inhabited Europe. This was followed by a beautiful scene of the blue Mediterranean dominated by the Acropolis. On the stage, in classic Greek drapery, the high priestess and her attendants danced with slow rhythm in honour of the pagan gods. Both from the artistic and, if not from the medical, at least from the psychical point of view, this was by far the most interesting act. Gradually the Pythoness is overcome by the fumes from the altar, by the rhythmic movements, and by the steady gaze of two slaves who follow her with slow music played on a sort of clarionet, and at last she falls insensible on the ground. From this, the cataleptic stage, she gradually emerges, and then her movements are quite different: they are marked with hesitation and expressions of surprise; she shades her eyes the better to see the visions by which she is surrounded, and then stoops forward to whisper to her attendants the oracles which the entire ceremony is intended to provoke. The next act represented French dances such as the gavotte and the style of dancing that preceded the Great Revolution. Coming immediately after the reproduction of the rites of the Greek oracles, the following lines in the argument did not fail to produce a thrill among many of the audience:—

> "Danseuses, à présent, vous allez nous les rendre
> Dans leur fraicheur pâlie et leur charme effacé,
> Ces visions d'aïeule où, folle, grave ou tendre,
> L'âme de notre France, en dansant, a passé."

Had it not been foretold that dancing would take place where the Bastille stood? and when the soul of France inspired the Great Revolution the grounds that covered the dread dungeons of the Bastille were converted into a garden and over the entrance was written, "*Ici on danse.*"

The last act represented modern ballet-dancing, but beyond the fact, as the *Matin* remarks, that Mademoiselle Zambelli with her rose-coloured satin shoe traced arabesques over the brains of the world, there is not much that was particularly interesting in this last phase of the performance. M. Loubet, Madame Loubet, the Shah, and their households now rose and slowly walked back to the Elysée through the great concourse that stood around them. Naturally they were very heartily greeted. But it took a long time before the guests had all departed. There were buffets under the trees where champagne and iced drinks were dispensed with lavish hand. The buffets inside the Palace had early in the afternoon been strategically surrounded and captured by the Germans, who, as a distinguished physician remarked, profit by the decorum, the timidity, and the politeness of other nationalities to get the most and the best for themselves. However, as among the better educated classes people do not go to such receptions for the sake of what they can eat and drink, there were comparatively few complaints. Apart from the refreshments the gardens were so pleasant and the crowd so interesting that but few cared to hurry their departure. Nearly every nationality was represented, many of them in their national costumes. The students wore strange caps of eccentric shape and often of gaudy colours. Then there were the two sons of the King of Norodom, who displayed their legs in black silk stockings while their bodies were draped with violet silk heavily covered with elaborate gilt designs. The Magyars, of course, stood proudly in their top boots, their tights, and their Attila cloaks, rich in furs and velvets, while plumes rose high above their heads. The trencher caps of the English universities were, however, considered quite as eccentric as any of these, to us, less familiar vagaries. The white caps of the Scandinavians, the spiked helmets of the German military surgeons, the fur bonnets of the Galicians, the broad silk bands of the Swiss students, the black Astrachan and pointed hats of the Persians, the elegant and fanciful dresses of the ladies, the glare of the chandeliers within the palace, the subdued tones of the garden at the approach of nightfall,—all went to make up such a picture, such a variety of effect, such a multiplicity of interest, that this garden party will never be forgotten by the thousands of guests of all nationalities who had the good fortune to be present. The idea of the entertainment originated with M. Loubet. He was anxious to do something new and unprecedented specially in honour of the medical and scientific guests of the French nation. He, in fact, possesses, as it were, the copyright of the whole entertainment. But already a great number of newspapers have urged that what has been done so well deserves to be repeated and special petitions are to be made to M. Loubet to allow the performance to be given again both at the Grand Opéra and in the Hall of Festivals at the Exhibition. Whatever may be the result of these requests, the members of the medical profession of all nations have to thank the President of the French Republic for the honour which he conferred upon them in thus organising such a magnificent entertainment for their special benefit.

A VISIT TO SOME OF THE PARIS HOSPITALS.

(FROM A CORRESPONDENT.)

There is probably no city in the world the hospitals of which are better known, at any rate by name, to physicians and surgeons all the world over than those of Paris. The doors of all were thrown open to the members of the Thirteenth International Congress of Medicine and full advantage was taken of the permission. In many the professors had prepared special demonstrations, and there is no specialty the votaries of which were unable to gratify their interest during the past week in Paris.

Hôtel Dieu.—Many physicians wended their way past the towers of Nôtre Dame to the famous Hôtel Dieu, one of the oldest of the Parisian hospitals, dating from the seventh century, but completely rebuilt in 1878. The importance of this hospital may be recognised from the interesting fact that during the French Revolution it was rechristened "L'Hôpital de l'Humanité." Here Dieulafoy holds the senior chair of clinical medicine, and gives twice a week the masterly lectures associated with his name. This last year he has devoted much time to the pathology and treatment of appendicitis. He is so convinced of the necessity of early surgical treatment that he has formulated his opinion in the words, "*Il n'y a pas de traitement médical de l'appendicite.*" Faisans also has wards in the Hôtel Dieu and is a good clinician, the other physicians being Brissaud and Cornil, there being in all 510 beds for medical cases. During the Congress Lucas-Championnière gave a demonstration of his method of treating fractures by mobilisation and massage with presentation of patients so treated, his theory and practice being similar to those of Mr. W. H. Bennett, whose results have been published in our columns. There is no doubt that his method is a healthy reaction against the exaggerated teaching of putting up even a Pott's fracture in plaster or splints for from three to six weeks or strapping an arm for several weeks for a fractured clavicle. The essential quality in the apparatus used, which should be as light as possible and should be worn for the shortest possible time, is to prevent displacement. There is much work still to be done in this subject, greatly aided as we are in our examination of a fracture by the x rays. Champétier de Ribes is the accoucheur of the Hôtel Dieu and his ward visits are always instructive and interesting, the present school of midwifery in Paris being indeed very strong with Pinard and Budin in the van.

Hôpital de la Pitié.—Not a few of the hospitals of Paris are so constructed and equipped as to inevitably remind one of the injunction not to put new wine into old bottles. It

is striking, for instance, to see over the old gateway of La Pitié the date "1612" still legible on the battered stones and inside to find operating theatres equipped with all the very latest improvements. Another contrast is the notice "*Service de consultation*" on what is evidently the door of the ancient chapel of the hospital, and yet in La Pitié may be seen Terrier, a pioneer in aseptic surgery and still one of the ablest surgeons in France. His formula is, "Perfect asepsis of instruments and dressings, antisepsis of the skin of surgeon and patient." It is well worth while to pay a visit to some of the medical wards of La Pitié, Jaccoud's or Robin's. Babinski, too, has clinical demonstrations in which nervous diseases are shown and contrasted. The immense material of the larger Paris hospitals affords an invaluable training to students and graduates.

L'Hôpital de la Charité.—Close to the Faculty of Medicine, in the buildings of which the meetings of the Congress were held, is the famous Hôpital de la Charité, covering the immense piece of ground bounded by the rue Jacob, the boulevard St. Germain, and the rue des Saints-Pères. Its old amphitheatre, formerly the choir of the chapel, is that in which Corvisart inaugurated the first chair of clinical medicine during the Revolution. Potain and Bouchard are the chief physicians and there are few whose lectures are more instructive and interesting. The surgeon, Tillaux, is one of the old school, but full of a long experience and a wisdom that draws round him daily numbers of students. Tillaux had the reputation in his youth of being able to break a femur in his vigorous hands.

Saint Antoine.—Hayem, who has done so much work in investigating changes in the blood in anæmia and other diseases, issued a general invitation to visit his wards, of which a considerable number of physicians took advantage. It is some distance along the rue de Rivoli and the old Faubourg St. Antoine until the hospital, founded as long ago as 1178 by Foulques, preacher of the fourth crusade, is reached. Lermoyz has here one of the best services for diseases of the ear, the nose, and the throat. Béclère gave an interesting demonstration here to members of the Congress during its session of medical radioscopy with explanation of apparatus and presentation of patients.

Hôpital Necker.—One of the best organised sections of the Congress was that of genito-urinary diseases held in Guyon's department of the Necker Hospital. Guyon has his wards here, his magnificently-equipped out-patient department, pathological department, museum and library, all affording much interest to anyone engaged in the treatment of these diseases. The French members of this section gave a banquet to their foreign *confrères* and Professor and Madame Guyon gave a most enjoyable reception.

Hôpital Cochin.—High up in the rue du Faubourg Saint Jacques is the Hôpital Cochin, which is well worthy of a visit if only to see the two new beautiful surgical wards in the garden, built in 1893 and named the "Pasteur" ward and the "Lister" ward. Cochin boasts three of the most distinguished surgeons of Paris—namely, Schwartz, Bonilly, and Quénu. Quénu has done much good work and good writing on the surgery of diseases of the rectum and is a scrupulously clean operator. Bonilly has one of the largest practices in surgical gynæcology in Paris. In vaginal hysterectomy he adheres to the generally discarded method of assuring the arrest of hæmorrhage by leaving forceps on the broad ligaments for 48 hours after the operation. Chauffard, the genial secretary of the Congress, is an energetic physician whose wards in the Hôpital Cochin are well worthy of a visit.

The *Hôpital Beaujon* is one of the older hospitals of Paris. Berger here does interesting plastic operations and Bazy always extends a hearty welcome to visitors to his gynæcological and genito-urinary cases. Ribemont-Dessaignes has the midwifery building, which is one of the most modern and perfect in Paris. It is only necessary to contrast the French and English textbooks on this subject to see to what a degree of thoroughness of detail this specialty is developed in France.

The *Hôpital Lariboisière*, near the Gare du Nord, was too far for many of the members of the Congress; but those who did go saw Tuffier, one of the best of the younger surgeons, operate. Tuffier is simple and clean in all his abdominal work.

The *Hôpital Tenon* was visited in order to see Léjars operate. Léjars is the author of "La Chirurgie d'Urgence." Here, too, is Poirier, the energetic and versatile surgeon, formerly professor of anatomy. Lannois and Achard have also wards in the Tenon Hospital.

The *Hôpital Laënnec*, in the rue de Sèvres, has two services well worthy of a visit—namely, Landouzy's in medicine and Reclus's in surgery. Reclus is an excellent clinical teacher and does some interesting surgery under cocaine, including the radical cure of hernia, amputations, &c. Landouzy is one of the French authorities on tuberculosis.

The *Hôpital Bichat* is a new hospital built to make up for the necessary demolition of part of the Hôtel Dieu. The surgical department perhaps is best equipped owing to the fact that these wards were held by Terrier and his assistant Hartmann, who are rigid adherents to all rules of asepsis.

The *Hôpital Boucicaut* is the newest and best of the Paris hospitals. Gerard-Marchant is the surgeon and Letulle the physician. Letulle has had the courage and energy to put current ideas into practice and has transformed one of his wards into a sanatorium for consumptives. Doléris is the accoucheur and is always interesting and instructive.

Dermatologists at the Congress had a treat in store for them at the *Hôpital St. Louis*—the largest skin hospital in the world. Built by Henry IV. to take in plague-stricken patients and named in memory of St. Louis who died from the plague when leading the army of France in Palestine in a crusade, it is still recognised chiefly as a school for this specialty, the out-door consultation service being particularly useful owing to the number and variety of the daily cases. The out-door patients in 1899 amounted to 140,000. The library and the many beautifully coloured models illustrative of diseases of skin are invaluable to the student and to the practitioner.

The *Hôpital Ricord*, with its curious old gateway in the Boulevard du Port-Royal, offers a great opportunity to all who wish to study venereal diseases. From 50 to 200 patients presenting every form of chancre, &c., defile daily at the out-door service. The corresponding hospital for women is the *Hôpital Broca* where Pozzi has gynæcological wards. Pozzi's great scientific position has been recently recognised in England by his election to an honorary Fellowship of the Royal College of Surgeons of England.

Children's hospitals.—This department is well managed in Paris both as to surgical and medical wards. The Hôpital des Enfants Malades has several pavilions for the treatment of diphtheria, where Sevestre gives a full course of practical instruction. Lannelongue, the President of the Congress, is surgeon here. Grancher and his able assistant Marfan have also wards here, while the foreigner can go round the wards with Comby or Variot, both excellent observers. The other large children's hospital is the Hôpital Trousseau, near the Bastille. Here Broca has a large surgical service, and here also practise Kirmisson, a well-known orthopædist, and Netter, who has done such good bacteriological and clinical work in pneumonia and meningitis.

Nervous diseases.—The Salpêtrière, with its 4000 inhabitants, is known all the world over. Here Charcot began the scientific study of nervous diseases and laid foundations upon which modern pathology is firmly based. Here Raymond and Déjèrine hold their interesting cliniques, to which flock specialists from all the world. Pierre Marie's wards are at the Hospice de Bicêtre.

OPERATIONS AT DOYEN'S CLINIQUE.

Of the thousands of physicians and surgeons in Paris during the week of the International Congress there must be comparatively few who made a point of systematically and regularly attending the various sectional meetings. The fact that these proceedings are afterwards printed in full, that discussion upon the papers read and defence by each author of the thesis he has advanced are limited to a few minutes, and that many of the papers are merely "taken as read," all these reasons tend to make the sectional gatherings more or less formal. The great interest of such a Congress lies in the incidentals, the meeting of scientific men of various countries all bound by the same interests, the contrast that each sees between what is here known and held to be good and that which he has hitherto considered to be best, and the healthy rivalry of medical men in all departments to offer to the visitor what may be most interesting and attractive. Thus this last week foreigners have had the opportunity of hearing Lucas-Championnière and seeing his well-known, but not altogether accepted, method of the treatment of fractures by mobilisation and massage, of going round his wards with Hayem and Dieulafoy and Potain and Robin, and

of visiting the famous Cliniques Baudelocque and Tarnier. To surgeons, however, one of the most interesting events was the visit to Doyen's private surgical clinique in the rue Piccini, just off the most beautiful part of the Avenue du Bois de Boulogne. Here Doyen operated daily, and in spite of the early hour of half-past seven there was upon each occasion a large attendance, including most of the greatest surgical names of the day. Among those present on Thursday, fresh from his reception by the President of the Republic, was the venerable Virchow, who came on purpose to see the operation of hemicraniectomy for a case of epilepsy due, as the operation beautifully showed when the osteo-cutaneous flap was folded down, to an exostosis growing from the inner table of the skull over the motor area. Doyen pointed out to Virchow that one of the surgeon's chief difficulties in head surgery had been the mechanical one of opening the "boite cranienne," but that with his electrical instrumentation that part of the operation did not last very long. "On the contrary," said the eminent pathologist, "it seems to me very short." Doyen also did a vaginal hysterectomy and an abdominal hysterectomy for fibroid, showing in each case his latest modifications of the operation. Another morning Doyen showed the second step of a craniectomy—that is, the exploration of the brain five or six days after the craniectomy has been performed—an amputation of the breast, an osteomyelitis, and an excision of the tongue. There were many well-known surgeons present, including Hingston (Canada), Kocher (Berne), A. R. Simpson (Edinburgh), William Murphy (Chicago), W. W. Keen, von Bergmann (Berlin), Snegireff (Moscow), and Mayo Robson (Leeds). Between the operations Doyen showed his visitors his technique of various other operations as recorded by the kinematograph—namely, excision of a goitre, an ovariotomy, vaginal and abdominal hysterectomy, amputation of a leg, &c., proving that though he had the reputation of being a rapid operator his speed was not due to haste but to a simplicity of technique which made lengthy operations exceptional. Doyen often quotes the English saying "that time is money," and adds, "*Pour nous chirurgiens le temps c'est la vie.*"

There have been many pleasant social and professional events in connexion with the Thirteenth International Medical Congress and the great numbers of medical men it has drawn to Paris from all parts of the world. On August 4th a meeting of the staff and former residents of the Hertford British Hospital was held to present to the Hon. Alan Herbert, M.D., an illuminated address commemorating his long and valued services to French and English interests in Paris, commencing with the ambulance work during the sieges of Paris in 1870 and 1871 and continuing with the duties of physician to the hospital founded so philanthropically and generously by Sir Richard Wallace. On the motion of Dr. A. A. Warden the chair was taken by Dr. James Miller, who then called upon Dr. J. F. Sutherland to present the address. The meeting was an interesting one and the affection and regard of all present for their old chief were evident and sincere. Sir Dyce Duckworth, who was present, made a few remarks emphasising the value to the English community and profession in Paris of a practitioner of Dr Herbert's high qualifications, and Professor Berger, a former fellow-interne with Dr. Herbert in the late "sixties," also made a few appreciatory remarks. Among those present were Dr. J. A. Bateman, Dr. Neech, Dr. Brandt of Royat, Dr. Waters, and Dr. Cree. The company separated to meet again in the evening around the hospitable table of Dr. Herbert in the rue Duphot, all glad to bear witness to the esteem felt for the doyen of English practitioners on the continent.

The members of the committee for the Section of Urinary Surgery gave a banquet to their foreign *confrères* on August 6th at the Palais d'Orsay in the handsome dining-hall of the new terminus hotel, the chair being taken by Professor Guyon. More than 130 guests sat down to dinner, among that number being included some wives of the members. The toast of "The Foreign Guests" was proposed by Professor Guyon from the chair in the most cordial terms. Mr. Reginald Harrison, in replying, referred to the good work that was being done in the section and to the fact that unless that section had been formed serious difficulties would have arisen in the Section of General Surgery from the great amount of material. He thanked the French hosts for their hospitality and said that all present recognised that though they had no common language they were actuated by the same desire for the advancement of medical science, a desire untrammelled by any differences arising from either clime or language. Professor Küster of Marburg, upon whom the Honorary Fellowship of the Royal College of Surgeons of England has recently been conferred, also thanked Professor Guyon and the French members of the section for their reception. The great success of the section was due to the excellent organisation and arrangements elaborated by the secretary, Dr. Desmos, who had done a large amount of valuable work.

On Wednesday night, August 8th, President Loubet gave a State banquet to the Presidents of Sections of the Thirteenth International Medical Congress and the official delegates from the various nations. The banquet took place at the Palais de l'Elysée and the guests were received by President Loubet and Madame Loubet. The gathering was one of the most brilliant of the many noteworthy events in connexion with the International Medical Congress, and the handsome uniforms and jewelled orders worn by the distinguished company were well set off by the artistic decorations of the palatial apartments. Covers were laid for over 250 and the table decorations excited much admiration, numberless rosebuds having been effectively arranged in connexion with the splendid service of Sèvres china. The dinner was the more enjoyable to many by reason of there being no speeches, and the excellent playing of the band of the 29th Infantry Regiment was much appreciated. After the banquet, before joining in the reception by President Loubet of members of the Congress, many guests lingered to examine the exquisite Gobelins tapestry on the walls and had leisure to admire the tasteful floral decoration of the pillars, the effect of the hanging chains of roses being specially artistic. No pains had been spared in organising the details of this entertainment and the comfort of each individual invited was most abundantly provided for.

On Thursday evening, August 9th, the Neurological Society of Paris gave a dinner in the Restaurant Russe in the Eiffel Tower in honour of the neurologists from the provinces and foreign countries who had taken part in the work of the Neurological Section. The President of the society, Professor Joffroy, was in the chair. The guests, including ladies, numbered about 150, and each as a souvenir of the meeting found in his or her place the medal by Vernon struck in honour of Charcot and subscribed for by his pupils and admirers. Professor Joffroy, as president of the society, proposed the health of Professor Raymond, the president of the section, and of Professor Marie, the secretary, whom recent bereavement prevented from being present, also of the reporters and members of the section. Professor Raymond replied briefly and with emotion to the eulogium of Professor Joffroy. Professor Homen (Helsingfors), M. Roth, M. Jolly, and M. Tamburini returned thanks for their respective countries, speaking in praise of Charcot, who lives in his distinguished pupils. M. Pitres replied for the French provincial neurologists.

On August 10th the Ophthalmological Society of France and the Paris Ophthalmological Society entertained over 130 members of the Ophthalmological section at Chantilly, among the party being about 30 ladies. The invited guests assembled at the Gare du Nord and proceeded by special train to Chantilly, a distance of 25 miles. Carriages were in waiting for the party at the station and after a short drive the Grand Hotel was reached where lunch was served, Professor Dor of Lyons presiding. Several representatives of different nationalities delivered themselves of speeches and then a move was made to the museum formerly the property of the Duc d'Aumale, the heir of the Condés. The picture gallery, containing examples of such painters as Raphael and Poussin, naturally attracted the visitors and the well-kept grounds also were much admired. A long drive through the park and the forest concluded a most pleasant excursion and the members returned to Paris by a special train.

THE SECTIONS.

II.—MEDICINE.

GENERAL PATHOLOGY.

MM. P. HAUSHALTER and LOUIS SPILLMAN (Nancy) contributed a paper entitled

Researches upon Alterations brought about in the Bone-marrow of Young Animals by Infection or Intoxication.

The authors commenced by giving an account of the

different aspects presented by normal bone-marrow in young rabbits at ages varying from two days to two and a half months. They then went on to describe the alterations brought about in 49 rabbits, aged from two days to three months, alterations brought about by infection or intoxications produced by subcutaneous and intravenous injections or by way of the alimentary or pulmonary tracts. The substances used were various cultures, microbial toxins, extracts from fæcal matter, and sundry poisonous substances. They divided the appearances shown by the marrow after infection into classes of the following types: (1) a simple fœtal type showing the cells crowded together without fatty vacuoles; and (2) a type wherein the vacuoles were absent; but the cells were crowded and red, infiltrated, or massed together cells also were seen. In addition to these they distinguished three other types showing certain special features. From their observations MM. Haushalter and Spillman concluded that the particular type observed after inoculation had no relation to the age of the animal, to the length of time for which it survived, to the method of infection, to the nature of the substance inoculated, or even to the intensity of the infection or intoxication. The medullary reaction was able to manifest itself in a marked way in slight general or local infections, but was insignificant in rapidly fatal infections. Microbes and various toxic or chemical substances introduced into the organism by various routes acted upon the marrow of a young animal in very similar ways, bringing about alterations in it which corresponded to a powerful method of defence employed by the organism. Infection of the pregnant female, as other observers had shown, could bring about medullary alterations in the offspring.

Professor G. RUMMO (Palermo) read a paper upon

The Nature and Essence of the Toxic Qualities of Blood-serum both when Normal and Pathological.

He said: "The numerous works published in Italy, France, and in other countries upon this subject have entirely borne out the results of experiments first undertaken by myself and M. Bordoni in 1888 and continued by myself in 1891 and in following years. The group of symptoms of poisoning brought about by injections of heterogenous blood-serum have been accepted by those observers who have followed my work. Some slight discrepancies have arisen as to the toxic dose due to the different animals experimented upon, in the method of collecting the serum, in the rapidity with which the clinical picture develops, and so although I have always brought about a very acute poisoning others have observed a more or less slow intoxication and have arrived at a lower toxic co-efficient. My experiments show that the toxicity of blood-serum does not depend upon urea or upon mineral substances any more than upon increase in the amount of blood matter or acute infection or upon substances which are formed outside the vessels. Kohler's theory as to the fermentation of fibrin and Landois's as to a corpuscular decomposition are not now tenable. As a matter of fact, an animal can lose with impunity one-fifth of its blood and there is no relation between corpuscular disintegration and the toxicity of blood-serum. For instance, the serum of ox blood, which has a high toxicity when injected into a chicken, does not disintegrate the corpuscles to anything like the same extent. *Vice versa*, ox blood-serum passed through a Chamberland filter loses the greater part of its toxic power although the disintegrating power is preserved. In my opinion the toxic power of heterogenous blood-serum is due to toxic principles, to true animal poisons which the blood picks up from the tissues, which are promptly eliminated by the emunctories and which are neutralised by certain glands. These principles are partly fixed and partly volatile and are altered by putrefaction. Given by way of the stomach serum is only slightly poisonous. When introduced into the veins it brings about disturbances in the nervous and muscular systems, in the blood, in the myocardium and its intrinsic innervation, in the blood-pressure, in the heat centres, and in metabolism." Professor Rummo went on to say that he had studied the chemistry of the subject and was able definitely to say that the toxic principles resided in the albuminous bodies of the serum or at least in substances which were precipitated with the albumins.

Dr. F. W. PAVY, LL.D., F.R.S., consulting physician to Guy's Hospital, read a paper upon

Fundamental Points connected with the Pathology of Diabetes Mellitus.

The following were the principal points demonstrated. The primary point to be dealt with in connexion with diabetes mellitus was that carbohydrate, in the form of sugar, was eliminated with the urine in a manner that did not occur in health. From this it followed that in diabetes an inaptitude existed within the system for the proper application of carbohydrate matter to the purposes of life. Thus, briefly stated, diabetes consisted fundamentally in a mal-application of carbohydrate through an error existing somewhere or other within the system. The amount of carbohydrate reaching the system from the food was exceedingly variable, but under natural circumstances no matter what amount within ordinary limits was ingested it did not afterwards become visible to them. All that was observable was that it disappeared from view and that the system derived benefit from it. Exactly the reverse was met with in diabetes. Instead of disappearing from view the carbohydrate reaching the system from the food was afterwards discoverable in the urine as sugar. Proportionately to the amount of carbohydrate ingested so was sugar discoverable in the urine. Penetrating further, the blood of the general circulation was found to stand in a similar position to the urine. Normally, there was in the urine a certain small proportion of sugar which was not to any sensible extent influenced by the character of the food. Normally, also, in the blood there was a certain standard amount of sugar present irrespectively of the nature of the food. There was no difficulty in definitely expressing its quantity and it might be said to stand at somewhere about 1 per 1000. It seemed to be a standard component of the blood just as they found sugar entering as a constituent into the various tissues of the body; and, moreover, it was susceptible of being shown[1] that, as in the tissues, the sugar was not solely dextrose, but dextrose associated with other cupric oxide—reducing carbohydrates so as to give rise to a product possessing a cupric oxide—reducing power considerably below that of dextrose. Such was a representation of the normal state and the small amount of sugar present in the urine corresponded, it might be considered, with that existing in the blood.[2] Concurrently with the outflow of sugar in diabetes there was an increased amount recognisable in the blood. The sugar eliminated had pre-existed in the blood and the fault lay in its having been there. Carbohydrate food now led to the undue presence of sugar in the contents of the circulation and it was by virtue of this that it appeared in the urine. The sugar escaping might be taken as an index of the sugar that had wrongly been present in the blood. The point was thus reached that diabetes was fundamentally connected with the wrong presence of sugar in the blood and the question that next presented itself was, To what cause was the wrong presence attributable? Could it be that the carbohydrate of their food naturally reached the general circulation as sugar and through failing to disappear accumulated and then passed into the urine? or was it that the carbohydrate ought not in reality to reach the general circulation and by wrongly doing so rendered itself evident in the manner that was observed? Dr. Pavy then recounted experiments proving that if sugar were injected into the blood it was not destroyed but after the lapse of some time appeared as such in the urine. Insuperable difficulties attended the view that the carbohydrate matter of their food passed in the form of sugar through the circulation to the tissues for destruction. The facts of modern science gave it no support—indeed, they stood opposed to it. The transit could not occur without being brought to their knowledge by the state of the urine, and no possibility of disappearance existed of a nature to satisfy the requirements of the case. To provide for freedom from glycosuria the carbohydrate of their food must be prevented from reaching the general circulation as sugar and this point brought them to the consideration of the broad question of the mode of utilisation of carbohydrate in the animal economy. The problem now before them was, In what way did the carbohydrate matter of their food become disposed of so as to be prevented reaching the general circulation as sugar? Any solution that was offered of this problem to be satisfactory must locate the disposal somewhere between the seat of absorption and the point where the general circulation was reached—that was, somewhere before the hepatic veins were arrived at. Dr. Pavy then went on to say that, broadly speaking, carbohydrate matter in organism was disposed of as follows: small molecular sized carbohydrates were built up with concurrent dehydration into large-sized

[1] Pavy: Journal of Physiology, xxiv., p. 486.
[2] Baisch, Zeitschrift für Physiologische Chemie, xx., 1895, p. 249.

molecules by protoplasmic action, while large molecular sized carbohydrates were broken down and hydrated into small molecules by ferments. He proceeded to say that it was the change wrought upon absorbed carbohydrate that placed it in a position to pass in the direction of utilisation, and evidence went to show that if this change was not brought about it remained as sugar and in this state was carried to the general circulation whence it flowed off as waste material with the urine. Thus what was wanted to avert the outflow of sugar was that by the proper performance of assimilation the carbohydrate should be disposed of without sugar being permitted to reach the general circulation. To this question of assimilation he would now direct attention. He had entered into it fully in his work on "The Physiology of the Carbohydrates," published in London in 1894. A German translation by Karl Grube was published in the following year by Deuticke of Vienna. As a result of experimental inquiry he had been led to consider that by the following three processes the carbohydrate of their food was disposed of in the villi and in the liver and thus prevented reaching the general circulation as sugar: (1) transformation into fat; (2) synthesis into proteid; and (3) transmutation into glocogen. Dr. Pavy then proceeded to give an exhaustive account of how these transformations were effected. Shortly, his conclusions may be summed up thus: carbohydrates were transmuted into fat by the action of the protoplasmic cells of the villi. As to synthesis into proteid this was effected by the carbohydrate reaching the villi as sugar. Falling within the influence of the cell proteid-plasm encountered the carbohydrate became incorporated into proteid. Transmutation into glycogen occurred chiefly, though not exclusively, in the liver. By assimilation in the manner pointed out above the sugar carbohydrate was prevented from reaching the general circulation as sugar. If assimilation was not fully carried out the non-assimilated carbohydrate reached the general circulation as sugar and appeared as such in the urine. Dr. Pavy proceeded to say that by a test diet information was readily obtainable regarding the extent to which the assimilative power was deficient. It might happen that the loss of assimilative power was such that even with a properly constructed fully restricted diet the carbohydrate contained in it (it was not possible to construct an existence diet *entirely* free from carbohydrate) sufficed to throw a certain amount of sugar into the urine. Ordinarily the loss did not amount to this and thence by the restricted diet a sugar-free state of urine might be induced. With a less extent of loss a certain amount of food of a carbohydrate nature would be found to be susceptible of being taken without leading to the passage of sugar; and thus it was observed to run on, more and more carbohydrate being tolerated in proportion as there was less and less loss of assimilative power. The effect of adjusting the supply of carbohydrate to the assimilative power existing to dispose of it was intrinsically to place the system in a natural state. It was not the mere fact of the waste of food attending the elimination of sugar that constituted the source of trouble in diabetes; this was but a minor part of the question. The source of the various symptoms was the presence in the system of the sugar which had preceded the elimination. The blood of the general circulation stood in a position antecedent to the urine. The sugar found in the urine had previously existed in the blood and had thus created in this fluid a deviation from the natural state which told injuriously upon the entire system. It was not natural for the blood of the general circulation to contain more than a certain small amount of sugar which under normal circumstances was not influenced by the presence of carbohydrate matter in the food. When an increased quantity of sugar was present as the result of faulty assimilative action it was thrown into an unnatural state by which its fitness for administering to the nutritive and other operations of life was interfered with. The various symptoms encountered in diabetes depended upon the abnormal presence of sugar in the blood, and immediately this condition was altered by excluding from the food the carbohydrate that failed to be assimilated the symptoms subsided. The speediness of the alteration in the condition of a patient was often wonderfully marked. The transit of sugar through the system that could be controlled by the reduction of ingested carbohydrate meant the infliction of unnecessary harm, and the harm inflicted stood proportionate to the amount of sugar that was allowed to reach the system and thence escape with the urine. The fact of the voidance of sugar afforded evidence that the system was already overburdened with carbohydrates and anything which conduced to its increase would have the effect of adding to the troubled state existing. What was wanted for rectifying matters was restoration of the assimilative power. This, according to Dr. Pavy's experience, was not attainable unless the system was brought into a natural state by controlling the transit of sugar through it from the food. This was indicated by the removal of sugar from the urine, and with this removal steadily maintained cases presented themselves in which first of all a little carbohydrate food was found to be tolerated without leading to the voidance of sugar and then more and more until it might possibly happen that an ordinary diet could be resumed without occasioning a re-appearance of sugar in the urine. The class of case in which this favourable issue might be met with was that occurring amongst persons above the middle period of life, and in this class instead of being a rare event it was not uncommon to find that the assimilative power might be restored to a certain point and at this point, more or less short of what was natural, remain. Under such circumstances, as long as the carbohydrate taken was within the limit representing the assimilative power existing there was no sugar voided, whilst when the limit was overstepped sugar appeared in the urine in proportion to the extent to which the excess had reached. It was the "*alimentary*" form of diabetes to which Dr. Pavy had been referring and in this form the elimination of sugar was not only controllable by regulation of the food but there was an absence of abnormal tissue disintegration. In the other and more grave form of diabetes to which Dr. Pavy had suggested[3] that the term "*composite*" should be applied the eliminated sugar was in part derived from the tissues of the body as well as from the food. By morbid tissue breaking down the carbohydrate contained in the proteid molecule became cleaved off and passing into the blood reached the urine. Other products also arose from this abnormal tissue disintegration and through these likewise passing into the urine an indication was afforded of the action going on. β-oxy-butyric and di-acetic acids accompanied the sugar and distinguished the "*composite*" from the "*alimentary*" form of the disease. In the latter the pathological condition was confined to a malassimilation of the carbohydrate matter of food, whilst in the former there was this and in addition an abnormal setting free of carbohydrate in the form of sugar from a previously combined state. If, now, they gave a comprehensive glance at the position of their knowledge of the conditions standing at the foundation of diabetes it might be said that the effect of modern research was to carry them away from the view that there was a functional transit of the carbohydrate matter of their food as sugar through the general circulation to the tissues. Under such a view they were faced with insuperable difficulties in relation to the information they possessed with regard to both health and diabetes, whilst under the view contended for in this communication everything satisfactorily fitted in and a rational working basis for the treatment of diabetes was supplied.

Glykæmia and Diabetes Mellitus.

Professor I. SEEGEN (Vienna) read a paper in which he stated that glucose was a normal constituent of the blood and that glykæmia was essential to health. He had examined the blood of 10 healthy men of various occupations between 20 and 30 years of age and had found that the amount of sugar in it varied between 0·16 and 0·18 per cent. Hyperglykæmia was different from normal glykæmia. According to Bernard the limit between them was drawn at 0·25 per cent. Beyond this amount a portion of the sugar of the blood was excreted by the kidneys. Hyperglykæmia was regarded as a necessary condition preliminary to glycosuria. Opinions varied as to the cause of hyperglykæmia. Chauveau and Kaufmann believed it to be due to an over-production of sugar. They relied on differences in the amounts of sugar found on chemical analysis of venous and arterial blood; but Professor Seegen had shown that these differences were within the limits of error and that the method was unreliable. He believed that hyperglykæmia was caused not by over-production of sugar but by interference with its transformation, so that sugar accumulated in the blood. By estimation of the sugar contained in the blood of diabetic patients Professor Seegen had ascertained

[3] THE LANCET, June 16th, 23rd, and 30th, 1900.

that there might be well-marked glycosuria without concomitant hyperglykæmia. It was only in cases of severe diabetes which persisted in spite of the absolute withdrawal of amylaceous food that the sugar of the blood was notably increased, reaching 0·3 or 0·4 per cent.

M. BOSC (Montpellier) read a paper upon

The Treatment of Typhoid Fever by Injections of Artificial Serum.

He said: "Basing my ideas upon a very considerable clinical experience I have come to the conclusion that alongside the usual methods of treatment employed in typhoid fever—namely, the cold bath and the use of caffeine—an important place ought to be given to subcutaneous injections of saline solution. A daily dose given subcutaneously of from 800 to 1000 cubic centimetres of artificial serum brings about two sets of phenomena in typhoid fever patients. First come phenomena of reaction, such as sweating, profuse micturition, and the like, which are relatively unimportant and soon give place to post-reactionary phenomena. These last from 12 to 24 hours, or even 48 hours, and are characterised by an elevation of blood-pressure, an increase in the force of the heart beat, a fall of the temperature, and finally, by a great activity of the emunctories. After the third or fourth injection the blood-pressure, which before was perhaps only from eight to 10 centimetres, rises to 17 or 18 centimetres, and finally is maintained at about 14 centimetres. The antipyretic action of injection of saline solution is not only marked but is also persistent. The amount of urine secreted is much increased and a general tonic action is apparent. I would add that in cases of typhoid fever complicated with intestinal hæmorrhages I have seen remarkable hæmostatic effects produced by the injection. The sole contra-indication for the use of this remedy is the fear of raising the arterial tension too high, but this danger is in great part guarded against by the greatly increased diuresis.

M. CHARRIN (Paris) had found that the serum of animals injected with solutions of mineral substances increased in bactericidal qualities. He would like to know whether M. Bosc had noticed any analogous properties in the serum of his typhoid fever patients who had been treated by injections of artificial serum.

M. BOSC replied that he had not studied the subject from this point of view.

M. BALTHAZARD (Paris) said that in a case of diphtheria treated in M. Richardier's wards by injections of saline solution it was noticed that the toxicity of the urine was much increased. Such treatment, therefore, must aid in the elimination of poisons.

M. BAYLAC (Toulouse) was afraid that the continued use of subcutaneous injection might give rise to septic accidents. For himself he preferred the use of enemata which gave just as good results.

M. BOSC, in reply, said that with reasonable care there was no danger of sepsis, provided that the usual rules for its prevention were observed.

Extra-Buccal Alimentation.

Dr. W. VON LEUBE in his remarks on this subject drew attention to the administration of nourishment by nutrient enemata and by subcutaneous injection. Proteid matters were well absorbed by the rectum, but after the prolonged use of enemata proctitis frequently ensued. Carbohydrates were also suitable for this means of feeding and the best form to use was starch, which was transformed in the rectum into grape sugar and irritated the rectum to a lesser degree than did cane sugar. Fat was not suitable for nutrient enemata, but meat and fat pounded with the pancreas of an animal might be recommended. By means of subcutaneous injections fat was well absorbed, but peptones, albumoses, and carbohydrates were not suitable. The speaker therefore suggested that in those cases in which no nourishment could be taken by the mouth a combination of nutrient enemata and subcutaneous injections should be employed.

Professor C. A. EWALD (Berlin) contended that extra-buccal alimentation was not a complete substitute for feeding by the mouth and could not fully satisfy the claims of the body for any length of time, and in the great majority of cases wasting supervened when extra-buccal feeding was entirely resorted to. An exception might be made to this statement, however, in those cases in which there was a benign stricture of the œsophagus. The best results were obtained when enemata were given simply as a temporary measure or when this mode of alimentation was added to the ordinary means of feeding. Nutrient enemata were much to be preferred to subcutaneous injections. In fact, Professor Ewald was of opinion that the latter could only be considered as experiments and not as recognised measures for administering nourishment.

M. CHANTEMESSE (Paris) read a paper upon

The Action of Microbial Toxins upon the Myocardium.

He said that before studying the effects of microbial poisons upon the myocardium M. Lamy and himself made some observations upon the isolated heart of a tortoise which was supplied with fresh blood. They were thus able to obtain a number of tracings registering changes in the volume and rhythm of the heart. (These tracings served as controls.) The toxins of typhoid fever and of diphtheria only acted slowly and after a period of latency, during which the action of the heart was in no way disturbed. It appeared as though the anatomical elements of the heart gradually took up the poison and that their action was not impaired until saturation point was reached. By employing very strong doses of poison they were enabled to bring about arrest of the heart which remained absolutely irresponsive to stimuli at the end of two hours. If instead of passing the poison directly through the heart it was first injected into an animal and the blood of this animal then used to feed the heart, the heart was much more violently affected. It would almost appear that the poisoned blood had a tetanising effect. However, after an hour or two of tachycardia the heart recovered itself. If, however, a fresh supply of blood from the same poisoned animal was again circulated through the heart the same cycle of phenomena recurred. The question was then, What was this cardio-excitant which existed in the blood of a poisoned animal? Was the toxin modified by the organism or was an *anticorps* produced by the living cells proportionately to their affection by the poison? The second hypothesis appeared to them the more plausible.

M. CENTANNI (Ferrara) read a paper upon

The Fixation of Anti-pneumococcic Serum in the Organism and the Multiplicity of its Component Bodies.

M. Centanni gave an interesting account of his various researches on the subject and concluded as follows: "In my opinion pneumococcic manifestations as well as those of other infections are due less to the direct action of the bacilli than to the rapid supply to the blood of secondary poisons having their origin in the altered tissues. Equally the results of my researches enable me to state that side by side with the multiplicity of bodies which go to make up an antitoxic serum the organism itself takes an active part in the mechanism of immunity."

M. PHISALX (Paris) read a paper upon

The Sources of Natural Immunity.

He said: "If a vigorous adult dog is injected under the skin of the thigh with a fresh non-sporulating but virulent culture of *charbon*, and if after an interval of from five to 18 days the animal is killed and cultures are made from the glands of the inguinal region, new cultures are obtained altogether different from the original anthrax culture inoculated. These gland cultures are deprived of all virulence, but according to the length of their stay in the gland and the intensity more or less marked of the local reaction the morphological characters of the bacillus are sometimes still recognisable, and at other times so completely changed that any observer not previously warned would assign them to a race having no affinity with the bacillus anthracis. They appear as micrococci, either single or in chains; they are non-virulent, stain by Gram's method, and do not form spores. To demonstrate their relationship to the bacillus anthracis I have inclosed cultures in capsules of collodion which I have then introduced into the peritoneal cavity in dogs. If one of these capsules full of virulent anthrax culture is withdrawn from the peritoneal cavity after a three months' stay it will be found to contain only micrococci capable of reproducing themselves indefinitely. This fact proves not only that the bacillus anthracis is transformed but also that the transformation takes place under the influence of soluble and dialysable substances. Why is this modification so slow in taking place in the capsules, although so rapid when the bacilli are exposed directly to the organism of the dog? By employing dogs' serum as a culture medium in the capsules I have ascertained that the transformation into micrococci becomes much more rapidly effected. It happens still more quickly if the capsule accidentally breaks so that white corpuscles are

able to enter. It is therefore probable that in the living animal the bactericidal power is exerted by a continuous supply of assisting principles which are elaborated mainly by the glands of the lymphatics and by the white corpuscles."

M. SABRAZÈS (Bordeaux) read a paper on

The Diagnosis of Pure Nervous Leprosy by Inspection of a Living Nervous Filament; the Part Played by Mosquitoes in the Inoculation of the Disease.

M. Sabrazès commenced by saying that although nodular leprosy was easy to diagnose the pure nervous form was very difficult. In the case of a man, aged 32 years, who suffered from this form of leprosy affecting the area supplied by the sciatic and the external popliteal nerves on the left side he had been able to confirm the diagnosis by inspection of a sensitive nerve filament excised from the anæsthetic region. He considered that mosquitoes might be agents for the transmission of the disease, for the blood of a leprous patient contained Hansen's bacilli in large numbers.

M. BABES (Bucharest) said that a long time ago he had demonstrated the presence of Hansen's bacilli in nerve filaments taken from a leper. He had also put forward the theory that these bacilli could penetrate directly through the skin.

BACTERIOLOGY AND PARASITOLOGY.

Immunity.

Dr. HANS BUCHNER (Munich) read a paper on this subject, treating it under the headings of Natural Resistance, Specific Immunity, and General Conclusions. He preferred the term "natural resistance" to the commonly employed one, "natural immunity," because he considered that the term "immunity" ought to be reserved for a specific, very characteristic condition quite different from natural resistance. Apart from cases of congenital insusceptibility to toxins, natural resistance consisted principally in the microbicide influence of the fluids and of certain cells of the organism and in their richness in alexins. It accounted also for the cure of infective processes which threatened the organism attacked and in which specific immunity recently acquired played no part. In staphylococcic infections, such as boils, abscesses, &c., recovery seemed to be due to an increase of the local or general natural resistance but not to specific immunisation. M. Metchnikoff and M. Bordet discovered several years ago that the alexins of the sera had for the most part their origin in the leucocytes. They supposed, however, that they had to do not with a secretion by living cells but with a passing over of the alexins into the serum after the death and breaking-up of the cells. M. Laschtschenko discovered in Dr. Buchner's laboratory that with a series of different sera heated to 60°C. it was possible to extract bactericide alexins from the leucocytes of rabbits without destroying the leucocytes. There was therefore evidently secretion by the leucocytes without destruction of them. The alexins consequently appeared to be usually secretions formed by living leucocytes and it followed for the explanation of phagocytosis that the bacteria were with doubt enfeebled by chemical action before being devoured. It was unquestionable that living and even virulent bacteria might be devoured by the leucocytes, but it was known that microbes passed through phases of latent vitality during which their vital functions were suspended and were afterwards recovered. If, therefore, in consequence of unfavourable external influences the processes of nutrition and multiplication ceased at intervals it was not always necessary that the micro-organism should be destroyed or permanently weakened. The main argument against the generalisation of phagocytosis was the fact that in the interior of the body, in exudations, &c., bacteria could be destroyed without leucocytes being present. It could, therefore, never be proved, when phagocytosis was observed, that there had been no primary chemical injury of the bacteria before they were attacked by the leucocytes. The microscope would not serve to decide the question, which would doubtless remain unanswered for a long time. Phagocytosis was clearly enough not an indispensable condition for the destruction of bacteria. Dr. Buchner classified specific immunity under three heads: (1) antitoxic, produced by previous treatment with specific toxins or non-toxic modifications of toxins; (2) bactericide, produced by previous treatment with specific bacteria, either alive or dead; and (3) hæmolytic, produced by previous treatment with specific erythrocytes, fresh or heated to 60° C. In all three cases the blood of the animal experimented upon contained a substance (anticorps, Antikörper) which was not destroyed at 60° C. In Case 1 it was the well-known antitoxin contained in anti-diphtheritic and anti-tetanic serum. In Cases 2 and 3 it produced no immediately perceptible effect, but it acted in combination with the non-specific alexins. Natural resistance and specific immunity differed in principle, the former being characterised by the alexins and the latter by the specific substances (anticorps, Antikörper) just mentioned. These specific substances were not destroyed by a temperature of 65° C.; the differences between them depended not on the species of animal from which they had been obtained, but on the "Reaktionsobjekt" (toxins, bacteria, erythrocytes) with which the animal had been treated, and there was a chemotaxic attraction between the specific substance and the "Reaktionsobjekt." The alexins, on the other hand, were destroyed at 60° C.; they differed according to the species of the animal from which they had been obtained, and they did not exhibit the phenomena of chemotaxis.

Toxins and Antitoxins.

Professor EHRLICH in his paper summarised his conclusions under the following statements. 1. Toxins were extremely unstable substances found among products of secretion of animal or vegetable origin. 2. At present it was impossible to give a chemical definition of toxins, and that for two reasons, because (*a*) their tendency to change prevented them from being obtained in sufficient quantity and in a pure state, and (*b*) it was difficult to separate them from certain transformation products called "toxoids" which had an analogous composition. 3. The only criteria of a substance being a toxin were biological in their nature. These criteria were on the one hand the special phenomena presented by the toxic action, and on the other hand the power of determining under certain conditions the formation of antitoxins in the animal organism. This latter property permitted of an analogy being drawn between toxins and certain enzymes, an analogy which had been established by the work of Roux on the poison of diphtheria. 4. In contradistinction to the action of chemically defined poisons the action of most toxins was characterised by a period of incubation which never failed to occur, no matter how large a dose of toxin might be administered. Some poisonous substances which had no period of incubation—e.g., snake poison—resembled the toxins in their power of determining the formation of antitoxins and in their irritability. 5. Substances of definite chemical constitution were quite incapable of producing antitoxins. The statements that it was possible to obtain antitoxic sera efficacious against inorganic poisons, glycosides, or alkaloids, were founded on errors of observation. 6. It resulted from these peculiar properties of toxins that their action on the animal organism must be quite different from that of other poisons. The toxic action of toxins depended on their power of forming chemical and specific combinations with the protoplasm of certain groups of cells. Other poisons—e.g., the alkaloids—obeyed certain laws of distribution in the animal body, but they differed from toxins inasmuch as their relation with the parenchyma was far from a true chemical combination and was more akin to the phenomena of "solid solution." 7. The specific character of this chemical combination of the toxin molecule was due to this molecule possessing a peculiar chemical arrangement, the haptophore group. The fixation of the toxins on the tissues by the aid of this haptophore group did not sufficiently explain the toxic action of these compounds. This toxic action required the presence in the toxin molecule of a second group, the toxophore group, the influence of which on the protoplasm was conditioned by the combination of the haptophore group with the protoplasm. 8. Under certain experimental conditions the action of the haptophore group might be separated from that of the toxophore group. Thus Morgenroth had proved that in cold-blooded animals like the frog the haptophore group of the tetanus toxin molecule was capable of acting on the cells in the cold, but that the toxophore group required heat (explanation of Courmont's experiment). Differences in the time of action of the two groups also accounted for the period of incubation. Dönitz and Heymans following different methods proved that diphtheria toxin and tetanus toxin very rapidly became fixed in the tissues but that the pathological effects appeared slowly. 9. The fixation of the haptophore group of the toxin molecule in the protoplasm was accomplished by means of certain lateral chains which

the latter possessed and which were termed "receptors." These receptors shared also in the normal life of the protoplasm, inasmuch as they contributed to its nutrition by fixing the nutritive principles. Toxins had this in common with nutritive substances, that they possessed, like the latter, certain haptophore groups. In fact antitoxin substances (anticorps, Antikörper) might be produced by means of nutritive substances—e.g., Bordet's coaguline. 10. Receptors existed sometimes only in certain tissues, sometimes in the majority of the organs. (Tetanus toxin in guinea-pigs was of the one kind and in rabbits it was of the others.) 11. The absence of receptors in certain kinds of animals was, perhaps, one of the causes of natural immunity. On the other hand, the presence of numerous receptors in organs of small vital importance might produce, by a sort of deviation of the toxin molecules, a diminished sensibility of the organism with reference to that toxin (Dönitz, Roux). The receptors, far from being constant in the organism, might in certain cases undergo considerable variations (crotine, hæmolysine). 12. When the receptors of the protoplasm formed combinations with the haptophore group of the toxin these receptors ceased to be useful for the vitality of the cells, and phenomena of regeneration then occurred because the protoplasm renewed the receptors which had become unserviceable on entering into combination. In accordance with a general biological law this regeneration went further than merely to compensate what was deficient and became hyperregeneration (Ueberregeneration), which might be so exaggerated by repeated injections of toxins that at length the receptors regenerated in excess became detached and passed into the circulation. 13. These protoplasmic receptors circulating in the blood constituted the antitoxins. They preserved in this state their original property of chemically fixing the haptophore groups of the toxin. ..... 17. Löffler's diphtheria bacillus produced substances of two kinds—toxins and toxons, both of which had the property of fixing the specific antitoxic substance (Antikörper) and therefore possessed the same haptophore group. The action of the toxons was different from, and weaker than, that of the toxins. 18. Every diphtheria culture bouillon also contained non-toxic modifications of toxins; these bodies, however, were capable of combining with the antitoxic substance (Antikörper) and were known as "toxoids"; their formation depended on the fact that the toxophore group of the toxin molecule being much less stable than the haptophore group was much more easily destroyed under the influence of heat and chemical agents. Evidence of this was supplied by researches which had been made on the spontaneous attenuation of diphtheritic poisons preserved in the liquid state. These researches proved that while the toxic power of a given culture bouillon diminished considerably its neutralising power remained unaltered, the question being one of quantitative modification. 19. The toxoids were of different kinds, corresponding to the different causative agencies which were in operation. Many observations seemed to show that the toxin molecule might be destroyed in successive stages and that by employing suitable methods toxoids possessing a partial toxic power might be obtained. 20. It followed from this that specific antitoxins might be derived not only from toxins but from toxoids. Very sensitive animals such as mice and guinea-pigs might therefore be easily and rapidly immunised against tetanus by means of toxoids only. Therefore, when for patients abnormally sensitive on account of their illness only a moderate degree of immunisation was required it might be advisable to use toxoids.

The Hæmatozoon of Malaria.

M. A. LAVERAN said that the hæmatozoon of malaria (hæmamœba malariæ) presented two varieties which might be distinguished by the names "parva" and "magna" in accordance with the size of the parasites. Supposing that hæmamœba malariæ var. parva had been found in the blood of a patient in Senegal, if the person returned to France and again suffered from feverish attacks hæmamœba malariæ var. magna was generally found in the blood; the question was not one of different species but only of varieties. The methods of studying the parasite had made great progress of late years. Koch, Ziemann, Nocht, and Ruge had improved Romanowski's method. In the Proceedings of the Society of Biology for April 15th, 1899, and June 9th, 1900, M. Laveran had described a mode of staining the nuclei of the endoglobular hæmatozoa, which appeared to him to be more easy and certain than either the original or the modified one followed by Romanowski. The researches of Simond, Schaudinn, and Siedlecki upon the coccidia had thrown fresh light on the debated question of the flagella of the hæmatozoon of malaria, and it was now demonstrated that these flagella were male elements the function of which was to fecundate female elements. The observations made by Mac Callum, Opie, Koch, and Marchoux left no doubt on this subject, and in M. Laveran's opinion no one now maintained that the question was one of degeneration of the hæmatozoon. In 1884 M. Laveran suggested that in the absence of human beings the hæmatozoon of malaria was a parasite of the mosquito, an hypothesis which has been verified by the beautiful researches of Major Ronald Ross, I.M.S., supplemented by those of Koch, Grassi, Bignami, and Bastianelli. All the anopheles seemed to be able to convey malaria, the co-existence of anopheles and endemic malaria had now been demonstrated in a great many parts of the world; in non-malarious localities on the other hand only culex had been found. Anopheles which had bitten persons suffering from malaria might infect healthy persons; in the salivary glands of these insects germs were found which were inoculated along with the secretion of the venimo-salivary glands. It would, however, be premature to conclude that malaria was always inoculated in this way, for it was often contracted in uninhabited places; the fact that turning up and clearing the ground often gave rise to outbreaks of malaria was also difficult to explain on the hypothesis that malaria was always inoculated by anopheles which had fed on malarious blood. Protection against mosquitoes was, however, essential in the prophylaxis of malaria. It was also of importance to prevent relapses in patients who had already suffered from malaria, as such relapses would serve to infect anopheles. No means of obtaining an artificial immunity against malaria had as yet been discovered.

THERAPEUTICS, PHARMACOLOGY, AND MATERIA MEDICA.

In the sub-section of Therapeutics some interesting papers were read, among which may be mentioned the Treatment of Biliary Lithiasis, by Dr. NAUNYN (Strasburg), following which came papers on the same subject by Dr. GILBERT (Paris) and Dr. FOURNIER (Paris). Professor BAGINSKY (Berlin) and Dr. HAYEM (Paris) then read contributions dealing with the Indications and Counter-indications for Blood-letting; Dr. LANDOUZY (Paris) read a paper on Saline Injections in Therapeutics; while Professor STOKVIS (Amsterdam) and Dr. LÉPINE (Lyons) asked the meeting the important question, Should Fever be Combated?

In the sub-section of Materia Medica Dr. THOMS (Berlin) made an interesting communication upon Solanum; Dr. VAN AUBEL (Liège) discussed the Active Principle of Digitalis; and Dr. BOURQUELOT (Paris) read a practical paper upon the Deterioration of Medicines through Oxidation.

The most important contribution to the sub-section of Pharmacology was made by Sir T. LAUDER BRUNTON, who read a paper upon the Physiological and Therapeutic Action of Digitalis and of its Active Principles.[1]

NEUROLOGY.

Importance of the Speech-Inhibiting Power of the Auditory Centre for Language.

Professor PICK (Prague), in the course of his remarks on this subject, mentioned as a well-known fact that persons in whom word-deafness (*surdité verbale*) had suddenly developed itself suffered, in addition to paraphasia, from a special infirmity which had been called logorrhœa; they mumbled (*bredouillent*) spontaneously for a long time without cessation, and they repeated the same performance every time that the speech centre was stimulated—as, for instance, by a question being asked. Two explanations of this phenomenon had been given, but the most probable one was that logorrhœa was a consequence of the loss of an inhibitory function belonging to the auditory centre.

Pure Motor Aphasia without Agraphia.

M. P. LADAME (Geneva), in commencing his paper on Aphasia, said that confusion had been caused by the want of a sufficient distinction between aphasias and anarthrias. Anarthrias resulted from a lesion of the projection neurons which constituted the motor bundles of the phonation apparatus. Aphasias, on the other hand, were caused by a

This paper is printed in full on p. 477.

lesion of the association neurons, these neurons being either intra-cortical, inter-cortical, or trans-cortical, and trans-hemispheric or commissural. In ordinary motor aphasia the greater part of the channels of communication of Broca's convolution were more or less affected and the resulting symptoms were in relation with the complication of the lesions. In pure motor aphasia without agraphia—i.e., pure aphemia—the lesion was localised in the association neurons which placed Broca's centre in connexion with the phonetic centres in Rolando's convolutions in both hemispheres. The association fibres which connected the foot of the third frontal convolution with the motor centre for writing remained in that case quite free. Clinically, pure motor aphasia without complications of any kind was characterised by the loss of the faculties (1) of voluntary speech, (2) of repeating words, and (3) of reading aloud. The faculties which were retained were those (1) of spontaneous writing, (2) of writing to dictation, (3) of copying, and (4) of understanding words either spoken or read; the "*langage intérieur*" was, in fact, not interfered with. M. Ladame classified motor aphasias as follows: A. Pure motor aphasias. 1. Pure aphemia without agraphia. 2. Pure agraphia without aphemia. B. Complex motor aphasias. 1. Common motor aphasia (motor aphasia with or without agraphia, with paralyses, monoplegias or hemiplegias, epileptiform attacks, contractures, &c.). 2. Sensory motor aphasia (different combinations of motor aphasia with word-blindness and word-deafness). 3. Aphasia with mental disturbance.

The Projection and Association Centres of the Human Brain.

Professor FLECHSIG (Leipsic), in his paper on this subject, said that his researches had led to a division of the cerebral cortex into sensorial spheres (sensorial centres) and association centres (intellectual centres or organs of thought). This division, however, was distinctly seen only in the human fœtus and the young child; it was founded on the employment of the myelogenetic method which investigated the details of the central fibres by tracing the history of their development. Nerve-fibres belonging to the same group received their covering of myelin at practically the same period, whilst those belonging to different groups were covered with myelin at different periods, succeeding one another according to a definite law. Proceeding on this principle, he had outlined on the cerebral cortex about 40 myelogenetic cortical regions which he had arranged in three groups—(1) regions of early development, (2) regions of late development or terminal regions, and (3) intermediate regions. This classification was not intended to modify or replace the previous division into sensorial centres and association centres, the principle of classification in the two being quite different. Comparative anatomy was of no assistance in this investigation, and the information given by the anatomy of the normal adult brain was very imperfect in comparison with that derived from the anatomy of the brain of the fœtus or the new-born child. From the purely anatomical point of view the cortical regions might be divided into projection centres and association centres. Prof. Flechsig distinguished four projection centres—(1) the sphere of bodily sensibility, (2) the visual sphere, (3) the auditory sphere, and (4) the olfactory and gustatory sphere. Each of these spheres, except the auditory sphere, was formed by combining several myelogenetic cortical regions. The sphere of bodily sensibility contained eight, and each of the others contained three. Moreover, the sphere of bodily sensibility (called also the tactile sphere, the sphere of general sensation) occupied an area rather larger than that which Prof. Flechsig had assigned to it; at the level of the first frontal convolution it came several centimetres further forward. The anterior segment (about two centimetres long) of the gyrus supra-marginalis ought also to be added to it. The gyrus subangularis constituted a new projection field which Prof. Flechsig had discovered last of all; it showed in the structure of its cortex the characteristic features of the sensorial centres. Prof. Flechsig at first distinguished four association centres: (1) the frontal centre; (2) the parietal centre; (3) the temporal centre; and (4) the insular centre. At a later period he united the temporal and the parietal centres in a single centre—the great posterior association centre. A projection centre which was proved to exist in the gyrus subangularis reduced these two united centres to the posterior portion of the second temporal convolution; they were of no great breadth. Apparently there was some ground for retaining the early division into temporal centre and parietal centre. In the parietal and temporal centres it was particularly easy to make out a subdivision into peripheral zones, arriving early at complete development, and into central regions, attaining the adult state later. The same sub-division was evident in the frontal association centre, but the arrangement was more complicated. The peripheral zones touched the sensorial centres and were united to them by numerous fibræ arcuatæ. The insula and the præcuneus seemed to consist only of peripheral zones. Perhaps the peripheral zones constituted transition forms between regions rich in corona radiata and those which had none. Sometimes, although very rarely, atypical bundles of the corona radiata were found on the peripheral zones; they represented aberrant projection fibres. Such isolated observations in no way proved the general and regular presence of bundles of the corona radiata in the peripheral zones. The central regions of the association zones (especially the middle part of the gyrus angularis, the third temporal convolution, and the anterior half of the second frontal convolution) were to all appearance the nodal points of the long association systems, whilst the peripheral zones presented these characters in only a small degree. The central regions were all of them terminal regions; they were essentially characteristic of the human brain. Their destruction in isolated portions was never accompanied by phenomena manifesting any disturbance of motor power or sensibility. Phenomena of motor excitation by which these lesions might be accompanied ought to be interpreted as actions at a distance. The central regions of the association zones were centres which were in relation more or less direct each with several sensorial zones and some with all; they probably combined the functional activities of the sensorial zones. When they were destroyed on both sides the mental power was weakened and the association of ideas was particularly interfered with. The central regions were therefore to all appearance of great importance for the exercise of the faculties of the mind, for the formation of mental images composed of several sensorial operations for the performance of acts such as the naming of objects, reading, &c. These functions were disturbed with special regularity in morbid conditions of the posterior association centres. Clinical observation justified the division of the cerebral cortex into sensorial centres (projection centres) and association centres.

Professor HITZIG (Halle) said that Professor Flechsig's theory of the existence of projection centres and association centres possessing different functions in connexion with the cerebral cortex was based on the following considerations. 1. The alleged existence of projection fibres in the former and the absence of projection fibres from the latter. This assertion, however, could not be maintained in its full extent, for Professor Flechsig had abandoned it himself as regarded one part of his centres of association, and other observers declared that they had seen projection fibres coming from the association centres. It appeared certain that some regions of the cerebral cortex possessed a much smaller number of projection fibres than others which for their part were in more or less direct connexion with the terminations of the sensory or sensorial nerves. 2. The order of succession in the myelinisation of the projection centres and the association centres, as well as in that of the different projection centres in particular. This assertion, like the preceding one, could not be maintained in its full extent because Professor Flechsig himself had found discrepancies which he attributed to pathological influences, but which his opponents with equal right believed to be physiological. 3. The differences in the anatomical structure of various projection centres and the differences in the anatomical structure of the projection centres and the association centres. The opinions of the various authorities being entirely discordant, it was impossible to form a positive opinion on this subject. Professor Flechsig endeavoured to solve the questions connected with the function of the sensory centres by the perception of irritations proceeding from various sensory surfaces and by the association of them with mental images. He supported his views by arguments drawn from pathological observations, such as tactile paralysis, sensory aphasia, &c. In this part of the subject Professor Hitzig was disposed to agree with Professor Flechsig. The function of the association centres was found by Professor Flechsig in the retention of memorised images and in the reproduction and association of them, either by stimulation of adjoining sensitive spheres or perhaps by stimulation of other association centres. He considered them to be the real organs of mind and thought.

Professor Flechsig's views on this part of the subject appeared to be quite hypothetical. His hypothesis of memorised images laid up in certain groups of cells was not in any way proved. With these exceptions the work of Professor Flechsig and the line of argument which he had followed were to be regarded as marking a real advance in the knowledge of the structure and functions of the organ of thought. He would have done better if he had expressed himself less dogmatically.

Professor C. VON MONAKOW (Zürich) said that the theory of association centres and projection centres advanced by Professor Flechsig in 1895 had since that time been essentially modified and extended by its author in an article published in the *Neurologisches Centralblatt* of Nov. 1st, 1898. In this article, which marked a real advance in embryological research, Professor Flechsig divided the surface of the brain into 40 regions in which myelinisation took place at different periods; moreover, he entirely abandoned certain opinions which he had stoutly maintained not long before. The anatomical question involved was this: Were the projection fibres really much less numerous in the association centres than in the sensorial centres? The results at which Professor Monakow had arrived were as follows. The projection fibres united in the corona radiata and spread all over the surface of the brain were in direct connexion with only a relatively small number of cortical points. In all the convolutions the projection fibres formed only a small fraction of the total fibres of the medullary substance. There were therefore all over the surface of the brain considerable spaces encroaching on one another where no projection fibres were to be found. The aggregate of these portions of the cortex thus devoid of projection fibres might be called association centres in contra-distinction to the scattered foci where the projection fibres met. It was, however, impossible to outline even roughly the regions which were poorly supplied with projection fibres and those which were rich in them. Professor Monakow, like other observers, had failed to perceive fundamental anatomical differences between the two kinds of regions in the hemispheres. Moreover, there were in other regions of the brain (the central grey substance) portions of small extent which were also devoid of projection fibres and in which it was not customary to distinguish projection centres and association centres. The arrangement of the fibres in the white substance of the brain did not follow a uniform plan. The division adopted by Professor Flechsig, who considered only the projection fibres of the sensorial tracts, did not take sufficient account of many portions of the brain which were anatomically well defined. For instance, it made no reference to the cerebellum, the locus niger, the nucleus of the tegmentum, the pulvinar, &c. Professor Monakow did not agree with Professor Flechsig's theory according to which all the projection fibres of a cortical sensorial tract became coated with myelin almost simultaneously, his own theory being as follows. Under the name of a neuron group (Neuronencomplex) he included all the individual neurons which unite with one another and progressively form coördinate systems (in the sense of Meynert's systems of different orders of projection) containing a number of neurons which showed a progressive numerical increase as they approached the cortex and of which the minimum was required to produce in the adult a nerve effect (the perception of light, for instance). A sensory tract was composed of a great number of these neuron groups, similar in their nature, of which the most centrally situated were the first to be covered with myelin, the peripheral ones being covered at a later stage.

Nature of Tendon Reflexes.

Professor E. JENDRASSIK (Budapest) read a paper on this subject, the summary of it being as follows: 1. The tendon reflexes were true reflex movements the path of which traversed the grey substance of the cord. 2. The patella reflex and the tendon reflexes in general were the result of a sudden, mechanical, momentary stimulation of the sensory nerves of the tissues surrounding the tendon and were not transmitted to the muscle by vibration of the tendon. 3. The patellar reflex and the tendon reflexes in general could not be put in the same category as other reflex movements. The ordinary cutaneous reflexes were reflexes the circuit of which included the brain and probably the cortex, whilst the reflex movements observed in paraplegics suffering from myelitis—namely, flexions of the thigh and leg and dorsal flexion of the foot (rarely any other kind of movement) produced by prolonged stimulation of the skin—were pathological reflexes resulting from a sort of overflow of the nerve-current prevented from finding its way to the brain or from an increased excitability of the nerve elements of the cord disconnected from the higher centres. 4. Muscular tonus had a great influence on tendon reflexes; if it was increased the reflex was more active; diminution of tonus might even abolish these reflexes. 5. The abolition of patellar reflexes in tabes was not sufficiently explained by current theories; it was very probable that the diminution of the muscular tonus was the ordinary cause of this abolition. 6. In disease of the brain abolition of the tendon reflexes was exceptional. 7. In disease of the cerebellum abolition of the tendon reflex had been observed in only a small number of cases. 8. Loss of the patellar reflexes was by no means a proof of a total transverse division of the nerve elements of the cord. 9. Abolition of the patellar reflexes in traumatic lesions of the cervical or dorsal portions of the cord was a clinical proof that the grey substance of the lumbar portion of the cord was also involved; this extension of the pathological process was not always demonstrable by ordinary histological means, but it was proved by the occurrence of severe trophic disturbances, such as acute bedsore, septic cystitis and pyelitis, vaso-motor affections, muscular atrophy, &c. The abolition of the patellar reflexes was therefore an unfavourable symptom except in the rare cases where the loss of these reflexes was caused by nervous shock. 10. The examination of the patellar reflexes was not always easy to make in paraplegia and it was not uncommon for appropriate means to succeed in eliciting this reflex in cases in which it had seemed to be absent.

Professor C. S. SHERRINGTON (Liverpool) said that two distinct sets of phenomena were included under this name—namely (1) true spinal and spino-cerebral reflexes from tendons; and (2) pseudo-reflexes commonly known as tendon phenomena or by British and American writers as "jerks." The former—i.e., No. (1)—were easy of explanation. The tendons of muscles, long ago recognised by Bichat as capable of affecting sensation, contained the end-organs of afferent nerves. These were the end-organs described by Golgi, by Ruffini, and others. These organs could be excited by mechanical means, probably mechanical strain was the stimulus which was their normal and adequate mode of excitation. The true tendon-reflexes were not of so much importance to clinical medicine as were the pseudo-reflexes (tendon-phenomena, "jerks"). The latter—i.e., No. (2)—was typified by the "knee-jerk." An objection to calling them "tendon-phenomena" was that the tendon was not essential to the phenomenon. That they were not true reflexes was shown by the time of the latency of the reaction being so brief as to exclude the possibility of reaction through a nerve-centre. The "jerk" was a direct response by the muscle to sudden mechanical strain. It was only when the excitability of the muscle was great that this direct response could be elicited from it. When the muscle was cut off from the spinal motor neurons which innervated it its excitability fell too low for the response to be possible. When the afferent spinal roots connected with the spinal tonus of the muscle were severed the excitability of the muscles also fell too low for the direct response to sudden mechanical strain. There was therefore necessary for the "jerk" the maintenance of the spinal tonus of the muscle. The reflexed arc on which the spinal tonus of the muscle depended was composed of the afferent nerve-fibres coming from the muscle (vasto-crureus, in the case of the "knee-jerk") itself and of the motor neurons innervating that muscle. The activity of that reflex arc could be exalted or inhibited by the activity of various other spinal and spino-cerebral arcs. Removal of the cerebral hemispheres led immediately to very great exaltation of the tonus of the vasto-crureus muscle traceable to exalted activity of spinal motor neurons innervating that muscle. The knee-jerk was then much exalted so that a rhythmic series of jerks might follow a single tap on the patellar tendon. On the other hand, the activity of spinal motor neurons innervating the vasto-crureus might be depressed by exciting the activity of the motor neurons which innervate the antagonistic muscles, the flexor muscles of the knee. The activity of these motor neurons of the flexors of the knee was habitually associated with some degree of inhibition of the extensor muscles of the knee. The most easy spinal reflex to obtain in the hind limbs by excitation of the limb itself was flexion of the limb at the knee and at the hip. Hence an easy way of causing inhibition of the

knee-jerk was to excite a reflex movement of the hind limb from some portion of the limb, because the flexors of the knee were brought into play and the activity of the motor cells of the extensors was then partly or completely inhibited. The inhibition could be peculiarly obtained by stimulating the flexor muscles themselves—e.g., the semi-membranosus.

Non-tabetic Lesions of the Posterior Columns of the Spinal Cord.

Dr. ALEXANDER BRUCE (Edinburgh) commenced his paper on this subject by describing the constitution of the posterior columns as shown by degenerations following: (1) lesions of nerve-roots; (2) lesions of the cord itself interrupting the continuity of the posterior columns; and (3) lesions of the grey matter. Passing on to the exogenous tracts, he said that the differentiation of Goll's and Burdach's columns depended on the termination of their long fibres in the nucleus gracilis and nucleus cuneatus respectively. Burdach's column commenced at the fifth dorsal segment. Goll's column had a definite and characteristic form at each segment, any departure from which indicated a partial involvement of its components. Kahler's law regarding the positions of the exogenous fibres in the columns was generally true but required some modification for the cervical and dorsal regions. It was applicable to descending branches of the roots also. The relative position of ascending fibres of roots, as far as known, was considered. The endogenous tracts were then discussed—namely, the cornu-commissural zone of Marie, the comma tract of Schultze, the septo-marginal tract (including the oval field of Flechsig and the triangular area of Gombault and Philippe), the descending tract of Hoche, and the postero-internal root-zone of Flechsig. It was shown that they were not purely endogenous but contained exogenous fibres also. The endogenous fibres of the cornu-commissural zone were short and degenerated upwards. Those of the comma tract degenerated downwards for several segments. Those of the septo-marginal tract were derived from segments as high as the eighth cervical and degenerated downwards. The postero-internal root-zone was mainly composed of root-fibres of indeterminate length which entered it horizontally in the sacral and dorsal regions and in the lumbar and cervical regions passed obliquely upwards into it. The areas of Flechsig were considered. Dr. Bruce then discussed the pathological changes in the posterior columns considered in relation to the diseases which involved them, taking as examples (*a*) progressive muscular atrophy of the Charcot-Marie type; (*b*) cerebral tumours which frequently produced degenerations in the posterior columns, sometimes interpreted as due to retrograde degeneration from the nuclei of the columns; (*c*) syringomyelia; (*d*) Friedreich's ataxia; and (*e*) combined sclerosis of the posterior and antero-lateral columns, including pellagra, ataxic paraplegia (Gowers) or ataxo-paraplegic tabes (Dejèrine), the combined system degeneration of German authors, and combined degeneration in grave anæmia. In pellagra, the sclerosis, according to Tuczek, affected chiefly the column of Goll and the middle root-zone, and spared relatively the cornu-commissural and the septo-marginal tracts. The roots, according to Tuczek, were healthy; according to Babes they were degenerated. Both these observers regarded the sclerosis as the result of the destruction of the nerve fibres by the direct action of some toxins. In ataxic paraplegia the lesions resembled those of sub-acute combined degeneration, but the disease differed from the latter in its much more prolonged course. The degeneration of the columns in grave anæmia seemed to be the same as those described by Rothmann as combined system-disease, and by Russel, Collier, and Batten as sub-acute combined degeneration. The lesion was most marked in the dorsal and the cervical region. It affected mainly the middle root-zone in the lumbar region and in the cervical and dorsal chiefly Goll's columns.

Dr. C. L. DANA (New York) said that the points of view from which the posterior columns of the spinal cord and the posterior spinal roots, so far as diseases were concerned, were studied were (1) diseases in connexion with the embryological areas; (2) diseases in connexion with the exogenous and endogenous fibres; and (3) diseases connected with the vascular supply. He gave a brief review of the non-tabetic lesions and then discussed the subject of acute ataxia due to spinal lesions, "acute spinal ataxia."

Dr. E. A. HOMÉN (Helsingfors, Finland) gave the results of observations made on 16 cases at the Helsingfors Pathological Institute.

Nature and Treatment of Acute Myelitis.

Dr. G. MARINESCO in his paper on this subject said that acute myelitis was characterised by a multiple process involving the vessels, interstitial tissue, and nerve cells. The pathological lesion of most frequent occurrence was hæmorrhagic softening, caused by toxic and infective agencies, of which the most important were the streptococcus, the infectious principle of rabies, and the pneumococcus. Dr. Marinesco had tried Marmorek's serum in the treatment of cases of streptococcal origin, but had not found it successful.

Differential Diagnosis of Organic and Hysterical Hemiplegia.

Professor D. FERRIER (London) in his paper on this subject said that hysterical hemiplegia might simulate hemiplegia due to organic cerebral disease, and there was scarcely a single symptom uniformly present sufficient of itself to enable one off-hand to differentiate the one from the other. A correct diagnosis was, however, in most cases possible, and this depended on a consideration of several factors, of which the more important were the following:—(1) the personal and family history; (2) the mode of onset; (3) the characters of the paralysis; (4) the course and termination; and (5) the state of the superficial and deep reflexes. Hysterical hemiplegia like organic hemiplegia might occur at all ages. The subjects of hysterical hemiplegia were individuals, male and female, of neurotic inheritance, and of the so-called hysterical temperament, and who had either been previously liable to hysterical attacks, or exhibited some of the permanent stigmata of hysteria, such as zones of hyperæsthesia or anæsthesia, or complete sensitivo-sensorial hemianæsthesia of the recognised type (Charcot). The subjects of organic hemiplegia were (apart from traumatism or autochthonous intracranial lesions) those predisposed by vascular, renal, or cardiac disease to cerebral hæmorrhage, embolism, or thrombosis, of the existence of which it was generally possible to obtain evidence by careful clinical investigation. Hysterical hemiplegia occurred most commonly after some great nervous disturbance, such as emotional shock, or after an epileptiform or apoplectiform attack (so-called hysterical apoplexy), simulating cerebral hæmorrhage. In hysterical hemiplegia the upper or lower extremity might be more or less completely powerless and flaccid, but the face was rarely so. Such affection of the face as occurred was usually of the labio-glossal spasmodic type (Charcot) on the same or the opposite side. The leg was usually more affected than the arm, and in walking the paralysed leg was dragged like an inert mass and not circumducted as in organic hemiplegia (Todd's symptom). In the majority of cases hysterical hemiplegia was associated with complete sensitivo-sensorial hemianæsthesia. Hysterical hemiplegia might last an indefinite time and continue of the same flaccid character throughout. In hysterical hemiplegia the deep reflexes were not necessarily altered, and true ankle clonus was rare, whereas in organic hemiplegia the deep reflexes became unavoidably exaggerated and ankle clonus was the rule.

Professor W. ROTH (Moscow) dealt chiefly with the characteristic symptoms of organic hemiplegia, arranging them in the following order. 1. Aphasia in any of its forms might be present and was not difficult to distinguish from hysterical mutism. 2. Conjugate deviation of the eyes was marked by the amplitude of the movements of the eyes towards the paralysed side being diminished and often continuing so for a long time. Sometimes this diminution manifested itself only in voluntary movements, but did not occur in reflex unconscious movements or if the patient followed with his eyes an object which had a lateral motion. 3. Facial paralysis might be "systematic" and might show itself only in imitative movements. Facial paralysis was excessively rare in hysterical hemiplegia; what was generally seen was a pseudo-paralysis, a hypotonus united to a hypertonus, with characteristic little jerking movements of the muscles of the opposite side of the face. 4. The paretic deviation of the tongue and the typical difficulty of articulation were in proportion to the degree of paralysis of the tongue. In hysteria the deviation of the tongue presented itself in a variety of well-known capricious forms (hemispasm, systemic paresia, deviation to the opposite side). 5. The relative intensity of the paralysis of the limbs and of the muscular groups of a limb was usually typical. Certain attitudes and the manner of walking were characteristic. 6. Associated involuntary movements of the paralysed extremities might occur. 7. The

evolution of the paralysis in cases not preceded by a fit usually presented characteristic features. 8. The paralytic symptoms had a tendency to diminish. 9. The contractures were characteristic. 10. The exaggeration of the tendon reflexes and bone reflexes (jerking movements of the patella, hands, and feet) corresponded to the muscular hypertonus. Reflex jerking movement of the foot might, however, show itself exceptionally in hysterical hemiplegia. 11. The superficial reflexes were of less value, with the exception of Babinski's toe phenomenon. 12. Hemianæsthesia was less marked than paralysis, and the degree of anæsthesia was not necessarily the same over the entire half of the body, but there were none of the abrupt and capricious transitions seen in hysteria.

PSYCHIATRY.

Treatment of Insanity by Rest in Bed.

Dr. CLEMENS NEISSER (Leubus) in his paper on this subject said that this system of treatment would inevitably have the effect of assimilating lunatic asylums to hospitals. Rest in bed was not a specific for mental diseases any more than for febrile diseases; but it was indicated in all cases of acute illness and also in the treatment of persons whose general behaviour was disorderly or excited, and in mania, melancholia, epilepsy, general paralysis, &c. When recovery had reached a certain stage the patient must be allowed to get up, for if kept in bed too long he might perhaps refuse to leave it (*manie du lit*).

Dr. S. KORSAKOV (Moscow) spoke very highly of this method of treatment, but said that it must not be enforced too strictly in the case of patients who were feeble-minded or predisposed to apathy, anæmia, and masturbation.

Dr. JULES MOREL (Mons) said that the treatment of insanity by rest in bed was originated by Dr. Guislain in 1852; it was adopted in Germany in 1854 and in the United States of America in 1878. Dr. Morel devoted a considerable part of his paper to the advantages of having well-trained attendants.

Sexual Perversions from a Medico-legal Point of View.

Professor KRAFFT-EBING read a paper on this subject, at the close of which he said that persons who were proved to be under the influence of obsessions or irresistible impulses could not be held responsible for their actions. In the event of failure to prove that the culprit's impulse was irresistible his culpability ought to be reduced as far as the law would allow on the ground that he was, through no fault of his own, suffering from mental degeneration.

The Pathological Anatomy of Idiocy.

Dr. G. E. SHUTTLEWORTH (Richmond) and Dr. FLETCHER BEACH (London) presented a paper on this subject in which they said that as far back as the time of Hippocrates the physical characteristics of idiocy were noticed. Pliny, too, in his "Historia Naturalis" mentioned the macrocephali, and Talpius ("Observationes Medicæ") had a chapter on hydrocephalus which he had seen associated with idiocy. Willis, in his "Collected Works," in the part dealing with the anatomy of brain (English edition) described and figured the brain of a young man completely imbecile, the size of whose brain was scarcely one-fifth of that of an ordinary man (microcephalus). Pinel ("Traité sur l'Aliénation Mentale") also described and gave illustrations of two cases of microcephalus, and Gall and Spurzheim in their Atlas accompanying their "Anatomie et Physiologie du Système Nerveux en Général et du Cerveau en Particulier" gave plates not only of microcephalic heads and crania, but of hydrocephalic crania, in one case of a cretin and in the other of an imbecile child. The above remarks had reference to the size of the head. As regards the form, bony deformations were noticed by Meckel in "Mémoires de l'Académie de Berlin," published by him in 1760. With respect to conformation, Tulpius ("Observationes Medicæ Rariores") remarked that the convolutions were less numerous, and Malacarne ("Encephalotomia Nuova Universale") stated that the lamellæ of the cerebellum increased or diminished according to the development of the intelligence. As regards the organisation, Meckel (1760) remarked that in idiots there were dryness and hardness of the cerebral substance, and Bonnet and Haller reported tumours and ulcerations in the brain and cerebellum. Finally, Esquirol ("Des Maladies Mentales") noticed that the convolutions were small, atrophied, compact, and thin, and that the lateral ventricles were of small capacity. Apparently the first observers dwelt most on the size and shape of the head as causes of idiocy, the structure of the brain being noticed at a later period. Modern authors were of opinion that pathology and classification were mutually interdependent. According to this view Dr. Shuttleworth and Dr. Beach classified the anatomo-pathology of idiocy under three chief heads—viz., (*a*) congenital formative defects; (*b*) developmental cases; and (*c*) acquired cases. Under the first head they placed (1) microcephalus; (2) hydrocephalus; (3) scaphocephalus; (4) *mongol* imperfections of the osseous, cutaneous, mucous, and in some cases cardiac tissues; (5) neuropathic *genetous* cases, in which the convolutions were coarse and simple, or were small, slender, and curling (microgyry); (6) amaurotic *genetous* cases; (7) sporadic cretinism, due to defective structure or absence of the thyroid gland; and (8) partial local defects, such as defects of the corpus callosum, or porencephalus. Cases illustrating some of the foregoing types had been reported by them and by Marshall, Ireland, Telford-Smith, Spiller, Vogt, Otto, Schrœder van der Kolk, Bruce, d'Astros, Jastrowitz, Hammarberg, Klinke, Sachs, Koplik, and Kingdon assisted by Risien Russell. Under the second head they included (1) eclampsic cases with hæmorrhagic or inflammatory lesions; (2) epileptic cases, the views of Bevan Lewis, Andriezen, Batty Tuke, and Echeverria being given; (3) syphilitic and juvenile general paralysis cases, the opinions of Clouston, Mott, and their own being quoted; and (4) paralytic cases in which there were degenerative changes in the vessels of the brain or in some cases atrophy of the brain. These cases might be due to birth-palsy, to palsy coming on after whooping-cough, or to inflammation. The opinions of Schrœder van der Kolk, Freud, Telford Smith, and of themselves were given. Under the third head were comprised (1) traumatic cases due to pressure on the head during labour owing to abnormal narrowness of the pelvis, prolonged labour, or less often the use of the forceps, and lesions produced by accidents; (2) post febrile inflammatory cases (under this subhead was placed hypertrophic idiocy, a monograph on which subject had been published by one of them); and (3) sclerotic idiocy, a disease first described by Bourneville in 1882. The changes in the brain observed in this disease were noted by Dr. Wilmarth in 25 out of 100 cases, and had been noted frequently by Dr. Beach, who not only described the changes already observed but also hyperæmia, softening, tumours, and disease of the membranes of the brain; asymmetry of hemispheres and convolutions; alteration in relation of grey to white matter of the brain; simplicity of convolutions, thickening of the arteries; thrombosis; disease of the cerebellum and spinal cord; and anomalies of the convex surface and base of the cranium in Tuke's "Dictionary of Psychological Medicine," 1892. The microscopical appearances of idiocy had been observed and noted by one of them, and by Bevan Lewis, Andriezen, Mierzjewski, Hammarberg, and Bourneville.

Mental Disturbances of Puberty.

Professor MARRO (Turin) in his paper on this subject presented his conclusions as follows. 1. Puberty had an important influence on the mental state of the individual and this influence might be manifested either (*a*) by investing previously existing mental disorders with features which up to that time they did not possess or possessed in only a minor degree or (*b*) by creating a tendency to mental derangement. 2. Among the mental disorders from which young persons of both sexes might suffer at the period of puberty the hebephrenia of Hecker was one which might be regarded as specific on account of several symptoms which it shared with other mental disorders being combined in it and in no other form of mental aberration. 3. The symptoms exhibited in this condition and the changes found on post-mortem examination proved that the cerebral cortex and the membranes were the seat of a morbid anatomical process. The initial symptoms tended to show that the condition might with some probability be considered as originating in a process of auto-intoxication due to disorders of the alimentary tract. 4. Puberty and the precocious and abnormal exercise of the generative functions might give rise to other morbid manifestations which permanently influenced the disposition of the individual in a peculiar way, although increasing age and life under favourable conditions might obliterate the evidence of them. 5. For the prophylaxis of mental derangement the greatest attention must be paid to the avoiding of all weakening influences which interfered with the development of the physical and mental

organisations at this important period of life, such as excessive bodily or mental fatigue, and, above all, the precocious and abnormal exercise of the sexual functions.

Dr. JULES VOISIN (of the Salpêtrière, Paris) also read a paper the substance of which was as follows:—1. The term "psychoses de la puberté" denoted mental derangements which were developed during the period of puberty, that is between 14 and 22 years of age. This period was characterised by sexual maturity, and by the physical and mental development of the individual. 2. All the varieties of mental derangement might show themselves at this period. Hebephrenia as a morbid entity did not exist. The term "hebephrenia" ought to be reserved for cases of dementia. Mental disorders developed at the initial stage of puberty were less serious than those developed during the progress of puberty or at the end of it. The former ought to be called mental disturbances of puberty and the latter mental disturbances of adolescence. 3. Hereditary predisposition was the principal cause of these affections; it was the incomplete intellectual development of the individual associated with his hereditary taint that gave to the disease its peculiar character called hebephrenia. ..... 7. Premature dementia (hebephrenia) described by Kahlbaum and Hecker presented itself under two forms, of which one was severe and one was slight. The symptoms of the former were stupor, dementia, catatonia, and mental confusion. This rendered its diagnosis difficult. The slight form or premature simple dementia must be distinguished from progressive general paralysis and spasmodic epileptic dementia. 8. The mental confusion was a "délire de rêve," or dreamy delirium, which had much analogy to alcoholic delirium. This dreamy delirium was the characteristic of mental disturbances of auto-intoxication and it was almost certain that disorders of nutrition during adolescence were the causes of this delirium. Recovery took place in half of the cases; it was generally preceded by *crises*, profuse perspiration, diarrhœa, salivation, menstruation, abscesses, boils, &c. 9. Progressive general paralysis in the young was distinguished from progressive general paralysis in the adult by the absence of grandiose ideas and by its slower course.

Professor ZIEHEN (Jena) read a third paper on the subject in which he said that from a consideration of about 400 cases of mental disease, the first symptoms of which dated from the period of puberty, that is from the age of 13 years to about the age of 21 years, he had arrived at the following conclusions. 1. Mental morbidity attained one of its maxima at the age of puberty, and the tendency thereto was increased by hereditary taint. Apart from heredity it was principally anæmia, bodily and mental overwork, acute infectious diseases and sexual excesses which played an important part in the causation of the mental disturbances of puberty. 2. Almost all the known mental disturbances were met with at the time of puberty. The special influence of puberty showed itself only in the greater prevalence of certain mental disorders and in the symptoms and course of mental derangement being often (but not always) modified in a certain manner. It was a mistake to speak, as some authors had done, of a special mental disorder of puberty which would include the majority of the cases of mental disease occurring at that period. The only mental disorder which belonged almost exclusively to puberty, the dementia hebephrenica or hebephrenia of Kahlbaum, occurred in only a relatively small number of cases. 3. Apart from hebephrenia the most common mental disorders of puberty were *folie circulaire*. mania, melancholia, acute paranoia, wild hallucinations (amentia of some authors), and hysterical and epileptic mania. ..... 5. The prognosis of the insanity of puberty was in general worse than that of insanity occurring after puberty. 6. The treatment of the insanity of puberty did not in general differ from that of insanity occurring subsequently to puberty. Complete confinement to bed was, however, admissible only for cases where there was much exhaustion. Regular occupation, bodily and mental, for each hour of the day was of the utmost importance. Narcotics should be avoided as much as possible. Great caution was necessary in keeping such patients in association with adult lunatics.

Dr. RÉGIS (Bordeaux) remarked on the important part played by auto-intoxication in the causation of the insanity of puberty.

Dr. MABILLE (La Rochelle) said that he had observed various forms of mental disorder at the age of puberty but was not satisfied that there really was an insanity of puberty possessing special clinical features.

Dr. TOKARSKI (Moscow) said he thought that the previous speakers had not paid sufficient attention to certain psychical signs of hebephrenia, such as theatrical attitudes, pathetic demonstrations, &c.

Dr. TRENEL (Rouen) remarked on the difficulty of diagnosing premature dementia.

Dr. BENEDICKT (Vienna) mentioned the importance of sexual abuses (platonic or actual) in the production of the insanity of puberty.

Dr. GILBERT BALLET (Paris) made a distinction between (1) mental disturbances occurring during puberty and (2) the mental disturbances of puberty. The former were of ordinary occurrence: the others seemed to have clinical features approaching those which had been described by Kahlbaum. He preferred the term *folie d'adolescence* to the term *folie pubérale*.

DERMATOLOGY AND SYPHILOGRAPHY.

The Parasitic Origin of Eczema.

Dr. P. G. UNNA (Hamburg) commenced his contribution to this subject by pointing out that the doubt which existed as to the organisms which gave rise to eczema was in part due to the absence of a classification of micrococci. Up to the present time the micrococci had been classified unscientifically, so that species were confused which had very different pathological actions. He considered that one method of arriving at a better classification of micrococci would be to study more exactly special methods of staining. In order to prove that an eczema was due to a micro-organism it was above all necessary to prove that the dermatological lesions produced by the inoculation of the supposed microbe were identical with those of a true eczema. Among the many micro-organisms which were found to be present in an eczema there were many which on inoculation gave rise to an eczema. The first thing to do was to distinguish the different varieties of eczema which were due to the action of different microbes. Dr. Unna stated, in conclusion, that it was certain that eczema was a contagious disease and under certain circumstances epidemic.

Professor JADASSOHN (Berne) first defined the terms "parasitic" and "eczema." He then detailed the results of some researches on the subject under discussion undertaken by Dr. Frédéric of Berne. In most eczemas no micro-organisms could be found, or at all events not such as could be considered pathogenic. As in many other skin affections common micro-organisms invaded the inflamed area and might give rise to more or less important secondary changes.

Dr. JAMES GALLOWAY (London) said that the present wide use of the term "eczema" rendered it necessary to define the condition dealt with. His own investigations had been limited to "acute papulo-vesicular eczema." He had taken four cases and these had been submitted to careful bacteriological examination, the earliest lesions being chosen so as to avoid contaminating influences as far as possible. From all four cases a white coccus was isolated, though in one of the cases some moulds were found, and in another staphylococcus aureus. The white cocci which occurred in the four tubes seemed to show some slight differences, especially with regard to the power of liquefying gelatin and to the tendency to grow in masses or in smaller groups, but they were all examples of what would be readily recognised in the laboratory as the staphylococcus pyogenes albus. After many cultures the cocci still were pathogenic to mice, but the degree of virulence was not great. The conclusions at which he had arrived were the following:—1. That cocci producing white cultures were present in early and uncomplicated lesions of papulo-vesicular eczema, but that these cocci, though varying in minute particulars in different strains, were not sufficiently differentiated to distinguish them from the staphylococcus pyogenes albus. The morococcus described by Dr. Unna fell into this category. The descriptions given by him were not sufficient to distinguish it as a separate species. There was still less evidence to consider this organism as the specific organism causing eczema. In later stages of eczema other organisms made their appearance so that the coccus yielding white cultures might even be crowded out of existence. The most important of these organisms was no doubt the staphylococcus pyogenes aureus. 2. It appeared that in the production of eczema more than one factor was at work, though the presence of such organisms as those mentioned, which were well known to have pyogenic powers, must be an important

factor in every case. These organisms did not grow in such enormous numbers on injured surfaces without producing some result and from the knowledge of their effects in other situations the result must be noxious. The local infectivity and chronicity of eczema were probably mainly due to the presence of the organisms mentioned. 3. Other factors, however, were probably concerned in the production of any attack of eczema and of these two appeared to be of much importance: (*a*) the predisposition of the skin usually associated with the seborrhœic state, to the free growth of many varieties of vegetable parasites (this was probably the most effective of all the conditions of susceptibility or of lowered resistance in the causation of eczema); and (*b*) the clinical evidence seemed to be conclusive that certain conditions of imperfect metabolism predisposed to the onset of eczema, or at any rate to its occurrence, and of these the most common were those associated with improper digestion and assimilation of food.

Dr. L. BROCQ (Paris) and Dr. VEILLON (Paris) communicated a paper of which the first part contained a discussion as to what conditions should be included under the word "eczema." They excluded many forms, such as seborrhœic eczema and the dermatoses resulting from traumatism, and limited the term "eczema" to a condition commencing by the formation of vesicles, which might be well-marked or ill-developed, with a special evolution. The authors of the paper then gave a historical account of the question up to the present time and proceeded to describe their own researches, the results of which were as follows. Recent unopened eczematous vesicles contained no microbe which could be detected by microscopic examination or by cultures, but old broken vesicles contained many micro-organisms, especially staphylococcus aureus, though a streptococcus and a staphylococcus albus were also found. If a layer of sterilised oxide of zinc were placed on a disinfected patch of eczema although the vesicles continued to develop they were free from germs. If a culture of the staphylococci from an eczematous patch were inoculated on to another part of the body of a patient suffering from eczema they did not give rise to an eczema. Their final conclusions might be stated as follows. 1. In the present state of knowledge they could not admit the existence of a specific microbe in eczema, although it might be allowed that a micro-organism might exist which could not be detected by microscopical examination or by cultures. 2. The typical primary lesion of eczema—the vesicle—did not contain any microbe which could be found by bacteriological methods. 3. The different microbes (especially the staphylococcus) which grew in abundance on the weeping or scabbed surfaces in eczema constituted secondary infections which were the cause for the most part of the complications and suppurations which so frequently supervened on true eczema.

Tuberculides.

The discussion on this subject was opened by Dr. C. BOECK (Christiania) who pointed out the reason for classing together these diseases. It was recognised that there was a series of cutaneous affections which were generally very symmetrical, and which were found so often in tuberculous patients that it must be concluded that there was some causal connexion between these diseases and tuberculosis. Koch's bacillus was never, or very rarely, found, and inoculations of a guinea-pig never, or quite exceptionally, gave rise to positive results. The theory which had been formed to explain these facts was that these lesions were produced by the toxins of the tubercle bacillus which formed them in the lymphatic glands and in the viscera. The facts accorded very accurately with this theory. True tuberculosis of the skin was asymmetrical, but the tuberculides were strikingly symmetrical, and appeared to be the result of the action of the toxins on the vaso-motor centres. Symmetry was the most important characteristic of a tuberculide; the exact character of the lesions was a point of much less importance.

Professor ROBERTO CAMPANA (Rome) pointed out that the skin was very sensitive to the action of the toxins of tuberculosis, but the skin had a great resisting power to the tubercle bacillus, and this was the result not of its structure but it was due to the fact that the skin contained very little oxygen, so that the bacillus was obliged to live an almost anaerobic life, which was very inimical to its vitality. The proof of this hypothesis was to be found in the great rarity of the bacillus in primary tuberculosis of the skin. He did not think that it was possible to distinguish clinically between skin lesions produced by the toxins and those produced by the bacillus itself; though he admitted that a general intoxication with tuberculous products might well be the predisposing cause of certain cutaneous manifestations of external origin which might simulate true tuberculous manifestations.

Dr. J. DARIER (Paris) said that there existed a group of skin lesions to which the name of "tuberculides" had been applied and which possessed the following characteristics: first, that they were clinically connected with tuberculosis, for they were only seen in patients already infected by Koch's bacillus or reasonably suspected to be infected; and secondly, in the immense majority of cases the local lesions of the tuberculides did not seem to contain the tubercle bacillus—in fact, with hardly an exception bacteriological examination and experiment had not succeeded in proving the presence of this bacillus. Dr. Darier proceeded to enumerate the diseases which might be considered to be tuberculides. He then described the forms in which the tuberculosis bacillus might be present, showing that a very careful search was sometimes needed to prove the presence of the disease. The clinical characters of the tuberculides were so very various that it was difficult to give a general description of them, but it might be said that they usually appeared suddenly without fever; that they were often symmetrical; that all parts of the body might be attacked; that the lesions were generally of a reddish purple or livid tinge; that they were painless but tender to the touch; and that they might undergo various forms of evolution. He gave three hypotheses to explain these diseases: (1) that they were due to unknown microbes, which required for their development a soil impregnated with the products of Koch's bacillus; (2) that they were due to the toxins of the tubercle bacillus; and (3) that they were the results of multiple embolisms of attenuated tubercle bacilli. Dr. Darier was rather inclined towards the last of these three theories.

Alopecia Areata.

Professor O. LASSAR (Berlin) opened a discussion on this subject and expressed the opinion that in alopecia areata there was no such thing as predisposition or special power of resistance in certain persons; neither could immunity from the disease be acquired. The nervous theory of origin had lost ground more and more. Even the isolated facts met with in dermatological literature which seemed to afford some support to this theory had little force. The localisation had no reference to nervous tracts; it might be unilateral, bilateral, or general. The parasitic theory was the most consistent of all those which had been brought forward to explain the disease. The theory of contagion agreed well with the appearance of the disease in families, in schools, and in barracks, and with the formation of groups of the disease in connexion with shaving and hair-cutting. Also the way in which it spread in each patient was like that in which diseases due to a microbe spread. However, the organism itself had never yet been found. The treatment of the disease was practically only empirical.

Professor PAVLOV (St. Petersburg) said that alopecia areata was probably more common in Russia than was usually thought to be the case. He himself had seen about 150 cases in 10 years. There had been nothing in the history of the cases which he had seen to suggest contagion as the cause, and he had never seen it spread epidemically, although he did not take any precautions to prevent it. He was convinced from his clinical observations that the disease was connected with various troubles of the nervous system, and the truth of this was impressed upon him by the manner in which the disease progressed and by the results of his treatment. Alopecia areata always developed in persons whose nervous system was specially irritable, and it followed generally on mental disturbances, grief, worry, or injuries, and sometimes it seemed to be due to reflex irritation from a distant organ. The affected hairs, on microscopical examination, showed merely atrophy. Some bacteriological cultures of the affected hairs gave two negative results out of 10 cases, and in the remaining eight pure cultures of cocci were found resembling the staphylococcus pyogenes aureus and albus. The inoculation of these cultures in rabbits led to the formation of a patchy baldness with redness and scales.

Dr. NORMAN WALKER (Edinburgh) was of opinion that, although the nervous origin of alopecia areata must be given up in most cases, there were a few which were due to nerve influence. In these the patches were very irregular in

shape, the skin was smooth and glossy, and there were very rarely any "exclamation point" hairs. As to the infective theory, Dr. Walker had met with about four cases in which a possible source of infection existed. In all his cases, by cultures he obtained Sabouraud's "porcelain" growth, and in only two cases did the "brick-red" growth follow; in all, after from two to four weeks a deep brownish-black colour developed.

Dr. SABOURAUD (Paris) in the first place put aside various forms of baldness to which the term "alopecia areata" should not be applied. He considered that of those to which this term was rightly given there were at least two different clinical types. The first was the alopecia areata of Celsus (area Celsi), which was most common in childhood. It began in the occipital region, spread circumferentially through the scalp, and disappeared at puberty. Hereditary influence was definite, and contagion was infinitely rare if it ever existed. The second form (Bateman's) occurred in middle age, the initial patch being followed by secondary patches at a distance. All the patches were circular and the surface was infected with seborrhœic bacteria. In these contagion was still rare, but it was possible and certain. He laid great stress on the differentiation of these two forms, though he acknowledged that in practice it was impossible sometimes to decide into which group to put a certain case.

Dr. LÉON PERRIN (Marseilles) read a paper on Leucoplakia, pointing out how many different conditions were included under the name and showing that they were all produced by the reaction of the epithelium against a mechanical irritant.

Syphilis and Associated Infections.

This subject was introduced by Dr. L. DUNCAN BULKELEY (New York), who classified the conditions as follows. First into cases of double coincident infection. These were again divided into cases of syphilis with a local lesion and cases of syphilis with a general disease. The other cases where syphilis was associated with some other disease were those in which the two infections were not coincident, and these were divisible into those in which the syphilis appeared before the associated diseases and those in which the syphilis appeared after the diseases with which it might be associated. The points to be considered were how far the associated diseases might retard, accelerate, or modify the normal course of one another.

Professor A. DUCREY (Pisa) said that the subject had practically no limits. He thought that it would be useful to consider first, the association with syphilis of local diseases such as a soft sore, which never gave rise to general manifestations; secondly, the association with syphilis of diseases such as gonorrhœa, which were usually local but which sometimes became generalised; and, thirdly, the association with syphilis of true general infections such as the infectious fevers and leprosy. With regard to the soft sore and other local septic conditions, the association with syphilitic manifestations seemed to increase the gravity of the specific lesions, suppuration and gangrene being more likely to occur. In the case of the hyphomycetic fungi such as the ringworm fungi Dr. Ducrey was inclined to think that the trichophyton found a syphilitic soil favourable for its growth. Gonorrhœa in men did not seem to affect or to be affected by a coincident syphilis, except that the complications affecting the epididymis and testis appeared to predispose to syphilitic disease of the same organs. In women a gonorrhœal vulvo-vaginitis seemed to hasten the appearance of, and to render more severe, local syphilitic lesions. Little was known about the mutual action of syphilis and the eruptive fevers. When syphilitic children had measles and scarlet fever the mortality was heavy, but this was chiefly due not so much to the syphilis itself as to their condition of general weakness, especially as most of them were hand-fed. Typhoid fever seemed to weaken or even to destroy syphilis, at least so far as external manifestations went; but cases of syphilis did occur which seemed to be unaffected by the typhoid fever. Erysipelas, especially when severe and long continued, hastened the resolution of syphilides and sometimes seemed to put an end to the disease. Puerperal septicæmia was more common and more severe in syphilitics, but if the woman recovered from the septicæmia the syphilis seemed to be diminished. Syphilis and tubercle appeared generally to have a harmful effect upon each other so that the manifestations of each were more severe and more acute than when either disease occurred apart. When malaria was associated with syphilis the latter was markedly more severe; this was probably due to the great general depression caused by the malaria. Syphilis and leprosy could co-exist without any apparent modification of either.

Dr. H. HALLOPEAU (Paris) limited the term "associated diseases" to those which modified or were modified by syphilis. Often infectious diseases progressed in a syphilitic subject without influencing the syphilitic manifestations or being influenced by them. The general conclusions at which Dr. Hallopeau arrived were as follows. That certain infections by associating with the syphilitic poison could give rise to various hybrid forms; these were the bacillus of the soft sore, the agent which gave rise to epithelioma, and rarely the bacillus of tubercle. It was possible, but it had not yet been proved, that the mixed infection of syphilis and pyogenic organisms gave rise to suppurating syphilides which might be called streptosyphilides or staphylosyphilides. The organisms and their toxins could modify the characters of syphilitic eruptions and caused "parasyphilitic" affections, giving rise to severe complications. The activity of the syphilitic poison might be modified temporarily or permanently by the co-existence of certain generalised infections; this was especially true of erysipelas.

The Descendants of Congenital Syphilitics.

Professor B. TARNOWSKY (St. Petersburg) presented a table based on data furnished by 25 syphilitic families with their descendants to the fourth generation. He arrived at the following conclusions:—1. The hereditary influence of acquired syphilis showed itself in its greatest severity in the second generation of syphilitics, and caused a large number of miscarriages and stillbirths, of early deaths, and of children showing signs of congenital syphilis or with various forms of malnutrition. 2. The influence of syphilitic heredity decreased markedly in the third generation, causing many but fewer miscarriages, stillbirths, and other manifestations of congenital syphilis. 3. Syphilis acquired in the first generation was not transmitted to the third generation in the form of manifestations recognised as due to congenital syphilis. In the same way the immunity against the syphilitic virus was not transmitted to the third generation. 4. Parents, the father or the mother, with the symptoms of congenital syphilis, either at the time of conception or in the course of pregnancy, did not transmit to their children hereditary syphilis. 5. Syphilis never seemed to pass over a generation—i.e., it was never transmitted from the grandparent to the grandchild, while the children remained free from syphilitic signs. 6. A second generation of syphilitics showing no manifestations of congenital syphilis produced generally healthy offspring. 7. Hereditary syphilis of the third generation was generally due to a fresh syphilitic infection contracted by a member of the second generation. 8. "Binary syphilis"—i.e., syphilis acquired by a member of a second generation of syphilitics—exerted on the third generation a much more harmful influence than the syphilis of the first generation exerted on the second. 9. One of the chief reasons for the rapid degeneration seen where syphilis was endemic was certainly "binary syphilis." 10. The harmful influence of acquired syphilis seemed to cease completely after the fourth generation.

Professor E. FINGER (Vienna) held that in order to prove the transmission of syphilis to the grandchildren of syphilitics, it would be necessary to exclude completely the possibility of syphilis having been acquired by the second generation, and there should be absolute certainty of the presence of congenital syphilis in the third generation. Most of the 24 cases which had been described of this transmission of syphilis could not furnish the proofs required. The second question that had to be considered was the possibility of the transmission to the grandchildren of various dystrophies. This question was even more difficult to answer than the first, for many of these dystrophies occurred in families which were not syphilitic; and, moreover, if these dystrophies were really syphilitic in origin, they ought to be seen especially in cases of hereditary syphilis, but only a few of the cases of congenital syphilis manifested them. On the whole the action of syphilis on the descendants had less tendency to cause the degeneration of the race than to limit the number of descendants. A third point that arose was the question of the immunity of the descendants of syphilitics. There were several reasons for thinking that the descendants of syphilitics possessed some degree of immunity. Among them might be mentioned the fact that when syphilis became endemic it tended to become less severe; that when syphilis attacked a people hitherto free

from the disease it was usually in a severe form. But these facts and a few others which pointed in the same direction were not sufficient to prove any hereditary transmission of immunity. There were many other facts which showed that the immunity against syphilis, even in those who had acquired the disease, was much less great than was usually thought to be the case.

Dr. JULLIEN (Paris) had succeeded in collecting 92 cases in which syphilis had been transmitted to the grandchildren of those who had become infected with syphilis, and the following conclusions had been arrived at:—1. The syphilis had been transmitted to the third generation in 58 cases by the mothers who had had congenital syphilis and in 34 cases by the fathers. There was no loss of fertility, for in some of the families were seven, eight, eleven, and 15 children. 2. Abortions occurred in 33 per cent. of the cases, but this tendency to abortion was wonderfully amenable to specific treatment. 3. The syphilitic manifestations which were observed in these cases of the third generation affected the skin in various ways, the bones (as by caries), the viscera, and especially the brain, and the eyes (as by iritis). 4. There was much general debility in these cases and many of the patients died at an early age, and if they grew up they were liable to various nervous symptoms, such as convulsions and paralysis. They were also prone to have rickety affections of the bones, atrophic rhinitis, adenoids, and pulmonary tuberculosis. 5. The children of those who had suffered from congenital syphilis were rarely of normal build; they were small and thin, and the various parts of the body were not symmetrical. The skull was badly shaped, the palate was arched, and the teeth were badly formed and readily became carious. The mental functions were generally abnormal. 6. Anomalies and malformations abounded in these cases. In 261 of these children there were four cases of nævus, one of hæmophilia, one with congenital cysts of the neck, one cryptorchid, one with harelip, one with congenital amputation, one with polydactylism, and one with malformation of the iris. Dr. Jullien was inclined to attribute these signs and symptoms occurring in the third generation to the absorption by the fœtus of toxins through the placenta.

The Causes of the Generalised Infections in Gonorrhœa.

Professor LESSER (Berlin), who opened this discussion, considered that generalisation of the infection in a case of gonorrhœa occurred especially if there were complications. In the male in most of the cases of generalisation the posterior portion of the urethra was affected. There seemed to be a special predisposition to the production of a generalised infection, for some patients had a general infection every time that they had a fresh attack of gonorrhœa.

Professor P. TOMMASOLI (Palermo) said that the organism which gave rise to general infection in gonorrhœa might be the gonococcus itself or there might be a mixed infection, the gonococcus having, perhaps, prepared the way for the entrance of the other micro-organisms by lowering the general power of resistance. It was possible, though it was not necessary, that the microbes themselves should be present in the lesions of the generalised disease, for the toxins were probably capable of producing all the inflammations met with. There was, however, another point which had to be decided, and that was what special conditions were necessary, or at least favourable, for the microbes or their toxins to become capable of causing a general infection. Anything which weakened the general condition would predispose to generalisation of the disease; so, over-exertion, want of food, and alcoholism would all be favourable to general infection. Moreover, since the gonococcus preferred a slightly acid soil, it was probable that in acute rheumatism, in which there was an increase in the amount of acid, the soil would be more favourable for the growth of the organism.

Mr. A. H. WARD (London) maintained that in all cases of gonorrhœa there was some absorption of toxins where they caused systemic degenerations of varying degrees of severity. The gonococcus itself might spread by continuity of tissue or might pass into the blood-stream, and this was rendered more easy by the action of the absorbed toxins on the leucocytes, preventing phagocytosis. The microbes in the circulation tended to become stranded in minute capillaries, where they developed and formed more toxin and gave rise to local inflammations. The invasion of the organism was favoured by all over-energetic treatment of the local infection, for this depressed the local power of resistance. Local treatment was always required, and should be free from instrumental, mechanical, or chemical violence.

Dr. F. BALZER (Paris) remarked that the chief tract by which the gonococcus infected the organism was the blood-vessels; and the gonococcus had been seen in the vessel walls and its presence in the blood itself had many times been proved. The toxin of the gonococcus (gonotoxin) was capable of producing many of the generalised effects of gonorrhœa. Other microbes might co-exist in the system with the gonococcus; staphylococci and streptococci, bacillus coli, the pneumococcus, the tubercle bacillus, and various other forms had been found. The more extensive the local disease the more was the generalisation of gonorrhœa rendered probable. The increase of the virulence of the gonococcus was sometimes much increased, especially during physiological processes such as menstruation, pregnancy, and parturition. The explanation of the manifestations of gonorrhœal generalisation was to be found chiefly in previously damaged tissues, for these were more liable to be attacked than healthy tissues. Thus, an old endocarditis favoured the localisation of the gonococcus in the endocardium. It was possible that some forms of arthritis were produced not by the gonococcus but by the toxins, and that others might be produced not by their direct action on the joint but by a trophic action through the nervous system. A nephritis might occur, and also various cutaneous manifestations.

III.—SURGERY.

RHINOLOGY AND LARYNGOLOGY.

Diagnosis of Laryngeal Cancer.

Professor R. FRAENKEL (Berlin) read a paper upon the Diagnosis of Cancer of the Larynx from an Anatomical and Pathological Point of View. He said that the microscopical examination of fragments of tissue taken from a tumour in the larynx was of the first importance as a means of diagnosing cancer. If the result of the examination was negative no certain conclusion could be drawn; on the other hand, if a positive result was obtained a diagnosis could be made with certainty. Difficulty arose from the fact that only very small pieces could be obtained. They should be hardened and embedded for cutting in paraffin and should be stained by Van Gieson's method or by picrocarmin. For a diagnosis it was not sufficient to find globular masses of epithelium, although this was very suspicious, but epithelial buds should be found in places where they should not normally exist. If epithelial processes were found continuous with the surface epithelium the diagnosis was still in doubt, for many other disease processes gave rise to similar outgrowths of epithelium, notably syphilis. Irregular structure of epithelium was a characteristic of cancer.

Dr. MORITZ SCHMIDT (Frankfort) followed with a paper on the same subject. He said that the symptoms of cancer of the larynx, such as pain, stenosis, and offensive odour, were not characteristic but were found in other laryngeal diseases. Cancer of the larynx, however, showed from its very commencement and throughout its course the characteristics of a tumour. Cancer arising in the deeper tissues of the larynx sometimes gave rise to a proliferation of true papillomas on the mucous surface. This form of cancer throughout its whole course had a very close resemblance to a perichondritis. Cases of cancer of the ventricle of Morgagni gave a laryngoscopic image almost exactly like that of an internal perichondritis. In very rare instances the cancer commenced at the back of, and almost underneath, the cricoid cartilage. In such a case nothing could be noticed at the beginning of the disease but paralysis of the recurrent laryngeal nerve. In order to exclude syphilis from the diagnosis it was generally sufficient to give during 15 days a daily dose of three grammes of iodide of potassium. It was possible to arrive at a definite diagnosis by examining microscopically a small piece of the growth. A curette forceps with the blades working up and down was the best instrument to use for this little operation. Only a positive result of the microscopic examination was conclusive.

Sir FELIX SEMON (London) regretted that the speakers had confined themselves to discussing the microscopic diagnosis and recommended a study of the clinical points.

Dr. MERMOD (Yverdon) followed in the same sense.

Dr. KRAUS (Paris) went so far as to say that he thought it wrong to attach much importance to the results of the microscopic examination of cancer of the larynx inasmuch as

such an examination gave no clue to the clinical type of the growth.

Dr. RUAULT (Paris) and Dr. LOUIS BAR (Nice) agreed with the last speaker, Dr. Bar pointing out that tuberculous and malignant disease of the larynx could exist in the same subject. But Professor FRAENKEL considered a microscopic examination the best basis on which to decide upon operation. He said that immobility of the vocal cords was a very rare sign in cancer.

Purulent Ethmoiditis.

Dr. HAJEK (Vienna) read a paper upon Purulent Ethmoiditis, which he defined as a disease of the ethmoid bone and the mucous membrane covering it, accompanied by a flow of pus. But when other affections were present, such as tubercle, syphilis trauma, or new growth, the disease was not called by this name. He divided it according as to whether the mucous membrane or the bone was affected. In the first category came acute catarrhal inflammations, chronic catarrhal inflammations, and an inveterate form of the last-mentioned which was characterised by a considerable growth of polypi. The bony form was divided into slight degrees of inflammation leading to rarefying osteitis and intenser forms which lead to necrosis.

Dr. BOSWORTH (New York) followed with a few remarks upon the treatment. He said that in purulent ethmoiditis the essential condition was one of imprisoned pus. Each of the trabeculæ involved constituted, as it were, a small abscess. There was but little tendency to a spontaneous cure. The prominent and practically the only indication was to open each and every cell and to release the imprisoned pus accumulation. If this be true the important consideration was as to the best method of accomplishing this end. They might use the gouge, forceps, snare, curette, scissors, burr, spoon, or other devices. In his own experience the end was best accomplished by first uncapping the ethmoid cells by the use of the wire snare écraseur and then breaking down the trabecular walls by means of the burr.

Dr. LUC (Paris) pointed out that the frequency of purulent ethmoiditis was not appreciated, while it was very rarely a solitary condition, being usually associated with similar inflammation of the frontal and maxillary sinuses. Where ethmoiditis was accompanied by inflammation of the frontal sinuses he opened the frontal sinus.

Dr. MOMET (Montpellier) thought that in early stages ethmoiditis could exist alone, but later a condition which he called "panethmoiditie" was reached when opening, curetting, and drainage were required.

Thyrotomy.

Sir FELIX SEMON (London) read a paper upon the Indications of Thyrotomy, which was published in full in THE LANCET of August 11th, p. 393.

Dr. SCHMIEGELOW (Copenhagen) read the following paper upon the Technique of Thyrotomy. He said that thyrotomy was an operation which must be preceded by tracheotomy and performed under profound narcosis. The tracheal cannula must be made so as to prevent the aspiration of blood during the operation. Hahn's tampon cannula was the best. After the larynx had been opened by an incision of the thyroid cartilage the pharynx must be plugged with a sponge to prevent saliva trickling into the larynx. The sensibility of the mucous membrane of the larynx could be dulled by the application of cocaine. The operation being concluded and all hæmorrhage arrested the tracheal tube was taken out and the interior of the larynx dusted with iodoform. The wound was lightly covered with lint and iodoform gauze, which were frequently changed during the first few days. The patient should lie with the head as horizontal as possible and at the end of five or six days the wound would have closed sufficiently to enable him to raise it.

Dr. GORIS (Brussels) read a paper upon the Immediate and Remote Effect of Thyrotomy. He said that with the object of getting as many results as possible he sent a message to various specialists asking them to tell him the age and the sex of their patients, the exact seat of the disease, the general condition of the patient at the time of operation, the method employed, and the results both immediate and remote. He received 105 answers which were divided up as follows: 62 operations were for malignant tumours of the larynx, 14 were for tuberculosis, 25 were for innocent tumours, two were for stenosis, one was for a foreign body, and one was for rhinoscleroma. Out of these 105 operations four proved fatal from pneumonia within eight days after the operation. Thus thyrotomy came within the category of operations which were fairly safe inasmuch as it gave a death-rate of 4 per cent.

Thyrotomy for malignant tumour.—Sex.—Malignant tumours affect almost exclusively the male sex. In his statistics out of 62 cases 55 occurred in males, three in females, and in four cases the sex was not stated. Age.—From this point of view the cases could be divided as follows: under 30 years, 0; between 30 and 40 years, 4; from 40 to 50 years, 14; from 50 to 60 years, 20; from 60 to 70 years, 18; from 70 to 75 years, 4; and age not given, 2. Effects upon the voice.—As a rule the removal of one vocal cord allowed the patient to make a certain noise afterwards. In some cases the voice remained good after the extirpation of one cord owing to the formation of a cicatricial band. Remote results.—Out of 62 cases he should say nothing of seven because in these the whole larynx was removed. He should also say nothing about six other cases which had occurred at too recent a date to be able to draw any statistics from them. There remained, therefore, 49 cases, giving the following results: still alive at the end of 10 years, one; at the end of from five to eight years, eight; and at the end of from three to five years, 14. That was to say, 23 cases in all, or a percentage of 46·9. There were also seven cases which lived on without any relapse, and so might be considered as cured.

Thyrotomy for tuberculosis.—The results of this operation were much less brilliant. Out of 14 cases only three could be considered as cured. In all the others the operation apparently increased the spread of the disease.

Thyrotomy for innocent tumours.—As regards the effect on the voice the results were variable, but on the whole they were good. The most frequent affection for which the operation was performed was diffuse papilloma. Out of two cases of stenosis one was cured, but in the other respiration was not improved. Finally, in a case of extensive rhinoscleroma Chiari obtained a perfect cure by excision of the swelling.

Spasmodic Rhinitis.

Dr. JACOBSON (St. Petersburg) read a paper upon Spasmodic Rhinitis. He said that this affection presented itself under many different forms which had not yet been sufficiently studied or differentiated. Hay fever was one of these forms which it was necessary to mark out with great precision. Hay fever should be considered only as one special form of spasmodic rhinitis, and those forms brought on by other causes should not be considered as hay fever. One form of spasmodic rhinitis was due to paralysis of the vaso-motor nerves. Other forms were caused by different kinds of intoxication. They attacked persons who were otherwise perfectly well and had no tendency to recur.

Vocal Nodules.

Professor CHIARI (Vienna) read a paper upon Vocal Nodules. He gave a description of them from the anatomical point of view, saying that they were generally situated on the free edge of the lower vocal cord. They were more often found in the anterior third and they were almost invariably symmetrical. They never ulcerated and sometimes they would spontaneously disappear. They were probably produced by acute or chronic catarrh of the larynx by over-use of the voice and sometimes by a faulty method of singing.

Professor KRAUSE (Berlin) followed with some remarks on the same subject. He said that these vocal nodules were generally due to a faulty method of production of the voice during singing but not during speaking. The trouble which these nodules give rise to consisted in an alteration of the singing voice at certain parts of the scale. In addition to this the voice got very rapidly tired while the patient was singing. The treatment he proposed was to give complete vocal rest and absolutely to forbid singing. If this treatment did not do good, and supposing that the interests of the patient imperatively demanded that he should get his voice back, the nodules might be removed by a surgical operation strictly limited to the affected parts.

Dr. CAPART (Brussels) followed with a paper on the treatment of vocal nodules. He divided the methods of treatment employed into hygienic treatment by drugs and treatment by operation. Many observers, he said, had argued that nothing was necessary to bring about a cure but complete vocal rest. They could not, however, trust altogether to this. Rest only improved the condition which was the cause of the formation of these nodules but had no effect on

the nodules themselves. Treatment by drugs was inefficacious or even dangerous and operative treatment should be always employed. The nodules should be removed either by a very fine pair of forceps or else by the galvano-cautery, but if the nodule was big enough to be caught by the forceps this method should be employed. After-treatment consisted in absolute vocal rest; no singing should be allowed for a month at the very least and the method of voice production must be altered.

Anosmia.

Professor ONODI (Budapest) read a paper upon Anosmia. He began by giving a very full account of the connexions of the nerves of the nose with the olfactory tract in the brain. He then continued: "We are now in a position to study the pathology and classify the various clinical forms of anosmia. I shall divide them into three classes: (1) essential anosmia, wherein the olfactory tract is attacked, whether at its centre or at its periphery; (2) mechanical or respiratory anosmia; and (3) functional anosmia. The first class may be due to various causes, such as inflammation of the olfactory tract leading to neuritis or atrophy of the olfactory nerves. Such diseases as influenza, syphilis, and chronic ethmoiditis are all able to bring about pathological modifications of the peripheral olfactory region. With regard to anosmia due to some central cause it may be brought about by any cause affecting the central nervous system, such as cerebral tumours, embolism, progressive paralysis, senile atrophy, and any other lesion directly affecting the olfactory tract. Sometimes, too, anosmia is due to various intoxications, such as those produced by tobacco, cocaine, mercury, lead, morphia, irritating gases, and many other substances. Mechanical or respiratory anosmia may arise from any cause which produces obstruction to nasal respiration, such as congenital narrowness of the nostrils, deviations of the septum, inflammatory swelling, tumours in the nasal fossæ, and foreign bodies. As regards functional anosmia, it is usually due to hysteria, but it may also be due to reflex influences, as, for instance, ovariotomy and menstruation. These few remarks show us that there are innumerable causes of anosmia, that we know very little about them, and that it is necessary to make a large number of accurate clinical observations so as to supply what is lacking."

OTOLOGY.

On Measuring the Power of Hearing.

Dr. F. SCHIFFERS (Liège) read a paper on this subject in which he expressed the following conclusions. That the watch and all similar indefinite instruments could not serve for an exact method of notation. All watches had not the same intensity of sound. The tuning fork was the best means of measuring the hearing power of a person under examination. The method consisted in employing the tuning fork to note how long the sound was heard on the affected side and on the unaffected side, and the result might be expressed as a fraction, of which the denominator represented the time of perception of the healthy ear, and the numerator that of the ear examined. For example, $R . A . Do_2 . 256 . \frac{9}{24}$ would mean that on the right side, the sound being conducted by the air, the tuning fork, with 256 vibrations to the second, could be heard for nine seconds, while it lasted for 24 seconds on the healthy left side. The examination by articulate language was necessary especially in children. The whispering voice was the best to employ and individual consonants and vowels should be used, excluding the sibilants.

Dr. ARTHUR HARTMANN (Berlin) read a paper on the same subject. The tests of hearing were intended to make the diagnosis more exact and to determine the degree of hearing power in order that the effects of treatment might be seen. It was necessary to determine the capacity of perception through the air and through the bones. The tuning fork was the only instrument to be employed, and the duration of perception of its sound should be recorded. The result of the test might be recorded as follows: $C^2.512.\frac{18}{48}.A.$—that is to say, the tuning fork which vibrated 512 times a second was heard by the healthy ear for 48 seconds and by the affected ear for 18 seconds, the sound being conveyed by the air. For the voice, which should be whispered, the words used and the distance at which they were repeated should be recorded.

Auditory Exercises for Deaf-mutes.

Professor URBANTSCHITSCH (Vienna) read a communication on this subject. Up to a recent date little attention had been paid to the auditory organs of deaf-mutes. The examination of deaf-mutes showed that they had a greater or less power of hearing, and it was very rare to find complete deafness of both ears, though they did not seem to understand what they heard. Moreover, deaf-mutes showed an utter lack of attention to auditory vibrations. The object of methodical auditory exercises was to awaken the attention to auditory impressions, to lead them to distinguish by hearing the sense of what they heard, and the gradual increase of auditory sensitiveness. Nearly all cases were suitable for these exercises, even cases of cerebro-spinal meningitis from which the patient had recovered. The exercises should go on until the deaf-mute could hear his own voice. The success of these exercises depended on the duration of the daily exercises, on the existing power of hearing, on the intellectual condition of the pupil, and on his application. In some cases it was possible to evoke little by little a trace of power of hearing in persons who seemed to lack it entirely. The exercises had a favourable influence on the pronunciation.

Dr. SCHWENDT (Bâle) also read a paper on the same subject. He considered it important in deaf-mutes to utilise the hearing power as much as possible, but not to the detriment of the lip language. He thought it desirable, in order to judge of the results of this method of treatment, to separate those who benefited by this method from those who were completely deaf.

The Surgical Treatment of Otic Sclerosis.

Dr. F. SIEBENMANN (Bâle), who read a paper on this subject, said that experience showed that surgical treatment of sclerotic otitis was useless, except when it resulted from suppurative otitis or from hypertrophic catarrh. From otic sclerosis several conditions had to be distinguished: (1) blocking of the Eustachian tube; (2) the remains of old otorrhœa; and (3) affections of the nervous system with involvement of hearing. To this last belonged the progressive deafness which came on between the ages of 40 and 50 years, and which had been called "presbyacousia." The early form of progressive deafness began generally between the tenth and twentieth years of age or between the twentieth and thirtieth years, rarely later. This was the true sclerosis of von Troeltsch, and consisted in the deposit of bone in the osseous labyrinth. The stapes became fixed, partly by contraction of its fenestra from the deposit of new bone and partly by the ossification of the annular ligament. A similar formation of new bone extended inwards and forwards to the end of the canal of the cochlea. Isolated foci might also occur in all the spirals of the cochlea or between them, giving rise to a nervous deafness. It was obvious, therefore, that it was impossible to treat such a condition surgically.

Dr. RICARDO BOTEY (Barcelona) maintained that surgical treatment in dry otitis should only be undertaken when auditory perception conducted through the bone was still preserved. Perforation of the membrana tympani and removal of one or all of the ossicles generally gave only temporary improvement. Surgical treatment was quite useless in this condition because otitic selerosis was a trophoneurosis, with the formation of bony tissue chiefly in the capsule of the labyrinth, around the fenestra ovales, in the canal of the cochlea, and even in the spirals of the cochlea, the endings of the auditory nerve being more or less affected.

Dr. MALHERBE said that he agreed with Dr. Siebenmann as to the great difference in the improvement obtained by the surgical treatment of dry otitis according as the sclerosis was either (1) secondary to catarrh of the hypertrophic variety, or (2) secondary to suppuration of the middle-ear, or (3) primary. On the one hand, in scleroses secondary to catarrh or to suppuration the improvement was, in Dr. Malherbe's experience, always very well marked. On the other hand, in primary sclerosis the results were variable, the degree of functional improvement depending exclusively on the extent to which the labyrinth participated in the sclerotic process. Dr. Malherbe also made some remarks on the progressive deafness of young persons referred to by Dr. Siebenmann as being the true sclerosis of von Troeltsch. He had often observed an early and rapid form of primary sclerosis which appeared to him always to originate in the tympanic cavity. He agreed with Dr. Ricardo Botey's opinion as to the uselessness of perforation of the membrana tympani, extraction of the ossicles and restoration of the mobility of the stapes, but he could not accept the view that the surgical treatment of dry otitis was a failure. In a

tropho-neurotic disorder great improvement could not be expected, but he thought that aural surgeons ought sometimes to be satisfied with small improvements provided that the patients were really benefited thereby. Dr. Malherbe spoke in favour of the petro-mastoid operation which he had often performed and he defended it against some adverse criticism by Dr. Laurens.

Dr. LOEWENBERG said that the rational treatment of sclerosis, a frequent cause of high degrees of deafness, ought to be based on an exact knowledge of the nature of the disease. In his opinion the treatises on otology which described it as a general atrophy of the lining membrane of the tympanic cavity associated with a patulous condition of the Eustachian tube were altogether in error. In a very large proportion of patients there was, on the contrary, catarrh of the tympanic cavity with enlargement and hypersecretion. On account of the want of success which had hitherto attended the treatment of sclerosis he thought that remedial measures ought to be directed chiefly against the catarrh which seriously aggravated the sclerosis and interfered with the hearing.

Professor POLITZER (Vienna) said that he had often observed that the lesions of sclerosis were localised at the level of the fenestrum ovale and that synechiæ were found in the tympanic cavity. He had met with forms of malignant sclerosis which advanced with great rapidity. He did not advocate either mobilisation or extraction of the stapes, neither did he think that in inflammatory cases advantage could be derived from operations by way of the Eustachian tube; these latter operations caused irritation and often made the hearing worse. He preferred either massage according to the method of Deltanche or vibratory massage.

The Causes and Treatment of Ménière's Disease.

Dr. MOLL (Arnheim) read a paper on this subject, in which he pointed out that there were so many conditions which could give rise to the giddiness, humming in the ears, deafness, and vomiting, which constituted Ménière's disease, that it was advisable to speak of Ménière's symptoms rather than of Ménière's disease. As to treatment, that must depend on the special cause of the labyrinthine irritation. To calm the hyperæsthesia of the labyrinth sulphate of quinine was of much value, given in small doses; also hypodermic injections of pilocarpine. The iodides were also useful. Surgical intervention to remove the cause might sometimes be of much service.

STOMATOLOGY.

Treatment of Pyorrhœa Alveolaris.

Dr. PIERGILI (Rome) said that any pathogenic diathesis favoured pyorrhœa alveolaris and on this account appropriate treatment must be adopted for even the mildest degrees of gout, diabetes, albuminuria, or rheumatism, also for anæmia, diseases of the nervous system, diseases of the heart, emphysema of the lungs, &c. This general treatment should precede the local treatment. Pyorrhœa alveolaris depended on sclerosis of the pericementum. At the commencement of the disease the gums were generally hyperæmic; the pericementum compressed between the root of the teeth and the alveolus very quickly became necrosed. The gums ought to be scarified and freed from any granulations (*fongosités*) which might be present. During the second period of the disease the gums became detached from the neck of the tooth and epithelium soon covered all its inner surface. Dr. Piergili not only excised the projecting parts of the gum but scraped the funnel-shaped space between the tooth and the detached gum so as to remove all the fragments of tartar, all the detritus of the pericementum, and the epithelium covering the inner surface of the gum. When the disease was very advanced and the pus very abundant he commenced the treatment by washing out the alveoli with an ordinary Pravaz syringe, using by preference a solution of corrosive sublimate (1 in 10,000); he had tried actol (lactate of silver) which is an admirable disinfectant, but he had given it up because it blackened the teeth. Dr. Piergili had found these methods of treatment very successful.

Correction of Deviations of the Teeth.

Dr. PIERMICHELE GIURIA (Genoa) said that the most favourable age for the correction of deviations of the teeth was from 12 to 16 years. The simplest apparatus and that which was applicable to the greatest number of cases consisted (1) of a plate of caoutchouc furnished with vulcanite pivots which pressed the irregular teeth into their proper place and (2) of elastic metal bands applied to the labial surface of the teeth and usually intended to exert counter-pressure. When there was insufficient space the remedy was either expansion of the dental arch or extraction of a tooth (the sixth or the fourth). In prognathous patients when the condition was idiopathic the deformity might sometimes be prevented by pressing back the front teeth with a caoutchouc plate and wires. For pathological prognathism Dr. Giuria described a variety of mechanical methods of treatment. In opisthognathous patients the molars and bicuspids might be covered with an indiarubber plate provided with pivots by means of which the front teeth were pressed forwards. In slight degrees of mordex apertus the molars might be filed or extracted. When the condition was well marked the angle of the mandible might be reduced by inserting a plate of indiarubber between the upper and lower molars and exerting continuous pressure by means of a bandage under the chin. Irregularities of individual teeth might be corrected by means of wires fixed to an indiarubber plate.

V.—STATE AND MILITARY MEDICINE AND SURGERY.

MILITARY MEDICINE AND SURGERY.

Prophylaxis of Syphilis in Armies.

A communication was read from Colonel J. LANE NOTTER, M.D. Dub., R.A.M.C., professor of hygiene at Netley, official delegate from the War Office to the Congress. The tables referred to were shown. He said:—

"The accompanying tables give, as far as the records will allow, the total syphilis, divided into primary and secondary, and total venereal diseases in certain divisions of the British Army. The four divisions chosen are—(1) home, (2) India, (3) Gibraltar, and (4) Malta. The total persons under observation have been 153,646 per annum, giving a total of 6,145,840 in all. From 1859 to 1868 venereal disorders were classed as enthetic diseases. From 1869 to 1878 non-syphilitic venereal diseases were all collected under the diseases of the urinary tract; the figures for these years will be therefore about 10 per 1000 more than they should be. From 1879 to 1885 the non-syphilitic diseases were entered under the two heads gonorrhœa and the sequelæ. From 1886 to 1898 they are classed as soft chancre and gonorrhœa, and the total primary syphilis and soft chancre form the group primary venereal sore. If we look at Tables I., II., III, and IV. the first striking feature is the great excess of syphilitic and of venereal cases occurring in India and the low admissions in Malta.

"*Home.*—Taking the home figures first it will be observed that there was a gradual diminution in the number of admissions for syphilis from 1859 to 1876. From 1876 to 1884 the admissions rose so that in the last year they were as high as in 1867. From 1884 to 1898 there has been a gradual and practically constant fall. From 1866 to 1886 the Contagious Diseases Act was in force in 14 stations. As has been often pointed out, the admissions were lower in these 14 stations than in 14 similar stations during the operation of the Act. In spite of the Act, however, the admissions in the protected stations gradually rose after 1874 until 1884, the admissions in 1884 being only five per 1000 of the strength less than in 1860. After the abolition of the compulsory examination of the prostitutes in 1883 the admissions rose considerably, but the rise appears to be only the continuation of that which was taking place the previous year. Since 1886, when the Contagious Diseases Acts were finally repealed, the curves of the 14 previously protected, 14 non-protected, and whole strength are nearly parallel and show a steady fall. If we consider the total admissions for all venereal diseases or the admissions for primary venereal sores the same steady fall is seen. There seems to be no doubt, therefore, that quite independently of all regulations in the home stations syphilis has constantly declined. The reasons for this decline are probably not far to seek. In 1873 the Education Acts were adopted and it is significant that 12 years after this adoption the fall really began. The increase of education affects both the soldier and the prostitute. In the case of the soldier he has greater liking for intelligent amusement and greater self-restraint. The prostitutes on account of their education become of a higher order and therefore are more likely to endeavour to keep themselves in good health, or to endeavour to get cured

of venereal diseases which they contract in the pursuit of their calling. In addition to this there is less drunkenness in the army and with this decrease there will be a corresponding decrease in venereal diseases. In addition, the prostitutes are able to get proper medical advice at some or other of the various medical charities which abound throughout the country. With increasing education and a higher social and moral standing in the Army there is every prospect that the decline will continue. No regulations, therefore, can with reason be recommended.

"*India.*—A glance at Table II. shows that in India neither syphilis nor total venereal diseases have decreased since 1886 except during the last two years, but that on the whole there has been an increase in both figures. The years 1892–1896 show a very marked increase. Upon consulting Table V. it is seen that there has been a similar increase in the primary venereal sores and that this increase has been caused almost entirely by the excess of admissions for primary syphilis. It is quite evident, therefore, that the same influences are not at work in India as at home. In the first place the conditions are not the same, for although the army is practically the same the prostitutes are totally different. The Indian prostitutes are largely hereditary and have a separate caste, so that they are not looked upon by their fellows as outcasts; in fact, there are castes upon whom they look down, it being an insult to a prostitute to term her a common sweeper. They are totally uneducated and there is no doubt that they belong to a much lower type than their English compeers. In 1897 the inefficiency in the army from venereal diseases had reached such a great amount that the East India Cantonments Act and Regulations were introduced. These regulations differ very considerably from any regulations which were previously in force. The chief provisions are that the cantonment authority may, so far as the funds permit, provide and maintain as many hospitals and dispensaries as may be necessary, that all poor sick suffering from any contagious or infectious disorder may be treated gratuitously at the hospital or dispensary either as an in-patient or as an out-patient, that any person not eligible by reason of poverty may be treated upon such terms as the cantonment authority think fit to impose, and that if the medical officer in charge of such hospital or dispensary has *prima facie* grounds for believing that any person living in the cantonment is suffering from an infectious or contagious disease he may, by notice in writing, call upon such person to attend at the hospital or dispensary and not to quit it without the permission of the medical officer unless and until such medical officer is satisfied that such person is not in fact suffering, or is no longer suffering from, such disorder. That if any person having received a notice to attend refuses to do so, or having attended leaves without permission, the commanding officer may direct such person to remove from the cantonment and prohibit such person from re-entering it. That the cantonment authority may prohibit the keeping of a brothel or the residence of a public prostitute in the cantonment or in any special portion thereof. That no public prostitute shall be permitted to reside within the limits of any regimental bazaar situated in the cantonment, and that no person shall in any street or public place within the limits of the cantonment loiter for the purpose of prostitution or importune any person to the commission of sexual immorality. It will be seen that these provisions are in no way penal. Provisions are made for the prevention of venereal diseases somewhat similar to those for the prevention of the spread of such diseases as small-pox at home. If a prostitute having, or presumably having, a venereal disease declines to go to the hospital or dispensary she has the alternative of leaving the cantonment. In the hospital she is treated as an infectious patient and not as a prisoner, as in the old Lock Hospital, and the cantonment authorities are instructed to see that the spirit of the Act is carried out and that great caution must be observed in respect of the attendance at, or detention in, a hospital or dispensary, so that any respectable persons who will themselves adopt measures for the prevention of the spread of the disorder from which they are suffering shall not be detained in the hospital. The cantonment authorities are further authorised to make arrangements for and to encourage the prostitutes voluntarily to submit themselves to an examination. The Cantonment Act was put into operation in October, 1897, and in 1898 the admissions for primary syphilis fell to a point which is lower than in any year since 1838. It is perhaps unfair to attribute it to the enforcement of the Act entirely, but the fact is significant. The Act is on its trial and whether the decrease will be maintained remains to be seen. Upon one thing all the Indian authorities are agreed, that some regulations are absolutely necessary on account of the impossibility of obtaining any immediate increase in the moral or social standard of the prostitutes themselves.

"*Gibraltar.*—Table III. shows that the total venereal admissions, although not so high as in India, are much higher than those for the home stations—that is, during recent years. The admissions for primary syphilis are erratic. The comparatively high rates from 1880 to 1885 are very noticeable and not easy of explanation. In Table V. the analysis of the high curve of admissions for primary venereal sores is very strange when compared with the other three curves. As a whole the curve of the primary syphilis admissions is considerably below that for both the home stations and India, whereas that for soft chancres is in excess of all the other divisions. Although the rate for syphilis is satisfactory, especially during the years 1894, 1895, and 1896, and though even in 1897 and 1898 the rates are below those of any of the other divisions, the total admissions for venereal sores are inordinately high and the loss in efficiency is therefore very great. Compulsory weekly examination of alien prostitutes by the medical officer was instituted in May, 1883, and repealed in July, 1887. The issue of certificates of health after voluntary examination ceased in November, 1888, and police inspection was stopped in January, 1889. There seems to have been but little effect following either the institution or the repeal of these measures. As there is no tendency for the total venereal rate to fall spontaneously, as in the home stations, it is necessary to adopt some measures to prevent the constant high inefficiency from these disorders. It would be advisable to adopt some part of the East India Cantonment Act and Regulations. For instance, the medical officer should have power to demand the attendance of any person suffering from any contagious disease at the hospital and failing the attendance the person in question should be required to leave the station. The poorer persons should have the opportunity of being treated gratuitously by the authority.

"*Malta.*—Table IV. shows that in Malta the admission rate for all venereal diseases has been lower in Malta from 1859 to 1896 than in all the other divisions. During 1896, 1897, and 1898 the rate is higher than in the home stations, but considerably lower than in Gibraltar or India. In Table V. it is seen that the curves for primary syphilis and soft chancres cross one another and that during the past five years the admission rate for the former has been in excess of that for the latter. The rate for soft chancres is lower than in India or Gibraltar but rather higher than that in the home stations. In Malta the motion to repeal the Contagious Diseases Acts was lost in the House of Deputies, so that these are still in force. It is perhaps not just to compare the Malta figure with the home figures on account of the great difference between the strengths, but it is significant that with the exception of the last three years the rates for total venereal and primary syphilitic diseases have been lower in Malta than in the home stations. The modified cantonments regulations which had been suggested for Gibraltar might well be tried in Malta. There is nothing in these regulations which interfere with the liberty of the subject more than the laws which affect the infectious diseases in Great Britain, and these are surely very necessary interferences. Further, the prostitutes are not to be treated as criminals, but merely as sick patients, who can be treated either gratuitously or at small charge for their illness.

"To summarise, the methods of prophylaxis to be recommended are: (1) general; and (2) specific. The general methods are the education of the soldier in the subject of contagious disease, the encouragement of physical or intellectual amusements, and the inculcation of self-restraint. The specific methods are the wise administration of the Cantonment Acts in India and of a modified form of these Acts in Malta, Gibraltar, and other similar stations."

THE LATE DR. H. MARSHALL.—A memorial brass has been placed by some friends of the late Dr. Henry Marshall in All Saints Church, Clifton, with which church the deceased had been prominently identified since its foundation.

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

THE OPENING CEREMONY.

BY two o'clock in the afternoon of Friday, August 10th, the largest amphitheatre of the École de Médecine was nearly full with expectant members of the Tenth International Congress of Hygiene. The platform was decorated with red velvet and gilt braidings and flowers, and was soon occupied by well-known sanitary reformers. A few minutes after 2 o'clock, the Prime Minister, M. Waldeck-Rousseau, accompanied by Dr. Brouardel (the President of the Congress), Dr. A. J. Martin (the general secretary), and many others entered. Indeed, the platform proved too small and several members who should have taken their places by the side of the presidential chair were obliged to hunt for seats in the already crowded amphitheatre. It appeared that there had been a great increase in the number of members within the last few days, but that it was too late to obtain a larger hall. Professor BROUARDEL was the first to speak and he expressed his thanks to M. Waldeck-Rousseau for presiding over the meeting, as his presence would show that the Government sympathised with the efforts of the Congress to improve the public health of all countries. He then expressed his gratitude to the foreign members of the Congress and assured them that in the cause of hygiene they would find no frontier demarcations. All nations would benefit from their labours, and indeed it was only necessary to visit the great exhibition to realise that they had done so already. If, for want of technical knowledge, the visitor failed to appreciate all the improvements, he need only look at the statistical tables which set forth how the mortality had decreased in proportion to the sanitary reforms achieved. This was more particularly shown by the exhibits of the United States and of Germany. The latter country displayed a map of Europe which at a glance indicated how the prevalence of small-pox had been reduced where vaccination was rigorously practised. It had been said that a century hence the civilisation of a people would be judged by the number of cases of small-pox occurring in its population. The same remark might be made with regard to typhoid fever, and where disinfection was rigorously practised there the prevalence of infectious fevers was much reduced. In Paris that reduction was during the last 10 years equal to 25 per cent. The century which commenced with Jenner and closed with Pasteur promised still greater progress for the future. With the use of antitoxin the deaths from diphtheria had been reduced by four-fifths, and large wards in the Paris hospitals which had been reserved for cases of this disease had to be closed for want of patients. In England the prevalence of tuberculosis had been lessened by one-half, and England paid the lightest tribute to this disease of any country. To England and to Germany the world stood indebted for a great example—the one nation by its sanitary legislation and the other by its economic legislation had very materially reduced their death-rates. The engineer and architect in England, and the compulsory insurance with its pensions and sick fund in Germany had made all Europe anxious to do something of the same sort. The work was great; it must be begun at school and continued by the press. The nations must be taught that if sanitation was at times expensive it had never failed to keep its promises. Its laws, however, had not yet been sufficiently applied to the poorer classes. Of all social questions this was the most urgent. The new century would continue the good work, particularly as they might now rely on a more active support from the Governments.

THE GOOD DONE BY HYGIENIC CONGRESSES.

The General Secretary (Dr. A. J. MARTIN) reported that no sooner had the Congress at Madrid decided that it would meet next time in Paris than the French committee set to work. Through the Minister of Foreign Affairs application was made to foreign Governments to form local committees, and these committees had materially assisted in giving the Congress its present representative character. Some 1500 members had been enrolled and three-quarters of them were delegates representing Governments, universities, municipalities, and other organised bodies. For the discussions of the Congress 56 reports had been submitted to the sections and most of them were now in print and distributed. They comprised the whole evolution of the century If many of the facts adduced were not new they in any case constituted useful evidence. Thanks to the generosity of the town of Paris it had been possible to print these reports. Dr. Martin then went on to review the practical results achieved by the various international congresses of hygiene. The first was held in Brussels in 1876, with the result that the Brussels Bureau of Hygiene then created had become a model institution for all Europe. Two years later a similar impulse was given in France by the presence of the second Congress held in Paris during the Universal Exhibition of 1878. The third Congress met in Turin, and since that day there had been a great improvement in sanitary legislation and in the death-rate of Italy. In 1882 they met in Switzerland, and in 1884 in Holland. At these Congresses Pasteur and Koch spoke and the prophylactic measures based on their discoveries were widely adopted. In 1885 they were at Vienna and the sewerage works of that capital were taken in hand. In 1889 they came to Paris more especially to see the results of Pasteur's work. After their meeting in London in 1891 notable efforts had been made in England to improve the housing of the poorer classes. At Budapest they gave a special welcome to Dr. Roux, who had just produced his anti-diphtheritic toxin; while finally, at Madrid, they had infused new life and hope among the Spanish sanitary reformers. What the results of the present Congress would be it was as yet too soon to say; but they might rest assured that wherever the Congress met there sanitary reforms would follow.

THE PROMISES OF THE PRIME MINISTER.

The President of the Council of Ministers, M. WALDECK-ROUSSEAU, now rose and read his speech. In the name of the French Government he welcomed the members of the Congress. They had already met twice in Paris and he was glad of this opportunity of rendering homage to the praiseworthy and useful work they had accomplished. Hygiene was quite a modern science. It dated back barely more than 50 years. Preventive medicine was most complex and this might be explained by the fact that it could be considered as the crown of all natural sciences. The discoveries of physicians, of chemists, and of engineers were the materials out of which hygiene was constructed. But to realise the ingenious theories of the hygienists the help of the State was needed. They had every right to rely on such help. This declaration was greeted with loud applause. M. Waldeck-Rousseau continued: "You are the most valuable and indispensable collaborators of all governments. You are the guardians of public health—that is to say, of the most precious gift a State can possess. For too long governmental and parliamentary initiative has neglected the elaboration of indispensable sanitary laws. For too long the incontestable right of the State to impose upon the individual necessary preventive measures which, while protecting his health preserve the public welfare, has been overlooked and misunderstood. The rights of the individual, badly interpreted, have prolonged this delay. It is a matter of education and the democracies will insist that such education shall be given." The presence at the Congress of so many distinguished foreigners is a guarantee that the work of the Congress would summarise what the civilised world had done. "Our best reward," he said, "will be the confidence you will have of seeing your theories applied by those who are in power. You may rest assured that so far as we are concerned and in the measure of our forces, your confidence will not be misplaced."

This handsome promise was loudly applauded; and it is all the more precious as it was not due to the enthusiasm or impulse of the moment, but had been deliberately written down beforehand in the carefully elaborated set speech which M. Waldeck-Rousseau read out.

Dr. CALLEJA spoke on behalf of Spain, recalling that he had been a student in that amphitheatre and had learnt to look upon France as his second country.

Dr. KÖHLER, for Germany, said much had been done, but much more remained to be done. The fruit of their teaching would ripen in the next century. The Tenth Congress of Hygiene stood between the two centuries, and he hoped its deliberations would help to render the twentieth century a century of sanitary reform.

Professor CORFIELD, on behalf of Great Britain, also recalled the fact that he had been a student in that amphitheatre. He lamented the fact that at several of the previous Congresses the British Government had not been represented. Then at last the War Office had sent one delegate. Now on this occasion there were no less than five official representatives of the British Government attending. This, he thought, was a big improvement, though he was utterly unable to explain how it had been brought about. Perhaps the British Government had at last grasped the fact that there was something serious in these Congresses; or, perhaps it was because since the Congress had met in London many dwellings, he might almost say palaces, had been built for the working-class. In any case, they were now five Government representatives, and if they continued to increase in the same ratio they would be 25 at the next Congress.

Dr. VAN IVAMA-STERNNEGG of the Austrian Statistical Bureau, Dr. BARTOLETTE of the United States Army, and a representative of the Russian Government having said a few words, M. WALDECK-ROUSSEAU expressed his gratification at having heard so many cordial remarks from the foreign delegates. He thought that the French Faculty of Medicine should be proud of the fact, rendered manifest that afternoon, that so many illustrious teachers of hygiene coming from different countries had been its former pupils. The meeting now terminated and the members hurried off to the *fête* and garden party to be given at the Elysée by the President of the Republic.

EXCURSION TO THE ACHÈRES SEWAGE FARM.

On August 12th some 300 members of the Congress were conveyed by special train to the plains of Achères situated on the banks of the Seine close to the forest of St. Germain. This municipal estate measures 10 kilometres in length and one kilometre in width. It is irrigated throughout with the crude sewage of Paris. The train did not stop at the station but at the extreme western end of the estate. Here three narrow-gauge trains conveyed the members to various points of interest. In 1895 a visitor to Achères would have seen the sewage from Paris just beginning to arrive. The greater part of the plain seemed like a vast desert. The small brushwood which formerly served to conceal the game—for the Emperor Napoleon III., and after him Baron Hirsch, used to shoot over these grounds—had been cleared away and nothing had yet grown in its stead. The contrast to-day is most remarkable. The barren plain is now verdant with luxurious vegetation. Beetroot is growing over a large part of the ground, but there are also many fields rich with golden grain. The avenues are planted with trees, mostly walnut. Of course they are still young and small, but they are healthy and flourishing. The greater part of land is let out to cultivators, but the municipality has kept a portion in its own hands for experimental purposes and to lay out a few ornamental parks and to plant orchards. It was at these spots that the members of the Congress stopped so as to stroll among the flower-beds, admire the peaches and other fruits ripening on the trees, and above all to visit the ornamental waters; these were as clear as crystal. Fish darted rapidly about, and as the water came out of the earth in little jets glasses were filled and the water was eagerly drunk by nearly all the visitors. Yet this was neither rain-water nor spring-water: it was the water of the Paris sewers. What this meant was evident to all, for close by on the surface of the soil in countless little drains the black foul sewage was exposed to view. But having fed the plants and having passed through more than six feet of sandy soil the water collected at the lower levels is found to be quite free from the sewage. The sewage, which contained 11,750,000 bacteria per cubic centimetre, retained but 2350 bacteria in one part of the estate and only 188 in another part—that is, of course, after it had filtered through the soil. The purified sewage water at Achères is more free from bacteria than is usually the case with good spring water. In regard to organic matter, where the amount extracted from the sewage weighed 34·9 grammes, after passing through the soil this water only retained 1·8 grammes. The object, however, is not to produce drinking-water out of sewage but to prevent the pollution of the Seine by the crude sewage. For this purpose the town of Paris now possesses 900 hectares at Gennevilliers, 1000 hectares at Achères, 2150 hectares at Méry-Pierrelaye, and 950 hectares at Carrières-Triel—a total of 5000 hectares. As it is calculated that 40,000 cubic metres of sewage can be treated per hectare per annum, 200,000,000 cubic metres of sewage can be turned in the course of the year on to these estates; and as yet the sewage of the town of Paris does not exceed 180,000,000 cubic metres per annum, so that it is only the storm overflow that now goes direct into the river; and the Seine, which had been contaminated by the Paris sewage as far down as Rouen, is at last free from this great source of pollution. On the other hand, the sewage is no longer entirely wasted; it produces luxuriant crops, and at Achères there is a large distillery where the beetroot is converted into alcohol. All this was explained and shown to the members of the Congress, who were not only greatly edified by the practical success of this gigantic enterprise but were also charmed by the artistic taste shown in the laying-out of the gardens, by the beauty of the flowers, by the artificial rockery around the ornamental waters, and by the general prosperity, fertility, verdure, and brightness of the scene. After some light refreshments served at the distillery, and having travelled over the entire estate in the narrow gauge trains, the members reached the station of Achères, where the special main-line train was waiting to conduct them back to Paris. The entire cost of this agreeable and instructive expedition was defrayed by the Paris municipality. M. Beckman, M. Launey, and M. Louis Musson, the principal municipal engineers, accompanied the party and were busily engaged all the time in giving explanations to the members.

THE PRIME MINISTER'S ENTERTAINMENT.

The third official reception of the members of the Medical Congresses took place on Monday evening, August 13th, and was given by M. Waldeck-Rousseau, who, as Prime Minister, elected to take over the portfolio of the Ministry of the Interior. He entertained at dinner 80 of the official Government representatives who are members of the Tenth International Congress of Hygiene, and later in the evening threw his official residence at the Place Beauveau open to all the members of the Congresses. Hardly any members, however, of the International Congress of Medicine remained in Paris and nearly all the guests were members of the Congress of Hygiene, consequently I do not think that there were at any time more than 1500 persons present. The result was a thoroughly enjoyable evening. To begin with—and this is always a good symptom—I was on entering at once able to dispose of my overcoat. At the Palace of the Luxembourg this simple operation had necessitated a fierce struggle in the midst of a dense and disorderly crowd that lasted for more than half an hour. Once within the beautifully furnished saloons of the Ministry I was able to stroll about freely, for there was no crowding. Even the buffet was not besieged, and refreshments could be obtained without delay or struggle, or the risk of having wine spilt over one's clothes or an ice dropped down one's back, all of which mishaps had become usual incidents on these festive occasions. But, more wonderful still, in the spacious long room which had a stage at its farthest extremity I was actually able to obtain a seat and thus saw in comfort the whole performance. First there were some Andalusian dances, and then a *pot-pourri* of the most popular songs from Offenbach's operettas. These were admirably rendered and loudly applauded. The gardens were illuminated and offered a cool strolling ground for the guests to smoke and chat, and it was not till after midnight that the members resigned themselves to quit these luxurious and pleasant Ministerial reception rooms.

THE RECEPTION AT THE HÔTEL DE VILLE.

On the afternoon of Tuesday, August 14th, the Congress was received at the Hôtel de Ville by M. GRÉBAUVAL, the President of the Paris Municipal Council. All the reception-rooms were thrown open and for some time the members strolled about looking at the gigantic and somewhat sensational pictures that illustrated dramatic episodes in the history of the town. Ultimately an usher announced the arrival of the President of the Municipal Council, who took his stand in front of a buffet and the members gathered in a half-circle around. Professor BROUARDEL introduced the Congress, observing that it constituted a remarkable gathering of people from all parts of the world who discussed together in perfect harmony, there being no party divisions among them. The resolutions adopted by the Congress in the main coincided with the policy of the Paris Municipal Council in so far as sanitary questions were concerned. This opinion would be

more particularly confirmed by those members of the Congress who had visited the Exhibition where they could see what had been done to improve the public health of Paris. The Municipal Council had always been popular with hygienists, for it had shown considerable readiness to adopt the suggestions of sanitary reformers, it had spent a considerable amount of money on improvements, and it was ever ready to welcome both French and foreign hygienists. M. GRÉBAUVAL expressed his thanks for the laudatory words uttered by the Dean of the Paris Faculty of Medicine. The concord to which allusion had been made was the happy result of the study of science. Hygiene represented the beneficent goddess who in teaching preventive medicine also helped to prevent moral corruption. As hygienists the members of the Congress had examined the minutest details of every-day life, thus showing a truly scientific spirit. It was to be hoped that in time the mass of the people would learn to be equally minute and careful. Formerly the constituted authorities were at the service of intolerance and superstition; now they were at the service of science. The crowd would not forget this Congress, for it had helped to build a wall—not a Chinese wall, but a European wall—against disease. He invited the Congress to accept a glass of champagne and he asked leave to drink to the prosperity of their good work. Some members of the Congress were then presented to the President of the Municipal Council, and after a little conversation the Congress dispersed so as to prepare for the great banquet to be held at night.

To-morrow there will be no sitting. The day will be left free so that the French members of the managing committee may conduct parties to the Exhibition to show and explain those exhibits that are of technical interest to hygienists. The work of the sections will be resumed on Thursday, August 16th.

Paris, August 14th.

THE WAR IN SOUTH AFRICA.

THERE is but little to be chronicled from a military point of view during the past week. What there is, on the whole, is good. The Boers are being hard pressed. We have news about Lord Kitchener and De Wet which would lead to the belief that the force commanded by the skilful Boer general was at last in grave danger of being surrounded, but this has been so often an unfulfilled belief before, owing to the clever way in which he has eluded capture, that we may well hesitate to express any definite opinion until it is an accomplished fact and there is no longer any room for doubt. Until this has been done we may expect a repetition of harassing raids and surprises. In war the boldest strategy is so frequently the best that to our unmilitary mind we fail to understand why, following the plan adopted by Sherman in his celebrated march during the American war, no attempt has been made to provision a strong force and march it for the purpose of seizing the railway and cutting off the source of the Boer supplies and line of communication with Lorenzo Marcques. The more we learn of the war in South Africa the more clearly does it appear that transport has throughout been the main source of all our difficulties. The railways in South Africa are of narrow gauge, there is a great deficiency of rolling-stock, there are steep gradients and a want of sufficient motive power; the consequence of all which is that trains take a very long time in making their journeys and have to carry relatively light freights. The hospital service has greatly suffered on this account and the straits to which General Rundle's force has been reduced are apparently attributable to the same cause.

The members of the South African Royal Commission are on their way to South Africa and the session of Parliament has closed, and we may consequently anticipate a brief lull in contentious criticism. We are not sorry for it, for we think that the tone adopted in the last debate in the House of Commons on the Royal Commission was regrettable. We do not know, of course, whether Mr. Burdett-Coutts has an exasperating effect on Mr. Balfour as has been alleged, but such certainly seems to be the case, for a strained position has somehow been brought about. Mr. Balfour is usually extremely temperate and courteous in his replies to Members and in his conduct of Parliamentary business generally, butwhere Mr. Burdett-Coutts is concerned he almost always couches what he has to say in a tone of asperity.

Assuming that the statements from a special correspondent of the *Times* of August 13th regarding the treatment of enteric fever convalescents from South Africa are correct, we can only say that they disclose a discreditable state of things and a want of practical organisation in looking after our invalid reservists. As regards the medical department and hospitals at the seat of war we continue to read the most conflicting accounts in the public press as to their alleged shortcomings. It can scarcely be that any deficiency in the supplies has arisen from these not having been present in the country, for the Government and the public have forwarded them in abundance. We can therefore only assume that, owing to transport difficulties, they have not been distributed. The medical officers should, in our opinion, have full power to purchase hospital supplies whenever necessary and where these are locally obtainable, notwithstanding the objections that might be urged against having more than one spending department with an army in the field.

We can quite realise the disappointment of the medical officers in South Africa at the change which has taken place in the state of affairs affecting their service and that they are looking forward to the investigation by the Royal Commission and some authoritative expression of opinion as to the alleged shortcomings and their causes with a keen sense of relief.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

The first detachment of the new branch of the Imperial Yeomanry Hospital destined for Pretoria has arrived from England, and pending the completion of the necessary arrangements for their transport we are putting them up here, to the number of 104 orderlies, two medical officers, and 12 nursing sisters. This brings up the number in our camp to 1225. It is to be hoped that the difficulties—such, for instance, as the inevitable irregularity of railway service as long as there are commandoes liable to swoop down upon the line—which still make it necessary for the military authorities to curtail railway travelling north of Bloemfontein, even to the extent of forbidding the return of prominent members of the mining industry to Johannesburg, will shortly be removed, or that, at all events, means will be found for getting the staff and material of this new branch up-country in order that they may get into working order without undue delay. The *personnel* are full of enthusiasm and desire to get to work, whereas all the excitement of working in the war and the novelty of African surroundings has worn itself out of our staff during the last five months, and much as many of our people would like to see something of the "front" there are very few who would voluntarily throw up their work in this hospital for the sake of any change of site, however tempting it might be from some points of view. Everything runs like clockwork here now and the feeling of romance has so completely died out that we really almost at times forget that we have not been working under similar conditions all our lives, while at other times the feeling most prominently expressed is one of home-sickness and a longing to be "back again." Colonel Sloggett went down to Cape Town to meet the new branch and brought them up here at once. It was not altogether an easy matter to find accommodation for them, especially for the 12 sisters, for our own 48 sisters were quite cramped enough already. However, by the help of a few bell-tents their sleeping accommodation was arranged for, and with great good luck we got a fresh hut erected just in time to be used as a dining-room for the 60 nursing sisters who now have to be catered for. Only a tent had been available for that purpose before and great inconvenience has been caused from time to time by its being repeatedly blown down. Now on the windiest and dustiest day they will at least be freed from any anxiety as to whether they will find their meals in an edible condition. This hut is 60 feet long by 16 feet 6 inches broad. One end of it is curtained off from the larger half as a sitting-room and there the dining tables are arranged, and we have placed it quite close to the sisters' kitchen, but separated from it by an open-air space. The doors are placed in the middle of the long sides of the hut, so that the two ends should be as far as possible defended from wind and dust. I think they will now be thoroughly comfortable.

I hope that during the sojourn of the new staff with us and the consequent increase of our forces we shall be enabled to give several of our original staff a little rest and change. Many of them have invitations from friends in other institutions. Some, indeed, have already run away for a few days—the sisters for the most part to Kimberley—and the medical officers have all of them got a change by either taking a train-load of convalescents down to Cape Town, by going over to a neighbouring magistrate's or farmer's for a day or two's shooting, or by going on a camping expedition to Table Mountain, which is some 12 miles away and where there is always a certainty of seeing, and the chance of capturing, some baboons. As they have always come back very much the better for the change, it is to be hoped that it will be possible to give everybody who has not hitherto been able to be spared a short holiday. Our dental surgeon has already gone home as have two of our surgeon's dressers, but luckily we have been able to replace one of the latter with a medical student who came out as a trooper in the Yeomanry. Indeed, every department of our staff has had in a similar way to attach to itself reinforcements from the convalescent patients or we should never have been able to get through the amount of work which we have found ready to our hand.

Though we have not taken in any ambulance train this week yet several small detachments, chiefly of Yeomanry, have arrived and the number of patients who have passed through the hospital now exceeds 2,300. Among these there have been only 53 deaths, which, considering that quite half of the patients have had enteric fever, gives a satisfactorily low death-rate. This disease is a most exacting one for any hospital to cope with in large numbers. Not only are many of its victims grave cases, which call for the most skilful nursing and much personal attention from doctors, sisters, orderlies, and those employed in the disinfecting departments, but also every case, however slight, occupies a bed for at least five weeks. The average length of stay, indeed, of these patients in hospital works out at even a longer time than that—which is more than double the length of stay of a patient with pneumonia, for instance—so that the beds are blocked for a long period. A curious sight was to be observed in one of the wards on Mafeking night. When the news of the relief came there was a patient convalescent from enteric fever but unable yet to get out of bed. His request to be allowed to get out of bed and execute a dance of joy was refused by the sister, so he was driven to signify his glee by proxy, and he asked the orderly to stand on his head in the middle of the ward for him. During the last month we have had to do over 100 operations in the "theatre" (the largest number on any one day was eight), besides many minor ones in the wards. We had a visit a little while ago from our civilian director, Mr. Hamilton. He instituted, and there has since been carried out, a complete stock-taking throughout the entire hospital.

We owe our thanks to a large number of people at home for their kind gifts of sweets and tobacco which have been arriving of late. They are both immensely appreciated. By-the-by it would be a great convenience to those who have to undertake the distribution of such gifts if they could be done up before they left the shop in very small packets, each packet containing just enough of the particular article to last one man for one day, or at the outside for two days. "Tommy" seems much to prefer his comforts doled out to him frequently in small quantities. He is not a good hand at so husbanding a larger supply as to make it last the time it should, nor is he at all fond of sharing a packet with another man or men. What he likes best of all is to have his day's ration of each article distributed to him each day, and ever since we came here our "Tommies" have been humoured in that respect by my wife's regular daily round; but, of course, if the distributor has to deal out the allowance from large parcels it adds enormously to the labour of distribution when there are from 700 to 800 patients to be visited each day. If I were asked what quantity should be put into each parcel I should say, of cigarettes six, of tobacco half an ounce, and of sweets two ounces. It would be a much easier matter for the distributor when it was necessary or desirable to increase the number of such small parcels than it is to carve out the large parcels we at present receive; but while I venture to make this suggestion it will not, I hope, be thought that we are "looking a gift horse in the mouth."

I think I told you last week that there are some small commandoes of the enemy working about the country not far north from here. None of them are south of us, and yet a few days ago a wounded officer came in who had been sniped a couple of stations down the line towards Cape Town.

Our one and only blacksmith has lately escaped again from hospital, where he was laid low with dysentery, and he is now very hard at work in the smithy mending implements and bedsteads, shoeing horses, and so on, but I regret to say that his place has been taken in the ward by a still more indispensable member of the staff in the person of our masseur. I really doubt whether there is any other member whose absence from duty would excite such a general regret among the patients. I am glad to say that no more cases of scarlet fever have cropped up, and all members of the staff who are in hospital are doing well. The marble cross I brought down from Kimberley last week has been erected over poor FitzHugh's grave.

One of the first batch of wounded officers who came to us in our early days and went back to the front quite well, got wounded again recently near Pretoria. Directly we saw his name in the paper we thought we should not be far out if we prepared a bed for his early arrival, and we were not wrong, for on that very day he sent a telegram to say he was on his way and hoped we could take him in. Of course we were delighted to have him back, and still more delighted when our sympathy for his hard luck at having been sent down with a bullet in the leg was turned to smiles on the x-rays demonstrating that he had had the good luck to prove too tough for the bullet to go into him. There was only one wound, so naturally it was inferred that the bullet had lodged, but it was evidently a case of a spent bullet which had hit the skin only just hard enough to penetrate it and not hard enough to bury itself. He went up to the front again the next day.

The London newspapers for the last week of June have now reached us, and for the first time we are in a position to know fully about the reasons for the commotion which the local papers had already told us had been caused at home by the charges of inefficiency made against the Royal Army Medical Corps. We see that a committee of inquiry has, upon Lord Roberts's suggestion, been appointed by the Government, but we do not yet know all the names of that committee, nor have we been able to find the terms of reference which prescribe the field of inquiry. Whether any real and permanent good will result from the work of this committee, I think, depends to a very large extent upon the scope of their inquiries. If they are limited to a mere investigation of the way the Royal Army Medical Corps have done the work which it is their duty to do, I do not believe that they will succeed in discovering very much amiss, but if the committee is instructed to go further and to investigate fully some collateral matters, such, for instance, as the question whether the transport department have always given to the Royal Army Medical Corps as great facilities as it is reasonable to suppose they might have done under the given circumstances (and, of course, everybody knows that the circumstances are often extremely difficult in such a country as this), then I think that facts will come to light that have a very important bearing on the welfare of the sick and wounded.

We hear from officers just down from Pretoria that at this very moment Lord Roberts is moving his troops with a view to surrounding the Boers at Machadodorp, so that the news of the next few days will probably settle the question whether he is able to give them a good hammering there and by a big capture bring about the speedy termination of the war, or whether they will succeed in getting away to Lydenburg, in which case it is the opinion of many that the war will last another three or four months. Among the many signs that the end of the war is at hand is the fact that the Portland Hospital is being shut up. We are told that its equipment is being sold and that some of the articles are fetching far more than cost price. There could not be any better confirmation of what I told you some time ago about the number of beds now empty in the hospitals and the consequent removal of stress from all the hospitals in South Africa. Otherwise in face of the rumpus at home over the "military hospitals question" the disbanding of one of the hospitals would never have been even contemplated, especially of the one which bears the very best of reputations and which has the additional distinction of being the oldest of the many voluntary hospitals engaged in this war.

We have got some bicycles here now for the sisters, and when the weather improves—for we are still having a very bad time, with wind one day and rain the next—I hope they

will get some pleasure out of them, though indeed the surrounding country is so entirely unfavourable that we have never unpacked our own machines. The roads are not roads at all—they are just cart-tracks across the veldt—and the man of our staff who bicycles most generally limits his roving to a patrol of the railway-line.

Deelfontein, July 23rd.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Government of India and the Plague Commission Report.—Cholera and Plague in Bombay.

THE Government of India have considered the report of the Indian Plague Commission on the measures for the suppression of plague. The methods which have been employed for the discovery of plague cases are (1) notification of sickness generally or of plague in particular; (2) surveillance of arrivals from infected areas; (3) grant of rewards for information regarding plague cases; (4) employment of volunteer agencies; (5) inspection of villages in the neighbourhood of infected villages; and (6) house visitation and house searches. The fifth and sixth are found to be useful only in very exceptional circumstances and the employment of paid spies and informers is considered a measure which should never be adopted.

The methods of obtaining information regarding the occurrence of plague deaths are by registration of deaths and by corpse inspection. The compulsory examination of dead bodies has had to be abandoned so that careful local inquiries for the purposes of fixing the exact cause of death alone remains. The imperfect registration of deaths makes the statistics of deaths far from being even approximately accurate. The Commission consider the measures to check plague under the following heads: (1) removal of plague patients to hospital; (2) segregation of contacts; (3) evacuation of towns and villages; and (4) disinfection.

The Government of India desire that the removal of patients to hospital should be compulsory only in places and under circumstances where it can be carried out so completely as to render it an effectual precaution. With regard to contacts the Governor-General in Council agrees that the segregation of contacts should be abandoned. Evacuation is generally beneficial but much depends upon climatic conditions, and in villages and small towns up to 10,000 people complete evacuation is generally possible and provides the most effective safeguard against the spread of the disease which has yet been discovered.

The Commission report that chemical disinfection is the only measure which, where effectively carried out, immediately destroys the infective material in a room and renders the room at once practically safe for re-occupation.

The Government of India do not agree that disinfection in towns should be restricted to the houses in which either cases of plague have occurred or dead rats have been found. The Commission think very little indeed is to be gained by the disinfection of the persons of travellers and recommend that this should be abandoned. Then there are the measures to prevent the spread of plague from infected to uninfected areas: (1) measures to prevent the spread of plague by sea to foreign countries or other places in India; (2) measures taken at the place of arrival of ships from infected ports; (3) measures to prevent the spread of plague from one part of India to another by railway; and (4) measures to prevent the spread of plague by means of communication in India other than by sea or by railway.

The Commission found that the work under the terms of the Venice Convention was carried out in a most thorough and conscientious manner and so as completely to satisfy the letter and spirit of the Convention. The Government of India under the second heading direct that in future the examination of passengers arriving from one infected port in India at another shall be discontinued. Under the other heads further changes are proposed. The disinfection of the personal effects of railway travellers will be altogether abandoned and all disinfection stations maintained on the railways will be closed. The detention of the ordinary traveller because he has come from an infected area is also condemned and "cordons cannot be made an effective means for preventing the spread of plague."

The summing-up of the Commission on the various measures is that in the larger places disinfection and the evacuation of specially infected quarters are the only measures to be applied. For villages they recommend inoculation, chemical disinfection, and evacuation. The Government of India lay down their opinion that certain measures should never be undertaken. These are the employment of paid informers or spies, the compulsory examination of corpses, the shutting up of people in infected houses, and the prevention of their movement from the infected area by means of a cordon or any other device. The Government of India also give their opinion on certain other measures which should rarely be attempted. These are house visitations or searches, compulsory notification of sickness, and the grant of rewards for information as to the existence of sickness.

The prospects of the monsoon have again become very gloomy. Very little rain has fallen in some places and the south-west current is generally weak. If more rain does not fall in the northern part of the Bombay Presidency the suffering is likely to exceed anything that has yet been endured. The numbers under famine relief still exceed 6,000,000. Within the past fortnight the outbreak of cholera in Bombay has assumed alarming proportions. The general mortality has risen, however, in greater degree and last week the total deaths registered were 1524—being 305 more than in the previous week. The registered deaths from plague have also increased. Every precaution is being taken with regard to the water-supply and all well water is examined and the wells are disinfected. Every house where a case occurs is promptly disinfected and the clothing of the patient is burnt. In other parts of India the plague continues subdued. There is now very little in Calcutta and Karachi is declared to be free once more.

July 26th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending July 7th are as follows: Remaining at the beginning of the week, 62; admitted, 1; discharged, 6; died, none; remaining at the end of the week, 57. The totals up to the end of the week are as follows: Cases, 297; deaths, 101; discharged, 139; "contacts" isolated, 1689; "contacts" remaining, 47; cases among "contacts," 7. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

Down to the end of the week ending May 19th the weekly number of new cases continued high. For that week it was 24, and afterwards was in each week as follows: May 26th, 7; June 2nd, 17; June 9th, 4; June 16th, 10; June 23rd, 6; June 30th, 12; July 7th, 1. This sequence, taken together with the diminished severity of the disease, gives ground for hoping that the end of the outbreak has been nearly reached, and that it will soon be possible once more to furnish outgoing vessels with clean bills of health. In the meantime the measures and precautions hitherto taken have not been relaxed; however, the last area proposed for cleansing will be quarantined immediately, and then this method will be given up for the present. It remains to gauge its usefulness; but this cannot be done until all the circumstances have been fully considered—a business on which the staff of the Department of Public Health are now beginning to be engaged.

July 10th

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING JULY, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 7·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 6·2, 7·2, and 6·9 per 1000 respectively. The

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1900.

(*Specially compiled for* THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.												
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	**4,589,129**	**13**	**1003**	**955**	**—**	**166**	**8**	**12**	**290**	**1**	**2448**	**7·0**	**—**	**161**	**25**	**93**	**167**	**—**	**41**	**2**	**437**	**926**	**2·6**	**5522**	**15·7**	**158**
West Districts.																									
Paddington	130,104	—	32	9	—	3	1	1	12	—	58	5·8	—	8	—	1	2	—	—	1	15	27	2·7	137	13·7	184
Kensington	173,603	—	25	22	—	6	1	—	9	—	63	4·7	—	4	1	—	2	—	2	—	17	26	2·0	198	14·9	217
Hammersmith	110,203	2	20	14	—	5	—	—	4	—	45	5·3	—	2	—	1	2	—	1	—	11	17	2·0	116	13·7	140
Fulham	136,383	2	45	53	—	3	—	—	13	—	116	11·1	—	2	2	5	5	—	—	—	18	32	3·1	141	13·5	128
Chelsea	96,715	—	21	18	—	3	—	—	4	—	46	6·2	—	1	—	2	1	—	1	—	7	12	1·6	105	14·2	124
St. George Hanover-square	81,133	—	16	6	—	1	1	—	3	—	27	4·3	—	—	1	—	—	—	—	—	—	1	0·2	50	8·0	57
Westminster	51,657	—	12	9	—	2	—	—	4	—	27	6·8	—	1	—	1	1	—	1	—	2	6	1·5	66	16·7	241
St. James Westminster	21,457	—	6	4	—	1	—	—	—	—	11	6·7	—	—	—	—	—	—	—	—	—	—	—	22	13·4	118
North Districts.																									
Marylebone	139,777	—	26	22	—	2	—	2	12	—	64	6·0	—	5	—	3	7	—	2	—	15	32	3·0	172	16·0	112
Hampstead	81,766	—	15	13	—	5	—	—	3	—	36	5·7	—	4	—	4	2	—	—	—	—	10	1·6	46	7·3	87
St. Pancras	245,551	3	49	44	—	16	—	—	17	—	129	6·8	—	5	1	5	9	—	3	—	22	45	2·4	325	17·2	152
Islington	351,541	—	80	44	—	14	—	—	19	—	157	5·8	—	10	1	9	10	—	2	1	9	42	1·6	351	13·0	116
Stoke Newington	35,718	—	14	5	—	—	—	—	2	—	21	7·7	—	1	1	1	1	—	1	—	2	7	2·6	34	12·4	71
Hackney	225,519	1	49	53	—	6	—	1	11	—	121	7·0	—	7	—	3	8	—	2	—	38	58	3·4	245	14·2	189
Central Districts.																									
St. Giles	36,870	—	5	5	—	2	—	—	4	—	16	5·7	—	—	—	1	1	—	3	—	—	5	1·8	53	18·7	165
St. Martin-in-the-Fields	11,885	—	3	3	—	—	—	—	—	—	6	6·6	—	—	—	—	—	—	—	—	1	1	1·1	6	6·6	111
Strand	22,748	—	6	6	—	1	—	—	1	—	14	8·0	—	—	—	1	—	—	1	—	1	3	1·7	28	16·1	100
Holborn	29,188	—	14	5	—	2	—	—	4	—	25	11·2	—	4	—	—	1	—	—	—	—	5	2·2	60	26·8	351
Clerkenwell	66,007	—	12	14	—	1	—	—	3	—	30	5·9	—	4	1	5	3	—	1	—	7	21	4·1	95	18·8	194
St. Luke	40,655	—	10	6	—	1	—	—	2	—	19	6·1	—	1	—	1	1	—	1	—	7	11	3·5	68	21·8	119
City of London	26,922	—	7	4	—	1	—	—	1	—	13	6·3	—	1	—	—	—	—	—	—	1	2	1·0	35	17·0	176
East Districts.																									
Shoreditch	120,641	—	20	33	—	6	—	1	14	—	74	8·0	—	8	1	5	2	—	—	—	34	50	5·4	180	19·4	209
Bethnal Green	128,831	1	24	40	—	3	—	—	12	—	80	8·1	—	6	3	5	5	—	—	—	6	25	2·5	197	19·9	136
Whitechapel	82,220	1	40	36	—	6	—	—	9	—	92	14·6	—	8	1	1	3	—	2	—	6	21	3·3	106	16·8	126
St. George-in-the-East	48,875	—	13	14	—	3	—	—	5	—	35	9·3	—	2	3	1	3	—	—	—	10	19	5·1	100	26·7	277
Limehouse	58,944	—	7	9	—	3	—	—	4	—	23	5·1	—	15	3	1	3	—	—	—	13	35	7·7	127	28·1	303
Mile End Old Town	113,781	—	30	19	—	8	—	—	11	—	68	7·8	—	10	—	1	12	—	1	—	24	48	5·5	192	22·0	272
Poplar	170,968	—	29	47	—	11	—	—	7	—	94	7·2	—	7	—	3	7	—	4	—	43	64	4·9	281	21·4	214
South Districts.																									
St. Saviour Southwark	23,854	—	9	4	—	1	—	—	2	—	16	8·7	—	—	—	—	3	—	—	—	4	7	3·8	41	22·4	269
St. George Southwark	60,597	—	19	9	—	1	—	—	4	—	33	7·1	—	3	—	—	1	—	—	—	5	9	1·9	99	21·3	178
Newington	125,138	1	23	38	—	3	—	1	6	—	72	7·5	—	6	1	3	8	—	—	—	12	30	3·1	160	16·7	151
St. Olave Southwark	10,909	—	5	—	—	—	—	—	—	—	5	6·0	—	—	—	1	—	—	—	—	—	1	1·2	8	9·6	45
Bermondsey	85,920	—	13	8	—	1	—	—	3	—	25	3·8	—	—	1	—	6	—	2	—	8	17	2·6	124	18·8	214
Rotherhithe	41,246	—	6	15	—	4	—	—	9	—	34	10·7	—	2	—	1	1	—	—	—	3	7	2·2	48	15·2	145
Lambeth	312,152	—	60	107	—	9	4	1	16	—	197	8·2	—	3	2	13	6	—	3	—	24	51	2·1	364	15·2	115
Battersea	178,100	—	38	19	—	6	—	2	5	—	70	5·1	—	4	—	1	9	—	2	—	24	40	2·9	168	12·3	187
Wandsworth	217,004	1	29	30	—	8	—	—	12	—	80	4·8	—	3	—	1	4	—	1	—	13	22	1·3	192	11·5	127
Camberwell	268,457	1	58	52	—	7	1	2	12	—	133	6·5	—	2	—	7	15	—	3	—	13	40	1·9	303	14·7	143
Greenwich	184,582	—	28	46	—	4	—	—	16	—	94	6·6	—	6	1	4	9	—	1	—	13	34	2·4	217	15·3	159
Lewisham (excluding Penge)	93,548	—	26	28	—	2	—	1	6	—	63	8·8	—	—	—	—	6	—	—	—	6	12	1·7	83	11·6	110
Woolwich	41,600	—	10	5	—	2	—	—	2	—	19	6·0	—	3	—	—	—	—	—	—	1	4	1·3	58	18·2	118
Lee	40,722	—	19	25	—	—	—	—	—	—	44	14·1	—	2	—	1	3	—	—	—	—	6	1·9	36	11·5	74
Plumstead	65,558	—	29	11	—	—	—	—	7	—	47	9·3	—	11	1	1	5	—	1	—	2	21	4·2	85	16·9	100
Port of London	—	—	1	1	—	3	—	—	—	1	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 15 cases of membranous croup.

† Including deaths from membranous croup.

rates were considerably below the average in Kensington, Westminster, Limehouse, Bermondsey, Battersea, and Wandsworth; while they showed the largest excess in Fulham, Holborn, Whitechapel, St. George-in-the-East, Rotherhithe, Lee, and Plumstead sanitary areas. Thirteen small-pox cases were notified during July, of which three belonged to St. Pancras, two to Hammersmith, and two to Fulham sanitary areas; 12 small-pox patients were admitted into the Metropolitan Asylums Hospitals during the month, and 11 remained under treatment on Saturday, July 28th. The prevalence of scarlet fever showed a slight decline from that recorded in the preceding months; among the various sanitary areas this disease was proportionately most prevalent in Stoke Newington, Holborn, Whitechapel, St. Olave Southwark, Lee, and Plumstead. The Metropolitan Asylums Hospitals contained 1804 scarlet fever patients at the end of July, against 1619, 1735, and 1788 at the end of the three preceding months; the weekly admissions averaged 210, against 174, 198, and 202 in the three preceding months. The prevalence of diphtheria showed a marked increase last month; the greatest proportional prevalence of this disease was recorded in Fulham, Bethnal Green, Whitechapel, Rotherhithe, Lambeth, and Lee sanitary areas. There were 1256 diphtheria patients in the Metropolitan Asylums Hospitals at the end of July, against 1131, 1402, and 1212 at the end of the three preceding months; the weekly admissions averaged 183, against 135, 172, and 151 in the three preceding months. The prevalence of enteric fever showed a further slight decline from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Pancras, Whitechapel, St. George-in-the-East, Mild End Old Town, Poplar, and Rotherhithe. The Metropolitan Asylums Hospitals contained 129 enteric fever patients at the end of July, against 208, 176, and 148 at the end of the three preceding months; the weekly admissions averaged 20, against 27, 24, and 21 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, Holborn, Shoreditch, Whitechapel, Rotherhithe, and Plumstead sanitary areas. The 12 cases of puerperal fever included two in Marylebone, two in Battersea, and two in Camberwell sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the four weeks ending July 28th the deaths of 5522 persons belonging to London were registered, equal to an annual rate of 15·7 per 1000, against 20·2, 16·6, and 14·8 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 6·6 in St. Martin-in-the-Fields, 7·3 in Hampstead, 8·0 in St. George Hanover-square, 9·6 in St. Olave Southwark, and 11·5 in Wandsworth and in Lee; the highest rates were 21·8 in St. Luke, 22·0 in Mile End Old Town, 22·4 in St. Saviour Southwark, 26·7 in St. George-in-the-East, 26·8 in Holborn, and 28·1 in Limehouse. During the four weeks of July 926 deaths were referred to the principal zymotic diseases in London; of these, 161 resulted from measles, 25 from scarlet fever, 93 from diphtheria, 167 from whooping-cough, 41 from enteric fever, two from simple continued fever, and 437 from diarrhœa. These 926 deaths were equal to an annual rate of 2·6 per 1000, against 1·8, 1·8, and 1·7 in the three preceding months. No death from any of these diseases occurred last month in St. James Westminster; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, St. Martin-in-the-Fields, City of London, St. Olave Southwark, Wandsworth, and Woolwich, and the highest rates in Shoreditch, St. George-in-the-East, Limehouse, Mile End Old Town, Poplar, and Plumstead. The 161 deaths from measles were 74 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Holborn, Whitechapel, Limehouse, Mile End Old Town, Woolwich, and Plumstead sanitary areas. The 25 fatal cases of scarlet fever showed a decline of 46 from the corrected average number; the greatest proportional mortality from this disease occurred in Fulham, Stoke Newington, Bethnal Green, St. George-in-the-East, Limehouse, and Plumstead sanitary areas. The 93 deaths from diphtheria were 71 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Fulham, Hampstead, Clerkenwell, Shoreditch, Bethnal Green, and Lambeth. The 167 fatal cases of whooping-cough were slightly in excess of the corrected average number; this disease showed the highest proportional fatality in Mile End Old Town, St. Saviour Southwark, Newington, Bermondsey, Lewisham, and Plumstead sanitary areas. The 43 deaths referred to "fever" exceeded by ten the average number in the corresponding periods of the ten preceding years; among the various sanitary areas the "fever" death-rate was highest in Stoke Newington, St. Giles, Strand, Whitechapel, Poplar, and Bermondsey. The 437 fatal cases of diarrhœa showed a decline of 318 from the corrected average number; this disease was proportionally most fatal in St. Luke, Shoreditch, St. George-in-the-East, Limehouse, Mile End Old Town, and Poplar sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during July was nearly 35 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 158 per 1000. The lowest rates of infant mortality were recorded in St. George Hanover-square, Hampstead, Stoke Newington, Strand, St. Olave Southwark, and Lee; and the highest rates in Westminster, Holborn, St. George-in-the-East, Limehouse, Mile End Old Town, and St. Saviour Southwark sanitary areas.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following qualified candidates for the Naval Medical Service have been appointed to be Surgeons in Her Majesty's Fleet:—George Ross, John Scarbrough Dudding, William Bastian, Charles Thomas Baxter, Robert William Basil Hall, Henry Cyril Adams, Llewellyn Lindop, Noel Hugh Harris, William Ernest Gribbell, Hardy Vesey Wells, John Marcus Hobson Conway, Robert Bernard Scribner, John Whelan, Arthur Izod Sheldon, John Verdon, and Cecil Rodney Rickard.

IMPERIAL YEOMANRY.

4th Battalion: The appointment of R. Mervyn Wilson as Medical Officer, with the temporary rank of Captain, which was notified in the *London Gazette* of Feb. 2nd, 1900, is cancelled.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels:—George Holden Sylvester, William John Macnamara, Daniel O'Sullivan, Edwin Oswald Milward, Charles Rolleston Woods, John Oldfield Greatrex Sandiford, Robert Lindsay Love, Henry Walker Murray, Michael William Kerin, Alfred Peterkin, Edward Lewis Maunsell, William Heffernan, Ronald William Edward Huntly Nicholson, James Grove White Crofts, William Dugdale, Delaware Lewis Irvine, Edward Russell Cree, and Denham Francis Franklin.

INDIA AND THE INDIAN MEDICAL SERVICES.

The following appointments to the Indian Medical Service are submitted for Her Majesty's approval:—To be Lieutenants: James Drummond Graham, Cuthbert Allan Sprawson, Maxwell MacKelvie, William Lapsley, William Henry Cazaly, Percy Alfred Browne, Walter Valentine Coppinger, Alfred Spitteler, James Charles Stewart Oxley, Henry Richard Macknee, Leonard Joseph Montague Deas, William Mitchell Houston, William David Acheson Keys, George Joseph Grafton Young, James Good, Alexander Chalmers, William Gavin Hamilton, and Samuel Robert Godkin.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. W. Ellis to be Surgeon-Major.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Robert William Beesley to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Aberdeenshire: Henry McIlree Williamson Gray to be Surgeon-Lieutenant. *Royal Engineers* (Volunteers): 1st Hampshire: Surgeon-Lieutenant A. B. Wright resigns his commission. 1st Newcastle-on-Tyne: Surgeon-Captain H. H. Gourley, from the 4th Durham (Western

Division, Royal Garrison Artillery), to be Surgeon-Captain. *Rifle:* 1st Volunteer Battalion the Royal Warwickshire Regiment: Arthur Roscoe Badger to be Surgeon-Lieutenant. 4th Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant F. B. Manning to be Surgeon-Captain. 2nd Volunteer Battalion the Princess of Wales's Own (Yorkshire Regiment); Surgeon-Captain S. H. Snell, from 1st Essex Volunteer Artillery, to be Surgeon-Captain. 5th Volunteer Battalion the Cheshire Regiment: Edward John Walter Carruthers to be Surgeon-Lieutenant.

TRANSVAAL WAR NOTES.

The Southampton Town Council have decided to confer the freedom of the borough upon Mr. Robert E. Lauder, F.R.C.S., L.R.C.P. Edin., and Mr. W. Prior Purvis, M.D., B.Sc., M.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., of the Southampton Volunteer Ambulance Corps who have recently returned from South Africa.

Major Dodd, R.A.M.C., and Lieutenant Phipps, R.A.M.C., have left South Africa for England.

Major Caldwell, R.A.M.C., and Captain Moore, R.A.M.C., have arrived in the *Tagus*.

We understand that commissions in the Royal Army Medical Corps will be granted to those of the civilian surgeons serving in South Africa who may care to accept them.

In a passage in a private letter to the *Times* Special Correspondent dealing with De Wet's attack on Honing Spruit published in the *Times* of August 14th the writer pays what is evidently a well-deserved tribute to the services rendered by Mr. G. L. Cheatle, F.R.C.S., and concludes with the following words: "Imagine what Smith and I should have done with them (the wounded) if Cheatle had not happened to be on his way home by that train. He is a very gallant fellow and did well."

HOW TO POPULARISE OUR ARMY.

We would direct the attention of our readers to an article under the above heading in the August number of the *Pall Mall Magazine*. It strikes us as being written from a common-sense point of view by one who has had some practical experience to guide him in what he has to say. To take a single point, soldiers' barrack-rooms are very badly lighted. We do not pretend to agree with all the author has advanced, nor, indeed are we concerned with several of the points discussed, but some of the remarks on soldiers' barrack-rooms, lavatories, cubicles, dining- and recreation rooms, and on hospital stoppages are of a practical character and well worth reading.

DEATHS IN THE SERVICES.

Surgeon-General Daniel James O'Callaghan, on August 12th, aged 85 years. He joined the Honourable East India Company's service in January, 1842, was employed in the Field Hospital of the Army of the Sutlej with the 49th Bengal Native Infantry, and also in the Chinese war of 1860 (medal). He acted as surgeon in chief medical charge of Foot Artillery at the seige of Delhi, and was present at the storming and capture of the city (medal and clasp). He retired in 1872. Surgeon-General O'Callaghan, who was the father-in-law of Sir Henry Irving, commenced his public career in the Royal Navy.

The Edinburgh Company of the Volunteer Medical Staff Corps completed a successful month's training at Aldershot on August 11th and were dismissed. Owing to the large number of troops in camp the services of the company have been most useful, and it is to be regretted that more such units are not formed.

Correspondence.

"Audi alteram partem."

HALLUX RIGIDUS.

To the Editors of THE LANCET.

SIRS,—Mr. Warrington Haward, in a clinical lecture published in THE LANCET of July 28th, refers on p. 242 to a case of hallux rigidus. I should like to refer him to a note on this condition which was published in Vol. I. of the *British Medical Journal* for 1887, p. 726, giving what I believe to be the first account of the disease. Further experience while acting as resident medical officer at the General Post Office in London showed me that the condition was fairly common among the telegraph messengers and was due to the wearing for the greater part of the 24 hours of boots with very stiff "waists," thick soles, inelastic uppers, each boot often weighing one and a half pounds. The result in a growing boy was a permanent painful stiffness of the metatarso-phalangeal joint of one or both great toes. I have also found excision of the metatarsal head to be the only means of cure, but, contrary to Mr. Haward's experience, have found in at least two instances eburnation of the dorsal half of the metatarsal head. As bearing on the disability the condition may cause well into adult life I was called not long ago to see a man, aged 40 years, who presented well-marked hallux rigidus of the left side; so great was the difficulty in rising on to the toes of the left foot that one day in breasting a steep hill, the right leg leading as usual, he ruptured his *right* plantaris tendon with the classical symptoms. All effort in walking had for years been made with the right leg. Short of operation I found that a cure could be affected in recent cases by cutting transversely through the "waist" of the offending boot down to the welt. By restoring thus the possibility of flexion to the foot affected the painful rigidity of the great-toe joint rapidly passed off.

I am, Sirs, yours faithfully,
REGINALD H. LUCY, F.R.C.S. Eng.

Plymouth, August 9th, 1900.

"PREPUTIAL CALCULI."

To the Editors of THE LANCET.

SIRS,—In reference to your annotation on this subject in THE LANCET of August 4th, I may say that I have in my possession a specimen consisting of 28 faceted fragments weighing nearly one ounce and an eighth which I removed from a Chinaman a few years ago. The fragments were admirably apposed, forming a roundish lump of the size of a large alley, which lay behind a phimosed prepuce. The external surface was a little rough; the colour was ash grey. The material turned out to be calcium carbonate, calcium phosphate, and organic matter. It had caused considerable irritation, ulceration, and suffering. After a small incision I was able to extract it piecemeal and the man made a rapid convalescence.

I am, Sirs, yours faithfully,
GERALD S. WALTON, M.B., C.M. EDIN.

Sutton, Surrey, August 8th, 1900.

"THE TREATMENT OF CHRONIC GLAUCOMA."

To the Editors of THE LANCET.

SIRS,—In the account of the discussion, at the meeting of the British Medical Association, on Mr. Cross's paper on the Treatment of Chronic Glaucoma, published in THE LANCET of August 11th, the following remarks are attributed to me: "Mr. Bower was in favour of prolonged treatment with eserine and cocaine. His experience of iridectomy was that in many cases the disease progressed." As this is very far from what I really did say I trust you will allow me to correct what would otherwise give rise to an entirely erroneous impression.

It is true that I mentioned the case of a woman who had been under my care for at least six years where glaucoma had been kept in abeyance during the whole of that time by the use of myotics. She always refused operation, but said she would consent to iridectomy if the sight should get worse, which it has not done up to the present time. She had already lost one eye from glaucoma, which naturally made one not over-anxious to operate on the remaining eye if it could be avoided. I was careful, however, to state that such cases are rare and should never deter us from advising an operation in chronic glaucoma when once the diagnosis is established.

In reference to iridectomy, what I said was that it would be interesting to know what percentage of cases were permanently cured after operative measures, as my impression was that eventually after a longer or shorter period of time—it might be years—in the greater number of cases which might have been regarded as cured the ultimate end was gradual deterioration of vision terminating in blindness. In all but a few exceptional cases I invariably recommend

iridectomy in chronic glaucoma provided the central vision is fairly good and there is not too much contraction of the field, but one is sometimes, perhaps, inclined to rely for too long a time on myotics in the very early stage of the disease, lest after the performance of iridectomy with its possible resulting astigmatism the sight might be left rather worse than it was before the operation and so cause the patient to be disappointed with the result and dissatisfied with the surgeon.

Mr. Cross's suggestion to perform sclerotomy rather than iridectomy in the very early stage of the disease might, I think, in some cases be advisable, as there would probably be less disturbance of vision from that operation than where a large piece of iris had been removed, and iridectomy could always eventually be performed if necessary. I should not have troubled you with this letter were it not that the operative treatment of chronic glaucoma is not now, as far as I am aware, open to question, so that the remarks erroneously attributed to me are entirely contrary to what is now a well-established fact.

I am, Sirs, yours faithfully,

Gloucester, August 12th, 1900. E. DYKES BOWER.

THE COVENTRY DISPENSARY.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 4th I notice a report of a discussion at the Deontological Congress in Paris where a Mr. Adolphe Smith is reported to have said that a combination of the local profession against certain "ostracised" practitioners in Wolverhampton and Coventry failed owing to the support these received from Birmingham consultants. I should like to know what are the facts which support this statement or whether there is any inaccuracy in the report. I have never heard of any "ostracised" practitioners in Wolverhampton nor do I think this term is rightly applied to the staff of the Coventry Dispensary. I have never been asked to support the profession in either town against any individuals nor do I know that a request of this kind has been brought before any of our medical societies by either of these towns. Such support was asked by another neighbouring town and at a meeting of the Birmingham and Midland Counties Branch of the British Medical Association it was agreed to, and I believe the boycott had the desired effect.

If I am not mistaken Mr. Adolphe Smith is the same gentleman who three years ago made certain statements about the profession in Birmingham which he failed to substantiate when challenged. So far as my knowledge goes his present allegations are equally baseless.

I am, Sirs, yours faithfully,

Llandrindod Wells, August 10th, 1900. ROBERT SAUNDBY.

*** We have every reason to believe that Mr. Adolphe Smith knows what he is talking about. Some three years ago Dr. Saundby wrote a letter in our columns containing offensive allusions to our Commissioner's work. If this letter is what he now refers to as a challenge it is well that he should understand that it was not answered either by our Commissioner or by ourselves because it was rude.—ED. L.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Three New Hospitals.

THE Assistance Publique will be able before the end of the year to open three new hospitals for children built to replace the Trousseau Hospital which will be pulled down as soon as certain legal formalities have been complied with (*après désaffectation*). The buildings are almost complete and the children will be admitted as soon as the plaster is dry. The new hospitals are built of brick in accordance with all the most modern ideas and contain altogether 700 beds. Their names are as follows: the Herold in the Place de Danube, the Trousseau in the Rue Michel Bizot, and the Bretonneau in the Rue Carpeaux. Including the Hospital for Sick Children in the Rue de Sèvres, formerly called the Hôpital de l'Enfant-Jésus, Paris will have four hospitals for children at convenient distances apart, so that mothers will not have to go very far for consultation. The last-mentioned hospital has been considerably enlarged and last year some isolation wards were built which are looked upon as models of construction and fitting. Paris will henceforth be able to offer opportunities for the study of children's diseases such as few other towns in the world can afford.

The Monument to Pelletier and Caventou.

A monument in memory of Pelletier and Caventou, the two discoverers of quinine, has just been erected. It stands in the Boulevard Saint Michel at the corner of the Rue de l'Abbé de l'Epée, close to the School of Pharmacy, and was unveiled on August 7th in great state at 10 o'clock in the morning. M. Marty, a member of the Academy of Medicine, handed over the monument to the town of Paris and M. Edmond Lepelletier returned thanks in the name of the Municipality. The two chemists are represented as standing upon one pedestal. The expenses were defrayed by a subscription among the members of the Pharmaceutical Section of the Academy of Medicine and by the Syndicate of Pharmacists.

The Relations between the Thyroid Gland, the Hair, and the Genital Organs.

M. Gautier, who has been pursuing his researches upon organic arsenic, communicated his latest results to the Academy of Medicine at the meeting held on August 7th. Normal blood contains very little arsenic or iodine, but it is otherwise with menstrual blood, except the menstrual blood of anæmic patients. At every period the thyroid gland discharges nearly the whole of its arsenic. Iodine is four and half times more abundant in menstrual blood than in normal blood. Both elements have their origin in the thyroid gland which establishes a relation between this gland and the menses and is at the same time a confirmation of the relation anciently said to exist between the thyroid body and the genital organs. In the lower animals the arsenical nucleins of the thyroid increase the growth of the hair and this increase is specially marked between the rutting periods. In men these nucleins are devoted to the growth of the hair and beard, not having to be eliminated by the menses as in women. Women treated with the cacodylates show an increased growth of the hair and the menstrual flow becomes more abundant. In tuberculous patients the arsenic and iodine may disappear from the thyroid, and hence affections of the hair and skin in such patients can be improved by administering these elements. These facts explain the favourable influence of arsenic upon cutaneous affection and upon the growth of the hair. Replying to the objection of M. Fournier, who said that he had never seen a case of cure of prurigo gestationis, or for the matter of that of any skin disease by arsenic, M. Gautier said that he never used mineral arsenic but only arsenic in the form of the cacodylates.

August 14th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Statistics of Diabetes.

DR. GEORG HEIMANN of Berlin has published in the *Deutsche Medicinische Wochenschrift* some interesting statistics of the frequency of diabetes in Prussia. The number of deaths from this disease in Prussia as given by the Royal Statistical Office was 12,929 during the period from 1877 to 1897 and of these 4889—37·8 per cent.—were deaths of females. On an average 378 persons died from diabetes annually from 1877 to 1886, of whom 237 were males and 141 were females. From 1887 to 1896 the average annual number of deaths was 796, 494 being males and 302 being females. In 1897 the deaths were 1186, 735 being males and 451 being females. In 1877, 1887, and 1897 the death-rates of males per 100,000 of the male population were 1·0, 2·4, and 4·7 respectively, the corresponding death-rates for females per 100,000 of the female population being 0·7, 1·6, and 2·8 respectively. The increase of mortality from diabetes is due probably to a better knowledge of the disease, the diagnosis being made now in a greater number of cases. There are certainly many more cases than are recorded in the official tables owing to the deficiency of death certificates in country places, and it is very significant that of 1186 deaths

in 1897 there were 823 reported from towns and 363 from the country. No figures are available showing how many patients actually suffer from diabetes; the Statistical Office is only able to record those under observation in hospitals, sanatoria, &c., as the number of patients treated at home is of course not known. In institutions of the above-mentioned kind 7285 cases of diabetes were admitted from 1877 to 1897, the annual totals rising steadily from 117 in 1877 to 895 in 1897. Of 1000 hospital patients there were 0·5 diabetic in 1877, 0·7 in 1887, and 1·4 in 1897. The proportion of males among the cases of diabetes for the 21 years from 1877 to 1897 was 73·6 per cent. Of all the diabetic patients in the hospitals 1410 (19·3 per cent.) died, the disease being more fatal in women with a death-rate of 22·6 per cent. than in men with a death-rate of 18·2 per cent. As regards age it is stated that persons under 30 years were relatively seldom affected (about 18 per cent.), those upwards of 40 years being the majority (70 per cent.). Of the hospital patients the youngest was six years and the oldest was 80 years of age. The death of one child aged three months was recorded. As regards the profession or occupation of the patients the greater number of them were engaged in trade or commerce and the disease occurred relatively often among the well-to-do. The complications recorded and the number of cases in which they presented themselves were as follows: tuberculosis in 56, Bright's disease in 21, cataract in three, carbuncle in 40, and gangrene in 101; 36 of the cases of gangrene died. Of the 895 hospital patients 165 died, 35 of them from coma. In the Prussian army from 1893 to 1897 there were 130 cases of diabetes with 27 deaths.

Plague in Hamburg.

It has been officially announced by the Hamburg authorities that a steward on board a steamer which recently arrived in that port was found to be suffering from plague and was removed to the Eppendorf Hospital, where he died. No other cases have hitherto appeared. The steamer has been disinfected and is in quarantine.

The Military Expedition to China.

The care of the health of troops embarked for China has been an object of great solicitude to the military authorities, and all the officers have received a small pamphlet containing hygienic rules to be observed on board ship and in the Far East. The pamphlet is written in a style intelligible to ordinary readers, and the officers have been ordered to give their men instruction in the subjects dealt with in it. This is the more necessary as the China expedition is the first in which German troops have been engaged on a large scale in a war out of Europe. The troops have been provided with different uniforms for the hot and cold season; the summer uniform consists of khaki and a straw hat, the winter uniform of stout cloth and furs. With a view to prevent scurvy and similar diseases great quantities of preserved vegetables and anti-scorbutics have been sent to China. Apparatus for the sterilisation of drinking-water by boiling and by bromine, as suggested by Dr. Schumberg, has also been provided. Army medical officers specially trained in bacteriological work have been sent with the army and it will be their duty not only to examine the food and the drinking-water, but also to investigate any conditions which might have a significance in connexion with an outbreak of disease. The army medical corps is, of course, much more numerous than in an European war, one army medical officer being sent for each 120 men. The special medical staff consists of a bearer company and of four field hospitals for 200 patients each. For the erection of stationary hospitals 127 tents and 15 barracks have been sent with all the necessary staff and material. Two hospital ships have been chartered from the North German Lloyd for the conveyance of sick and wounded soldiers to Europe.

August 13th.

Obituary.

ERNEST ARTHUR TAYLOR STEELE, L.R.C.P. LOND., M.R.C.S. ENG.

MR. E. A. T. STEELE of Byford House, York-road, Southend, died there on July 25th after a painful illness of some 10 weeks' duration. He received his professional education at University College, Liverpool, where he had a highly successful career as a student, and in 1888 he took the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. After being house surgeon under Sir W. Mitchell Banks at the Liverpool Royal Infirmary he became medical officer at the Dispensary, Worksop. He then settled in Plaistow, Essex, where he soon showed his talent for surgery and gynæcology, and chiefly through his exertions St. Mary's Children's Hospital was gradually built up from a very small beginning to the successful institution it has now become. He also found time in the midst of a very busy practice to act as honorary medical officer to the Plaistow Maternity Charity and District Nurses' Home, and the loss of his ever ready help and skill was deeply felt when he was obliged in 1897 to relinquish his practice in Plaistow owing to failing health and seek less onerous work at Southend. Here he soon built up a practice and gained many friends. In spite of increasing weakness and pain he battled on bravely for three years more, working to the last and only giving up when he was no longer able to move about. All who were brought into contact with him recognised his talent and capacities and deplore his death at the early age of 34 years. He leaves a widow and one child. Two accounts of successful operations performed by him appeared in THE LANCET in 1899, one being for the removal of suppurating cysts of both ovaries and the other for strangulated inguinal hernia.

Medical News.

VACCINATION AWARD.—Mr. J. R. White, M.B. T.C.D., L.R.C.S. Irel., of Kelvedon Hatch, Brentwood, has been awarded the vaccination grant for the sixth time.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—At the recent examination the following scholarships were awarded:—Lawrence scholarship and gold medal, C. J. Thomas; Brackenbury medical scholarship, A. T. Pridham; Brackenbury surgical scholarship, C. E. West; senior scholarship in anatomy, physiology, and chemistry, M. E. Waterfield; entrance scholarships—junior, I. D. Clements-Smith and K. S. Wise (equal), Jeaffreson exhibition, M. B. Reichwald, and Shuter scholarship, H. H. Dale; and Kirkes scholarship and gold medal, A. E. H. Thomas. The next examination for entrance scholarships will take place on Sept. 26th.

THE OFFICE OF CITY ANALYST, MANCHESTER.—Rates tend to rise and city councillors in their occasional attempts to reduce expenses are apt to lay hands where possible on the modest gains of the professional men employed in municipal work. It was therefore moved at the last meeting of the Manchester City Council "That a committee be appointed to inquire into the administration of the city analyst's department with a view to its reorganisation on a more economical basis." All personal feeling was disclaimed and it was acknowledged that Mr. Estcourt did his work well. He was appointed in 1873 at a salary of £150 a year, and in 1882 it was arranged that he was to have in addition a fee of 7*s.* 6*d.* per sample on all samples received for analysis beyond 200 per annum, and later still it was decided that on all samples beyond 800 per annum he should receive 5*s.* per sample. Last year these fees came to £470, and in addition to this the corporation paid Professor Delépine £426 in fees for bacteriological analysis. Fees were also paid by the waterworks department for analysing the town's water-supply. It was decided to appoint a special committee to inquire into the whole subject of the analytical work of the corporation, of the employment by the corporation of its own officials, and to consider the question of the appointment of a city bacteriologist. As Mr. Alderman McDougal held, there was no city analyst, except for matters under the Food and Drugs Act, and no city analyst department. Mr. Estcourt's appointment could only be terminated with the approval of the Local Government Board "and that would not be easily obtained." He further stated that while Manchester paid an average of 7*s.* 1*d.* per sample Salford paid 7*s.* 4*d.*, but Liverpool paid 13*s.*, and in some towns the fees averaged as high as a guinea per sample. It may be that the council, notwithstanding its anxiety to reduce the cost of applied science, had better bear the ills it has than fly to others that it knows not of.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

EXTRAORDINARY GENERAL MEETING HELD AT THE HOSPITAL, QUEEN SQUARE, W.C.,

ON SATURDAY, AUGUST 11, 1900.

MR. PEARMAN—I beg to move that Mr. George Russell take the chair.

SIR GERALD FITZGERALD—I have much pleasure in seconding the resolution.

[Carried unanimously.]

MR. GEORGE RUSSELL took the chair.

THE CHAIRMAN—Ladies and Gentlemen, my first duty is to call upon the Secretary to read the notice convening the Meeting.

[The Secretary read the notice convening the Meeting.]

THE CHAIRMAN—Ladies and Gentlemen, my next duty is to read a letter from the Lord Chancellor, and nobody can be more sensible than I am how greatly it would have been to our advantage if the Lord Chancellor, who is a valued member of our Board of Management, had been able to preside, but on being applied to to take the chair he writes to Mr. Rawlings from the House of Lords as follows:—"Dear Sir, I am very sorry to say that I shall not be able to take the chair next Saturday. I am due to arrive at Homburg on Thursday." Then he concludes by saying that he had hoped it might be possible that his holidays would have been delayed for another week, in which case he would have come to the meeting and taken the chair with pleasure, but as it was he could not delay further as he was bound to be with his wife at Homburg. I think it only due to Lord Halsbury's great position in the world that his expression of good-will towards the hospital and readiness to serve it at this rather critical moment should be made known. I now begin to open the proceedings, and in the first place I have to call the attention of my hearers to the fact that by our Rule No. 6, Section 3, members and governors have a right to speak, but only governors are allowed to vote, and that by Rule 8 of the same section only governors who have been governors for the space of three months are allowed to vote. It will be observed that there is a slight distinction there—only governors to vote and speak, subscribers can speak but not vote. But under existing circumstances, though I have not power to do it myself as Chairman, I will take the indulgence of the meeting for any member of the medical staff who may happen to be here to-day in case he should wish, although not a governor, to be allowed to address the meeting. Of course he would not be able to vote even then. Members of the staff who are governors are disqualified from voting by Rule 10, Section 3, but in case any member of the medical staff should wish to be heard in his own behalf, or in behalf of his colleagues, I would appeal to the meeting to permit him to address it. I have no reason to believe that anybody wishes to intervene, but in case it turns out that a member of the medical staff should so wish to be heard, I will ask the indulgence of my hearers to give him an audience. Some apologies are necessary I feel to those who have been good enough, I fear at some inconvenience, to respond to this invitation for the period of the year at which the meeting is convened, but really the responsibility does not rest with us as a Board of Management, but with the medical staff. The statement to the governors dated May, 1900, was really only issued on June 16th. The Board's reply was issued on July 24th, and the fact that it was issued as soon as that shows that we have not been wasting our time, because the interval has been occupied by the inquiry conducted by the special committee which was appointed to look into the domestic condition and the administration of the hospital. We thought it our duty to hold that inquiry before we replied to the governors in order that we might have a definite answer to the allegation of mismanagement to place before the governors when we addressed them. That accounted for the time up to July 24th, and the letter of the medical staff in the *Times* of July 28th was the first statement by the staff that the differences between them and the Board of Management were irreconcilable. When that was publicly announced we felt that it was impossible for us to delay taking some practical notice of it. We should have felt that we were to blame and that the governors of the hospital to whom we are ultimately responsible would justly hold us to blame if we allowed any time to be wasted between that declaration of an irreconcilable difference of opinion and the summoning of a meeting. We were bound, we considered, in the interests of the hospital to take the very earliest opportunity open to us for calling the governors, or such of the governors as would consent to be called together, for the purpose of hearing this question argued out. The board meeting was summoned on the very day as that on which the declaration of the medical staff appeared in the *Times*, and it was summoned for the earliest day possible, and for the meeting of the governors again the earliest day possible, was decided upon at the board meeting. To-day, therefore, is the very first day in which, conformably with the rules of the hospital, this special meeting of the governors could have been called together. It will be observed by those ladies and gentlemen who looked into these proceedings in their earlier stages that two entirely distinct questions are submitted to it for decision. I will label them, for the sake of clearness, Question A and Question B. Question A is a question whether the rule of the hospital, No. 5 of Section 5, should be altered so as to allow the medical staff to sit on the Board of Management. Question B is a question whether there shall be a further inquiry into the actual condition and management of the hospital as it now is. We considered these two questions to be of very different importance, and for convenience' sake I will invert their order and deal with Question B first—the question whether it is necessary to hold a further inquiry into the actual condition, working, nursing, management and so forth of the hospital. I have had the honour of a seat on this board for exactly ten years, and during those ten years I have by no means considered my duty discharged by attendance at board meetings or meetings of the House Committee. I have made it during all those ten years a practice to visit systematically the wards of the hospital, and I think—there may be exceptions of course with regard to times when one is absent from London—that I have been almost always a weekly visitor to the hospital during all those ten years. I have cultivated what I think I may call friendly relations with our patients of all classes and conditions past and present. For I have made it a point, whenever circumstances permitted, to keep up some sort of knowledge of those patients who have left us in a more or less restored condition, partly with the view of helping them in the altered conditions of their subsequent life, and partly on account of the genuinely friendly feelings engendered by a constant intercourse with them during the time that they resided in our wards. In addition to that, I proposed the other day, as it is the wish of my colleagues, the appointment of a special sub-committee of inquiry into the internal condition of the hospital. That inquiry may really be called exhaustive. We examined with great care—and be it remembered that we had in the person of Mr. Pearman a gentleman on that committee well versed in the conduct of legal business—all the responsible authorities of the hospital from secretary-director and lady-superintendent down through the sisters, stewards and the cook—the latter a by no means unimportant element in such an inquiry as we were then conducting. We also paid surprise visits to the wards, the kitchen, the offices and the basement, and gave rather special attention to the actual condition of the food as it was sent up to the wards. The total result of our experience—in my case an experience prolonged for ten years—is that, in our opinion, no further inquiry is necessary. It would be ridiculous to say that the arrangements of any hospital were not susceptible of some improvement. I cannot conceive that anybody who has any experience of house-keeping on a large or small scale would maintain that it was possible to keep every detail of a very large establishment such as this in absolutely perfect and ideal order from week to week over a period of ten years, but such faults as we did discover may fairly be written down as infinitesimal, and as well within the power and the will of the Board to remedy the moment they are brought to the Board's notice. It is to be borne in mind that a further inquiry if conducted by a legal authority from outside would be a costly business, and during this process would more or less interfere with the ordinary work and every-day life of the hospital. But these considerations, although they are for the Governors to bear in mind, would not affect our view as to the desirability of holding an inquiry. If the governors think that further inquiry is necessary in the interests of the patients or for the satisfaction of their own minds on the subject, I am instructed by my colleagues, the Board, to mention that we should offer no kind of opposition, and we should stipulate only that the inquiry should be conducted by an impartial authority and by somebody well accustomed to the sifting of evidence. Granted those conditions, we should be ready to agree to render all the assistance in our power to make the inquiry exhaustive and complete, being well assured in our own consciences that this hospital has nothing to fear from the closest examination or the widest publicity. So much for Question B—the question as to whether further inquiry into the affairs of the hospital is necessary. I now come in the inverse order to Question A, and with regard to that the attitude of my colleagues who are on the Board of Management, and myself is extremely different from the attitude we take with reference to a further inquiry into the state of the hospital. We feel convinced that the demand of the medical staff for admission to the Board must be resisted. It is, as you know, at present forbidden by Rule 5 of Section 5. That rule was passed twenty years ago, and I am informed—I think it was before the time of my connection with the hospital—that Mr. Chandler, whose name must always be mentioned with gratitude and with honour within these walls as one of the founders of this institution, was a party to the passing of this rule by which the medical officers of this hospital were excluded from the Board of Management. The rule under which they are excluded from or rendered incapable of sitting on the Board of Management is, I am told, in force also at the London Hospital, at St. Bartholomew's, at the Middlesex, at the Brompton Consumption Hospital,[1] at the London Fever Hospital, and at the City of London Chest Hospital. It therefore cannot be argued that a rule obtaining in such hospitals as those is unique or even exceptional. The reasons on which the Board found themselves in their firm opposition to this demand may briefly be stated as follows: We consider that the functions of the medical staff which

[1] Dr. J. E. Pollock, in the *Times* of August 14th, points out that this is a mistake so far as the Brompton Consumption Hospital is concerned.—ED. L.

are well defined in the rules may call for the exercise of discipline on the part of the Board, and where that is the case it would be obviously—to put it in the very mildest way—a very inconvenient arrangement that gentlemen whose conduct might be called in question should be themselves the members of the tribunal to which that question would have to be submitted. Amongst matters possibly affecting the staff which might from time to time be brought by way of the exercise of discipline before the notice of the Board of Management, I may mention, just by way of illustration, the following: The question of regularity of attendance on patients according to the rules; the question of leave of absence and provision for professional substitutes during absence; the admission of patients according to the rules—that is the admission only of such patients as those who are suitable for treatment at this hospital. In passing, I may say that that point is liable perhaps to some amount of misconstruction. It may very properly be urged that a medical man is the best judge as to whether a patient's state is such as to make it desirable to admit him to the hospital or not. Yes, that is so, but we are hemmed in in one direction by a legal restriction. I believe I am right in saying—of course I speak in the presence of lawyers—that the matter is an exceedingly perilous one in connection with the powers of the Lunacy Commission to harbour in any building, public or private, any person of unsound mind unless the house in which he is harboured is a duly licensed house. Cases might arise where the person applying for admission here, or where friends applied for admission for him, was a person of unsound intellect. In that case by our absolute rule we are forbidden from admitting such a one into the hospital. Although his condition might be such as to justify a medical man in saying that he would be the better for the treatment provided here, we should be legally restricted from admitting such a one into our wards, and should be obliged to refer such a case through the relations to the authorities properly responsible for the custody of those mentally infirm. And then, again, there is the important question of complaints made by patients against the medical staff. I am not saying that such complaints are made—that is not my business at the present moment to say whether they are or are not made, but very obviously complaints might arise. There might be questions of neglect in which a patient might feel himself aggrieved and in which he would be fully justified in appealing to the Board of Management, and we feel that it would be wholly inconsistent with the notions of order and propriety that medical men whose conduct was called in question in such a matter as that should be judges in their own cause. It seems to me obvious that gentlemen whose conduct might be called in question cannot properly sit on the tribunal by which the charge has to be investigated. But, although we feel very strongly that this direct admission to membership of the Board would be an alteration fundamental and vital in the rules and constitution of the hospital which we cannot be parties to, we still feel very strongly, and I welcome this opportunity of publicly stating it, that there is the greatest value in a free interchange of opinion between the medical staff and the Board of Management. For that purpose, and to promote that free interchange of opinion, the Medical Committee exists. If I am rightly informed, every member of the staff is a member of the Medical Committee. Therefore, there can be no doubt that the sentiments, views, and opinions of the medical staff will be adequately represented by the Medical Committee, and that free communication between the Medical Committee representing the staff, and, indeed, consisting of the staff and the Board of Management, is by us both desired and encouraged. Be it borne in mind that no medical matter—no matter affecting the food, treatment, or nursing of the patients—is ever dealt with by the Board of Management without reference to the Medical Committee, and all the representations of the Medical Committee, whether invited or volunteered, are invariably regarded by the Board with a most careful courtesy and careful consideration. But the Board of course must reserve to itself the power of dealing in the long run on their own responsibility with cases as they arise, but there has been no instance, so far as I know of, when any recommendation of the Medical Committee has been disregarded or treated lightly. On the contrary, it has always been carefully weighed by us and decided upon its merits. If my own assurance on that point were regarded as insufficient, I could confidently refer the governors of the hospital to the statement made by the medical staff itself in their letters circulated through the governors of the hospital under the head of "Diet of Patients," where readers will see that recommendations by the medical staff have been, on the showing of the medical staff, sanctioned and adopted in every detail by the Board of Management. If the Medical Committee stands, so to say, on the one hand as representing the medical staff, so the Board of Management stands on the other side as representing the general body of the governors, and as it seems to me a very suitable medium of communication between the committee and the Board of Management is found in the person of the secretary-director. As a part, and a considerable part, of this recent dispute has fallen upon the secretary-director, I think it only due to him and due to the hospital to point out that in spite of all that has come and gone there seems to be no general hostility to the gentleman who now fills the office of secretary-director. I do not dispute, and I am sorry to say that I cannot well dispute, that there are not individual instances in which some ill-feeling towards Mr. Rawlings has been displayed; but taking the general tone of the medical staff it remains, I believe, on the whole courteous and amicable, and that that is so is evidenced by the fact that frequent letters pass even still between the Medical Committee and their secretary and Mr. Rawlings as representing the Board, and that those letters are still couched in language that is perfectly consistent with friendliness and courtesy. But that does not exhaust the possibilities of intercourse between the two authorities—between the Board of Management and the Medical Committee—and although, as I say, the fact that we have such an officer as the secretary-director and that he is so able and efficient seems to point to Mr. Rawlings as the most obvious channel of communication, still we have never dreamed of restricting the medical staff to communicating with us through that channel. We have always invited the freest possible expression of opinion, whether by letters or by personal interviews, and at one time the system of sending two delegates or representatives to the Medical Committee from the Board of Management seemed to be working well and likely to be attended with good results, and I, for my own part, very much regret the deciston of the medical staff to discontinue that mode of communicating their views. I fully admit that there are cases in which direct communication face to face may be more satisfactory than any amount of correspondence through a third person. Points may be more easily explained face to face, and misconstruction or misapprehension may be more easily removed in a personal interview, than when the correspondence is conducted on paper through the secretary of the Medical Committee on the one side and the secretary of the hospital on the other. Therefore, we have all along welcomed, and shall continue to welcome, any suggestion on behalf of the medical staff for a system of personal communication between themselves and the Board short of their direct inclusion on the Board of Management. The demand for their direct representation on the Board of Management only became acute in the spring of 1899, and I would have my hearers to bear very carefully in mind, for it is important in reference to what comes later, that when in the spring of 1899 this scheme for direct representation on the Board of Management was very forcibly urged, it was not grounded on an allegation that the patients were suffering from neglect. No allegation of that kind was made, or hinted at, or suggested. The sole cause then assigned for this urgent demand for representation on the Board of Management was the fact that the Board had recently introduced the system of payments by out-patients towards the cost of their medicines, and this was an arrangement to which the staff on general considerations of the interests of the local profession, entertained an objection. I am bound on that point to say a word of justification for the course which the Board adopted. The income of this hospital does not increase by leaps and bounds. We are made custodians of the purse of the hospital, and it is quite obvious, and hardly needs saying, that we could wish it fuller than it is. The outgoings, the expenditure of the hospital in some departments has partly increased, and this is very largely due to alterations in the system of treatment. Of course I should be the last person in the world to canvass the wisdom or propriety of the changes in treatment which the medical staff think proper to introduce. They are probably the best judges in Europe of the cases which are brought under their care, and their views as to the right methods of treatment, diet, and the like are entitled to absolute respect; but in the exercise of their discretion they have of late years made such alterations in the nature of the diets as to very materially increase what may be called in homely phrase our housekeeping expenses. While our revenue shows no great signs of elasticity, our housekeeping expenditure does advance by leaps and bounds, and it occurred to those who have the interests of the hospital at heart that a very convenient and perfectly harmless way of meeting this increased expenditure would be not to compel but to invite payments from different patients for the medicine which they receive. It was never suggested that they should pay for the medical attendance that they receive. It was never suggested that they should pay for the benefit, or suppose themselves to be paying for the benefit, of the great medical skill and science which are brought to their assistance. All that was suggested was that patients not rich, and yet not abjectly poor, might welcome the opportunity of making an expenditure of sixpence or a shilling or so on medicine, which, if they were not patients here, they would have to buy at a chemist's shop, and we also felt that it would in many cases be a relief to the minds of those more respectable though not affluent persons if they felt that they were receiving their benefits absolutely without any return—that they would like to feel in fact that they were not paupers, but that they were making some small contribution to the expenses of the institution from which they were deriving unquestionable good. And it was therefore decided to offer them the opportunity—not to compel them—of contributing towards the expenses of the medicines which they here receive, and I may say that, although in the general interests of the profession the medical staff objected to the alteration, it has been found in practice to work well, and has produced without hardship to or pressure upon anyone an increase to the revenues of the hospital of between £800 and £900 in the year. That must be admitted I think to be a financial reform which was worth carrying out, and so far as I can see it involves no hardship to any living creature. It is important that it should be borne in mind that the class of patients has not altered, but is composed of just the same sort of people as it was before, but they are people who welcome the opportunity which you see was not previously afforded them of making some slight return to the hospital for the benefits which they are conscious of receiving from the hospital. The Board, in the financial interests of the hospital—for they only were at stake in this matter—felt themselves bound to maintain this change in the rules and to allow persons to contribute, but last year the Medical staff, in the exercise of their discretion, thought right to bring the

matter before the Hospital Sunday Fund with the view, as I understand, to the suspension or the refusal of the original grant. Then the matter remained for some time in abeyance and suddenly in the middle of June of this year a statement dated May, 1900, was sent out to the governors, and in order to show you how anxious we were that there should be no concealment about the matter and that every conceivable charge or allegation against us should be dragged into the light of day, I may mention this fact that where the medical staff were unable to find the addresses of the governors, which was the case in a certain number of instances, they merely forwarded a number of the copies of the memorial to the care of Mr. Rawlings or left them at the office with a request that they should be sent on and we, as far as our opportunities for finding the addresses of the governors sufficed, were careful to send every one of those memorials on to those to whom they were addressed, thus showing unmistakably that we had nothing to fear from the fullest investigation by yourselves, ladies and gentlemen, and by your brother and sister governors to whom we are responsible. I would now invite your attention to the statement circulated by the medical staff in the letter to the governors of the National Hospital, and you will observe that in that statement on its first page the claim to admission to the Board of Management is made to rest solely on the ground that the patients are suffering from evils of administration, the only cure for which would be to grant the medical staff direct representation on the Board of Management. That is the only ground on which the alteration in our rule is demanded. It is alleged that our patients are suffering from certain abuses which the presence of medical men on the Board would correct. Considering that this is the ground on which this all-important change is recommended to your consideration, it is necessary, I think, that the ground should be carefully examined. It appears to us that in advancing their claim to admission on the Board on this ground, that the patients are improperly or insufficiently attended, the medical staff put themselves in this position—they are gentlemen who, in the day by day performance of their duties must necessarily be acquainted with the work of the hospital. In the interests of the patients, no less than in that of the scientific reputation of the hospital, any shortcomings which they observe should have been made the subject of complaint or remonstrance to some person in authority. If it is true, as they say, that their patients were improperly fed, that their sheets were not sufficiently changed, that the nursing was insufficient, that the massage could not be adequately carried out, or if they observed, in a word, any other defect or abuse in the treatment of their patients, it would seem to me merely a matter of common sense to allege that they were bound in the interests of humanity and of the reputation of the hospital to report the circumstances directly to those in authority. But, as far as we can ascertain, and in truth I say we have ascertained it absolutely, the staff have never, down to the issue of their statement on June 16th this year, suggested that the domestic condition of the hospital was other than perfectly satisfactory. We infer, therefore, and we are driven to the inference, that the allegations and suggestions of mismanagement and insufficient or improper attendance cannot possibly be well founded. In fact, I have only to ask you to consider in what a very invidious light the staff are placing themselves, supposing that these allegations be proved to be well founded, for they would then be in the position of men who had deliberately allowed abuses and defects which came under their notice to remain unredressed during a very considerable period of time. I cannot for my own part believe that the medical staff of this hospital, whose personal and professional reputation is of the very highest character, would ever have sanctioned the withholding from persons in authority any of the grievances of patients if they had really found such grievances to exist. Assuming, however, just for argument's sake, what I do not believe, that the allegations made by the staff were well founded, I would say that it is obvious that gentlemen who never breathed a word of those evils to the secretary-director or to the Board, and have never taken the trouble even, as far as I can make out, to point out any of these abuses in the frequent letters which they have addressed to Mr. Rawlings, would not be a valuable accession to any Board of Management. It seems to me that the very fact, assuming it to be a fact, that they had allowed these evils to go unnoticed and unredressed, would be of itself a proof that they were not well qualified for a share in the practical administration and management of an institution which requires promptness and activity and business-like qualities in those who conduct its business. I feel that the fact, and I harp upon it because I feel that it is vital, that the medical staff have never made any representations about the patients being badly fed, or not kept clean, or badly nursed, is enough to dispose of the charges, but, if it were not enough, and supposing other testimony besides that of our own committee of inquiry were required, it is forthcoming in the evidence of Mr. Sidney Holland and Sir Henry Burdett. I do not suppose that there are any two gentlemen in England whose names are better known in connection with hospital work and hospital administration than those gentlemen; they have paid exhaustive visits to the hospital, and have declared themselves perfectly satisfied with what they saw here, and in proof of that statement I have only to refer you to what I daresay you have already seen—Sir Henry Burdett's letter in the *Times* of August 8th. Then it is to be borne in mind, and this is another proof, I think, that our internal condition is not unsatisfactory, that the doctors have continued to send patients for admission to the hospital, which surely they would not do in the case of a hospital as mismanaged as would appear from their statement to the governors this one is, and not only that, but have continued to communicate with the Board by letters addressed to the secretary-director, on all such matters touching payments to the hospital staff and other points of domestic administration, although the letter circulated no doubt would perhaps convey the impression that all communications had ceased. I now approach a subject which has been one of acute controversy during the last few weeks, and that is the Hospital Sunday Fund. Here I feel, and I am sorry to have to say it, though I must say it in the interests of truth, a very great cause of complaint against the medical staff exists. If we are correctly informed, the medical staff have used their best endeavours to secure the suspension of the usual grant from the Hospital Sunday Fund. This does not seem to be in the nature of legitimate warfare. The medical staff have a perfect right of course to request and even agitate for admission to the Board of Management, but pending the decision of that question by those who alone have power to decide it—that is the governors—it seems to me to be in the highest degree unfriendly and injurious to the hospital of which they are the officers that they should, either directly or indirectly, endeavour to procure the suspension or refusal of our usual grant from the Hospital Sunday Fund. I, for my own part, have reason to believe that that grant is only, in spite of the efforts made at the Mansion House, suspended and not permanently withheld, and I believe that the Hospital Sunday Fund authorities, when they realise the true position of matters as set forth on pages 8, 9, and 10 of the Board's reply to the letter of the medical staff, will reconsider the decision at which they lately arrived, and will renew the grant, which, as I say, I believe was actually stated to have been not refused but only temporarily withheld. Now I said at the very beginning that I should endeavour to keep quite distinct the two questions about representation of the medical staff on the Board of Management and the question of a further inquiry into the administration of the hospital. I refer to that question further, namely, the administration of the hospital, only to say this much: that should the governors decide and order it to be held, whatever its results, it would not affect the grounds on which we oppose the admission of the medical men to the Board of Management, and we could not ourselves be parties to referring to any outside authority—arbitrator or referee however distinguished—that question of the admission of the medical staff to the Board of Management. We hold that to be vital. We have expressed our opinion upon it again and again, and we ourselves, as I say, could not consistently with self-respect submit the decision of that to any outside authority. It remains, of course, in the hands of the governors, but we could not invite the opinion of an outside referee upon such a point as this. On the other hand, as to the internal administration of the hospital, and the comfort and care of the patients, we, as I said before, should welcome any inquiry by a properly qualified referee. In the medical staff's statement to the governors, as I said before, they base their demand for representation entirely and exclusively upon the alleged unsatisfactory condition of the hospital and it would seem that they did so because they thought that the governors would not be easily affected on any other argument, but having chosen their ground, we contend that the medical staff must be held to it and that the issue they raise must be the issue tried and decided upon. They must not be allowed to drop and ignore these charges and to argue questions of their admission to the Board on general grounds. In so far as I have now spoken, I have spoken after full consultation with gentlemen at least equally interested with myself in the hospital and with our legal advisers. I now wish to say that in my concluding remarks I am speaking entirely on my own responsibility without committing my colleagues on the Board of Management. A reason that weighs with me very heavily against the admission of doctors, physicians or surgeons to our Board of Management is this. They are specialists, they are as I said just now among the most eminent specialists in Europe, but the experience of life in various departments and vicissitudes of it has taught me this—that experts are not the best guides in the practical business of a large going concern. An expert in the subject in which he is an expert is an authority to be treated with the utmost deference, but in the general conduct of human life and of human interests, and more particularly in such business as the financial and administrative work of an institution like this, I for my own part never find that the expert's opinion is worth more than that of an ordinary man of the world. In truth, the very fact that he is an expert to some extent tends to narrow the range of his observation and to make points, in themselves comparatively small, loom very large in his view, and to destroy his general sense of the proportion and the relations of things. For my part, therefore, I discount altogether the argument that these medical and surgical gentlemen should be admitted to the Board of Management because they are experts in their profession. As experts in their profession we welcome them, are proud of them, and are thankful for the services they render to our patients, but in the general and financial control and administration of the hospital we think that a Board which includes the Lord Chancellor of England and the head of Coutts's bank is quite able to transact its own business without the assistance of even the most eminent men of science. And that brings me to my concluding remark; and here again I am not committing my colleagues, but I am speaking only of my own opinion and from my own experience. I do not propose at this late period of my speech, and in a mixed audience, to argue the rights and wrongs of the great subject of vivisection. I do not say whether the prejudice which exists against it is a well- or ill-founded prejudice. I only know that the prejudice does exist, and I am assured by those who have the best means of knowing, namely, by journalists and

pressmen, who can judge of the matter from the correspondence which pours in through the editorial letter-box, that the prejudice and feeling against vivisection is markedly on the increase. I am not arguing for it or against it—I am not saying whether I myself share or do not share in the prejudice against vivisection, but I recognise it is a great operative fact, and one which those who have the interests of this hospital at heart would be very foolish to disregard. It operates in various ways, but it operates in a real way among the working classes. Those who are familiar or conversant with the working classes must have heard it again and again alleged by artisans as a reason against subscribing to the Hospital Sunday Fund that in the hospitals experiments were performed on the poor for the benefit of the rich; and again I am not saying, of course, whether that is a well-founded or an ill-founded suspicion, but I recognise it as one that I have come across very often; but I take it into account as a fact. Then, in the higher and better educated and informed classes of society, I find exactly the same opinion, though perhaps not quite so bluntly expressed, operating with and determining men, and I have heard it again and again said, and I believe every one associated with the finances of this hospital has heard the same thing, "We are not willing to give our money to an institution where prominent vivisectors are on the staff." Now I have again and again had to point out that this is an unreasonable position, and I have again and again had to point out that we have no school or laboratory, or, as I believe the euphemism is, no physiological laboratory attached to this hospital, and that here the interests of humanity are at least as safe as they are in any other similar institution. I have again and again had to fight the battle of the hospital in that regard, but for all that, one's representations do not by any means always prevail, and there are notorious instances where large sums of money have been actually withheld from the hospital on account of this fear, reasonable or unreasonable, that the money might in some way be used directly or indirectly for what is called the promotion of research. At the risk of being wearisome I have to say that I have expressed no opinion as to the reasonableness of those fears or prejudice against vivisection. I have expressed strong opinions against the reasonableness of any fears with regard to the actual practice of this hospital. I have tried to reassure my friends by pointing to the simple fact that we have no physiological laboratory, but if this amount of prejudice exists, and if in addition to having associated with your medical staff gentlemen who are vivisectionists you have those same gentlemen included on your Board of Management, how very much stronger that prejudice might become, and how much larger would be the stoppage or withdrawal of financial support. For my part I desire here again as I did at the Conference with the Sunday Hospital authorities at the Mansion House, to affirm that with the most trifling exception we have been throughout on friendly terms with the staff of this hospital, that we desire to cultivate friendly terms with them, and that we have the strongest confidence in their humanity and in their uprightness as well as in their scientific skill. It was, indeed, at the instance curiously enough of one of the medical staff of this hospital—one of the most eminent members of that staff—that I was induced to join the Board, and I have always been very grateful to that eminent man of science for the opportunity he gave me of being associated with a work of philanthropy and mercy which has taught me many invaluable lessons, and in the fortunes of which I must always be most profoundly interested. It is essentially a work of Christian philanthropy, and it is in our judgment to be conducted in the spirit of its founders, and in the sole interests of suffering humanity. It was judged expedient by my colleagues on the Board that the resolution, the only one which is to be submitted on behalf of the Board, should be moved from the chair, and I therefore formally move on the part of the Board of Management the resolution which is printed on the red card in your hands, "That it is inexpedient to grant the demand of the medical and surgical staff for direct representation upon the Board." That is the resolution which I move, and it will be seconded by Mr. Hopwood of the Railway Department of the Board of Trade.

MR. HOPWOOD—Mr. Chairman, ladies and gentlemen, I was about to say, in common parlance, that I have much pleasure in seconding this resolution. It is, however, I fear, impossible to find any pleasure in matters connected with such a controversy as this. We know these cases. They appear with periodic recrudescence in almost every branch of philanthropic work. They are usually born in evil and nurtured in mischief, and the only result, as far as my experience of them goes, is that a little more misery and a little more distress rests at the doors of those who are seeking help and are in need. In fact, such controversies do the devil's work, but the question is how these cases, when they arise, are best met, and I say that they are best met by the application of good administration and of sound business principles. There is no distinction to be drawn between an undertaking of this kind and any other large commercial undertaking in the country. It matters not that this is a hospital. The same principles of business and of administration are equally to be applied to great concerns whether hospitals, banks, railways, or shipping companies. The governing body are trustees for the benevolent public and also for the suffering patients. What is the duty of trustees? The duty of trustees is to take the same care and have the same diligence with the matters entrusted to them, as trustees, as they would in connection with their own private affairs, and the question is, whether the governing body of this institution, acting as trustees, have displayed a good discretion in declining to entertain the application of the medical staff for representation upon their Board. In my judgment they used good discretion, and I hope they will maintain their position to the end. We hear, in these days, of strikes and lock-outs, but I have never yet heard that servants in an undertaking like, say, the London and North Western Railway have gone so far as to ask for direct representation on the Board of Directors for the purpose of repairing deficiencies in the management of the line. And what would be said by a man like our Sir John Blundell Maple if his servants waited upon him and threatened to bring about his ears those great premises in the Tottenham-court-road if he declined to put two of his cabinet-makers on his directorate? Directly you apply the ordinary principles of business life to this trouble you find the position of the medical staff is totally inadmissible, and it is because I feel that it is totally inadmissible, and because the directors—the governing body—of this institution are, in my judgment, doing their best, as trustees, to properly administer this hospital; and it is because they have apparently laid hold of the cardinal point—that hospitals are constructed for the benefit of the patients and not of the doctors—that I cordially second this resolution.

THE CHAIRMAN—The resolution has now been proposed and seconded and I have to invite any governor or subscriber or any member of the medical staff to speak on it. I only have to ask that any lady or gentleman who speaks will be kind enough to give his or her name to the reporters so that it may get down on the shorthand notes.

MR. BOWER—Mr. Chairman, ladies and gentlemen, it is now about 30 or 40 years ago since I first became acquainted with this institution. At that time it was somewhat of a one-horse-power institution, but the enlargement of the hospital and the increase of the utility of the hospital during all those years, from the small beginning when Mr. Chandler founded it to its present state, has been due to the management of the Board aided by the secretary for the time being. Now, sir, we are asked to say that we ought to allow—and the claim is made as of right—the medical staff to be represented on the Board. Now Mr. Chairman, ladies and gentlemen, I have taken a great deal of trouble to read every paper that has been issued in connection with this subject, and I will tell you one fact that strikes me as the strongest proof of how wrong it would be to put them on the Board, and that is the way in which they began this controversy. Now how does it stand on that point? They get a document signed and dated. They do not issue it for a month; and how did they issue it—after communication with the Board of Management either directly or indirectly? No. They took upon themselves to send it broadcast to all the governors so that as much evil as could be done should be done. Now, if there is anything which makes me think that they ought not to come on to the Board of Management that, at any rate, is one reason. But then how have they dealt with this matter since? The Board undertook to have an inquiry and it was one of the first duties of the Board—if I may be allowed to say so—to say to the medical staff "Give us particulars of what your complaints are." That was done; but the medical staff refused to give any particulars in respect of which there had been failure in administration. Is that fair, is that the conduct which one ought to expect from gentlemen on such a staff, and ought they, therefore, to have any right to ask that they should be admitted, or some of them admitted, to the Board of the institution? Those are, it seems to me, the great points besides those which have been pointed out by the Chairman, points which, if I may say so, ought to determine this question. We do not as a rule go to professional men, whether they be eminent surgeons or eminent clergymen, and ask them to go on to a Board as men of business. I will stop there, because I think you will all understand what I mean without further observation.

DR. SEPTIMUS GIBBON—Mr. Chairman, ladies and gentlemen, I think I am older than the last subscriber. I think in the year 185- I subscribed my first £5, and I have gone on ever since, and have induced my friends to put their money into the hospital. They have asked me what all this agitation is about, and I have said I could not tell them, but that I thought it was a bogus one, and that those who were responsible for it wanted to get free advertisements in the *Times* newspaper and in the medical journals. As to this resolution I quite agree, but there is one point which I shall submit to you, and that is that I think the medical staff, if they are governors, ought to be allowed to vote for representatives on the Board. As I understand the rules, your medical staff are precluded from voting in general meeting. I think that the right of voting might be conceded to them in that respect, as it has been to the medical staff who are governors in St. Bartholomew's Hospital and the London Hospital, and in some of the hospitals that are very well managed. I think if that were conceded to them, it would be a step in the right direction. I understand that at present the members of the medical staff of this hospital, although they were governors and subscribed their money, could not vote in any meeting. I think if the Board of Management would concede that point to them, it would put you right with the public, but certainly I do not approve of their going on the Board of Management, because medical men have not the time in the exigencies of medical practice and the details of medical practice—the details are very numerous and very onerous for men who are in active practice, and they could not give the time necessary for the work. Besides, as a rule, they are bad administrators, although I see there is a letter written by one of our medical staff in a medical paper to the following effect: "Now we ask the governors to consider frankly

to whom the success of administration is due. We have no wish to undervalue the services of the respectable gentlemen and so on. They are entitled to every recognition for the amount of labour they give to this philanthropic work, but after all, to speak plainly, they misconceive their position. In their relation to the hospital they are only hewers of wood and drawers of water. It is not they who built up its reputation. The Board of Management might easily be replaced by a dozen others; the staff could not be replaced. It is the finest medical staff in Europe," and so on. Well, they are not administrators. The success of this hospital is not due to them in the least. If it is due to any one it is due to our friend, Mr. Rawlings, who is the best administrator I have met with. There is only one gentleman in the city who comes up to him, and who is a large merchant. Certainly, Mr. Rawlings has conducted this hospital, because I have been well acquainted with it since its foundation—I attended its first meeting, and I gave my first £5 in the year 1857 or 1858—and I have watched it during its whole course, and I have been Medical Officer of Health for this district, and as far as I know in his administration Mr. Rawlings selects good people, good servants, and the matrons that he has had here have been really first-class. The organisation goes on as free from defects as it is possible to imagine. There are complaints about the quantity of milk, but I understand about 235 quarts of milk are supplied every day. That is the only point. I am a vivisectionist, and I am not an antivivisectionist. I think vivisection has done a great deal for medical science, but I do not approve of our secretary-director being vivisected, and gentlemen being allowed to plunge knives into his reputation. I think that is below contempt, and that personalities ought never to have been allowed.

The CHAIRMAN—Ladies and gentlemen, by the courtesy of the meeting perhaps I might be allowed to say one word in reference to something that fell from Dr. Gibbon with reference to the rules. The rule that he referred to was number 10, section 3, and I may, for the information of the meeting, perhaps, read it. "No person shall vote as a governor while he is a salaried officer of the institution, nor while he holds office on the medical staff." It is not part of my business to defend that rule. I do not know under what conditions or upon what arguments it was based, but I only read it out because I want to invite Dr. Gibbon's attention, and that of the governors and the public, to the fact that it is not confined exclusively to the medical staff, but covers all the officials of the hospital. A very curious instance has arisen with reference to the working of this rule. Owing to the munificence of our excellent chaplain we are indebted to him for the sum of £200 in one gift, and yet, by the operation of this rule, he is precluded from voting as a governor although he was a donor of £200 in one lump sum. I ought, perhaps, to say that my own opinions agree very much with those of Dr. Gibbon with reference to that rule.

MR. MELVILLE GREEN—Mr. Chairman, ladies and gentlemen, I desire to ask whether the medical staff have had notice that they would be heard to-day if they liked to attend this meeting, and that although they are not entitled to vote they would be invited to speak, because it seems to me that their staying away is unfortunate, though on the face of the rule which has just been read it seems to me it was not likely they would be here. I think it is unfortunate because the responsibility of this matter does rest with the whole body of governors. The action of the Board being challenged by the medical staff, the whole body of governors are responsible for the decision to which they may come, and I have seen these proceedings with very great regret because I do not see any way out of them which will be beneficial to the hospital. The motion before us seems to me to be one that if lost or if carried will alike be unfortunate, and if we could find some other way of getting the decision I think it would be a good thing. I do not know whether we could pass by this Question A *just* as you have done in your speech, and take up Question B and extend that to the entire question of the management of the hospital, and then obtain some small number of eminent men chosen chiefly from the boards of other hospitals to give us a report generally on the whole matter. We should, no doubt, have to meet in order to receive that report some day, but then we should have two advantages that we have not got to-day, we should have for either side a golden bridge. If such a body of men amongst their several recommendations were to say that it would not be desirable that the medical staff should be on the Board of Management, I think the medical staff would accept that—at all events for some time to come. If on the other hand they should say it was desirable, the Board might accept that likewise. If we decided to-day I know, of course, you have got a number of proxies and that the Board is practically going to carry this meeting with them. We are threatened by the staff with their wholesale resignation, thought I am not frightened even by that, but it would be a great calamity. No man or body of men are indispensable, but it would be a great calamity for all that, and it would be a very great calamity that the whole of the staff should carry out their threat and retire. It would also be a great calamity, if we carried the motion the other way, that that should be followed, as it might, by the retirement of the Board, as it might be regarded by them as a vote of censure. I do not want to censure anybody, and I do not think the governors ought to censure anybody, but I think we ought to endeavour to find out whether this matter cannot be so arranged in the interests of this valuable institution as that it will result in promoting its prosperity and getting rid of this domestic quabble which is not, really and truly, so important as each side seems to imagine. I am like another gentleman who has already poken on this matter to-day, because like him I have read every word that has been printed with reference to this controversy, and I have also read every annual report for many a long year; and what has most struck me is the exaggeration that has resulted from the fact that there has been a good deal of friction, and there has been a good deal of heat and, therefore, rather more temper than is desirable. That there is a great deal of exaggeration is the conclusion to which, I confess, I have come. It is not necessary to take up your time by pointing out what I think is exaggerated excepting this one thing. I think that the Board are greatly exaggerating the dangers of having two of the staff with them. If you have two men out of twelve—I think those are the numbers—or two out of ten, it is simply impossible that they can ever dominate the Board. The Board have exaggerated their own weakness. No people are less likely than the members of this Board to be "dominated" by a couple of doctors. In fact, I am sorry they use an expression of that kind because it seems to me that in so doing they have played into the hands of their adversaries. It suggests at once that if the Board feel themselves so weak as that they fear that they may be "dominated" over by a couple of doctors—nothing could be more natural than that they should be dominated by a secretary-director. I do not believe for a moment that the secretary-director does do so, but I must say, with reference to that gentleman, that I think perhaps we may have too much of a good thing in him. We have a secretary-director who is a man of zeal and devotion to the interests of the hospital, whom it would be impossible to replace and difficult to equal anywhere else. That is the conclusion I have gathered from what I have seen and noticed—namely, that we have a secretary-director with devotion and zeal, and that it has followed as a consequence that with his thirty-two years' experience the Board do not often overrule him in his *ex-parte* statements, but that they rather agree with him and allow their judgment to go with his judgment. I hope you quite see that I do not mean that you are led, in the sense of following the lead, but I think that something of that kind certainly does take place. Unquestionably, the secretary-director has not got as much tact as one would like him to have, otherwise the rupture between the staff and the secretary-director could not have reached the point it has reached. In fact there are one or two little things—I am not going to quote them—that show that, and it simply arises, I take it, from his exceeding devotion to the interests of the hospital, and from what naturally follows—the great confidence that is felt by the Board that what *he* thinks is right is right; and that very likely may be so. But we have this principle of government in this country of ours—that we do not like one-man authority. Now I think the doctors are undoubtedly in this position, whether by their fault or otherwise, that they do not communicate freely with the Board. They are not on cordial terms with the Board because they find, practically, that they have to convince the secretary-director before they can hope to convince the Board, and that, practically, the secretary-director is a sort of buffer between them and the Board. Now that is a bad thing. I am speaking as a man of business. I may be quite wrong, but that is how it strikes me as an outsider. If that is so it is a bad thing, and it is the reason probably that we have got into the position we are in, and which we must regret that an institution like this should have got into. I think there is a little misconception which I think the gentleman who seconded the motion has left on the minds of the meeting. I think he rather misapprehends the position of the medical staff in the hospital. He made some comparison of the medical staff with the men in the employment of Sir Blundell Maple, but I would venture to say that the men Sir Blundell Maple employs and the medical staff of this institution cannot be compared. A hospital of this kind may be defined as a means of applying the skill of the doctors by the hands of the nurses and by the pecuniary means found by the governors to the poor patients, and that is not a sort of definition that you could apply either to Maple and Co. or any other large business whatever. Not at all, it is not the kind of thing. This is an institution, as is also every hospital, which has one object to accomplish—namely, the good of the patients. That is the only object which anybody ought to have in view, and it is an object which is to be accomplished by the employment of skill and the expenditure of money. Skill cannot accomplish that object without money, and money cannot accomplish it without skill. But it is for them to co-operate, as they ought to co-operate, in seeking to accomplish that object. It is a great mistake to describe the staff as "servants" in the sense of being persons who are put under the control in the sense in which I think the word has been used, and in which Sir Blundell Maple's men are under his control. The medical staff of this hospital are co-operators, and it is in that light that their services should be looked at. Now there is a proposal to give them some influence in the management of this institution by putting them personally on the Board of Management. A proposal of that kind is not at all like a proposal to put the servants of a railway company on to the directorate of a railway. It is practically done as a matter of fact, I believe, in the majority, but certainly in a very large number, of hospitals where members of the medical staff are not only on the governing body—which they certainly ought to be—but they are on the committee itself—on the select body which does all the real work, and no such evils have, in fact, resulted such as are feared here. They do not "dominate"—the two or three members who are on the various hospitals—the rest of the Board, but I will tell you what they do. They produce a consciousness in their own minds that if anything goes wrong they, at all events, will be heard and understood amongst their colleagues, and the Board also be influenced by them. Now, it is very curious that the Board actually think that the influence of the medical staff, acting as a committee, is quite

right, but that as members of the Board it is quite wrong, for they say in few words they will entirely "dominate" all their colleagues. That is exactly what it is. A recognition that the sort of influence that a man exercises by sitting amongst his colleagues and talking freely, as their equal, to them upon all sorts of subjects which come before them, is different to that which a man exercises when he has to give his decision in reference to some serious complaint. I think those are the very words from the report which I quote—"serious complaint" It is plain that there was wanted here more linen and more washing before it was obtained. It came out only, as it were, by degrees; but it has been granted. Now, if two members of the staff had been upon the Board my opinion is that it would not have been necessary to make a "serious complaint," but it would have come about imperceptibly. Nobody would have known that anybody was exercising any influence with regard to it, but it would have come about. Therefore, I think, personally, if I have to vote to-day I must vote against the Board—not by way of censuring them, as a Board, because with everything that the Board has said I sympathise entirely as to the danger on the Board of the medical profession in neglecting to see that the interests of the individual patient is greater than either the interests of science or the interests of the medical profession. There is that real danger, and I sympathise with those who recognise its reality. That is to say, I am sympathising with both sides, and I am wishing that I was clever enough to suggest some way out of the difficulty that would not produce a collision. What occurs to me is that we might adjourn this question and that Question B should be determined as to whether there should not be some gentlemen nominated, not by the doctors, but by some outside people, to consider the whole subject, then when we have their report the governors would come together to consider what action should be taken upon it. That such an important question as this should be dealt with only by a circular is not very creditable. That is the suggestion I have got up to make—that is to say, to try and postpone the decision of this question until both sides see some way out of it which will be more to the benefit of this hospital than anything that can result from the passing of this resolution.

SIR HENRY BURDETT—Mr. Chairman, ladies and gentlemen, the last speaker has taken up the position which Lord Crewe took up with regard to the Liberal party. He proposes to sit on the fence because he seems to be under the impression that on whichever side of the fence he comes down he will get his feet in a mess. I did not intend to speak, but I rose because I wish to remove that misapprehension from the gentleman's mind, and from the mind of this meeting of governors.

MR. MELVILLE GREEN—There is no mess on either side of the fence.

SIR HENRY BURDETT—I did not say there was, but you said you sympathised with both parties.

MR. MELVILLE GREEN—To some extent, certainly, but I think I expressed myself quite clearly that I thought that the medical staff should be represented on the Board.

SIR HENRY BURDETT—This is only a matter of hospital politics, and must be dealt with entirely from the point of view of hospital politics. I gathered that your impression was that the general rule, and the only rule, which governs hospitals is that the medical staff should be represented on the Board of Management. I was rising to show that there were three distinct ways of representation of the medical staff in hospitals. The first way is that the whole of the honorary officers of any hospital shall be *ex-officio* members of the Committee of Management. The second way is that two representatives of the medical board shall be elected annually by their colleagues and shall be *ex-officio* members of the Committee of Management. The third way is that the medical staff recognising that their duties are professional and that as members of a staff of a great hospital they have duties to perform to the profession as well as to their patients, prefer to maintain their independence by having a Medical Committee of their own to whom the Board of Management refers all questions appertaining to medical matters in regard to hospital management, and they then collectively have the opportunity of expressing their opinion upon those affairs and giving their united counsel, or the counsel of the majority of the staff, for the guidance of the Board which invariably regards it as a decision binding upon the Committee of Management. Therefore, I wish to point out that it has been held, in my experience of more than thirty years, by the reputed leaders of the medical profession, and by men of the highest eminence, that the wiser course for the medical profession, and the sounder course, is that they should be self-contained and independent, and shall have their own Medical Committee. That is the plan which has been followed in the government of St. Thomas's Hospital, and it is the plan which has made the great London Hospital what it is; it is the plan which prevails at the Brompton Hospital, and it is to be found in other hospitals in London like the Middlesex Hospital, where it has worked with absolute efficiency, and where peace has invariably prevailed. In fact, I remember in my early days a very aggressive member of the medical profession saying that he believed that it was the only sound way, and the only sure way, of having a peaceful and efficient government in any great medical charity. Therefore, it is not a matter to-day for the governors to decide whether they will take this one course which is recommended by the staff as being the only course of medical representation, because, as I have explained to you, there are three courses, and there is certainly a difference of opinion in the medical profession to-day as to which is the best course for the whole body to follow. The staff have taken up one course; they have decided themselves that they wish to be represented by two members, but that is only the view that is now put forward at this time after many years by your staff in connection with this institution. Now I should like to say in reference to something which fell from one speaker that I do not think that the case of employés in Maple's and of the medical staff of a great hospital are analogous at all. You have on the medical staff gentlemen who give their services without payment, and on the other hand you have employés who work for a definite payment. I see that THE LANCET this week distinctly lays it down that the medical staff are the servants of the hospital to which they are attached; but having regard to the contracts in the War Office and the difficulties which have arisen — which are analogous — between the civil and the military authorities of that department which has cost this country so much anxiety, and so much expense, and so much tribulation, I do think before any hospital, which is free from the dual control and which is free from a conflict like that which exists between rival authorities or rival professions in the War Office, should be warned by that example, and should hesitate a very long time before they seek to imitate it. My own view of the matter is that Mr. Melville Green made a very good point in saying that it is not well and that it is not possible—I think there is a great deal in this—for the staff to work smoothly when their only means of communication, their only direct means of communication, with the Board is through the chief official, when that chief official is so able and so splendid a specimen of hospital officialdom as Mr. Rawlings is. I do think that, as far as that grievance is concerned, the Board should take steps to have it removed, and I believe that the rules of the hospital provide effectual means for its removal, for I think that under the regulations it is provided that the medical committee shall consist of two members of the Board of management. It does seem to me that under that rule instead of matters being referred to the secretary-director and then being brought to the Board—in which case, no doubt, it is necessary for the medical staff to first convince Mr. Rawlings and that unless they do convince him they will not get matters before the Board—the whole of these questions should be dealt with through the Medical Committee which does provide for the representation of the medical staff and does provide for what all the speakers who have spoken thought desirable, and what I am sure we all wish, and that is the personal intercommunication of the members of the medical staff with the Board of Management. If that was clearly worked out and in future communications made through the Medical Committee on all points and the Board were to express that wish I imagine that what Mr. Melville Green says, as far as any grievance or difficulty is concerned, would be effectively removed. It would be removed constitutionally and would be calculated certainly to obviate friction and promote harmony. There is another matter which I think is certainly worthy of consideration, and I was glad that Mr. Russell agreed that it was one which should be dealt with as far as he was concerned, and that was the fact that if any member of the medical staff, or any member of the medical profession, or any other officer, as an officer, has the means and interest to qualify himself as a governor, I certainly do think that whoever they may be that they ought to have full representation under the rules with regard to their subscriptions like anybody else. It is the usual practice which prevails in other hospitals, and I think that this discussion to-day will do a great deal of good by bringing out those points which no doubt may give rise to friction, which we all regret, and which we all hope to see speedily removed. But it is perfectly clear that if the medical staff are to be represented on the Board of Management they must qualify for such representation. I do not know whether it is your constitution or what the circumstances may be, but I believe that it is a fact that this hospital, which is certainly without doubt equal to any other—and anybody who has any interest in this matter or wishes to satisfy themselves to demonstration by actual observation of the fact should certainly come to the hospital and visit it—I say of this hospital that whoever visits it must certainly come to the conclusion when they have gone over its wards and have made themselves acquainted with them, and after they have satisfied themselves according to their knowledge of the actual position of affairs, they must say that it is a splendid hospital, and a credit to the great metropolis of the Empire. There is no doubt about that. In fact, I will go so far as to say this, that Mr. Holland and myself both felt—and we came here on one of the hottest of the hot days of last month—that it was so administered that every ward was probably as cool a place as there was in any building in London, and that from top to bottom there was a maximum of cleanliness and a maximum of loyalty on the part of the nursing staff—because we took great care to satisfy ourselves upon that—in combination with their food, and that generally looking at the hospital as an institution as it exists it is a worthy representation, both structurally and administratively, of the highest efficiency which our modern civilisation has produced with regard to hospitals. It would not be fair, and it would not be right, apart from all question of controversy that there should be the shadow of a shade of doubt left as to the efficiency and the worthiness and the usefulness of the National Hospital for the Paralysed. Now, sir, the medical staff are not governors, and it is a funny thing no doubt that throughout the whole history of the institution—I believe I am correct in saying —they have never subscribed or been instrumental in bringing in money to this institution. I believe that the whole monetary power behind the medical staff at the present time with regard to this hospital, spending many thousands a year as it does, is

represented by a subscription of one guinea per year. I make that remark without any reflection on the staff, but simply to show you as we are bringing out all our points of difference that there is a very marked difference in regard to the position occupied in reference to the upkeep of this institution and the position occupied by the medical staff of other institutions and other hospitals in London in reference to the provision of money for the upkeep of those institutions. And, sir, having regard to the remark which fell from you with reference to vivisection I should like to make this point, not only for this hospital but for all hospitals. It is a very remarkable circumstance that when you ask ordinary people to give you money for anything they have always got 200 reasons why they should keep their money in their pocket. That is the case with regard to the majority, but I do think it is a little strange when we are told, as you told us, that according to the correspondence in the newspapers there is so growing an opinion on this matter of vivisection that it should take the form of a statement by the working classes in London—though I do not accept that as an accurate statement, for I do not believe that the representatives of the working classes in London really do take that view, but it is evidently the belief that they do take it because I have often heard it before—that they do not subscribe to the hospital through the Sunday or Saturday funds because by doing so they may encourage vivisection. It is true that a certain association that has to do with certain representatives of the working classes has taken up that attitude, but it is not the general attitude of the working classes. And why do I say that? Because I say it is a very remarkable thing that they should criticise and be down on hospitals when the returns of our hospitals show that every year the number of people who want to get into the hospitals, and who want to be treated by the hospitals, is growing out of all proportion to the increase of the population. In fact, we have come to this condition of affairs that the hospitals are so popular as to be almost too popular, because the increasing number of people who seem to get into them, and seem to be treated in them every year, grows in greater proportion than the percentage of increase in the population of this metropolis. I am very sorry that it should be necessary that some decision should be come to on the points which we have under discussion, but I hope that that decision may lead to modifications—and I hope the Board will accept the modifications—which have been pointed out—that representation should be given to the staff, and a means of inter-communication, and that the only means of inter-communication should not be through the Board's officer, but that the question of that rule about the representation should be altered, and that there should be that representation which has been mentioned, so that we should have in future harmonious working in this institution under a system which at present exists in some of the highest and best administered hospitals in the country, and which I know, as a matter of fact, is a principle which is highly favoured, and has always been highly favoured, by some of the most representative members of the medical profession.

The CHAIRMAN—If no other good results flowed from this meeting which is being held, as I have said before, at a rather inconvenient period for you, we have at any rate had the immense advantage of Sir Henry Burdett's speech, which being duly reported ought to do something, and ought to do much, towards clearing away the misunderstanding which exists, and towards alleviating the disagreeable feeling which prevails on this matter. I am bound to say that personally, as far as I am concerned—I cannot speak for my colleagues—that all the points made by Sir Henry Burdett seemed to be sound and just—reserving only that rather abstract opinion about the state of public feeling with regard to vivisection. Sir Henry Burdett refers to a provision once obtaining in our rules by which two members of the Board of Management had seats on the Medical Committee. That system obtained long before I was connected with the hospital as far as I know, and it was disused, I understand from Mr. Rawlings, at the wish of the medical staff, but no part of that is within my own personal knowledge.

SIR HENRY BURDETT—May I say that I sent for a copy of the rules, and upon examination of the rules I see that that rule still stands.

The CHAIRMAN—I did not mean that the rule had been repealed, but that the practice has dropped into desuetude. I understand that no two members of the Board have attended for many years. Then with regard to the advantage of free intercourse and interchange of opinions between the medical staff and the Board. I think, as I said in my opening address, that we have always had a consistent and conscientious desire that there should be that kind of communication between the medical staff and the Board. Circumstances may arise in which written communication through a third person is not as convincing as intercourse and an interchange of views personally, and we have recommended a system of representation by delegates, namely, that the medical staff should send two delegates to discuss, whenever they wish, matters in which the medical staff are concerned. That system was in working order at one time, and has only been comparatively recently allowed to fall into desuetude, but we should very cordially welcome the reintroduction of that means for an interchange of views. With regard to the speech of Mr. Melville Green, I welcome, on behalf of my colleagues, his extremely conciliatory tone, and I feel with himself that it is a question in which feeling has been unnecessarily exaggerated on both sides. I agree with him that anything that tends to the re-adjustment of relations must be welcomed by those who have the true interests of the hospital at heart. Mr. Melville Green asked me whether it had been intimated to the medical men on their being invited to attend this meeting that they would be at liberty to speak. That, I think, is answered effectually by their own letter to the *Times* on August 6th, in which they say that they cannot attend on this occasion, but that they will be ready at a meeting summoned at the proper time to place fully before the governors every question, and if that were not enough I may remind Mr. Melville Green that four of the medical staff are governors, one by subscription, and three by complimentary election; and if any of those gentlemen had attended to-day, as they could have attended to-day, although by that rather curious rule that I have referred to they would have been restricted from voting, they would have had the right to speak. Another point, as suggested by one of my colleagues, is this, that it was not necessary if any of these practical grievances were brought forward by the staff that they should make a formal representation to Mr. Rawlings, because, as I am reminded, and as I understand, the slightest hint to the sisters in charge of the ward or to the lady-superintendent would have produced the desired result. With regard to the relations between the medical men and the nursing staff the Board never interfere; I mean there is free interchange of opinions between the medical men and the ladies who have charge of the patients in the several wards; and all the grievances or complaints or interests of those patients can be brought to the knowledge of the executive authority by the mere mention of the case to the sisters in charge. I think those are the only points in either of the two last very valuable speeches to which I need refer. But now I must speak in my capacity as Chairman, and I think that, considering that notice has been formally given by means of the advertisement in the *Times* agreeably to our rules with reference to the matters to be dealt with at this said general meeting, I am bound to invite a vote upon the only one of the two points at issue on which a resolution has at present been moved. That is entirely without prejudice to a second resolution being moved if anybody thinks fit to move it. The resolution which has been moved, seconded and supported is this: "That it is inexpedient to grant the demand of the medical and surgical staff for direct representation upon the Board." As I was the mover of that resolution it would not be fitting that I should put it to the meeting. I will therefore ask Mr. Bower to take a show of hands on the motion.

SIR HENRY BURDETT—May I ask whether that rule with reference to the representation of two members of the Board on the Medical Committee has not become inoperative because no members of the Board have been appointed of recent years.

The CHAIRMAN—Mr. Pearman is an older governor than myself. I will leave him to answer the question.

MR. PEARMAN—Perhaps, as I have been a member of the Board for some twenty-five years, I may be able to say something as to this. It was at one time the custom for two members of the Board to sit upon the Medical Committee, but the time came when the Medical Committee thought that the privacy of their discussion had been somewhat interfered with, and there were other reasons, which were best known to themselves, why they thought it was undesirable that members of the Board should, in fact, sit upon their committee; and the Board feeling that the Medical Committee could at all times communicate with them whenever they thought proper, either by the resolution of their committee or by delegates to any meeting of the Board, allowed the rule to fall into desuetude, and for some years—a great many years, I think, I am unable to name the number—no members of the Board have, in fact, had a seat upon the Medical Committee.

SIR HENRY BURDETT—But I think you said, sir, that you were prepared to revive the rule?

The CHAIRMAN—Certainly. I have no doubt—I am unable to speak for the Board as a whole—but I have no doubt if the Medical Committee desire members of the Board to sit on the committee two members of the Board would be appointed for that purpose, and that the Board would be quite ready to appoint two members to sit upon their committee, and to hear any complaint or suggestion that the committee might wish to make.

SIR HENRY BURDETT—It seems to me that that rule is a most important one. It has never been abrogated, but it has fallen into desuetude, and we are of opinion that if it had been acted upon we should never have been called together. We think, therefore, that it should be clearly understood, and that it should go out that the Board are willing that that rule should continue and again come into operation at once.

MR. PEARMAN—Of course I cannot pledge the Board, but I think there can be no doubt, sir, that if the Medical Committee wish it the Board would be very happy no doubt to appoint two of their members to sit upon the committee.

MR. MELVILLE GREEN—Will you put it further than that? Will you say that the Board will consider the matter and suggest it to the Medical Committee—that is to say, that this rule should be revived at the suggestion of the Board?

The CHAIRMAN—I will undertake on behalf of the Board to give that undertaking.

MR. BOWER—I have been asked to put the resolution that the Chairman has proposed. Those in favour of the resolution will kindly signify the same by holding up their hands. In favour 14. Against 2.

The CHAIRMAN—It is my duty, then, to declare that carried. Now I have to ask the indulgence of the meeting for Mr. Burford Rawlings who wants to speak.

MR. RAWLINGS—Mr. Chairman, ladies and gentlemen, I only wish to have the opportunity of saying a word or two in reference to one remark which fell from a gentleman who spoke—Mr. Melville Green

I think it was—about a want of tact on my part. I think I should like to say on that point with your permission that I am not conscious that I have ever been charged with want of tact. I know I have many shortcomings but I do not believe that is one of them. I may say that the origin and genesis of any feeling on the part of the staff arose out of my application of the rules of the hospital to a particular case. It was recommended for admission and it was ineligible.

The CHAIRMAN—Will you just state the case?

MR. RAWLINGS—It was a case where an idiot child that had been adjudged an idiot by the examining physician was brought to the Board room for me to see and I was asked by the steward whether it would be right to admit that child to the ward. The child was undoubtedly a most terrible idiot. If I were to enter into particulars it would take me a long time, but as far as is necessary to do so I may say that it was spitting all over the carpet of the Board-room during the few minutes its mother was with me, it was kicking at the furniture, and it tried to upset the ink; and, besides that, it was making a great many noises. The mother told me that was the condition of the child from morning to night, and almost from night to morning. It was proposed to send that child, contrary to our rules, into the children's ward; and I refused to sign the order for its admittance. The case was ultimately referred to the Board of Management, but I have simply to point out that in carrying that out I was obeying my rules—the rules under which I work—after the physician himself had noted the case as a case of idiocy, and therefore I was only putting this rule into operation.

MR. PEARMAN—Will you read the rule, Mr. Rawlings?

MR. RAWLINGS—The bye-law is this, on page 58 of the rules: "Persons labouring under or liable to attacks of epileptic mania or who are imbecile" are ineligible. No. 4: "All other persons of unsound mind, unless the examining physician is able to certify that the mental symptoms are temporary and due to some bodily condition which may be speedily removed by treatment, and will not render them a source of danger or serious discomfort to other inmates," are also ineligible. What I have to point out to you is that this child would have been a source of great discomfort to, and, in fact, it would have been a most terrible infliction on, the other children in the wards to have allowed that child to go there, but from that one instance I think all the trouble has arisen. I certainly know of no other case in which I have been in collision with the staff.

The CHAIRMAN—We have now disposed of the controversial part of our business and, as I said at the outset, the Board of Management do not wish to prejudice the discussion of the second question by indicating any opinion one way or another. We are confined by the terms of our notice to discuss the one resolution which has been disposed of. As to the second, whether it is desirable to hold a further inquiry into the condition of the hospital, I have no instructions to move a resolution upon that, but it is open to any governor to move such a resolution and failing the moving of such resolution the subject must be dropped.

MR. INNIS—May I ask you, sir, to give a statement as to the number of proxies that you hold on behalf of the Board?

MR. MELVILLE GREEN—The proxies were not counted.

MR. INNIS—I am quite aware of that; but Sir Henry Burdett, who has left the meeting, requested me to ask that.

The CHAIRMAN—I must ask the secretary to give the details.

The SECRETARY—At present the Board holds the proxies of 170 governors.

MR. MELVILLE GREEN—Is that the end of the business?

The CHAIRMAN—There is nothing else on the agenda.

MR. MELVILLE GREEN—Then, sir, as I have been the only opponent of the Board may I move a vote of thanks to the Chairman for his conduct in the chair, which I do very cordially indeed.

MR. BOWER—Might I suggest that the best thanks be not only given to the Chairman for his conduct in the chair but also to his colleagues on the Board for their past conduct in the management.

MR. MELVILLE GREEN—I think we had better put it as colourless as we can. We must be as colourless as possible. There can be only one opinion as to the way this meeting has been conducted, but if there is any difference of opinion about other things I do not think we ought to express it.

MR. INNIS—I shall have very great pleasure in seconding the resolution.

The resolution was carried *nem. con.*

The CHAIRMAN—Allow me to thank you, ladies and gentlemen. I make my acknowledgments to the governors, in the first place, for putting me in the chair, and in the second place for supporting me in it, and now for thanking me for my conduct in conducting the meeting. I understand Mr. Bower wishes to move something else.

MR. BOWER—I think, sir, after the expression of opinion from Mr. Green I will not do so.

Parliamentary Intelligence.

The Session from a Medical Point of View.

THE session of Parliament which closed on Wednesday, August 8th, cannot be said to have yielded much in the way of legislation of special interest or value to the medical profession. Measures of this description were introduced in both Houses, but few of them made substantial progress and fewer still passed into law. The sum of the latter is represented by a Public Health Act for Ireland, an Act to prohibit the employment of children underground in mines, and an Act enabling county and town councils in Scotland to impose a rate to meet the expenses of the Inebriates Act of 1898. An important Bill was introduced in the House of Lords by the Government to amend and strengthen the administration of the Lunacy Laws. It was designed, among other things, to deal with such irregularities as have been exposed recently in St. Pancras and other metropolitan parishes in connection with the certification and accommodation of lunatics. The Bill made a quick and comparatively easy passage through the House of Lords, but it came to grief and was abandoned in the House of Commons in spite of the cordial recommendation which it received from the Lord Chancellor. Medical men set great store by the Companies Bill because it contained a clause saying that it shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife. This clause was intended to put down unqualified and fraudulent practice by registered companies who in the present state of the law defy the Medical Acts. At one time it constituted a Bill by itself, but last year at the instance of the Lord Chancellor it was put into the Companies Bill when that measure was before the House of Lords. In the session just concluded the Bill was introduced in the House of Commons and when it fell to be considered by one of the standing committees the Minister in charge of it, Mr. Ritchie, President of the Board of Trade, supported a motion for the omission of the clause. He did so on the ground, not that he objected to the proposed extension of the law, but that he considered the clause was not germane to the Bill. In the Standing Committee Mr. Ritchie was defeated, but when the Bill was considered in the whole House on report he carried his point and the clause disappeared from the Bill. Sir John Batty Tuke, representing medical opinion, expressed regret at the course adopted by the Government, and intimated that in another session he will bring forward proposals on the subject. Another disappointment was the loss of the Medical Acts Amendment Bill. This measure was introduced late in the session by Sir Richard Jebb, and though it was known to have the support of all the university representatives and of the President of the Privy Council it failed to pass—indeed, it got no further than the first reading. It is scarcely necessary to explain that the Bill was the handiwork of the General Medical Council and was designed to strengthen the disciplinary powers of that body and enable universities and medical corporations to withdraw their diplomas from men who have been removed from the Medical Register for misconduct. General Laurie introduced a Bill to entitle certain colonial medical practitioners to registration, but he made no progress with it. What suggested the Bill to General Laurie was the refusal of the War Office to accept the services in South Africa of Canadian surgeons on the ground that they were not registered. Another measure which proved abortive was the Medical Officers of Health and Sanitary Inspectors Bill. It was introduced by Dr. Farquharson and sought to improve the tenure of these important public officials and provide for them a system of superannuation allowance. No progress was made with it beyond the first-reading stage. Other Bills which failed to pass were the Petroleum Bill, to raise the statutory flash point of petroleum; the Dogs Regulation Bill, a measure introduced by the President of the Board of Agriculture as a substitute for the muzzling orders; the Factories and Workshops Bill; the Cremation Bill; and the Isolation Hospitals (Amendment) Bill. The Midwives Bill requires mention by itself. It was introduced early in the session by Mr. Tatton Egerton and coming on unexpectedly one Wednesday afternoon it received a second reading and was referred to the Standing Committee on Law. This Committee went through the clauses and made many amendments as well as several additions. The Bill came back to the House on March 27th but its report stage was not reached until after Whitsuntide and then only during the last hour of the last sitting allocated to Bills promoted by private Members. A motion was made for the rejection of the Bill and this motion was "talked out," the last speaker before Mr. Heywood Johnstone, one of the chief promoters, who appealed to the Government to take up the subject in another session. It is a safe conjecture that if in another session the Government do not take it up Mr. Heywood Johnstone and his friends will put forward another Bill of their own. There are two subjects upon which many medical men looked for legislation during the past session—one death certification and the other the use of preservatives and colouring matters in food. With regard to the former Mr. Chaplin has made a public declaration that he is inquiring into the subject with a view to legislative proposals, while with regard to the latter all that can be said is that Sir Herbert Maxwell's Committee has not yet reported, pending the conclusions of an experimental inquiry.

PRESENTATION TO A MEDICAL MAN.—Mr. R. Allan, M.D. Glasg., medical officer of health of the Burgh of Ardrossan, was on July 31st entertained to dinner in the Eglinton Arms Hotel on his having completed 25 years' medical practice in the burgh, the occasion being marked by the presentation to him of a massive piece of silver plate and a purse containing £140 as testimonials of the respect and confidence he had gained from all classes of the community.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADDISON, E. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Workhouse and the Coddenham Sanitary District of the Bosmere and Claydon Union, vice M. T. Kelly, resigned.

BATHURST, L., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Urban District of Ellesmere and the Civil Parishes of Ellesmere Rural, Welshampton, Cockshuff, and Hordley, in Ellesmere Rural District.

BATTEN, WILLIAM SMITH, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the No. 2 District of the Calne Union.

BRANGAN, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of the Kilskyre Dispensary District, vice T. Canton, deceased.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.C.H. Dubl., has been appointed Medical Officer to the Chippenham Isolation Hospital by the Chippenham Town Council.

CALNAN, P. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Midland Railway Company for the Syston District of Leicester, vice W. C. Dalley, resigned.

CLARK, R. D., M.B., B.S. Aberd., has been appointed Assistant Medical Officer to the Walton Workhouse of the West Derby Union, vice E. J. Weightman, resigned.

DALLEY, H. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Midland Railway Company for the Syston District of Leicester, vice W. C. Dalley, retired; also Medical Referee to the Prudential Assurance Company for the Syston District of Leicester, vice W. C. Dalley, retired.

HARDING, NORMAN E., M.B., Ch.B. Edin., has been appointed Civilian Medical Officer to Her Majesty's Forces in South Africa.

HUTCHINSON, C. G., L.R.C.P. Irel., M.R.C.S., has been appointed Medical Officer to the Bluecoat School, Birmingham.

JONES, J. H., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Maesteg District of Glamorganshire.

KING, A., M.B., C.M. Edin,, D.P.H. Lond., has been appointed Medical Officer of Health for the Watford Urban District, vice D. H. Attfield.

LITTLER, R. M., F.R.C.S., D.P.H. Vict., has been appointed Certifying Surgeon under the Factory Acts for the Borough of Southport, Birkdale Urban District, and the civil parishes of Ainsdale and North Meols, in Ormskirk Rural District.

MACKENZIE, D. J., M.D. Aberd., has been re-appointed Medical Officer of Health by the Glossop Town Council.

RAMSDEN, H., M.D. Lond., D.P.H. Vict., has been appointed Medical Officer of Health for the Saddleworth Urban District, vice W. H. F. Ramsden, deceased.

RHYS, W. L., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Urban Districts of Aberdare and Mountain Ash.

ROBINSON, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Preesall with Hackinsall Urban District.

SKIPWORTH, H., L.R.C.P. Irel., M.R.C.S., has been re-appointed Medical Officer of Health by the Quorn Urban District Council.

SYKES, WILLIAM, M.D., has been appointed Honorary Medical Officer to the Woking Victoria Cottage Hospital.

THOMAS, G. CREWDSON, M.B., C.M., M.R.C.P. Edin., has been appointed Registrar to the Chelsea Hospital for Women, Fulham-road, London.

TROW, AUGUSTUS VIVIAN, M.B., C.M. Aberd., has been appointed Surgeon to the Police at Devizes, vice J. Ambrose, resigned.

WILLIAMS, W. R. E., M.B., Ch.B Edin., has been appointed Assistant Medical Officer to the Infirmary of the West Derby Union, vice J. Hay, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons to the Hospital for the Eastern Division of Bethnal Green and for South Tottenham.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals for the Treatment of Cases of Infectious Diseases. Salary £150 per annum, with board, lodging, and attendance. Applications to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Salary commencing at £125 per annum with the usual allowances.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—In-door Dispenser and Assistant to the House Surgeon. Honorarium 20 guineas per annum, with board, lodging, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Subject to annual re-election. Salary £70 per annum, with board, lodging, and washing.

GENERAL INFIRMARY, LEEDS.—A House Surgeon and a House Physician. The former appointed for 12 months and the latter for six months. Board, lodging, and washing provided.

GESTO HOSPITAL, Isle of Skye, N.B.—Resident Medical Officer. Salary £200 per annum, with free furnished house, garden, coals, light, and taxes. Apply to Mr. J. Simpson, Portree.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Anæsthetist for twelve months. Honorarium 10 guineas per annum. Applications to Mr. L. H. Glenton-Kerr, Secretary.

HEREFORD COUNTY AND CITY ASYLUM.—Locum Tenens Assistant Medical Officer for ten or twelve weeks about the end of August. £3 3s. a week, with board, lodging, washing, and attendance.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

ISLAND OF GUERNSEY.—Medical Officer of Health. Salary £200 (British currency), with local travelling expenses. Applications to be addressed, "Board of Health," States Office, Guernsey.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per annum, with board and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road. — Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OWENS COLLEGE, Manchester.—Additional Demonstrator in Anatomy, for the Winter Session.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence. Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried.

ST. GEORGE'S AND ST. JAMES'S DISPENSARY, 60, King-street, Regent-street, W.—Locum Tenens for one week. Salary 4 guineas, and residence. Personal applications.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, at the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, West Bar, Sheffield.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy as Certifying Surgeon under the Factory Acts at Edenbridge, in the county of Kent.

TOWNSHIP OF MANCHESTER.—Junior Resident Assistant Medical Officer at the Workhouse at Crumpsall for one year, unmarried. Salary £100, with furnished apartments, fire, light, washing, and attendance. Apply to the Clerk to the Guardians, Offices, New Bridge-street, Manchester.

UNIVERSITY OF GLASGOW.—Professor of Clinical Medicine.

UNIVERSITY COLLEGE, CARDIFF.—Demonstrator and Assistant Lecturer in Anatomy and Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the hospital.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

ASHBY.—On August 7th, at Bilton Garth, Hampsthwaite, *vid* Leeds, the wife of John Ashby, M.R.C.S., of a son.

BAKER.—On August 9th, at The Mount, Witley, Surrey, the wife of John Charles Baker, M.B., of a daughter.

CARGILL.—On August 9th, at Bickenhall Mansions, Gloucester-place, W., the wife of L. V. Cargill, F.R.C.S., of a daughter.

COOKE.—On August 11th, 1900, at Bridge-street, Cambridge, the wife of Arthur Cooke, F.R.C.S., of a daughter.

CORBIN.—On August 10th, at Moore House, Beckenham, Kent, the wife of E. R. St. Clair Corbin, M.B. Lond., M.R.C.S., of a daughter.

CORY.—On August 9th, at Tower House, Bournemouth, the wife of E. R. Haines Cory, M.R.C.S., L.R.C.P. Lond., of a son.

MEGGISON.—On August 11th, at Lewisham High-road, St. John's, S.E., the wife of T. C. Meggison, M.D., of a son.

NEALE.—On August 8th, at St. Margarets, Twickenham, the wife of Albert E. Neale, M.B., B.S., of a daughter.

STUART-LOW.—On August 12th, at Yealand, Herne-hill, S.E., the wife of William Stuart-Low, F.R.C.S. Eng., of a son.

WILLIAMS.—On August 13th, at Dunstaffnage, Brockley, S.E., the wife of Chisholm Williams, F.R.C.S. Edin., of a daughter.

MARRIAGES.

AHRENS—WILKINSON.—On August 8th, at St. John's Church, Upper St. Leonards-on-Sea, Henry Augustus Ahrens, M.R.C.S., L.R.C.P., of Basingstoke, to Beatrice, daughter of the late George Goodley Wilkinson of Delamere-road, Wimbledon.

CLEVELAND—JACKSON.—On August 11th, at St. James's, Kidbrook, Arthur John Cleveland, M.D. Lond., M.R.C.P., youngest son of the late Henry Cleveland of Blackheath, to Evelyn Mary, elder daughter of Edward Jackson of Blackheath and Karachi, India.

SCORER—NORRIS.—On August 9th, at Holy Trinity, Bournemouth, by the Rev. C. P. Koelle, M.A., assisted by the Rev. Malcolm W. Brown, M.A., Frank Scorer, M.R.C.S., L.R.C.P., second son of Alfred Scorer of Upper Hamilton-terrace, London, to Violet Eleanor Norris, only daughter of Alfred Norris of Catford, Kent.

SYMONS—BENNETT.—On August 9th, at Salisbury Cathedral, Captain Frank Albert Symons, Royal Army Medical Corps, son of John H. Symons of Halifax, Nova Scotia, to Dorothy, second daughter of the late Edmund Grove Bennett, of The Close, Salisbury.

TAYLOR—SOUTHALL.—On August 10th, at the Friends' Meeting House, Bull-street, Birmingham, E. Claude Taylor, M.D., M.S., of Eland House, Hampstead, and Huldah R. Southall, daughter of Alfred Southall of Birmingham.

DEATHS.

ANDERSON.—On August 9th, at New-cross-road, S.E., John Anderson, M.D., in his 82nd year.

BARKER.—On July 7th, 1900, at Kuching, Sarawak, Constance, the dearly beloved wife of A. J. G. Barker, Principal Medical Officer, Sarawak.

BLAKE.—On August 10th, suddenly, at his residence, Denbigh-road, Bayswater, Andrew Henry Blake, M.R.C.S., aged 60.

MALLETT.—On the 8th instant, at his residence, Newport House, Bolton, Frederic Blakesley Mallett, M.D., J.P., aged 59 years.

O'CALLAGHAN.—On August 12th, at Queen's Mansions, Surgeon-General Daniel James O'Callaghan, late of the H.E.I.'s Co.'s service, in his 85th year.

SIMPSON.—On August 11th, at Auchengrange, Lochwinnoch, Pierce Adolphus Simpson, M.A., M.D., Emeritus Professor of Forensic Medicine, Glasgow University, aged 63.

SMITH.—On August 12th, at Grafton-terrace, Cheltenham, Samuel Wagstaff Smith, M.D., late of Pershore, Worcestershire, in his 65th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PROTECTION OF PARTURIENT WOMEN AND NEWLY-BORN CHILDREN.

To the Editors of THE LANCET.

SIRS,—At the quarterly meeting of the Medical Guild held at the Medical Common Room, 64, Bridge-street, Deansgate, Manchester, on July 26th last I had the honour of proposing that the council should be instructed to take into consideration the drawing up of a scheme for the "protection of parturient women and newly-born children with a view to legislation." This was carried and the council have appointed a sub-committee to deal with the question. As I am the honorary secretary of the committee I shall be glad to have any suggestions from any of your readers in order to make the scheme as satisfactory as possible to the profession at large and one which shall have its cordial support. The main idea is suggested in the title and this will be rigidly adhered to and differs from previous attempts at legislation whose object has been more or less for the registration and legal promotion of midwives. We contend that as far as possible the skill of those legally registered to practise medicine, surgery, and midwifery should be placed by the State at the disposal of every parturient woman—that public obstetricians should be appointed in all districts with a view to this, just as we have public vaccinators who are paid by the State, and as the public is protected by local corporate bodies by the compulsory notification of infectious diseases. I do not consider it necessary to enlarge upon the advantages to public health which such a scheme if properly carried out would be. So long as the committee receive as many suggestions as possible it is a matter of indifference whether they are addressed to me personally or appear in your columns with a view of giving rise to a discussion. The more the matter is discussed the more likely are we to arrive at a sound and lasting conclusion of this difficult question. On the other hand, if practitioners will not avail themselves of opportunities to express their views upon this subject either publicly or privately they will have no one to blame but themselves if legislation takes place in a manner contrary to their desires.

I am, Sirs, yours truly,

G. H. BROADBENT.

Ardwick-green, Manchester, August 11th, 1900.

"A MAN WITH A QUIVERFUL."

UNDER the above heading the August number of the *Dublin Journal of Medical Science* mentions that a French Canadian living in a Rhode Island town was recently presented by his third wife with his forty-first child. His first wife gave birth to several pairs of twins, and his second presented him with three sets of triplets. Thirty-six of the children are living and many of them have families of their own. Eight of the grandchildren also are parents.

A DISGUSTING THREAT.

To the Editors of THE LANCET.

SIRS,—I have had during the last week an anonymous letter which I know by the writing to be from a medical student who has only to take his final now. In it he says: "I will meet you one day," and here he threatens to scratch me with a hypodermic syringe containing syphilis bacteria. He puts it: "Not death but disease." Now I fully believe that this heathen is fool enough to try something on like this. Is it possible that the imbecile could have the power to get hold of stuff like this, and would a scratch be sufficient to inoculate anyone with such a disease? If so, it is high time that such things should be well looked after and put out of the way of such lunatics who aspire to the medical profession. I don't wish to harm the fellow (as I most certainly could do on production of the letter) for the sake of his father and mother.—I am, Sirs, yours faithfully,

August 14th, 1900. NEMO.

*** Successful inoculation under the circumstances described would be rather difficult and disinfecting measures applied immediately might nullify the poison. The threat is probably an idle one; but it is of such a heinous character that we advise our correspondent, having made quite certain that he knows the offender's identity, to communicate with someone having authority over him—either his parents or the police. No one should be allowed to write such letters with impunity. But just because the offence is so serious our correspondent must be particularly careful not to make his accusation on any but the most convincing evidence.—ED. L.

A NOTE ON SOUND.

To the Editors of THE LANCET.

SIRS,—Walking with a lady, and in earnest conversation with her about our unhappy South African war, with a sudden gesture she said: "Doctor, I must go home quick, baby is crying." We were a mile from the house, out of sight of the house, but in 15 minutes we found that it was quite true. The baby—four months old—had been crying for a quarter of an hour. We have not lost our acute sense of sound. In this case thought and the sight of the dwelling seemed to

be out of the question, and only hearing could account for the call given. The wonderful weird quiet of a calm night on the South African veldt is so different, recognisable but indefinable, from the gentle murmur which awakes man and beast as the impact of daylight mobilises every atom on the face of the land. The vulture perhaps sees the dying beast lying on the open veldt; probably smells it as putrefaction sets in; but the heavy breathing and the groan of a dying animal are in all likelihood sufficient to fetch him many miles from his haunts, to hover over his prey till the end has come. The vulture is a coward and does not approach the house in which dying or dead lie. I am, Sirs, yours faithfully,

J. H. NANKIVELL, M.R.C.S.,
House Surgeon, Butterworth Hospital.

Cape Colony, July 14th, 1900.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 16th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 10	29·86	N.W.	0·13	95	65	55	55	57	Overcast
,, 11	30·32	S.W.	...	108	76	53	57	60	Hazy
,, 12	30·34	S.W.	...	111	83	58	63	68	Bright
,, 13	30·37	W.	...	119	88	60	63	67	Hazy
,, 14	30·35	N.	...	119	85	62	62	67	Hazy
,, 15	30·30	S.E.	...	115	74	60	61	65	Cloudy
,, 16	30·12	E.	...	116	76	60	62	66	Bright

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

THURSDAY (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (25th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (20th).—WEST LONDON POST GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: The Application of Splints to the Upper Extremity.

THURSDAY (23rd).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: The Application of Splints to the Lower Extremity.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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One Year	£1 12 6	One Year	£1 14 8
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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

During the week marked copies of the following newspapers have been received: *Aberdeen Journal, Nottingham Guardian, Daily Mail (London), Cheltenham Examiner, Times of India, Pioneer Mail, Scotsman, Builder, Architect, Liverpool Daily Post, Glasgow Herald, Sheffield Independent, Birmingham Gazette, Sussex Daily News, Yorkshire Post, Leicester Post, Bradford Observer, Manchester Guardian, Sanitary Record, Hertfordshire Mercury, Local Government Chronicle, Reading Mercury, Mining Journal, City Press, Essex Weekly News, Newcastle Journal, Surrey Advertiser, Daily Messenger (Paris), Hampshire Independent, Bristol Times, Aldershot News, Belper Chronicle, Pudsey District Advertiser, Building News, African Review, Alliance News, Coventry Times, Poole Herald, Canterbury Times, Draper's Record, Midland Daily Telegraph, Warwick Times, Ayrshire Post, Caithness Courier, Surrey Comet Citizen, &c., &c.*

Communications, Letters, &c., have been received from—

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An Address

ON

THE CELLULAR PATHOLOGY OF TO-DAY.

Delivered in the Grande Salle of the Sorbonne, Paris, to the Thirteenth International Medical Congress, August 6th, 1900,

BY SIR J. BURDON-SANDERSON, BART., M.D., F.R.C.P., F.R.S.,

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

GENTLEMEN,—May I be permitted first of all to express to you my high appreciation of the honour you have conferred on me by inviting me to address you on so important an occasion. I desire at the same time to thank our French colleagues on my own behalf and on that of the English members of the Congress for their friendly welcome.

Forty-seven years ago, after graduating in Edinburgh, I repaired to Paris for the purpose of completing my medical education. At that time Paris afforded facilities for clinical study which were not to be had in England. To myself it was an additional inducement that there were in Paris well-organised laboratories for practical instruction in chemistry, histology, and physiology. Moreover, the period was one of great activity and progress. Claude Bernard had recently achieved his greatest discoveries, those relating to the functions of the liver, the pancreas, and the processes of digestion. Brown-Séquard had just demonstrated the functions of the vaso-motor nerves and was already engaged in his investigations of the functions of the spinal cord. It was to Paris that every student repaired who desired to become acquainted with the most recent advances in physiology.[1]

The progress of pathology at the time we are considering was no less remarkable than that of physiology. It was then that the "cellular pathology"—the doctrine which has so powerfully influenced the progress of scientific medicine—was originated by Virchow. Nearly 20 years had elapsed since the discoveries of Schwann and the promulgation of the "doctrine of the cell." The science of histology had been developed by Charles Robin in France, by Bowman in England, by Henle and above all by Kölliker in Germany. Of these remarkable men one only is still with us. To Kölliker we can to-day address our congratulations on a life-work of unparalleled fruitfulness. It was from Kölliker's university, Würzburg, that the "cellular pathology" emanated. The book which bore this title was not published until Virchow had migrated to Berlin (in 1856), but since 1847, when the first volume of the "Archiv" appeared, the doctrine had been step by step set forth. A few years later (1862) von Recklinghausen made the capital discovery that the colourless corpuscle of the blood was not, as had been previously thought, a vesicle containing a nucleus, but rather an organism full of life and movement which possessed the wonderful faculty of incorporating minute particles suspended in its liquid environment. Five years later (1867) another pupil of Virchow, Cohnheim, made the further discovery that pus can be formed by the emigration from the blood-vessels of these same corpuscles, but it was not until after Cohnheim's death that the key to the mystery which he had in vain sought to penetrate was discovered by Leber[2] in the analogy of the phenomenon in question to that to which the botanist Pfeffer had given the name of "chemotropism."

I have adverted to these discoveries relating to the functions of the cell for the purpose of setting forth the relations between the cellular pathology of to-day and the cellular pathology as originated by Virchow in the "fifties." There can be no doubt that the tendency of pathological research has undergone a marked change since that time. Formerly the histological characters of morbid processes—of inflammation, of tuberculosis, and of other organic diseases—were the subjects of special interest. Now it is the microbe. It would, however, be a mistake to suppose that the new science of microbiology has hindered the progress of histology. On the contrary, histological research has never been pursued with more zeal and success than during what may be called the bacteriological period (1880 to the present time). I need only refer to the discovery of karyokinesis (1873-82) and to the wonderful advances in the microscopical study of the nervous system which we owe to Golgi, to Cajal, and to the army of artists in histology who are now working in the same field.

There are at the present moment few who doubt the value of bacteriological diagnosis or of serum therapeutics. These are the practical, life-saving results of bacteriological research. But it is not in these directions that microbiology is at present exercising its chief influence on the science of medicine; it is rather that it has given us a new and more comprehensive idea of the physiological functions of the cell and consequently of cellular pathology. Pathology is no less fundamentally cellular than it was when Virchow so designated it in the title of his book. But the word "cellular" has now a wider signification, for it comprises not merely histological changes, but the chemical reactions which subsist between the cell and its environment. Formerly we regarded each kind of cell as having a single special function proper to itself, but the progress of investigation has taught us that each species of cell possesses a great variety of chemical functions and that it may act on the medium which it inhabits and be acted upon by it in a variety of ways. Thus, for example, we think of the colourless corpuscles of the blood (or, as we now call them, leucocytes) not merely as agents in the process of suppuration or as typical examples of contractile protoplasm, but rather as living structures possessing chemical functions indispensable to the life of the organism. Similarly we have come to regard the blood disc, which formerly we thought of merely as a carrier of hæmoglobin, as a living cell possessed of chemical susceptibilities which render it the most delicate reagent we can employ for the detection of abnormal conditions in the blood.

The tendency of recent research is to show that the reactions to which I have referred as chemical functions of the cell (action of the cell on its environment—action of the environment on the cell) are the work of ferments—intrinsic or extrinsic—which are products of the evolution of the living cell and therefore to which we may apply the term "enzymes"[3] devised for them by the great physiologist whose loss we at this moment so bitterly deplore. Can we go a step further and accept the suggestion which presents itself that *all* the functions of the cell are due to the agency of enzymes? The question is one which we are bound to answer with great reserve. The utmost that can be said is, that if we exclude from consideration the functions which Bichat designated as functions of animal life—in other words, the functions proper to the nervous system and under its immediate control—we may as regards organic functions accept the suggestion as probably true. Recent researches have plainly indicated that in the case of the disease-producing micro-organisms, the specific functions which for years we regarded as proper to, and inseparable from the cell, belong essentially to the enzymes which they contain. It has been further shown that similar statements can be made as regards ferment-processes which differ widely from each other and no less widely from those induced by bacteria. Thus, if I may be allowed to quote the striking language employed by M. Duclaux[4]: "There are ferments which by slipping a molecule of water into the midst of a complex molecule divide it into two or three more simple ones, as an iron wedge splits a block of wood, and others which can reconstitute the block by re-uniting its dissociated elements. Again, there are enzymes which conduct oxygen to the bodies on which they exert their action," and others "which break up a chemical compound as the explosion of a shell shatters a wall." So that in the domain of microbiology the enzyme may in a certain sense be said to have "dethroned the cell." For if, as M. Duclaux continues, we can extract from the

[1] In 1852-3 the number of English students in Paris was considerable. I worked in the laboratory of the distinguished chemist Gerhardt and subsequently in that of Wurtz and Verdeil, at the same time following the demonstrations of Bernard. The day was divided between hospital attendance before, and laboratory work after, breakfast.

[2] Leber: Die Enstehung der Entzündung, &c., Leipsic, 1891.

[3] The word "enzyme" was introduced by Kühne in 1874. It has been adopted as a general term for soluble ferments which originate from cells by Professor J. R. Green in his important work on Fermentation. For this purpose it is much to be preferred to the word "diastase," which is used by Duclaux and other French writers in the same general sense.

[4] M. Duclaux is the accomplished Director of the Pasteur Institute. The passage quoted is in the final chapter of the second volume of his comprehensive treatise on "Microbiology."

cell a substance which breathes for it, another which digests for it, another which elaborates the simple from the complex, and finally another which reconstitutes the complex from the simple, the cell can no longer be considered as *one*, but rather as a complicated machine, the working of which is for the most part dependent on enzymes, which, however numerous and varied may be the processes in which they are engaged, all follow and obey the universal law of adaptation and all contribute to the welfare and protection of the organism.

Admitting that we may provisionally delegate the function of the cell to its enzymes the question may still be asked whether by doing so we acquire a better understanding of organic life. The answer may, I think, be easily given. The only way in which we can explain a vital phenomenon is by determining its non-vital conditions. The essence of physiological experimentation consists in the elimination of the mystery of life.[5] As regards each chemical function of the cell, taken separately, the first step towards this result is to reproduce *in vitro* what one has observed *in vivo*. Even though it may be impossible to state the nature of the process in chemical language, it is a great advantage to be able to study its relation to external conditions which have nothing to do with its vital origin. In illustration of this we may take a physiological process in relation to the nature of which the vitalistic idea has held its ground with great pertinacity—the alcoholic fermentation. It was not until 70 years had elapsed since the discovery of the yeast-plant, that Buchner, by employing more effectual methods than had been devised by his predecessors was at last able to prove that the alcohol-producing enzyme can be separated from the zymogenetic cell—i.e., that the chemical process which has been the source of so much good and evil to the human race may be brought about without the direct intervention of the living protoplasm. Another instance of nearly equal interest is that of the recent discovery and investigation *in vitro* by M. G. Bertrand[6] of the ferments on which certain plant-cells depend for the power which they possess of quasi-respiratory oxidation and the experimental proof which he has given that this is effected by the agency of an oxidising enzyme. It cannot be said that in either of these instances the way in which the enzyme acts can be *explained*.[7] In each case a process hitherto regarded as vital has been shown to be chemical, but the mode of action of the enzyme cannot as yet be stated in chemical language, so that the value of the discovery lies in the biological importance of the process and the new power which the physiologist has gained of subjecting it to exact investigation. In futherance of that investigation all that chemistry can do at present is to furnish us with efficient technical methods, but eventually—in the course of the next century—there can be no doubt that the purely chemical problems relating to the action of ferments which in the course of the next few years the biologist will one after another submit to the chemist will receive their answers. In the meantime let us avoid skating on thin ice. The value of the generalisation that each chemical function of the cell is the work of an enzyme, however admissible it may seem, depends on the number and importance of the phenomena to the elucidation of which it has been successfully applied. So long, for example, as a process of such fundamental importance as that by which the plant cell with the aid of sunlight is capable of elaborating carbohydrate out of material derived from the atmosphere has not been shown to be zymotic, we must carefully guard against giving the theory anything like the authority of a biological law.

May I now, by way of sequel to the general considerations relating to the chemical functions of cells which have occupied our attention, say something of their bearing on what may be called the "cellular pathology" of to-day, the relation of which to that of 40 years ago I have already indicated. The examples to which I referred just now related to the physiology of the plant cell. Our pathological problems relate to the constituent cells of our own bodies, the chemical functions of which present much greater difficulties to the investigator. It is not difficult to understand why more progress has been made in the investigation of isolated cells, such as coloured and colourless blood corpuscles and the nucleated cells which constitute the adenoid tissues, than in those relating to the constituent cells of organs. From the study of the cells of adenoid tissues we have learned that the nucleus not only governs the development of the cell but that it has chemical endowments which distinguish it from the protoplasm which surrounds it. I need only mention in this connexion the researches made by my friend Sir L. Brunton more than 30 years ago in Professor Kühne's laboratory, the subsequent work of Miescher the discoverer of nucleine, and the much more extended investigations of Professor Kossel of Marburg, which have given us such exact information as to the products of decomposition of nuclear substance.

As regards the coloured corpuscles, important discoveries have been made during the last few years in two directions. They have been studied first in relation to their physical properties, and particularly in relation to their osmotic relations to organic and inorganic substances in solution. I need only remind you of the work done by Professor Hamburger of Utrecht and by Dr. Hedin of Lund in Sweden. Still more interesting results have been obtained by investigations conducted in France and Germany relating to the physiological and chemical conditions which, on the one hand, render them capable of resisting the "globulolytic" action of the blood plasma, or on the other hand, compel them to yield to that action.

As the subject of hæmolysis at the present moment is receiving much attention, both here and elsewhere, I may be permitted to devote a few moments to its discussion. The fact that the blood discs are in general destroyed when they are introduced into the circulation of an animal of a different species has been long familiar to us. A few years ago it was demonstrated by Buchner that the hæmolytic power has its seat in the plasma and consequently in the serum. Still later, M. Bordet of the Pasteur Institute made a remarkable discovery that the hæmolytic process now in question is identical with the well-known "bacteriolysis" which takes place when pathogenic micro-organisms are acted on by the serum of an immunised animal. By a numerous series of observations *in vitro* and *in vivo* he showed that the lytic substance in the serum which acts on the vibrio of cholera and that which acts on the blood discs are identical, provided that the serum also contains a *tertium quid*—a certain substance which has a specific antagonistic relation to the *materies morbi* in the one case, to the "alien" blood-disc in the other. In other words the intruding blood-disc acts, and is acted upon, exactly as if it were an infective agent. To this specific body M. Bordet gave the name of "*sensibiliser*" because it renders the blood-disc or the specific micro-organism susceptible to the attack of the normally present hæmolytic ferment. The "*sensibiliser*" serves, so to speak, as a key, by the application of which the ferment is enabled to penetrate into the interior of the blood-disc so as to act on its susceptible constituents. And inasmuch as it appears to be proved that every blood-disc is liable to be affected by the presence of a plurality of substances possessed of the specific *intromittent* function, it seems as if one must admit that it must possess a corresponding number of specific susceptibilities; for if there are several keys, each differing from all the rest, there must be as many locks to which they severally fit.[8]

It is apparent that these beautiful researches have a special interest in relation to the occurrence of hæmolysis as a symptom—i.e., to the solution of the blood-discs which occurs in a variety of morbid states—but it is by the help which they are likely to afford us in our efforts to understand the origin and essence of disorders of nutrition, that the facts which have been disclosed relating to the chemical physiology of the blood-cells are most likely to be of service.

[5] That is, so much of the mystery as depends on vital conditions. Many physical and chemical processes—e.g., the production of muscular force and, as will be seen further on, the assimilation of carbon by plants, remain mysterious even after the vital element has been eliminated. The physiologist, however, has done his part and can hand over the unsolved problem to the chemist or physicist, as the case may be, with the assurance that eventually the explanation will be got at.

[6] Comptes Rendus, vols. cxxi. and cxxiii., 1895-96.

[7] In physiology and pathology we use the words "explained" and "understand" in a much stricter sense than that in which they are used by some popular writers on biology. To prove that what happens is in accordance with the general law of adaptation is not to explain it.

[8] Those who were present at the lecture given by Professor Ehrlich at the Royal Society last spring will notice that Bordet's "hæmolytic substance," or alexine, corresponds to Ehrlich's "complement" and Bordet's "*sensibiliser*" to Ehrlich's "immune body." The language differs but the experimental data are in agreement. It is proved that two substances are concerned—viz., a hæmolytic substance or "alexine" normally contained in the liquor sanguinis, which cannot, however, exercise its hæmolytic action unless the key to the lock—the *sensibiliser*—be present. M. Bordet's principal results were published in 1898. A second paper appeared this year.

In the action of the liquor sanguinis on alien blood-discs we have an exemplification of the way in which ferments may play a part as the instruments by which the constituent cells of different organs may influence each other for good or evil without coming into contact. When we turn from the blood-discs and leucocytes to the constituent cells of organs, it is obvious that the difficulties of investigation are infinitely greater. The suggestion which naturally presents itself is that the actions on each other of the constituent cells of different organs within the body of the same individual, are brought about in a similar way to those which we have learnt to recognise in the actions of indigenous blood-corpuscles on aliens; that is to say, that among the metabolic products which each species of cell throws into the blood-stream or lymph-stream there are specific substances which are analogous to M. Bordet's "*sensibilisers*" in so far that by their presence or absence the prosperity or decadence—the functional activity or the contrary—of other cells is directly affected. Vague as such language appears it may serve to indicate the lines along which we must work in our efforts to solve some of the most important problems of cell-pathology. In all dystrophic conditions—e.g., in the functional disorder of muscle and of liver-cell which renders these structures incapable of holding carbohydrate in reserve—in the autotoxy which manifests itself in the graver form of diabetes—in the "acid intoxication" which is associated with acute disintegration of the liver—in morbid conditions attributable to "internal secretions"—in all of these instances we have to do with disorders of the chemical functions of cells. In all our endeavours to ascertain the immediate and determining causes of these disorders we may with no less advantage at the present time than formerly allow ourselves to be guided by the principles and methods of the cellular pathology as Virchow taught them nearly half a century ago. The principles remain unchanged; as regards the methods, we have only to add to those we then learned the newer ones which the progress of knowledge has placed within our reach.

ON THE PATHOLOGY AND THERAPEUTICS OF SCURVY.

BY A. E. WRIGHT, M.D. DUB.,

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I PROPOSE here to place on record the results of a series of examinations of the blood, instituted with the view of testing the correctness of the inferences with regard to the nature of scurvy which were set forth by me in a paper on the Pathology and Therapeutics of Scurvy, printed in the Army Medical Report for the year 1895 (published in March, 1897). The line of thought which runs through the paper in question was briefly as follows.

The scorbutic condition is a pathological condition which is induced by a dietary consisting of meat and cereals to the exclusion of green vegetables, tubers, and fruits. Inasmuch as the food-stuffs which are excluded from the dietary in question are food-stuffs which contain an excess of bases over mineral acids, while the food-stuffs (meat and cereals) which remain are food-stuffs which contain a large excess of mineral acids over bases, it is obvious that the scorbutic condition is one which supervenes upon the ingestion of a considerable excess of mineral acids over bases. It would, in view of this consideration, seem probable that scurvy is a condition of acid intoxication, very similar to the acid intoxication which can be experimentally produced in herbivora by the ingestion of a surplus of mineral acids. The theory that scurvy is essentially a condition of acid intoxication would appear to be in harmony with the circumstance that the rapidity with which the scorbutic condition supervenes depends, apparently, upon the degree to which the mineral acids are in excess in the dietary. The condition is apparently more rapidly superinduced by a dietary of corned meat (i.e., meat which has been rendered hyperacid by the removal in the process of corning of the alkaline salts of the blood and lymph) than by a dietary of fresh meat (i.e., meat which still contains these alkaline salts). Similarly infantile scurvy would seem to be generally dependent upon the substitution of more acid food-stuffs (preparations of cereals sold under the designation of "infant foods") for the less acid food-stuff, milk. Justification for the identification of scurvy with a condition of acid intoxication would appear to be afforded also by the consideration that the scorbutic condition is remedied or alleviated by the addition to the scorbutic dietary of any one of a whole series of different substances—tubers, green vegetables, decoctions of leaves and growing shoots, blood (used for this purpose by the Laps), fruits, and fruit juices—substances which have apparently in common only the circumstance that they all contain an excess of bases over mineral acids. It was pointed out in the conclusion of the paper whose argument has just been summarised that, given the correctness of the above view of the origin and nature of scurvy, the proper prophylaxis and treatment of the condition would consist in the administration of salts of oxidisable organic acids, inasmuch as such treatment would lead by the most direct means to the retention or restoration of the normal alkalinity of the blood.

Enough will now have been said to place the reader in possession of the ideas which dictated the line of inquiry and the therapeutic measures which were adopted in the following cases of scurvy which came under observation in the wards of the Royal Victoria Hospital, Netley.

The question of the presence or absence of a condition of acid intoxication was in each case investigated by the method of hæmalkalimetry. The hæmalkalimetrical method employed was the method which was described by me in a previous communication to THE LANCET.[1] As estimated by that method, the alkalinity of the normal blood is represented by the formula $\frac{N}{35}$. In other words, the alkalinity of the blood is under ordinary conditions of health such that the addition of one volume of a normal acid, 35 times diluted, to an equal volume of serum, just suffices to deprive that serum of its power of blueing sensitive litmus paper.

The particulars of the cases of scurvy which were examined are as follows.

CASE 1.—Private A. Patient was examined on May 1st, 1897, when considerable subcutaneous ecchymoses were found interspersed with smaller purpuric spots on the legs and arms. There was general yellowish discolouration of the skin and brawny discolouration and œdematous effusion of the right foot and ankle. There was no noticeable sponginess of the gums. The alkalinity of the blood was $\frac{N}{100}$. On the 10th three three-gramme (45-grain) doses of acetate of potash were prescribed. There was some resultant diarrhœa. On the 12th the alkalinity of the blood was $\frac{N}{100}$. In lieu of previous treatment two grammes (30 grains) daily of acetate of soda were prescribed. On the 14th the alkalinity of the blood was $\frac{N}{70}$. The same treatment was continued. On the 18th the alkalinity of the blood was $\frac{N}{70}$ and the treatment was persisted in. On the 21st the alkalinity of the blood was $\frac{N}{70}$ and four grammes (60 grains) daily of tartrate of soda were prescribed. On the 24th the alkalinity of the blood was $\frac{N}{55}$ and the treatment was continued. On the 26th the alkalinity of the blood was $\frac{N}{45}$. The patient, who had previously, on a regimen of lime juice, had several recurrences of the purpuric eruption and of the swelling in the foot, became perfectly well.

CASE 2.—The patient, a sergeant, developed typhoid fever on the transport returning from South Africa. On June 12th, 1900, his condition was as follows. There was a characteristic earthy yellow complexion; the gums were spongy, deeply ulcerated, and covered with blood; and the mouth, in spite of treatment with antiseptic washes, was so sore that the patient could hardly speak or drink. The alkalinity of the blood was $\frac{N}{100}$. Four grammes of lactate of soda daily were prescribed. On the 17th the complexion and condition

[1] THE LANCET, Sept. 18th, 1897, p. 719.

of the mouth were found to be much more satisfactory. The patient could speak and swallow without pain. The alkalinity of the blood was $\frac{N}{35}$. The patient afterwards succumbed to typhoid fever.

CASE 3.—The patient, seen for the first time on May 5th, 1900, was a private soldier and was one of the beleaguered garrison at Ladysmith. He had a history of dysentery, complicated by frequent epistaxis. Since the raising of the siege his dietary had consisted exclusively of milk. The patient was seen to be in a very precarious condition. He was extraordinarily emaciated and was too feeble to raise his head from the bed. His complexion was of a dark greenish-yellow colour, like that of a corpse which had been buried. His mouth was very foul, the gums being covered with blood-stained sordes. A thin bloody fluid oozed at times from the nostrils. He had frequent serous motions, especially at night, the calls being so often repeated and so sudden as to prevent sleep. The alkalinity of the blood was $\frac{N}{200}$. One gramme of bicarbonate of soda three times a day was prescribed. On the 7th the blood coagulation time (estimated at the standard temperature of 18·5° C., in coagulation tubes of the standard calibre of 0·25 millimetre), was seven minutes. The quantitative estimation of calcium salts in the blood (estimated by mixing in capillary tubes one volume of pure neutral oxalate of soda solution with an equal volume of blood) showed that the minimum addition of oxalate of soda which sufficed to keep the blood liquid was 1 in 800. The treatment was continued. On the 9th five grammes of lactate of soda were prescribed. On the 10th the lactate of soda was reduced to 2·5 grammes daily. On the 11th the alkalinity of the blood was $\frac{N}{40}$. After this the patient improved in an extraordinarily rapid manner, his complexion becoming healthy and his dysenteric symptoms amending. He left the hospital about eight weeks afterwards looking robust and well nourished, every trace of scurvy having passed away.

CASE 4.—The patient, who also was seen for the first time on May 5th, 1900, had arrived by the same transport as the patient in Case 3. He had been in Ladysmith during the siege. The patient was found to be in an extremely emaciated and very precarious condition. There was the characteristic yellowish-green complexion noticed in the last case and the body was covered with the remains of a (? purpuric) eruption. There was a large sore under the tongue. There were frequent dysenteric stools associated with great pain. The alkalinity of the blood was $\frac{N}{150}$. Two grammes of citrate of potash daily were prescribed. On the 7th the blood coagulation time was eight minutes. The quantitative estimation of lime salts in blood showed that an addition of 1 in 600 of oxalate of soda was the minimum addition which sufficed to keep the blood liquid. The alkalinity of the blood was $\frac{N}{55}$. The same treatment was continued on the 8th and on the 9th five grammes of lactate of soda were ordered. On the 10th the lactate of soda was reduced to 2·5 grammes daily. On the 11th the alkalinity of the blood was $\frac{N}{35}$. The patient made a good but gradual recovery. He is now well nourished and has a clear healthy complexion, but he still suffers periodically from severe intestinal pain.

CASE 5.—The patient was a private soldier who arrived from Ladysmith by the same transport as the patients in Case 3 and Case 4. The diagnosis was dysentery complicated with phthisis. There was no history of bleeding or of purpuric eruption. He was not so reduced as the last two patients, being strong enough to sit up in bed. There was no sponginess of the gums, but the characteristic yellowish discolouration of the skin was present. There were large cavities in both lungs. The alkalinity of the blood on May 5th, 1900, was $\frac{N}{80}$. Three grammes of sodium bicarbonate daily were prescribed. On the 9th five grammes of lactate of soda were given, the dose being reduced on the 10th and following days to 2·5 grammes daily. On the 12th the alkalinity of the blood was $\frac{N}{35}$. The patient died on the 16th. The necropsy showed widespread destructive changes in the lungs and extensive ulceration of the intestine.

CASE 6.—The patient, seen first on June 17th, 1900, was a private soldier, aged 22 years, who had been one of the beleaguered garrison of Ladysmith and had suffered from enteric fever during the siege. He was found to be in a most extreme condition of emaciation, being reduced to skin and bone. Both buttocks were the seat of enormous bed-sores. At times he appeared to be almost exanimate, the whites of the eyes being alone visible. A fluctuating abscess of the size of a small orange occupied the left side of the cheek over the jaw. Watery blood oozed from the gums and a quantity of yellow serous discharge came from the nose. In spite of hot bottles and thick blankets the patient felt stone cold. His feet were considerably swollen and were covered with extensive ecchymoses; there were ecchymoses also on the legs and arms. The patient at times yelled with the pain of the bed-sores and of the frequent cramps in his legs. His intelligence was disordered and he begged for his legs to be cut off. His motions were passed under him in bed. The alkalinity of the blood was $\frac{N}{110}$. Four grammes daily of lactate of soda were prescribed. There was no noticeable change in his condition on the 18th, his mind still rambling. The treatment was continued. On the 20th his condition had much improved; he felt warm and the œdema of the feet had somewhat subsided. He said that the cramps were less frequent and that the bed-sores were not so painful. The abscess in the cheek had burst into the mouth. The alkalinity of the blood was $\frac{N}{35}$. The treatment was continued. On the 22nd the patient declared himself much better and asked to be allowed to smoke. On the 24th his temperature rose, the curve assuming a characteristic septic type, and the bed-sores were found to have assumed a gangrenous appearance. He succumbed on the 28th. The necropsy disclosed a certain amount of thickening, pigmentation, and congestion of the intestine. There was no effusion into the serous membranes. A colourless gelatinous substance occupied the medulla of the long bones. In spite of frequent examination directed to this point no trace of rigor mortis was detected.

CASE 7.—The patient was a private soldier and was also one of the beleaguered garrison of Ladysmith. He was brought into hospital from the transport on June 18th, 1900, in an extremely emaciated and moribund condition. The whole front of the body, from the neck to the umbilicus, was occupied with an extensive blood extravasation. In places where the epidermis had peeled off the surface resembled that of dried raw meat, and there were copious ecchymoses over the limbs and other parts of the body. Five grammes of lactate of soda were administered in milk. He succumbed a few hours after admission. Beyond the appearances described above and a complete absence of rigor mortis nothing characteristic was discovered at the necropsy. The alkalinity of the blood which was taken from the heart 22 hours after death[2] was $\frac{N}{100}$.

The fact that in all these cases the alkalinity of the blood was so strikingly reduced, and the fact that in every case (with the exception of the last where there is reason to suppose that the drug was not absorbed) a very striking amelioration of the condition followed upon the exhibition of lactate of soda and other similar substances, seems to me to establish beyond doubt that scurvy is—as was suggested in the paper referred to above—a condition of acid intoxication.

The following subsidiary points would appear to be deserving of notice:—1. Cases 3, 4, and 5, in which dysenteric symptoms were prominent, were well marked off from cases of ordinary dysentery, not only by their characteristic clinical features, but also by the fact that the alkalinity of their blood was diminished. The alkalinity of the blood in the uncomplicated cases of dysentery was not found to differ from the normal. 2. It was found that there was neither a notable reduction of blood coagulability nor a diminution of the lime salts of the blood in Cases 3 and 4, where these points were specially investigated. Nor were there in any of the three cases which succumbed any effusions into the serous cavities such as are described in the older records

[2] Observations made specially to determine whether any alteration of alkalinity occurs after death appear to show that there is in the case of blood taken from the heart only a very slight diminution of alkalinity within 24 hours after death.

as constituting a characteristic feature in pronounced cases of "sea scurvy."[3] 3. Case 2 would seem to be of interest as showing that the scorbutic condition may supervene and complicate the course of a specific fever. This point would seem to deserve attention, not only in connexion with the fact that a patient admitted for specific fever may previously have been subsisting on a scorbutic dietary—as will not unfrequently be the case in soldiers on active service—but also in connexion with the circumstance that a scorbutic condition may be induced during the course of a fever by the restriction of the patient to a dietary consisting of "acid food stuffs."[4] 4. A comparison of the course of events in Case 1 with the course of events in Cases 3, 4, 5, and 6 (all of which were much more severe) would seem to indicate that the desired increase of alkalinity can be more rapidly achieved by the administration of lactate of soda than by the administration of the salts of the less easily oxidizable organic acids. This is in conformity with what might *a priori* have been expected.

In conclusion, I desire to express my best thanks to Colonel W. E. Webb, R.A.M.C., and to Mr. F. J. O. Stephenson and Mr. F. J. Pearson, civil surgeons, for the facilities which they placed at my disposal in connexion with the study of these cases.

Netley Hospital.

EYE DISEASE IN EGYPT.

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IN native Egyptian life there are a marked amalgamation and close intercourse between the different social grades which are in strong contrast to the general custom of other civilised countries, and the town populations also merge intimately with those of the country. These factors, together with the general manner of living and the climatic conditions, cause the type and frequency of eye disease to be very evenly distributed amongst all ranks and classes.

The sequence of cases on which these remarks are founded forms only a very small proportion of the total number of similar ones which passed through my hands whilst in Egypt, yet it may be considered a fully representative one, as it is a series of hospital in-patients possessing accurate statistical record and is sufficiently ample to serve as a basis of comparison. Out-patients of the hospital and cases in private practice are not included here, as their statistics cannot be so fully complete. Although my work extended over a longer period than that covered by these cases (Jan. 1st, 1891, to Dec. 31st, 1898) exactly compiled statistics are only available for that time. In preference to selecting any one year for observation the cases have been aggregated together so that an average ratio may be deduced, and although this is perhaps fairer, yet it may be pointed out that the opportunities for such study at first were very meagre in comparison with what obtained later, when the department comprised 60 beds, of which 40 were for males and 20 for females. When the various cases were classified many of the patients were found to have suffered from a variety of eye affections, and frequently each eye was also differently affected—e.g., leucoma centrale, trichiasis, trachoma, and dacryocystitis formed no uncommon combination. On this account all the cases were arranged according to the principal condition treated, and in this connexion visual impairment was given precedence over other forms of disease. The most active period of work during the year extended from May to October inclusive, when the average shade temperature is 84·2° F. (29° C.), as shown by the records of 20 years. The acuter forms of eye disease are then most rife and the infective cases assume a more intensely aggressive character. In the other period, from November to April, the average temperature is 53·6° F. (12° C.). The light coming into the wards was not obscured in any way, as ordinary large paper shades over the eyes, when necessary, afforded quite efficient shelter and rest from the glare, whilst the patients benefited in their bodies by the general light which is always so essential for their rapid recovery and well-being. The only marked relief from the constant pressure of admissions to the beds occurred in the month of Ramadan, when Mahomedan canonical law forbids the introduction of anything into the stomach by way of the throat from the time of the rising to the setting of the sun, and even collyria are included in this prohibition, from their being able to reach the throat by way of the lacrymal passages. No efforts were made, except in extreme cases, to overcome this prejudice, as it gave an opportunity of affording a well-merited rest to the native nursing staff.

During this period of eight years there was a total of 5358 cases, making a yearly average of 669. They are grouped in the table appended to this article according to the site involved by the principal disease. The operations numbered 7081, averaging 885 yearly; they also are arranged in accordance with their site, which is simpler but does not always coincide with the condition which they relieved. It was a continual source of regret that owing to the constant pressure of work imposed by the adequate treatment of the patients but scant attention could at times be afforded for the proper pathological investigation of many of the interesting cases.

The conjunctival cases numbered 742, forming 13·84 per cent. of the whole series; amongst them were 77 instances of intensely *acute catarrhal conjunctivitis*, which had always some iritis associated with it. The onset was invariably sudden, and although attempts were made frequently to discriminate the exciting cause they were never entirely successful except in proving the absence of gonococci. The treatment varied somewhat in accordance with the extent to which the tissues were involved, but principal reliance was placed on solutions of cyanide of mercury, varying in strength from 1 in 50 to 1 in 2000; the progress of recovery was usually uninterrupted. *Acute purulent conjunctivitis* was represented by 177 cases. The majority were in all probability cases of a later and neglected stage of the acute catarrhal inflammation; nearly one-third of them presented some serious destructive process of the globe. The gonococcus was found in only a very limited number. The treatment followed was almost identical with that of the acute catarrhal cases. In *granular conjunctivitis* or *trachoma* only those patients whose cases were very aggravated were ever admitted into the hospital; they numbered 297, but were sufficient fully to establish the certain and rapid results obtained by the use of perchloride of mercury in solution, as compared with the effects of other agents which were carefully tried from time to time. The perchloride was usually painted on to the affected areas of the conjunctiva each day in strengths varying from 1 in 25 to 1 in 400. Expression of the contents of the granules was sometimes combined with local applications and may have facilitated the progress of cure, but operative measures alone were found insufficient. Instances of deformity and lack of success attending excision of the conjunctival fornix by others were sufficiently numerous to prevent that procedure being adopted. The presence of some trachoma on the lids when operation on the globe happened to become compulsory was never found to interfere with the success of the result. Research as to the bacterial origin of trachoma carried out by competent authorities[1] did not yield anything of a decisive nature. Only the worst sufferers from *ophthalmia neonatorum* ever found their way to the wards as there were special means of dealing with them elsewhere. In the treatment of these cases solutions of cyanide of mercury were preferred to other remedies. *Phlyctenular conjunctivitis* was ordinarily frequent and it occurred at all seasons of the year; it occasionally assumed a giant form, and 28 cases required special treatment as in-patients. The three major inflammations of the conjunctiva, acute catarrhal, purulent, and granular, with their attendant and resultant sequelæ, may be regarded as the principal cause of impairment of the eyes so commonly met with amongst the native Egyptians who form the bulk of the population;

[3] The absence of any features pointing to a notable reduction of blood coagulability and the presence of lime salts in the blood in normal quantities in the two cases examined are possibly associated with the fact that the patients who were under observation had, so far as was known, been continuously upon a diet of milk, which though it would do nothing to correct the condition of diminished blood alkalinity would probably efficiently correct any tendency to diminished coagulability.

[4] It need hardly be pointed out that a condition of diminished alkalinity, even when it is not sufficiently pronounced to induce the characteristic symptoms of scurvy, may not be without influence in the course of a specific fever.

[1] Dr. John Eyre, and also Mr. Arnold Lawson, in Royal London Ophthalmic Hospital Report, vol. xiv., part 3.

the Arab desert tribes are comparatively immune. The infection can be traced almost invariably to direct manual contact; finger-tips and thumbs are the ordinary means amongst the lower Egyptian classes of removing surplus discharge from the eyes, and the subsequent handling of articles used in daily work readily transmits this in some form to the hands of others, whence it can be unconsciously introduced to the eye by the not unusual vigorous rubbing of the palpebral fissure. The habit of only using the back of the wrist or hand for rubbing the eye at such times would seem to avoid this possible risk of inoculation by contamination which the matutinal use of cleansing lotions as practised by some does not obviate. It is a popular theory, amongst visitors to Egypt more especially, that flies are the source of this infection, but large experience convinces me that this is erroneous. Flies (*musca domestica*) are ever attracted by a gleaming sticky surface, especially if it is also an odorous one, and as it is the custom never to wash the native babies until two years after their birth the flies naturally swarm about the faces of these infants, drawn there simply by the glutinous discharge about the eyes and by the smell of other filth. Although flies alighting on infective matter are capable of carrying it to some other suitable nidus they seldom, if ever, enter the conjunctival sac of normal eyes, which is further protected by its inherent properties which are known to be naturally germicidal.[2]

A great deal of injury to eyes, and sometimes destruction, is wrought, amongst the poorer classes more especially, by the very prevalent use of locally made nostrums in the form of various dry powders, which are termed "*sheeshm*." They are principally composed of some harmless base, such as sugar, with the addition of powdered alum, ginger, cayenne pepper, and sometimes even slaked lime. The comparatively frequent occurrence of *symblepharon* (28 eyes in 16 cases) is thus attributable; the escharotic action of the "*sheeshm*," which is always used dry, denudes the opposing bulbar and palpebral surfaces, and the ensuing œdematous congestion maintains the parts at rest sufficiently long for cohesion to become fully established. There were 177 instances of *pterygium* in 97 individuals. The method of dealing with it will be referred to later.

Those suffering from corneal affections, of whom there were 1838, comprised 34·3 per cent. of the total cases. There were very few amongst them with *foreign bodies*, and three-fourths of these were due to "*sheeshm*" impacted on the corneal surface and obscuring vision; this was often relieved by use of the curette. There were 77 with various forms of *keratitis*, being 11·9 per cent. of the corneal cases, and of these the interstitial type of inflammation constituted fully the half. There were 130 cases of *ulcer* of various species, forming 7 per cent. Corneæ which had become *staphylomatous* were also numerous, and of the 75 cases 48 were found to be operable. The greater bulk of the corneal cases, 58·3 per cent., were entered as *leucoma;* these were of every degree and with varying complications. *Necrosis corneæ* accounted for eight cases; they were a sequela of acute purulent conjunctivitis and occurred usually in people very much debilitated. There was a series of 97 cases classed as *vascular cornea*, but these only formed one-third of the actual number which often accompanied graver maladies. In these there were distinctly separate blood-vessels, varying in number, which passed on to the cornea from every point of its periphery and ramified superficially over its surface anastomosing with each other by a network of fine branches. They were unconnected with any ulcerative condition and there was often no active process of inflammation or cicatrisation present. It seemed to be a varicose condition remaining after previous vascular new formation and congestion, the result at times of some contiguous chronic inflammation, but occasionally due to the irritation caused by trichiasis and still more frequently to that produced by the prevalent habit of systematically using "*sheeshm*." *Trauma* of the cornea as well as of other parts of the eye was of common occurrence. It was but seldom due to accident; it was occasionally self-inflicted with the object of escaping military service or of acquiring rights to the enjoyment of a pension, but usually it was caused by malicious violence by those who were addicted to, and were depraved by, the use of "*hashish*." *Epithelial xerosis* was not at all uncommon and its occurrence was not limited to any one season of the year; it was more frequently seen on the cornea than on the bulbar conjunctiva but sometimes it stretched across the limbus, and was rarely met with on the palpebral conjunctiva. It sometimes occupied quite a large area of the cornea and interfered with vision; skilled observation often showed that these patches had covered the same area for long periods without spreading further. Successful cultivations could always be obtained on suitable artificial media, but the production of the growth elsewhere on living tissue, and also its original cause, remained unsolved problems. Scraping and the use of antiseptics failed as modes of treatment, but the application of the actual cautery at a dull heat was always permanently successful, although the tissues seemed to resent its use more than is customary, as evidenced by the reaction produced.

There was a small series of cases of great interest in which there was a distinct extraneous growth of the cornea occurring in one or both eyes. It was always well defined and of a firm gelatinous consistence, pale yellowish pink in colour and semi-translucent, and with a few distinct blood-vessels joining its two corners at the periphery of the cornea. It was usually situated on the upper segment of the cornea, to which it was always attached by the whole of its base. In shape it was uniformly flattened, varying in thickness from one to two millimetres; its line of demarcation from clear corneal tissue was sharply defined, its surface as well as that of the cornea was always intact, and there was no evidence of any inflammatory process. When situated opposite the palpebral aperture the centre of the growth was more prominent than the edges and the colour was of a more vivid red. Such growths varied somewhat in size, at times occupying the upper third of the cornea, and were of exceedingly slow growth and quite painless; they were known by the laity as "*benza-hayra*," and as there was a superstitious reverence attached to them they came under the surgeon's care, as a rule, only when they encroached on the line of vision. They were easily removed in the form of a thick pellicle by the careful use of an angular keratome, and were always found to have an intimate vascular relation to the surface of the cornea which remained unaltered, with the exception of a slight diffuse opacity marking the site. There were eight of these tumours in this total series of patients, but I also met with them outside the hospital, as they were not confined to any particular rank of life nor were they peculiar to any occupation. Although I made every endeavour to obtain pathological scrutiny of their nature something unfortunately in each instance happened to mar the accuracy of the report; the only point which I was able to establish was the absence of tubercle.

As the poorer classes are mostly illiterate, errors of refraction seldom came under notice in hospital, yet needless to say there were numerous cases elsewhere. The majority of these were myopic, usually with astigmatism superadded, and they were often further complicated by irregularity of the corneal surface without opacity, the result generally of inflammation during early childhood. Whilst completing the examination of some cases for a medical colleague I found several patients with apparently healthy eyes but whose refraction, tested objectively with a mydriatic, showed errors of medium degree, both simple and compound; they themselves were quite illiterate, as were also their progenitors for generations. Arabic letters and numerals did not lend themselves to the subjective testing of vision, nor were the illiterate figures (E) of Snellen found to be applicable, but by the omission of the central short bar in the latter a type was produced which, arranged in series, was readily intelligible to the bulk of the patients.

Eyelid cases amounted to 1511, which was 28·2 per cent. of the total; two-thirds of these patients suffered from misdirected eyelashes, which included *districhiasis* and *trichiasis* both partial and total. The cases were as a rule so infinitely varied and complex that the simple term "trichiasis" was applied to them all as the only way of avoiding unnecessary minutiæ and consequent confusion. Some of the cases were undoubtedly congenital, but most of them bore distinct evidence of a previous inflammatory process, and it might be presumed that the resulting cicatricial formation was the principal cause later of the distorted position of the eyelashes. Total trichiasis occurred

[2] Contribution to the Bacteriology of the Normal Conjunctival Sac, by Dr. John Eyre, Annals of Ophthalmology, October, 1897.

in 1172 cases; *ectropion* was not uncommon, and *tumours*, both benign and malignant, were not rare.

The diseases of the fundus were usually those of major import. There was a marked preponderance of *optic atrophy*, both partial and complete, which could seldom be ascribed to local causes; when partial, it often indicated the existence of ataxia hitherto unnoticed. Very few of the cases of optic atrophy were the result of *glaucoma*. This latter supplied 261 cases, being 4·8 per cent. of the full series. Only 10 of them had reached the complete and final stage.

There were 63 cases (1·1 per cent.) of *panophthalmitis suppurativa*, which was often a sequela of purulent conjunctivitis, but not unfrequently also idiopathic. As a general rule the implicated organ was removed, but sometimes this was inadvisable owing to the surrounding tissues being much involved or to the general condition of the patient being too unsatisfactory. Evisceration by irrigation was then accomplished and the condition was quieted by suitable fomentations; no bad results were ever subsequently noted in these cases although the scleral envelope remained.

Disorganised eyes were peculiarly frequent. In the last statistical year (1898) there were 89 cases with one eye disorganised in a total of 686 admissions; this may be taken as a fair basis and in the gross total of 5358 patients would yield an average of 712 cases (13·28 per cent.), each having a wholly disorganised eye; there were only four instances of *sympathetic iritis* in this number. It will be readily seen that this is a very small proportion in comparison with what might have been expected in these 712 cases, which might, in accordance with views widely held, be considered as essentially predisposed towards its occurrence. There is a strong Mahomedan belief that the loss of any member of the body and consequent deformity in this world will preclude admission to the enjoyment of the after-life, and it was deemed expedient to conform to this general feeling as much as possible so as to avoid prejudicing opinion against the eye-work as a whole. It was under these circumstances that I was able to realise that the occurrence of sympathetic iritis is apparently a very greatly over-rated element of danger and that expectant treatment need not be insisted on, as it can be suitably encountered should it occur. Of the large number of eyes (an average of 712) already referred to as "disorganised" by previous inflammatory changes only 139 were removed by operation. The principle which eventually guided me in the treatment of all these cases was never to remove an eye which possessed any perception of light or where there was any possibility of such restoration, provided there were no signs of inflammation present to make its removal an urgent matter; also never to insist on the removal of any simply disorganised eye unless the patient voluntarily expressed such a wish, because the operation, although its technique is so simple, is sometimes, though only very occasionally, followed by extreme collapse which it is difficult to foresee or even to understand.

There were 28 cases of direct *trauma of the globe*, 22 of these being rupture caused by violence; in seven of these latter symptoms of sympathetic iritis had supervened on admission to hospital.

Cases classed under affections of the iris formed 3·3 per cent. of the gross total, and nearly half of them were *iritis* of varying form.

Disturbance of the *lacrymal apparatus* formed 1·8 per cent. of the whole series; two-thirds of them presented inflammation of the sac which was occasionally bilateral, when there was frequently a fistula established as well. There were two cases of complete obliteration of the nasal portion of the passage, and they were restored by a means of operation which ultimately became the assured groundwork for treating all cases of severe stenosis of the lacrymal duct. There were a few cases of a peculiar inflammatory induration of the skin and subjacent tissue occurring in young people, sometimes extensively, over the inner half of the rim of the orbit, and only occasionally associated with lacrymal stenosis; in most of these cases the surface had already become ulcerated, but this never extended beyond the palpebral area. It was readily submissive to treatment by simple curetting, attention to the lumen of the lacrymal duct, and suitable internal remedies.

Alterations in the lens were diagnosed in 325 of the cases (6·06 per cent.), 223 of these were due to *senile cataract* which not unfrequently had other local conditions also requiring operation; marked differences in the densities of the nucleus and periphery of the lens (Morgagnian) were unusually common. There were 33 cases of *lamellar cataract*. They occurred in young people between four years and 27 years old; they were almost without exception entirely devoid of any trace of constitutional disease, but some of them were the subjects of anæmia which was then often extreme and could usually be ascribed to the presence of bilharzia hæmatobia. The history of the cases was in many instances strikingly similar and could not be disproved by any cross-questioning. The simple narrative was that the patient had gone to bed at night with the eyes quite normal, but on waking in the morning vision was no longer possible and the eyes presented the condition noticed on admission. Other than this unvarying and peculiar history no abnormality was ever discerned, either at the time of operation or subsequently. Cataract was familiar to the people and was termed "*moya bayda*" (= white water), they thus distinguished it from glaucoma which they called "*moya zarqa*" (= blue water).

Changes in the equilibrium of the external muscles of the eye were extremely common; the condition of strabismus was so universally distributed amongst all classes that it scarcely provoked comment, nor was it even held to militate against the personal appearance; it was only when some particular paralysis or paresis supervened and caused diplopia that resort to treatment was deemed advisable.

The operative procedures required in this series of 5358 cases amounted, exclusively of minor ones, to a total of 7081, which was a yearly average of 885; for simplicity they were classified according to the site of operation, and a few of them demand special reference.

In cases of pterygium the extraneous tissue was made tense by raising it on a tenotomy hook, and with an angular keratome it was then carefully dissected off from the surface of the cornea. Its base was excised with scissors from over the sclera, and the process of repair was only aided by sutures when the resultant gap was of considerable extent; this occurred in 77 out of 117 operations. In symblepharon a similar procedure was followed, care also being taken, as in the preceding operation, to remove all débris thoroughly from the corneal superficies, and so avoid the subsequent formation of dense cicatricial opacities. The difficulty of maintaining the separation of the opposing denuded surfaces was overcome by everting the eyelid, and retaining it in that position by fine wire sutures of silver to neighbouring parts of the face, until healing of the bulbar surface was complete. Mention has already been made of the employment of the actual cautery at a dull heat in cases of epithelial xerosis; none of the many other methods tried was of any avail. The sub-conjunctival injection of a solution of cyanide of mercury, 1 in 1000, as practised by Darier and others, proved a most efficient remedy in obstinate cases of keratitis, uveitis, and also in some affections of the fundus, such as optic neuritis, partial optic atrophy, retinitis, &c.

In all cases of corneal abscess requiring operative interference the actual cautery was employed in preference to Saemisch's more radical method, as it was equally efficient and practically produced no marked deformity. The cautery was used in all other infective processes of the cornea, such as serpiginous and allied ulcers, epithelial xerosis, &c. When "*sheeshm*," as already mentioned, had become impacted it could usually be removed in great part by scraping, as could also the raised dense nebulæ which were met with occasionally, thus restoring a useful and clear cornea. Staphylomata were usually opaque in part, and if not extending beyond the corneal area they could frequently be reduced in form by suitable partial excision and suture; a more sightly appearance was thus produced which could be further enhanced by tattooing, and occasionally made useful by the performance of a visual iridectomy. No untoward incident occurred in the 48 cases thus treated. The most satisfactory way of abolishing the condition referred to as "vascular cornea" was by gently slitting the larger trunks of the vessels longitudinally, as they ramified on the cornea, thus converting them into open canals; it was readily done by a small Graefe's knife with the aid of a large magnifying lens, and the insignificant scratches thus made were treated as simple abrasions until healed. The almost imperceptible striæ marking the site of the obliterated vessels ultimately disappeared under appropriate treatment. Dividing the vessels transversely near the limbus as subsequently suggested by Schmidt-Rimpler, is not nearly so

certain and efficient, because a process of repair by anastomosis can be so readily established; the same remark applies to the operation of peritomy whether by excision or by the cautery. The above slitting of the vessels was done in 334 instances.

Blepharophimosis was a condition which often required relief, and in 159 cases a simple canthectomy was sufficient, but in 460 a more complete canthoplasty was necessary; after division of the canthus, the bulbar conjunctiva was undermined and attached to the respective prolonged margins of the lids, which were then kept apart during healing by withdrawal of the upper lid towards the eyebrow by means of a fine silver-wire suture. Ectropion, operated on 84 times, was overcome in 22 examples by shortening the length of the lower eyelid at its outer end and forming a new canthus there; there were 27 instances of ectropion due to hypertrophy of the conjunctiva in the upper fornix, occurring in neglected cases of ophthalmia neonatorum. Successful results were obtained by introducing thick silver-wire splints into the substance of the lid, thus controlling the deformity whilst appropriate treatment was being employed for subduing the inflammation.

For the purposes of operation the condition of trichiasis and that of districhiasis were divided into "total" and "partial"; the latter term included those cases in which the distorted eyelashes were single and separate or were in small isolated groups. The most certain method with them was to cut down on the eyelash from the skin surface, excise it completely, and close the wound afterwards with a fine suture. In treating "total" trichiasis the best results were obtained by regarding the tarsal cartilage as a mal-curved long bone and bisecting it on its inner surface above the level of the roots of the eyelashes, then everting this lower portion and retaining it in its altered position until sufficient union had taken place, which was usually in six days. This operation was not only speedy, but its results were eminently satisfactory both to the surgeon and the patient; there was no external deformity produced or indication of operation, the eyelashes had assumed a normal relation to the cornea and globe of the eye, and the conjunctival surface of the lid presented a smooth and level surface on which the white cicatricial mark alone indicated operative interference. There were a few patients whose general weakness made it incumbent for an extremely rapid but efficient operation to be done, and where personal appearance was immaterial, in such cases one deep incision was made along the whole length of the free border of the eyelid, and the roots of the eyelashes thus exposed were destroyed by use of the actual cautery. Many cases of interstitial xerosis of the cornea associated with total trichiasis showed marked improvement after the latter had been cured by operation; in one case of simple interstitial xerosis the eyelids were stitched together, but the improvement obtained was not sufficiently marked to encourage repetition.

In cases of glaucoma iridectomy was performed in preference to sclerotomy. With regard to all operations involving the iris there was very little local irritation subsequently, and this was ascribed to the minutely careful toilet of the injured parts which was made before applying the dressing.

There were two cases of lacrymal obstruction in which the lacrymal duct and its osseous wall were completely obliterated; these were fully restored by the drilling of a fresh passage. This served as a useful basis subsequently in rapidly and efficiently combating other hitherto obstinate cases where there was partial bony obstruction. Eventually, by noting in each case of lacrymal stenosis the extent and degree and also the position of the narrowing of the lumen in the lacrymal duct, much information was gained which had hitherto escaped notice, it being found that the strictures varied greatly in every way. Those which were indurated, cicatricial, or osseous were enlarged sufficiently by drilling, and styles were then introduced until the wall of the widened passage had again been covered by epithelium. When chronic inflammatory congestion and consequent new formation of tissue was the cause, constant pressure by suitably adapted styles of lead wire produced sufficient effect when accompanied by the use of astringent lotions and other applications. In every case where the lacrymal passages were implicated, attention was first directed to the conditions of its effluent portion, and when this was properly restored other abnormal conditions quickly submitted to the usual methods of treatment, as obtained elsewhere in the body. Fistulæ of the lacrymal sac thus readily yielded to scraping, cauterisation, or fuller reparation, as each case might require. Tumours involving the lacrymal passages were met with; they were sometimes far advanced in growth and so involved that operation was not always possible.

In the preparation of cases for removal of cataract, besides the proper regulation of the bowels and the general cleanliness of the patient the local surroundings of the eye were carefully attended to; the eyebrow was shaved and the eyelashes cut off closely, the parts were then washed and a dressing with a mercurial ointment was applied for 48 hours. At the time of operation the instruments were sterilised by boiling and were placed in a 4 per cent. boric solution. With lamellar cataract the attempt was made, and nearly always successfully, to remove the whole of the lens matter at one sitting. The pupil of the eye having been dilated, the lens capsule was incised and the substance of the lens was disintegrated with a linear cataract knife, which when withdrawn enlarged the point of entrance sufficiently to allow of the ready introduction of a narrow curette for the complete removal of the lens matter; the lens capsule, often also opaque, was sometimes extracted by forceps. By following this method, irritation and inflammatory reaction were reduced to a minimum, as was also the risk of extraneous infection by repeated operations. In some instances where the patients approached the age of 20 years or exceeded it, the lens was so dense that it had to be removed by the ordinary method of linear incision; this was done on 37 occasions.

In the operation for senile cataract the lens was removed through a linear incision situated well forward from the limbus and usually in the upper segment of the cornea; this incision seemed to heal more readily than when placed further back and it also decreased the proneness to the iris prolapsing. Iridectomy was not performed in 96 of the operations (28·7 per cent.), which numbered 330; as there are many factors bearing on this part of the technique, the decision was always relegated to the actual time of operation and it was only performed when seemingly unavoidable. There was occasionally some loss of vitreous, but in no way did this seem to diminish the ultimate acuity of vision. Experience proved that covering the operated eye and leaving the other one free was sufficient; the dressing used was a small sterilised one of dry absorbent wool with a small piece of vaselined gauze on its surface next the skin.

Condensed Statistics of In-patients, Eye-section, Kasr-el-Aini Hospital, Cairo, Egypt, from Jan. 1st, 1891, to Dec. 31st, 1898, classified according to the Principal Diseases for which they were Admitted, and the Operations according to the Area of Tissue in which they were Performed.

Diseases.			Tissue involved.	Operations.		
Percentage of total.	Yearly average.	Total.		Total.	Yearly average.	Percentage of total.
13·8	92·7	742	Conjunctiva.	273	34·0	3·8
34·4	229·7	1838	Cornea.	519	64·8	7·3
28·2	188·7	1511	Eyelids.	3040	380·0	42·9
1·9	13·1	105	Fundus.	—	—	—
9·8	66·0	528	Globe.	187	23·3	2·6
3·3	22·1	177	Iris.	2343	293·5	33·1
1·8	12·1	97	Lacrymal apparatus.	168	21·0	2·3
6·06	40 6	325	Lens.	513	64·1	7·2
0·14	1·0	8	Ocular muscles.	18	2·2	0·25
0·42	2·8	23	Orbit.	12	1·5	0·16
0·07	0·5	4	Sclerotic.	3	0·3	0·04
100·0	669·7	5353	*Gross total.*	7081	885·1	100·0

(*N.B.—Fractions are not fully extended.*)

It was covered by a piece of muslin the edges of which were fastened by flexile collodion to the skin around the orbit; this remained untouched for from four to six days, when it was replaced by a similar dressing applied daily under a bandage. Ordinary diet was given. Although every effort was made to insist on the recumbent posture being maintained it was

obeyed in comparatively few instances, and yet the satisfactory progress of the cases was unimpaired. The patients, whenever possible, were detained in hospital until a complete result had been obtained, because the bulk of them, being illiterate and not ambitious to work more than was necessary, were apt to be content only with a degree of vision which would enable them to walk about readily alone. There were 40 operations on secondary capsules.

Two cases of detachment of the retina were operated on by posterior puncture with an entirely successful result.

With regard to tumours of the orbit, it was occasionally found difficult to obtain consent for their complete removal in those cases where the growth had not yet involved the globe; consequently they sometimes attained most unusual proportions before the necessary assent was expressed, and by then the operation was often no longer useful and sometimes was even impossible.

Harley-street, W.

THE PATHOGENY OF GOUT.[1]

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IN this effort to elucidate one of the most obscure problems in medicine I begin by declaring that my position is that of the clinical investigator, and that much of my past study respecting gout has been directed to prove what are the exact manifestations of this malady as distinguished from other morbid states often confounded with it. As we shall find, the secret of its precise pathogeny has not yet been wrested from nature by the most skilful masters of chemistry or physiology, although some of our best conceptions of it have issued from these sources. The clinician has much to do in pursuing this inquiry.

In one of the best modern text-books on medicine, that of Professor Osler of Baltimore, it is declared that "the nature of gout is unknown." Is it too much to expect that after our deliberations to-day we shall be able to refute this opinion as well as that of M. Rendu who remarks: "Il est encore impossible de formuler une pathogénie définitive comme de donner une définition exacte et complète de la goutte"?

Without undue presumption I may venture to claim for my countrymen, and especially for the veteran Alfred Garrod, still enthusiastic in the pursuit of knowledge, a creditable share in the elucidation of this recondite subject. I may add that while my country has long been, and still is, a classical soil for gout, there is happily less of it in the acute form than there was a century ago.

In entering on a study of the question before us it appears to be the safest course to state the fundamental facts respecting gout upon which all observers are agreed. We recognise, therefore, in gouty persons a special diathetic habit or proclivity, more marked in some countries and races of men than in others—one which, like other diatheses, may be inherited and transmitted and may also gradually be acquired and modified. Next, we recognise a peculiar condition of the blood which is abnormal in respect of the presence of uric acid (urichæmia); and, lastly, we find in various localities of the body deposits of urate of soda. In any patient presenting truly gouty symptoms we expect to meet with at least the first and second of these conditions. In many cases, however, we can find no ante-mortem evidence of uratic deposit, nor, indeed, do we always find this post mortem. It is further certain that persons may be gouty in various degrees, presenting all varieties from the acute to the chronic forms, including the phases of irregular or incomplete gout.

The primary cause of gout doubtless lies in some constitutional defect of nutrition which permits the development sooner or later of its symptoms. With Noël Guenneau de Mussy I would say that this defect is the veritable disorder —"un trouble profond, primordial, qui a sa racine dans l'ensemble de la constitution et dans la race elle-même." It is in this direction that we have to push our inquiry. The tissues and their intimate modes of nutrition differ in the gouty from those not similarly impressed.[2] What is the nature of this difference?

Many of the most thoughtful students of gout have long been impressed with the fact that gout as a morbid state is not expressed or fully explained by the mere aberrant relations of uric acid in the body. Urichæmia of one variety is certainly a factor in the case, but it is itself the result of an antecedent faulty nutritive metabolism ("le trouble primordial").

In recent years much labour has been expended in the effort to determine the site or sites of production of uric acid in the body but at the present moment the best physiological authorities are not agreed upon this matter. The true solution of this question in regard to gout is probably only to be found by a study of the metabolic processes in the human subject, inasmuch as the origin of uric acid may possibly differ in different animals, and it may conceivably own special and abnormal sources in the gouty subject. Herein lies one of the great difficulties of the problem. Time forbids me to enumerate the different views which are held regarding the sites of formation of uric acid. It will suffice to state that the latest researches point to the kidneys as the organs in which it is alone produced from a conjugation of urea and glycocine, and this view has the support of Garrod, Latham, and Luff, who also maintain that uric acid is never present in normal blood but is always excreted by the kidneys which produce it. Charcot and Murchison regarded the liver as the principal seat of uric acid formation, but the latest researches tend to show that in gouty conditions the liver does no more than supply by undue stimulation an excess of urea and glycocine as antecedents for conversion by the kidneys into uric acid. Garrod and Luff believe that the source of uric acid is the same in the gouty as in healthy persons, but regard the kidneys as inadequate in the former to excrete it. This inadequacy is probably one of the peculiarities of the tissues of the gouty individual. Ebstein presumes as part of the abnormality in these persons a wider field for uric acid production and believes that gouty subjects may form it in muscles and bone-marrow as well as in the kidneys. We wait for proof of these assertions from the eminent professor at this sitting. So far as we know, this renal inadequacy to excrete uric acid normally from time to time is not manifested by any alteration of tissue recognisable by the microscope. It is quite apart from any degree of interstitial nephritis which is apt to supervene in the later stages of gout.

Kolisch of Vienna will tell us to-day that some antecedents or allies of uric acid constitute the *materia peccans* of gout and that certain alloxur bases induce a form of renal degeneration which precedes the development of gout. I think, on the contrary, that the fact of urichæmia in gout is proved and I deny that any recognisable degree of renal degeneration exists in the majority of patients who suffer from regular gout, at all events in the early course of the disease.

So far, then, as gout depends on urichæmia we have to consider whether its manifestations are associated with (*a*) an over-production or (*b*) a diminished excretion of uric acid.

We know that over-production of this acid occurs in some other diseases without including any gouty symptoms, as, for example, in anæmia and leukæmia, and it has been proved that a diminished excretion of it is the rule in gout. Further, it is known that agents which diminish excretion of uric acid tend to induce gouty symptoms in predisposed persons. The latest researches indicate that consequent on renal inability to excrete the uric acid formed in those organs absorption of it into the blood takes place, with liability to gout. Other varieties of urichæmia appear to depend on the transformation of nuclein derived from leucocytes or on the production of uric acid in areas outside the kidneys, and these urichæmic states in no degree determine gout, renal function being adequate. I accept the teaching of Garrod, Roberts, and Luff respecting the condition of the blood in gouty urichæmia. Uric acid is present in the form of a soluble, but unstable, gelatinous quadriurate of sodium. This is non-toxic and gives no evidence of its presence in the system, but it is readily converted by sodium carbonate in the blood into the bi-urate which is a

[1] A paper read in the Section of Internal Pathology at the Thirteenth International Medical Congress, Paris, on August 6th, 1900. The conclusions were published in our issue of August 11th.

[2] Hence may we not affirm with Jaccoud, "Au fond, la goutte est toujours une maladie chronique"?

crystalline and noxious salt. The precipitation of insoluble bi-urate of sodium from the gelatinous quadriurate is apt to occur whenever the blood is surcharged with the latter, and this appears to be coincident with a specific gouty crisis and a localised attack. The crystals thus formed are irritating to any tissue in which they may be deposited.

The greater frequency of gout in persons who take little exercise and habitually consume strong food and liquors in excess of their physiological requirement is to be attributed partly, if not entirely, to the disordered hepatic metabolism thereby induced. Whether uric acid is formed in the liver and other tissues in persons of a gouty habit is, as we have seen, not yet determined. I am disposed to regard with favour the hypothesis of Ebstein that amongst the peculiarities of the gouty subject there may be a tendency to form uric acid in abnormal situations, and to agree further with him in the view that this peculiarity of tissue may be transmitted to the progeny in varying degree, sometimes, perhaps, in a latent condition, but yet capable of being roused into activity by habits of life provocative of gout.

We are here, however, in a region of conjecture, and the nearest point of certainty we can reach for the present is to regard this humoral part of the pathogeny of gout as dependent on a special mode of tissue metabolism inherent in the subject of it, implanted in varying degrees and capable of transmission. This view receives support from our knowledge of cases of what is termed "poor gout," in which we find that the disease is well marked although the patient leads the most prudent and abstemious life. The intimate metabolic fault is present and gouty developments occur without any direct provocation from without. The patient inherits the peculiar defect of his tissues, a degradation, as it were, from the normal condition, constituting, as suggested by Gull, a reversion to a lower animal type of metabolism, a peculiarity, possibly, as Sir William Roberts thought, of a vestigial nature. With Bouchard we may regard it as a "ralentissement diathésique de la nutrition." In the realm of pathology there are doubtless other tendencies and states which are developed and transmitted in like fashion.

The foregoing conceptions are supported by the doctrines applicable to other diathetic conditions. Up to this point, however, the theory laid down is founded on a basic tissue-defect, leading to a purely humoral pathogeny for gout.

This I regard as incomplete and inadequate to explain all the phenomena of gout. We have yet to discuss the relation of urichæmia to the different symptoms of the malady, and in particular the specific determination of urate of sodium to the joints, especially in the earlier stages and the classical form. In my opinion another element has to be considered which materially influences the character of the disease. This is the nervous element and to this we must now direct our attention. I am entirely in agreement with the doctrine of the Parisian school in respect of the arthritic diathesis.[3] This was the original conception, I believe, of Féréol,[4] adopted by Pidoux, G. de Mussy, Charcot, and others, and it is now accepted by some British authorities. The subjects of this basic habit of body are especially prone to suffer from rheumatic and gouty disorders. Under provocation, whether from the *materia peccans* of rheumatism or the urichæmia of gout, the specific manifestations of these states are mainly directed to the articular system. I take note at this point of nervous or neuro-trophic influence, and, encouraged by the analogy of other arthropathic conditions, venture to agree with those who predicate the existence of a nutrient centre for joints situated probably in the medulla oblongata. There are good reasons for the belief that derangement of this trophic centre induces marked changes in joints such as occur, for example, in rheumatoid arthritis or in locomotor ataxia. I believe, then, that the second factor in the pathogeny of gout is a disordered condition or neurosis of this centre whereby the manifestations of the urichæmia are specially determined to the articulations. I also believe that this peculiar neurosis influences the features of rheumatic fever, an infective disorder affecting persons of arthritic habit. In cases of ab-articular gout we have to deal with the chronic and irregular phases of the disease and are then in the presence of a gouty cachexia pervading the whole system. ("Totum corpus est podagra.") No careful clinical student of gout can fail to recognise the nervous element in the disorder. The onset of a paroxysm is often due to such influence. The condition of urichæmia grows up, as it were, to saturation. A nerve storm is aroused by mental influences or arises either out of shock, depression, or excitement, and forthwith the crisis occurs and the attack is localised.[5]

Twenty years ago I ventured to submit the opinion that the peculiarities of the gouty habit were altogether the outcome of a central tropho-neurosis. My friend, the late Professor Ball of this school, in reviewing my theory reproached me with "seeking to localise at too limited a point the primordial lesions of a malady essentially general, one which is, and always will be, typical of one of the best diathetic conditions." I now confess that his criticism was just, and an extended study of the subject disposes me to limit the influence of the nervous system more particularly to the phenomena of paroxysms, metastases, and the determination of the sites of uratic deposit. I hold firmly to the idea that none of these occur casually or indiscriminately, but that local conditions of tissues are assigned, under neuro-trophic influences, for gouty manifestations. There must be some directing and determining force in the case. I cannot conceive of such a specific process occurring independently of nervous influence.

Let me remind you that this part of our inquiry is altogether outside the scope of experiment in chemical or physiological laboratories. The clinician has alone to find the key which will disclose this mystery.

I claim therefore for gout a dual pathogeny and speak of it as a neuro-humoral disease. This conception is not new. It was certainly adduced by Sydenham in the quaint terminology of the seventeenth century. Cullen of Edinburgh discarded the humoral side and exclusively developed the theory of the nervous origin of gout. By so doing he long prevented the study of the subject on profitable lines of inquiry. Garrod and the majority of modern investigators have, with rare skill and intuition, developed the humoral theory, and much, if not altogether, discarded the nervous element in the pathogeny of gout. For an adequate explanation of this malady we have to include both the hæmic and the neural elements which present themselves, and this was the doctrine of Laycock, taught 40 years ago in Edinburgh. Time forbids me to enter on multitudinous details of interest and importance in relation to the disease as a whole. I would add that we have to conceive of the gouty habit and tendency as originating and transmitted in varying degrees, as blended sometimes with, and modifying, other diathetic states. Yet it is always specific and ready to assert itself. Some persons are not, and cannot become, gouty, just as some are not, and cannot become, scrofulous.

I believe that the tendency to gout may be originated in persons not disposed to it by habits of life which are known to provoke it, together with excessive nervous exhaustion; and if these conditions fail to induce overt gout in certain individuals they may be potential to influence and modify the trophic processes in their progeny so as to induce gouty manifestations. Unless the descendants of such parents lead very different lives from those of their progenitors they are hardly likely to escape the worst effects of their inheritance, and even when such children lead lives of temperance and activity there may often appear in them the signs of irregular or incomplete gout.

Respecting uratic deposit as a permanent indication of past gout in any part I would express my belief that this is not always to be found. It is most likely to remain in non-vascular tissues, such as cartilage, but even from this and other textures I believe it may be removed in course of time, provided the patient ceases to suffer from repeated attacks. It is also certain that deposits may be formed in abundance without any painful paroxysms of gout. My experience further shows that patients with a tendency to excessive deposits do not always have, as has been alleged, obviously damaged kidneys. There may be only slightly marked interstitial changes. The special features which entail incapacity and inadequacy in the tissues of the gouty subject are, as I have already stated in respect of the kidneys, incapable of detection by histological methods.[6] We only recognise them by the symptoms they induce, and

[3] I also accept the teaching of M. Bouchard respecting the different diatheses.

[4] Some attribute this to Bazin.

[5] "A slight excess of any kind, whether in diet or exercise, will excite the disease in those predisposed to it. When the train is laid an additional glass of claret may have acted as the match, but in all such cases the explosion would have equally taken place had instead of claret some other exciting cause fired it." (On Diet and Regimen, Dr. Paris. London: 1837.)

[6] The same is the case in diabetes mellitus where no histological faults have as yet been discovered but in which a grave metabolic defect exists.

we know that the peculiar metabolism of such persons is morbidly sensitive to impregnation of the system by agents such as iron, lead, or alcohol.

To sum up my conceptions respecting the pathogeny of gout I will venture to affirm:—

That gout as a morbid condition depends on an inherent vice of nutrition, which is manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys and probably in the liver.

That this trophic disorder or inadequacy ("ralentissement de nutrition") leads to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (gouty urichæmia).

That histology throws no light upon the intimate nature of this defect, which thus relates to cellular potentiality, possibly under neuro-trophic influence, and not, so far as we know, to structural alteration.

That this textural disability, or a tendency to it, may be primarily acquired and also transmitted as a fault, thereby inducing from time to time urichæmia with gouty manifestations in the descendants.

That in most instances, under conditions which provoke it, and in some cases independently of these, attacks of gout may grow up and come to a crisis. Such crises are attended by an alteration in the solubility of the uratic salt in the blood, whereby irritating crystals of biurate of sodium are produced and precipitated in various parts of the body.

That a paroxysm of gout, the sites of its occurrence, and its metastases are determined by nervous influences, probably dominated from a bulbar centre, and that the local attacks alight either in the joints or in textures which have been weakened or rendered vulnerable by impaired nutrition owing to past injury or over-use.

That this central neurosis is an essential and transmissible feature in the pathogeny of gout and pertains to the arthritic diathesis generally.

That the urichæmia of gout is peculiar and unlike that which is induced by other morbid conditions, but that the occurrence of urichæmia in the gouty is by itself inadequate to induce attacks of gout.

That uratic deposits in any part of the body may be removed in course of time but are apt to be permanent in the least vascular tissues.

That uratic deposits may occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms.

That the clinical features of gout indicate that both hæmic changes (due to inherent morbid tissue metabolism) and a neuro-trophic disturbance act as pathogenic factors, and that consequently gout is to be regarded as a neuro-humoral malady.

DIPHTHERIA IN THE HORSE.

BY LOUIS COBBETT, M.D. CAMB., F.R.C.S. ENG.

(From the Pathological Laboratory, Cambridge.)

ON May 22nd, 1900, Dr. A. Mearns Fraser, the medical officer of health of Portsmouth, sent to this laboratory a culture of a bacillus which he had obtained from the nasal discharge of a pony and which had appeared to him to be identical with the bacillus of diphtheria. The history was as follows. A little girl having fallen ill of diphtheria Dr. Fraser, while seeking the source of the infection, found that a pony belonging to the child's father was ill with a purulent and slight sanguineous discharge from its nose. Subsequently the animal suffered from enlargement of the glands under the tongue and laryngeal obstruction, with difficulty of breathing and retraction of the abdominal wall, and a bacillus obtained from the nasal mucus having been pronounced morphologically indistinguishable from the diphtheria bacillus the animal was killed.

The bacillus which I isolated from the culture sent to me had the usual appearance and habit of growth of the bacillus diphtheriæ. It belonged to the short variety. It did not liquefy gelatin, it formed acid in media containing glucose, it clouded beef broth and subsequently cleared it, and, like many diphtheria bacilli freshly isolated from man, it formed only a scanty film on the surface. It was pathogenic to guinea-pigs, causing local hæmorrhagic œdema and the general symptoms which are seen in these animals when they are inoculated with the bacillus diphtheriæ. It formed a powerful toxin, the filtrate from broth cultures causing a little œdema at the seat of inoculation, followed in about 10 days by falling out of the hair in the neighbourhood, widespread hæmorrhagic œdema and necrosis of the tissues immediately affected, or death, occurring sometimes within 24 hours, according to the quantity of poison injected. The effect of injecting large doses of living culture, or even 100 fatal doses of filtrate was completely neutralised by diphtheria antitoxin.

The following experiments were made.

TABLE I.—*Living Broth Culture 24 Hours old.*

Weight of guinea-pig in grammes.	Quantity of: Culture in cubic centimetres.	Quantity of: Antitoxin in cubic centimetres.	Result.
290	0·1	0·0	Œdematous swelling about the seat of inoculation. Death on the sixth day.
280	1·0	0·01 = 5·5 units.	Remained well.

TABLE II.—*Filtrate of a Broth Culture Five Days old.*

Weight of guinea-pig in grammes.	Quantity of: Culture in cubic centimetres.	Quantity of: Antitoxin in cubic centimetres.	Result.
340	0·1	0	Small œdematous swelling. Recovered.
360	0·5	0	Small swelling following by loss of hair about the seat of inoculation. Recovered.
380	1·0	0	Œdematous swelling. Necrosis. Recovered.
320	5·0	0·01 = 5·5 units	Remained well.

TABLE III.—*Filtrate of a Broth Culture 11 Days old.*

Weight of guinea-pig in grammes.	Quantity of: Culture in cubic centimetres.	Quantity of: Antitoxin in cubic centimetres.	Result.
415	0·05	0	Œdematous swelling. Death on the third day.
405	0·1	0	Œdematous swelling. Death on the third day.
400	0·5	0	Œdematous swelling. Death on the second day.
390	1·0	0	Death in 24 hours.
375	2·5	0	Death in 24 hours.
375	5·0	0·01 = 5·5 units.	Remained well.

It will be noticed that the filtrate which was used on June 6th was much less deadly than that which was used on June 26th. The reason, no doubt, is partly that that used on the last occasion was obtained from a culture which had been grown for 11 days, while that first used was obtained from one which had been grown for six days only. But there is also another reason: in the interval the culture had been daily re-sown on beef broth, and had thereby become accustomed to this medium and had come to form a denser pellicle on the surface of the liquid than before. Consequently it is probable that its power of producing toxin had considerably increased.

These experiments put it beyond doubt that the bacillus obtained by Dr. Fraser from the pony was a true diphtheria

bacillus; and I think we may conclude—though at present there is but a single observation—that the horse is liable to nasal and laryngeal diphtheria. The discovery is of practical importance, since it points out a hitherto unsuspected channel by means of which the infection may be carried to man. It is of scientific importance also, because it has a direct bearing on the question of the origin of antitoxin. As is well known the serum of normal man, both adult and infant,[1] and that of the horse which has never been immunised with the diphtheria bacillus or its products, have often the power of neutralising diphtheria toxin[2]; and it has been shown, in the case of the horse at least, that this protective serum unites with toxoids as well as with toxin proper, just as does the serum of an immunised animal—that, in a word, it contains true antitoxin.[3] The diphtheria antitoxin found in man is probably due, as A. Wassermann has suggested, to some previous attack of diphtheria, possibly unrecognised, while that found by Fischl and Wunsheim in the placental blood of infants may have been derived from mothers who had had the disease. Now that the horse has been found to suffer naturally from diphtheria the presence of diphtheria antitoxin occurring naturally in this animal is easily explained.

Professor Ehrlich,[4] however, has suggested another explanation of the natural occurrence of diphtheria antitoxin in man and horses which brings this fact into harmony with his most interesting *Seitenkette* theory of the origin of antitoxin. His argument may be shortly stated as follows: Foodstuffs must of necessity have a chemical affinity for some part of the substance of the cells which they nourish. He assumes that the molecules of the cells have "side-chains," and that the molecules of the food have "haptophoric" groups of atoms, by means of which they bind themselves to these side-chains of the cell molecule. The bacterial poisons and certain other poisons, such as venom, ricin, abrin, &c., also have "haptophoric" groups of atoms in their molecules which enable them to bind themselves to the molecular side-chains of the cells which they destroy. Now the living cells do not possess special kinds of molecular side-chains merely that they may be susceptible to the action of certain poisons; but it happens that the binding groups of each of these poisons are identical with the binding groups of some particular food-stuff, so that the poison is able to act by seizing on to a side-chain hung out, so to speak, to catch food. Experiment has shown that the injection of these toxins, or even of their binding groups alone (toxoids) into animals causes the appearance in their serum of a specific antitoxin; and that the injection of certain food-stuffs also, such as globulin, peptone, &c., produces specific anti-bodies (precipitins) strictly analogous to the antitoxins, in the serum of the animals injected.[5] From this it may be inferred that the injection of a food-stuff which has binding groups identical with those of a certain poison ought to produce the same anti-body as the injection of the poison itself. Thus Ehrlich suggests that diphtheria antitoxin in apparently normal animals is present as a consequence of the assimilation of some food-stuff which has the same binding groups as diphtheria toxin.

I do not wish to enter into any general discussion of, much less to attack, the *Seitenkette* hypothesis, which knits together, and is supported by, so many observations; but I must point out that the fact that the horse may suffer from diphtheria suggests a much easier explanation of the occurrence of diphtheria antitoxin in this animal than that put forward by Ehrlich. Moreover, the fact that all horses do not possess this natural antitoxin is more consonant with the view that it is present in those which have accidentally contracted the disease than with that which attributes it to the assimilation of a certain food, seeing that the food of all horses is so nearly alike. It is hardly necessary to mention that up to the present time no food-stuff has been found the injection of which will lead to the appearance of diphtheria antitoxin, and, so far as I can ascertain, no normal animal, with the exceptions already mentioned, possesses an antitoxin of any kind in its blood.

The fact that diphtheria antitoxin is present in many horses[6] in this country and on the continents of Europe and America suggests that diphtheria is a common disease among these animals; and this is in accordance with the well-known susceptibility of some of them to the action of diphtheria toxin. It is therefore possible that the horse may be found to play a not inconsiderable part in the transmission of diphtheria.

Cambridge.

[1] A. Wassermann: Deutsche Medicinische Wochenschrift, Leipsic, 1894, Band v., V.B., s. 120, and Zeitschrift für Hygiene, Leipsic, Band xix., s. 408. Orlowski: Deutsche Medicinische Wochenschrift Leipsic, 1895, s. 400. Fischl and Wunscheim: Prager Medicinische Wochenschrift, 1895, Heft 45 and Heft 51, and Zeitschrift für Heilkunde, Berlin, Band xvi., Heft 5 and Heft 6.

[2] Roux and Martin: Annales de l'Institut Pasteur, Paris, 1894, viii., p. 616. Meade Bolton: Journal of Experimental Medicine, New York, 1896, vol. i., p. 543. Cobbett: Journal of Pathology and Bacteriology, London, vol. iii., p. 328. THE LANCET, August 5th, 1899, p. 332. Centralblatt für Bakteriologie und Parasitenkunde, Jena, 1. Abtheilung, xxvi., s. 548.

[3] Cobbett: THE LANCET; Centralblatt für Bakteriologie und Parasitenkunde, loc. cit.

[4] Croonian Lecture, March, 1900; Proceedings of the Royal Society, London, vol. lxvi., p. 424.

[5] Myers: THE LANCET, July 14th, 1900, p. 98.

[6] Dr. Meade Bolton found it in three horses out of 12 examined by him in Philadelphia. I found it in nine out of 13. Of these 10 came from London and eight of these possessed an antitoxic serum, while the other three lived in Cambridge, and the serum of one only had an antitoxic action. Thus in a limited experience it was present in 80 per cent. of London horses and in only 33 per cent. of Cambridge horses. This corresponds with the much greater frequency of diphtheria in London than in Cambridge. Of course if I had examined another Cambridge horse and found antitoxin the percentage of those containing an antitoxic serum would have jumped to 50. One must, therefore, not attach much importance to this ratio. Moreover, in Meade Bolton's experience antitoxin was present in only 25 per cent. of Philadelphia horses, and diphtheria is twice as common in that town as it is in London.

THE INCREASE AND DISTRIBUTION OF CANCER IN EASTERN ESSEX.[1]

BY GEORGE MELMOTH SCOTT, B.A., M.B., B.C. CANTAB.

SOME 1000 deaths from cancer occurred within the two unions of Chelmsford and Maldon in Eastern Essex between the years 1871–1898 inclusive. This period contained two complete intercensal periods of 10 years each (1871–1880 and 1881–1890) and an incomplete period of eight years (1890–1898). In order to compare the mortality of one period with another it was necessary to calculate this last incomplete period to 10 years—i.e., the figures shown are ten-eighths of the figures of those obtained from the registers. These figures are shown in Table I.:—

TABLE I.—*Total Number of Deaths in each Decade.*

—	1871–1880.			1881–1890.			1891–1900.		
	Total deaths	Proportion of males to females.	Deaths per 1000.	Total deaths.	Proportion of males to females.	Deaths per 1000	Total deaths.	Proportion of males to females.	Deaths per 1000.
Persons ...	274	—	4·78	355	—	6·23	447·5	—	7·73
Males	93	51·38	3·22	135	61·36	4·74	203·75	83·59	7·05
Females ...	181	100	6·36	220	100	7·73	243·75	100	8·41

From this we see that the number of deaths per decade increased from 6·36 in the first, to 7·73 in the second, and 8·41 in the third. At first sight this would appear to be conclusive evidence of an increase but further investigation throws doubt upon it, for the same table shows that the increase is largely in the male population, while the female death-rate is much more nearly stationary. Thus to every 100 women dying from cancer in the first decade 51 men died; in the second decade 61 men died to every 100 women; and in the third 83 men to 100 women. A further analysis of the deaths among men is shown in Table II. Here the cases in which the cancer occurred in the lip, the tongue, the throat, the penis, and the testis, easily accessible parts, are separated from those in which it occurred in more deeply-seated organs. Perhaps the same results given in ratio will be more easily grasped and expressed in that way we may state that while in the three decades accessible cancer increased in the ratios of 1·0, 1·6, and 2·4, less accessible cancer increased in the ratios 1·0, 2·2, and 3·5—that is to say, the increase was much more marked in

[1] Abstract of a paper read before the section of State Medicine of the British Medical Association at Ipswich on August 2nd, 1900.

those parts of the body where it could be diagnosed by increased knowledge and skill on the part of the medical men certifying. Furthermore, only of recent years has the Registrar-General inquired as to the nature of the "tumours" and "growths."

On the whole, then, our figures tend to show that there has been some actual increase in the number of deaths due to cancer in the past 30 years, but my own impression is that the increase has been much more marked in the professional skill of the medical men certifying. The object was to test Mr. Alfred Havilland's theory by applying it to this part of the country. This theory postulates that (1) in the counties having a high mortality from cancer we

TABLE II.—*Cancer in Accessible and in Inaccessible Parts of the Body.*

—	1871–1880.				1881–1890.				1891–1898.			
	Males.		Females.		Males.		Females.		Males.		Females.	
	No.	Proportion, total = 100.	No.	Proportion, total = 100.	No.	Proportion, total = 100.	No.	Proportion, total = 100.	No.	Proportion, total = 100.	No.	Proportion, total = 100.
External organs.	10	3·6	80	29·2	16	4·4	100	27·7	24	5·3	87	19·4
All other organs.	46	16 8	64	23·4	101	28·0	84	23·3	162	36·1	129	28·8
Not stated.	34	12·4	39	14·2	22	6·1	37	10·2	16	3·6	30	6·7

find that the tributaries of the large rivers rise from soft marshes or other easily-disintegrated rocks and these fall into sheltered valleys through which the main rivers flow; (2) that these rivers invariably flood their adjacent districts during the rainy season and have generally their waters coloured by the suspension of alluvial matter; and (3) that the districts "characterised by the tertiary and more recent clays and other retentive soils have a very high mortality from cancer." In order to test the soundness of the theory we must first get a clear conception of the contour, geology, &c., of the district which we are investigating. This consists of the two unions of Chelmsford and Maldon, the former of which lies to the west of the latter, the two together forming a tract of country extending inland some 25 miles from east to west, while from north to south the distance is roughly from 10 to 15 miles. The district forms an irregular parallelogram, being bounded on the east by the North Sea, on the south by the river Crouch, and on the west by a line running north and south some six miles to the west of Chelmsford. The northern boundary is more irregular. The area of the whole is 175,231 acres. (In future I shall refer to the two unions together as the "area.") In one respect the physical features of the two unions differ markedly, for while the Chelmsford Union is entirely inland and is watered by small rivers only the Maldon Union is cut in two from east to west by the great salt-water estuary of the Blackwater, and is bounded on the south by the very similar estuary of the Crouch. The country lying on each side of these estuaries, and the seashore lying between their mouths, is extremely flat, the water being kept out by sea walls, and the fields intersected with small creeks and ditches, while, as the map shows, in many places there are "saltings"—i.e., land which grows a rough species of grass, although covered with salt water at high tides. This part of the country used formerly to be the home of malaria. The geology of the whole district might fairly be summed up in the one word "clay." Excepting along the course of the rivers and on the seacoast, where there is a deposit of alluvium, the geological map is coloured one uniform tint over the whole area. In the higher parts of the south-western division the clay is capped with beds of Bagshot gravel and sand, while small deposits of a similar character are scattered irregularly and sparsely over a large part of the rest of the area. From this short description it may be gathered that we have to deal with a district in parts of which, at all events, one would presume a very high cancer mortality, if Mr. Havilland's theory be correct. I shall now proceed to put this presumption to the test.

The report of the Registrar-General for the period 1881–1890 shows that the cancer death-rate for Essex is by no means high, although the soil of the county is largely clay, and although it bounds large estuaries and contains considerable tracts of low-lying land. Yet there are 32 counties in England and Wales with a higher mortality from cancer, as against 13 with a lower. This alone would tend to show that the geographical peculiarities of the county are not such as to promote the disease, and Table III.

TABLE III.—*Death-rates per 1,000,000 calculated to Standard Population—1881–1890.*

Areas.	Ages and proportion of persons.						Totals.
	25–	35–	45–	55–	65–	75–	
England	189	665	1311	1644	1393	524	5746
Essex	169	521	1140	1578	1410	619	5437
The two Unions ...	147	608	959	1231	1236	642	4823
Chelmsford Union ...	208	603	1089	1204	1306	695	5105
Maldon Union ...	54	613	781	1266	1137	566	4417

emphasises the point, for there we see that not only is the cancer death-rate of Essex below that for England, but the rate for these two unions with their large amount of foreshore is below that of the county as a whole, and yet, further, the rate for the Maldon Union, which is bounded by two large estuaries and contains large marshes and saltings, is below that for the drier union of Chelmsford.

If now we divide up our area into smaller units we arrive at some interesting results. In order to eliminate error as far as possible the whole area has been divided into parishes and groups of parishes in such a way that the population in each group shall not be less than 1000 and the death-rate has been estimated from the returns for the years 1871–1898. Time will only allow me to give an outline of the results. The highest mortality (8·9 to 8·02 per 1000 per decade) occurs in the Waltham and Purleigh groups. Of these, Great Waltham is situated in the extreme north-west part of our area. The soil consists entirely of clay, which rises in one part to a height of 230 feet above mean sea-level, and is nowhere less than 130 feet. It may be considered a fairly elevated parish. Through it runs the Chelmer, which is here little more than a brook, but such as it is the houses are mostly aggregated in its vicinity. The floods in this and other parts are seldom serious, as the rainfall rarely exceeds 25 inches per annum. The Purleigh group also lies fairly high, a large part of the surface being above the 100 feet contour, while it rises in one part to 170 feet. The village of Purleigh comprises by far the largest collection of houses within the group and is situated on a sharp slope. The low-lying part of the parish is liable to be flooded when Purleigh Wash is swollen by very heavy rains, but there are few houses in the vicinity. The lowest mortality occurs in the groups of Tollesbury and Wickham Bishops. Tollesbury (with the lowest death-rate of all) is extremely flat, the village being situated at an elevation of 85 feet only. The outline of the parish is roughly triangular, two sides of the triangle being formed by muddy foreshore, creeks, and saltings; more than half the parish is under water at high tide; there are no fresh-water streams. In contrast with the above is the Wickham Bishops group. Here the largest collection of houses is the village of Wickham itself, situated on a patch of gravel at an elevation of 230 feet, the village church forming a conspicuous landmark. Although the (fresh water) river Blackwater, which is liable to floods, bounds the group on one side, yet there are very few houses in the vicinity of the water. But the most striking differences in cancer mortality under closely similar circumstances are shown in the contiguous groups of Burnham and Southminster. Both include saltings and a large extent of marsh land; one has a long frontage to a tidal river, the other a (shorter) frontage to the low seashore. In both the majority of the inhabitants live in small towns. And yet, although Burnham town is on the banks of the river and Southminster town is situated at a distance from the water the former has a low mortality and the latter a high.

These six instances serve to illustrate the results shown throughout the entire area—viz., that in this part of Essex cancer death-rate bears no evident relation to the variations in the physical features of the country.

Assuming the truth of Mr. Havilland's theory we should expect, if anywhere, to find a high cancer mortality along the course of our rivers, for although they cannot be said to

be subject to very frequent flood or yet to run through very sheltered valleys, yet they rise from, and run through, retentive soil and overflow their banks whenever the rainfall is especially heavy. The facts of the case, however, tend to point to an opposite conclusion for those groups which lie on the banks and shores of our rivers and estuaries have with only one exception a death-rate below the average of the whole area.

Taking first the river Crouch we have already seen that in the Burnham group, situated at the mouth of the estuary, the mortality is low (4·24 per 1000). The groups to the west of this latter are those of Latchingdon, Stow Maries, and Runwell, with death-rates of 4·96, 4·71, and 3·96 per 1000 respectively, all of which are decidedly below the average of 6·70 per 1000. The proximity of the river Crouch, therefore, cannot adversely affect the cancer mortality in its neighbourhood. And the same conditions obtain with respect to the river Blackwater, the north bank of which is formed from east to west by the groups of Tollesbury (a small slip of Tolleshunt d'Arcy), Goldhanger, Langford (Hatfield), Boreham, and Springfield. These have mortality rates of 3·41, 4·99, 5·56, 7·86, and 4·54 per 1000, all of which are below the average, with the exception of that for Boreham. On the south bank of the river lie the groups of Bradwell, St. Lawrence, Latchingdon, Maldon, Woodham Walter, and Little Baddon, with death-rates of 6·64, 5·43, 4·96, 6·14, 4·70, and 6·26 per 1000, all of which, again, are below the average of the whole area, although somewhat higher than the rates which obtain along the north bank of the river.

If, then, we may attach any weight to the results of this inquiry we must look for the causes of cancer in some other direction than in an alluvial and clayey soil, subject to floods, for, to sum up, (1) the disease is less common within the county of Essex, with its clay soil and numerous estuaries, than it is in England as a whole; (2) although the unions of Chelmsford and Maldon contain an excessive proportion of marshy land and estuary yet their death-rate is below that of the county; (3) those parts of the two unions which include the greatest extent of muddy foreshore, creek, and saltings have a mortality below that of the two unions taken together; and (4) the disease is not especially prevalent in those places which are situated on the banks of the fresh-water rivers.

Witham, Essex.

THE MICROSCOPIC APPEARANCES OF THE MOTOR GANGLION CELLS IN FIVE CASES OF PERIPHERAL NEURITIS.

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(From Dr. J. Lindsay Steven's Wards in the Glasgow Royal Infirmary.)

THERE now seems to be little doubt that motor ganglion cells undergo certain histological changes as a result of injury to their peripheral terminations. The investigations of Nissl, Marinesco, Lugaro, Van Gehuchten, and others have established this as being beyond dispute. Nissl tells us that after injury to a nerve chromatolytic changes appear in the ganglion cells within 24 hours and that by the end of from seven to 14 days these changes have become very marked. They reach a maximum from the twentieth to the thirtieth day and remain stationary at that for some time. In many of the cells recovery takes place, due either to regeneration of the nerve or to the tonic or trophic influence of adjacent or other ganglion cells, so that at the end of about from two to three months it is difficult to recognise these cells as having at any time been abnormal. Certain cells, or groups of cells, however, do not recover, but, on the other hand, undergo complete atrophy and disappear. It seems established, then, that even as by Waller's law degeneration of a nerve-cell causes degeneration in its nerve-fibre, so injury to the nerve-fibre causes corresponding changes in the nerve-cell. This leads to the discussion as to whether the poisons causing peripheral neuritis affect directly the peripheral nerve-fibres or act by first poisoning its nerve-cell—whether, in other words, the peripheral part of the neuron displays a certain independence in presence of certain morbid processes or that a degeneration of nerves means a primary lesion, or at least some primary dynamic trouble in the cell, seeing that the cell constitutes the central part of the neuron. The question is difficult and it has led to much dispute. The truth would seem to be that the trophic function does not reside in one single part of the neuron but that the vitality of the whole depends on the vitality of each constituent part. The poison in peripheral neuritis being in the circulation will reach the whole neuron, and while it affects the vitality of the whole it is in its most outlying part—the distal end of the axon—that the histological changes are first recognised. That it is the peripheral part of the neuron which is chiefly or wholly so affected has been demonstrated in numerous cases of peripheral neuritis, for it has been shown in these cases that the proximal portions of the nerve, the nerve-roots, and in some cases the ganglion cells themselves, have remained apparently unaltered.[1] The onset, moreover, of the paralysis in the extremities of the limbs points to the conclusion that it is not only the terminals of the neurons but the terminals of the longest neurons that first show disintegration and are first to lose the power of conduction. It is not, however, the purpose of this paper to discuss in detail the pathology of peripheral neuritis, but rather to furnish an account of the microscopic examination of five cases of that disease, contrasting the appearances they present with those already referred to as having been produced experimentally in animals.

The spinal cord was examined in all the cases, but only in the last three could the medulla and pons be obtained. The cords and medullas were fixed and hardened in formol (10 per cent.), embedded in celloidin, and stained with (*a*) theonin, and (*b*) hæmatoxylin and eosin. The nerves examined were the median and radial in the arms, the anterior and posterior tibials in the legs, and in two cases the right vagus at the level of the clavicle. The terminal fibres of these nerves were chosen by preference for examination and many terminals in each nerve were examined. They were fixed and stained in osmic acid (1 per cent.) and the individual fibres carefully separated from each other in xylol. The anterior roots, which were fixed along with the spinal cords in formol, did not stain so as to show their myelin, but in the roots of the first three cases the axis cylinders and cone-like framework of the myelin could be made out to be intact, and I take it, therefore, that these roots had undergone little degenerative changes. Of the anterior roots in the other two cases I can give no opinion.

CASE 1. *Alcoholic neuritis affecting the lower limbs and associated with tuberculous pleurisy and peritonitis.*—A man, aged 30 years, a clerk, was admitted into the Glasgow Royal Infirmary on April 21st, 1899. The patient dated his illness from a sudden attack of breathlessness about six weeks before admission. He was going up stairs at the time and it was with considerable difficulty that he could get to his room. Since then he had been more or less constantly confined to his bed, the dyspnœa being at times very troublesome. Excess in alcohol for many years was freely admitted. On admission the patient was seen to be very ill. There was evidence of a large quantity of fluid in the left pleural cavity. There was double foot-drop and very little voluntary movement even in the flexor muscles of the feet and legs. Tactile sensation, as far could be made out, was not involved, but the muscles of the feet and legs were painful on pressure. A bed-sore was present over the left trochanter. Dyspnœa was urgent. He died on the 27th.

At the necropsy the left pleural cavity was found to contain a large quantity of blood-stained fluid. Both surfaces of the pleura were studded with tubercles. The left lung was completely collapsed but otherwise healthy. The right lung was œdematous but free from tuberculous disease. The heart muscle was soft and pale. The omentum was much thickened and infiltrated with tubercles. The peritoneum was also studded all over with numerous small tubercles. The liver, spleen, kidneys, and alimentary tract appeared to be healthy, but there was evidence of atheromatous changes in the vessels. Microscopic examination of the nerves in the feet showed a well-marked parenchymatous neuritis. Scarcely a normal fibre could be found, and in many of the fibres the coagulated myelin had entirely disappeared, leaving nothing but the sheath and its nuclei.

[1] Allbutt's System of Medicine, vol. vi., pp. 685 and 715.

The cord was examined at 19 different levels—viz., seven cervical, six dorsal, five lumbar, and one sacral. In the last of these (the upper sacral segment) the appearances were most interesting. Scarcely one single normal cell could be found and yet in none had the changes caused a complete disintegration of the cell structure. There were examples of all the different stages of chromatolysis, from the almost normal cell to the faint and almost invisible "ghost cell." In about half of the number of cells the Nissl bodies had become fragmented, giving the plasma of the cell a powdered appearance, but these fine powdered granules still stained with considerable intensity. In the rest of the cells the granules were evidently disappearing, first from around the nucleus, then on towards the periphery till some cells had only a narrow outer rim of these fine granules, the rest of the plasma being pale. There were a certain number of typical "ghost cells," but they were not numerous. The nucleus seemed affected in only a small percentage of the cells and in these it had become peripheral. Yellow pigment was found in about 25 per cent. of the cells, but it was small in amount, very faint in colour, and seemed to be made up of unusually fine granules. Indeed, unless under a high-power lens this pigment had the appearance of a diffuse yellow stain rather than of a granular deposit. In the lumbar region the appearances were much as above described, possibly more pronounced, more cells having undergone complete chromatolysis. It is also to be noted that in the lumbar region the postero-lateral group of cells seemed more affected than the anterior or antero-lateral groups. In the dorsal, and possibly in the upper lumbar, segments the ganglion cells were practically normal. A few cells in the centre of the anterior horns were paler than normal and showed some fragmentation of their granules, but the anterior cells (medial and anterior groups) were almost invariably normal. Of the cells in the lateral horn (intermediate group) it is difficult to speak with certainty as they are normally small and their appearances are not too well defined. In the uppermost cervical segments the conditions were as in the dorsal region. Throughout the cervical enlargement the degenerative changes in the anterior and lateral groups were even more pronounced than those found in the lumbo-sacral cells. In most of these cervical cells the fragmented granules had entirely disappeared, leaving the cells ghost-like, and in many the nucleus was peripheral. It is to be noted, however, that the small inner or medial group of cells were practically unaffected by these changes. It is difficult to speak with certainty as to whether or not the degenerative processes above described had caused the loss of a certain proportion of ganglion cells. but examination of many normal cords convinced me that in this case there had been no such destruction of cells. A number of sections from various levels were stained with hæmatoxylin and eosin, but beyond showing an undoubted colloid degeneration in the coats of the vessels there was no other abnormality to record.

CASE 2. *Typical case of alcoholic neuritis affecting both arms and both legs.*—A woman, aged 42 years, was admitted into the Glasgow Royal Infirmary on Oct. 16th, 1899. The patient stated that she was in good health up to five weeks before admission. The first symptoms complained of were feelings of "pins and needles" in the feet and legs, which gradually extended up to the middle of the thighs. Two weeks later the same sensations were experienced in the hands and arms. Loss of power in the arms and legs subsequently developed. There was a history of alcoholism extending over the past three years. On examination a well-marked wrist-drop was found to be present, the paralysis of the extensors of the wrists and hands being complete. The flexors were also involved but to a less degree. The movements at the elbow were all fairly good. There was double foot-drop. The patient could draw up her knees but she was unable to raise the feet from off the ground. There was some slight voluntary movement in the toes, but there was no movement at the ankle-joints. The prickling sensations were still complained of in the arms and legs, but careful examination could detect no definite impairment of the tactile, thermal, or pain senses. The knee and plantar reflexes were absent. There was no heart lesion and the respiratory movements were normal. There were incontinence of urine and fæces. The patient died on the 26th.

The necropsy was practically negative as regards macroscopic appearances. The lungs were somewhat congested and the liver was large and fatty, but the heart, kidneys, and spleen all looked quite normal. There was no atheroma noted in the vessels. On microscopic examination nerve-fibres from the arms and legs showed a very marked parenchymatous degeneration. Very few normal fibres could be found and the degenerative change was equally marked in the arms as in the legs. The cord was examined at 12 different levels—viz., three cervical, six dorsal, two lumbar, and one sacral. The appearances here corresponded closely to those found in Case 1, but they were more pronounced. In the sacral and lumbar regions there were almost no normal cells and those that did exist were situated in the most anterior part of the lateral groups. Most of the cells were "ghost cells," a few had the powdery granulation, and a certain proportion showed a complete disintegration of the cell plasma, there being in these not only loss of Nissl's granules but also absence of nucleus, and, indeed, of any internal structure whatever. In many of the cells the nucleus was peripheral. In the cervical enlargement the changes were similar to those in the lumbo-sacral, but they were more pronounced, there being more cells with peripheral nucleus and more with disintegration of their cell substance. But here again, as in Case 1, the median group of cells was practically normal. The cells of the dorsal region were normal except at the lowest segment, where in the lateral group there was a certain proportion of chromatolytic cells. The yellow pigment in this case is worthy of note. It was very abundant at all levels of the cord. Nearly every cell contained some pigment and at least half the cells had half their plasma occupied with the pigment granules. Many cells were entirely filled with it and it is to be noted that healthy cells were as much (if not more) pigmented as chromatolytic cells. The pigment granules in this case were larger and deeper in colour than those in Case 1. There was no apparent diminution in the number of ganglion cells at any of the levels. The sections stained with hæmatoxylin and eosin showed some small hæmorrhages, dilated vessels (especially veins and capillaries), and a well-marked colloid degeneration in the vessel walls.

CASE 3. *Alcoholic neuritis involving chiefly the lower limbs.*—A woman, aged 40 years, was admitted into the Glasgow Royal Infirmary on June 15th, 1899. The illness began about six weeks before her admission into the infirmary with a feeling of burning heat in the toes of both feet, and this gradually spread upwards as high as the knees. There were no subjective abnormal sensations in the hands or arms. For a fortnight before admission there was difficulty in walking. Sickness and vomiting persisted during the illness. For some years the patient had taken alcohol to considerable excess. She was in the habit of having quantities of whisky every day and of being intoxicated two or three times a week. On examination no definite paralysis could be made out in any of the muscles of the hands or arms, but the grasp in each hand was distinctly feeble. The loss of power in the legs was more apparent, though here again there was no complete paralysis, and the patient could stand without support, but not without staggering. Sensation was normal except for a dulling of the sense of pain on the dorsum of the right foot. There were no mental symptoms. The pupils were unequal, but they responded normally to light and accommodation. The patient died on July 4th.

At the necropsy the various organs were found to be healthy except the kidneys, which showed a commencing interstitial nephritis. Microscopic examination showed a well-marked parenchymatous degeneration in the nerves of the arms and legs and in the right vagus. This was perhaps most marked in the vagus and least in the arms, but in none of the specimens were many normal fibres to be found. The cord was examined at 15 different levels—viz., three cervical, eight dorsal, three lumbar, and one sacral. In the lumbo-sacral segments in almost all the cells there seemed to be a slight fragmentation of the Nissl bodies, though in none was this so extreme as to give the powdery appearance described in Case 1 and Case 2; indeed, the granules in this case were not so much lessened in size as that their shape was ill-defined, and they and their surrounding plasma seemed too deeply stained. About a third of the cells, on the other hand, were unduly pale, but this seemed to be caused not so much by an absence of chromatic granules as by these granules staining with less intensity than normal. It is to be noted, further, that these changes were more marked at the periphery of the cell than

round the nucleus and also that the cells of the postero-lateral groups seemed more affected than the cells more anterior. In the cervical enlargement the appearances were much the same, with perhaps a rather larger proportion of pale-staining cells. In the dorsal region there was practically no chromatolytic changes. Pigmentation was quite as abundant as in Case 2. As compared with Case 1 and Case 2 there seemed to be a smaller number of cells in the anterior horns, especially in the lumbar and sacral segments, but it is difficult to be sure that this is due to atrophy of a certain proportion of cells. A similar examination to the above was made of the motor nuclei in the medulla and pons, but there were no definite changes to be recorded. The pigmentation here, as in the cord, was extreme. The Nissl bodies, too, were rather ill defined, but there was no well-marked chromatolysis to be made out. It is to be noted that the cells in the motor nucleus of the tenth nerve were no more affected than those in the nuclei of the twelfth nerve, the eleventh nerve, and the seventh nerve. As in the last case, the vessels were dilated and their walls showed the colloid degeneration. There were no hæmorrhages and no perivascular dilatations or exudations.

CASE 4. *Alcoholic neuritis affecting the lower limbs and complicated with tuberculous pleurisy.*—A man, aged 42 years, was admitted into the Glasgow Royal Infirmary on Jan. 11th, 1900. He was first conscious of loss of power in the legs a month before admission to hospital, but he had complained of pains in his feet for a much longer period. For three years he had been most intemperate in his habits and during that time he had at least one attack of delirium tremens. On examination the lower limbs were found to be completely paralysed, their muscles being wasted and very flabby. There seemed to be loss of sensation in the legs, but the patient's speech was thick and indistinct and one could not be certain as to the accuracy of his answers. There was a small bed-sore over the sacrum. The knee reflexes and plantar reflexes were abolished. There was no paralysis in the hands or arms. The pupils were normal; occasionally slight divergent strabismus was to be observed. The patient died on the 12th, within 30 hours after admission.

At the necropsy the right pleural cavity was found to contain a considerable quantity of fluid and its lining membrane was studded with tubercles. The right lung was collapsed and on section there were seen to be several small tuberculous cavities scattered throughout its lower lobe. The left lung was congested and œdematous. The kidneys showed the appearances of commencing interstitial nephritis. The other organs seemed healthy. Microscopic examination of the nerves of both arms and both legs, as well as of the vagus, showed an undoubted parenchymatous neuritis. The condition was most marked in the vagus and about equally marked in the nerves of the four limbs. The cord was examined at 17 different levels—viz., five cervical, eight dorsal, three lumbar, and one sacral. In the lumbar enlargement almost all the cells showed a certain degree of chromatolysis and in the vast majority of the cells this consisted of a fragmentation of the Nissl bodies into smaller granules. These granules stained deeply and only a few cells could be found from which the granules had disappeared. In the sacral region (third sacral segment) the appearances were much the same, but a smaller proportion of cells was affected. The above changes were no more marked in one group of cells than in another. In the upper lumbar region (second lumbar segment) about half the cells in the lateral groups showed this fragmentation of their granules, the remaining cells being practically normal. As in the other cases, the cells in the dorsal region remained unaffected unless for a few solitary cells in the centres of the anterior horns. In the cervical enlargement the appearances were much the same as in the lumbar, only more pronounced. Many of the cells had lost their granules, some had peripheral nucleus, and some showed no internal structure whatever. As far as could be made out the changes seemed to begin round the nucleus and progress towards the periphery of the cell. As compared with Case 1 and Case 2 the chromatolytic changes here were not so well marked, but as compared with Case 3 much better marked. There was a considerable amount of yellow pigment present in the ganglion cells. It was most abundant in the cervical region, where, indeed, the cells were almost as much pigmented as in Case 2. There was little pigment in the dorsal region and a moderate amount in the lumbo-sacral regions. There was no apparent diminution in the number of cells in any of the segments examined. Sections were made at seven different levels of the medulla and pons, but there were no well-marked changes in the motor nuclei to be recorded. In the nucleus ambiguus many of the cells showed a certain degree of fragmentation of their granules and some cells were distinctly pale. But the other nuclei examined (the twelfth, the eleventh, and the seventh) seemed quite normal. The vessels throughout the pons, medulla, and cord showed a well-marked colloid degeneration in their walls.

CASE 5. *Chronic interstitial nephritis in a patient who a year before had been affected by lead-palsy.*—A man, aged 40 years, a house-painter, was admitted (for the second time) into the Glasgow Royal Infirmary, on Jan. 19th, 1900. This patient first came under observation in December, 1898, with lead paralysis affecting the right hand and wrist of two months' duration. On examination he was found to have marked atrophy and flabbiness in the extensors of the right forearm, but the flexors of the supinator longus did not seem involved. There was but slight power of extension in the fingers and wrist. The dynamometer registered 10 kilogrammes in the right as against 35 kilogrammes in the left hand. The patient complained of shooting pains along the radial aspect of the arm but there was no other affection of sensation. The legs were unaffected and the knee-jerks were quite active. The man had worked with lead for 28 years and during most of that time he had suffered with cramps and colicky pain in the abdomen. He was moderate in the use of alcohol. There was a mitral regurgitant lesion and evidence of some chronic renal disease. He was dismissed after a month's residence in hospital very much improved, but he was re-admitted a year later as suffering from a well-marked interstitial nephritis and in a very feeble condition. By this time the paralysis had almost completely disappeared, though when at work there was still difficulty with some of the muscles of the right hand. The dynamometer now registered 25 kilogrammes in the right and 26 kilogrammes in the left hand. Signs of uræmic poisoning subsequently developed and the patient became comatose and died on the 22nd.

At the necropsy the left ventricle was seen to be greatly hypertrophied and the mitral curtains to be the seat of old-standing disease. The lungs were adherent from former pleurisy but otherwise healthy. The kidneys showed well-marked interstitial nephritis. The other organs were healthy. Microscopic examination of the nerves of both arms showed undoubted parenchymatous neuritis. The vagus and the nerves of the leg were not examined. The cord was examined at 15 different levels—viz., seven cervical, seven dorsal, and one lumbar. No definite chromatolytic change was to be found in any of these segments and the cells in the cervical seemed to be as healthy as those in the dorsal region. In the cervical enlargement the large ganglion cells possibly were smaller than normal, there seeming to be a larger proportion of the smaller cells than one usually sees, but this may have been the result of fixing, for the condition was no more marked on the right than on the left side of the cord. There was a large amount of yellow pigment in the cells, quite as much as in Case 2 and Case 3. The motor nuclei of the medulla and pons were likewise examined, but otherwise than the pigmentation there was no abnormality to record. The vessels in this case, as in the four former ones, had a colloid degeneration of their walls, and the veins and capillaries were greatly congested.

In dealing with the various appearances found in these five cases we must first consider the meaning of the changes in the peripheral nerves. In three of the cases it will be seen that although there was but slight loss of power in certain of the muscles there was well-marked neuritis in the corresponding nerves. In Case 3, for example, there was only slight impairment of muscle power in the arms and legs; in Case 4 there was no loss of power in the arms; and in Case 5 the paralysis in the arm had practically disappeared some time before death. But in my experience it is not uncommon to find changes in certain nerves when there is no apparent paralysis in the corresponding muscles. I have seen this in cases of beri-beri and also in cases dying from certain suppurative diseases. In Case 1 and Case 4, in both of which the patients died with an acute tuberculous affection, one would not be surprised to find such an alteration in the nerves. The same might also apply to Case 5, where the cause of death was interstitial nephritis. In this last case, ever

although there had been no regeneration in the nerves following the lead palsy, the parenchymatous changes certainly suggested a much more recent degeneration than the history of the paralysis would make one expect, for we look for the myelin to have more or less completely disappeared from the degenerated nerve-fibre by the end of from three to four months. The report of this case, however, tells us that the lead paralysis had appeared more than a year before. In view of these considerations I much regret that the nerves in the five cases were not examined over a wider area of the body, and also that the nerves in the arms and legs were not investigated at their more proximal as well as at their distal ends; but when the post-mortem examinations were made the cases had a different interest from what they now have and there was then no thought of gathering them together into such a series as this. It is also a matter for regret that the nervous symptoms, especially in regard to the electrical reactions, were not more carefully investigated; but in at least three of the cases the neuritis was only a complication of much more serious conditions, and, indeed, the patients were too ill to permit of detailed examination.

As regards the appearances in the motor ganglion cells, Case 1, Case 2, and Case 4 all show chromatolytic changes corresponding more or less closely to those found in animals following injury to a peripheral nerve. If we may consider the duration of the symptoms in these three cases as any indication of the duration of the changes in the cells we may judge the chromatolysis to have been present from six to seven weeks, a period at which, according to Nissl's experiments, the cells would probably soon begin either to regenerate or, I suppose, to undergo atrophy and disappear. In none of the cases could I be certain that any of the chromatolytic cells had become swollen and in the condition described as the first stage of regeneration. Many of the cells were large, but if larger than normal their powdery granules, though quite deeply stained, were still perfectly discrete. In Case 2 some of the cells seemed to have gone beyond recovery, for they showed complete absence of internal structure, the cell plasma being homogeneous throughout. We must here again note that in Case 1 and Case 4 there was no paralysis observed in the muscles of the arms (so much so that in Case 1 no arm nerve was kept for examination), and yet the changes in the cells of the cervical enlargement were even more marked than those in the lumbo-sacral. It is to be recollected, however, that though there were no symptoms of paralysis in the arms in Case 4 the arm nerves showed undoubted neuritis. In Case 3, where such symptoms as these pointed to the duration of the neuritis being a little over two months, the appearances in the lumbar and cervical enlargements were not nearly so marked as in Case 1, Case 2, and Case 4. The condition of the cells certainly suggested a variation from the normal, but as to whether this indicated an early stage of degeneration or a later stage of regeneration I can offer no opinion whatever. In Case 5, if the motor cells in the cervical enlargement were at any time chromatolytic they had completely recovered, and although the nerves of the arm showed degeneration, as has already been pointed out, this is probably a different neuritis from that caused by the lead poisoning, from which, as the history of the case shows, the nerves must have almost completely recovered.

It has been claimed that the chromatolytic changes in the nerve-cell vary according as the injury is applied to the peripheral nerve or direct to the cell itself.[2] In the one instance the fragmentation of the granules is said to be first seen at the periphery of the cell and in the other round the nucleus of the cell. It is said that after section of a nerve fragmentation begins in the Nissl granules at the part of the periphery from which the axon takes origin. If this be so the chromatolysis in Case 1, Case 2, and Case 4, which seemed undoubtedly to be first perinuclear, would not point to the poison acting first on the peripheral nerve but on the ganglion cell. In Case 3, on the other hand, it was the periphery of the cell that seemed the more affected.

In considering the grouping of the cells in the anterior horns we find that the changes in some groups were much more marked than in others. In all the cases the inner or medial group remained practically unaltered right through its whole length in the cord. This is quite what we look for and it bears out the teaching that cells of the medial group are commissural and do not send their axons into any of the anterior roots. Of the lateral groups it is not possible to speak with so much assurance. In the dorsal region where the lateral cells were fused with the medial groups, they remained quite normal, but in the cervical and lumbo-sacral enlargements it was usually in the postero-lateral sub-group that the degenerative changes were most marked. This, again, is what we look for, as it is this group that has been found most affected in the experimental work already referred to, and it is in these postero-lateral cells that the greatest amount of atrophy is found in cases of old-standing amputation.[3]

It is difficult to give a definite opinion as to whether or not there was any diminution in the number of the ganglion cells. It was only in Case 3 and Case 5 that this seemed at all possible—at least, judging from the number of cells in the other three cases. None of the sections were stained by Marchi's method and so there was not the evidence of degenerated axons to help one to draw conclusions.

It will be observed that no reference has been made in any of these cases to the condition of the cells in the posterior horns. It would be a matter of great interest from the clinical point of view to be able to estimate the effects on the motor ganglion cells of neuritis in the corresponding sensory fibres. There seems little doubt that degenerative changes supervene in motor cells, especially those of the postero-lateral group, as a result of section of the afferent nerves and this is much more extreme and rapid when both anterior and posterior roots are divided.[4] May it not be that recovery in the motor cells in cases of peripheral neuritis depends to a certain extent on the implication or otherwise of the sensory fibres? In none of the five cases were the sensory symptoms well marked, and as neither the posterior roots nor the posterior root ganglia were examined I can have no data from which to draw conclusions, and I have also left out of consideration the posterior horn cells.

As to the significance of the yellow pigment in the ganglion cells something must be said, and yet it is difficult to deal with it in anything like a satisfactory or convincing manner. In four of the cases this pigment was very abundant. It was found to some extent in nearly every cell, it completely filled some of the cells, and in at least half the cells it occupied half their cell plasma. It seemed to be rather more abundant in what we may call the healthy cells, though it was also found in considerable quantity in those undergoing chromatolytic changes. It has been said that this pigmentation is a degenerative change and again that it is the result or expression of the functional activity of the cell. Possibly it is both. We know that the deposit of yellow pigment takes place at the expense of the Nissl bodies which it would seem disappear before the increasing pigment. Indeed, the process of pigmentation seems to cause a certain fragmentation of the chromatic granules, as can be seen with a high power lens on examining the line of contact between the chromatic and pigment granules.[5] If this be so, pigmentation becomes another form (if a very chronic form) of chromatolysis; and if the chromatic granules represent the functional potentiality of the cell, either in the form of nutrition or as energy, or as both of these combined, the destruction of these granules must mean a degenerative change, even if it be the result of an increased activity in the cell. If this pigmentation, then, is a chronic degenerative change we find a corresponding change in the vessels, for in the whole five cases there was found to be a colloid degeneration in the walls of the smaller vessel throughout the whole nervous system whenever examined.

In conclusion, I have to acknowledge the courtesy of Dr. J. L. Steven and Dr. G. S. Middleton, physicians to the Glasgow Royal Infirmary, for permission to put on record the above cases. I am likewise indebted to Dr. Workman, pathologist to the Glasgow Royal Infirmary, who so kindly placed at my disposal their pathological material. For a full bibliography see "Normal and Pathological Histology of the Nerve-Cell," by Dr. Ford Robertson, *Brain* Summer Number, 1899; and Dr. Barker's "Nervous System."

Glasgow.

[2] Barker: The Nervous System, London, 1900.

[3] Warrington: Journal of Physiology, June, 1898, and August, 1899.

[4] Ibid.

[5] "A Case of Gastric Tetany, with an Account of the Microscopic Appearances found in the Medulla and Spinal Cord," Glasgow Hospital Reports, 1899.

SOME NOTES ON 100 CASES OF ENTERIC FEVER TREATED AT NO. 6 MILITARY GENERAL HOSPITAL, NAAUWPOORT, SOUTH AFRICA.

BY DERWENT PARKER, M.B. CANTAB.

THERE can be no doubt that the observation of a large number of patients suffering from the same disease at the same time gives opportunity of noting certain points which would probably be missed, or the observation be regarded as too uncertain to be worth publication, if the cases were isolated and seen at longer intervals. This is my reason for publishing, while still fresh, not only certain facts about my patients but also certain impressions which I have formed as regards their treatment. The patients were all strong young adults, which probably explains to some extent the different complications to which they were liable.

One of the first points noted was the great difference in the virulence of the attack according to the district from which it came. The cases from the Modder river, Norval's Pont, and Rensburg, and the districts about Rensburg and Arundel have almost all been of a severe type. But although there were great varieties according to the district in which the fever was contracted the general climatic conditions or some other factor have caused a progressive weakening of virulence and, on the whole, the later cases, no matter where they came from, have been milder than those of an earlier date. Though the average case was certainly more mild than the average cases seen either in the London general or the fever hospitals, and many cases were diagnosed as enteric fever which would not have been recognised as such in the absence of an epidemic (and these factors will certainly tend to improve the general statistics), on the other hand the most severe cases were infinitely more severe than anything I have seen in England. One patient had seven distinct perforations. Two others, if they had lived a little longer, must have had a still larger number, as every Peyer's patch of the last few feet of the small intestine was indicated by a grey-green gangrenous patch, clearly marked out on a red intestinal wall. These patches could be seen on the external surface of the intestine equally well as on the internal. Although both cases were well on in the third week of their illness, and indeed by the history one should have been in his fourth week, their temperature charts showed none of the hectic character indicating septic absorption, and their Peyer's patches were but very slightly ulcerated on their internal surface. The patient who died in his fourth week had lived long enough for one patch to slough, and he had in his intestine not the neat little puncture of an ordinary perforation but a hole. In his peritoneal cavity was a considerable quantity of fluid stained with fæcal matter. It will easily be seen how hopeless such cases are for operative interference, and I fear that the statistics of any surgeon operating on perforations of the type I have seen here will be bad.

It is generally believed that the same germ in different epidemics of the disease which it causes may at one time attack one system—e.g., the gastro-intestinal—but in another epidemic the prominent symptoms may be of another type, falling upon some other system—e.g., the neural. But it seemed to me, while holding posts as locum-tenent in various districts in England during an influenza epidemic affecting a large part of the country, that the local conditions, such as soil, climate, &c., of the district, were much more important factors in determining the kind of complication to which the patient was liable. This has been borne out in my experience of enteric fever here. Although the patients came from widely different areas, and the attacks were of very varying severity, when they came to be treated under the same conditions the complications to which they were liable were the same. It would be interesting from this point of view to compare the complications to which the patients in No. 6 General Hospital were liable with those of one of the other military general hospitals.

This hospital is situated over 4500 feet above the sea-level, and the patients are all in tents. Lung complications have been in my experience exceedingly rare. I had three patients who had slight hypostatic congestion with bronchitis. They were all in the same tent, which was built on a slope, and the bricks under the feet of the bed were insufficient to make their beds level. They were transferred and the tent was subsequently moved round. In my other tents lung complications were conspicuous by their almost entire absence. The ventilation is very free and the nights are sometimes exceedingly cold. I had two tents transferred to me containing 14 patients who had been under treatment by another civil surgeon. Among them were two patients who had bronchitis. One of these had a considerable amount of hypostatic congestion, but the beds of both these patients were sloping down towards the head.

All the patients took five minims of carbolic acid in water three times a day. If I exclude patients who had taken large doses of opium after hæmorrhage in only one case has distension with flatus been troublesome, and in that case there was, in addition to typhoid ulceration of the small intestine, irregular ulceration of the large intestine, suggestive of a mixed infection of typhoid fever and dysentery. It was in the large intestine that the distension was most extreme. There was also slight general peritonitis. There had been no clinical signs of dysentery beyond a small quantity of mucous in the stools, which was not more than could easily be accounted for by occasional turpentine enemata and the frequent use of a rectal tube. Excluding this case distension has never once been a prominent feature. For this freedom from distension I am disposed to give some credit to the carbolic acid, aided undoubtedly by the fact that the patients were mostly men of considerable muscular development.

Surgeon-General W. D. Wilson, P.M.O., told me that he thought that carbolic acid had a tendency to increase the frequency of hæmorrhages. This is to some extent borne out by my experience. I have had 12 cases of hæmorrhage out of 120 cases and some of these patients at the time of writing are not yet discharged. Osler states that hæmorrhage occurs in from 3 to 5 per cent. On the whole, however, my feeling is that I like carbolic acid. Although the type of disease was undoubtedly severe the mortality was only 10 per cent., whereas in the enormous number of statistics collected by Murchison the mortality was 19 per cent., and Osler puts down the mortality at from 10 to 30 per cent.

As regards stimulants brandy seems much the most useful. Although undoubtedly this stimulant raises the blood-pressure and so, perhaps, increases slightly the risk of hæmorrhage, yet it certainly does so less than strychnine, which is the only other stimulant which seems to me to have an appreciable effect on the failing heart of an enteric fever patient. With a plentiful supply of brandy patients certainly seem less restless and they sleep more. Strychnine, on the other hand, seems to me sometimes to increase restlessness. After a hæmorrhage, too, I would not long deprive my patient of brandy. Hæmorrhage usually occurs in a patient whose disease has been of such a type that he had required a considerable quantity of stimulant before its occurrence, and if the pulse is allowed to grow very feeble after the hæmorrhage it seems well-nigh impossible to get a patient again to rally. Transfusion with normal saline solution will, I think, save a considerable number of lives among such patients. It has a wonderful effect in causing the patient to rally, and at the same time by dilution it increases the coagulability of the blood. I have tried giving a considerable quantity of hot water by the mouth, but without good result. It does not seem to be absorbed, and this to a large extent seems to me true of any stimulant given by the mouth under these circumstances. I have not tried water enemata, as I think that they would be too likely to disturb the intestine and, indeed, the patient generally.

Turning now from palliative to preventive treatment the question may be asked, What, so far as one can judge in a limited number of cases, are the results of inoculation with anti-typhoid serum? I had under my own care nine inoculated patients. My impression (and I think an impression is often more correct than statistics) is that they were milder than the average cases. Other medical officers have almost invariably expressed to me the same opinion. Perhaps, however, the wish was father to the thought. The figures which I have been able to collect are curious. Owing to the kindness of Civil Surgeon F. Pearshouse and Civil Surgeon R. D. Maxwell I was able to get statistics of 327 cases among non-commissioned officers

and men; of these, 35 only—i.e., 10·7 per cent.—had been inoculated. None of them were inoculated twice, but all, so far as could be ascertained, had reacted fairly well to their one inoculation. This result seemed good, but of 200 patients in hospital suffering from other diseases I found that only 6·5 per cent. had been inoculated. This result would make it appear that the risk of infection from enteric fever is considerably increased by inoculation. This conclusion appears to me to be absurd. The explanation probably is that as all the patients suffering from diseases other than enteric fever were questioned at the same time they were drawn from one or two regiments, and regiments varied considerably in the percentage of men inoculated. I must have happened upon regiments of which the members were but little inoculated, and thus the percentage of men inoculated is too low. The fact that I contracted enteric fever myself shortly after making this inquiry prevented my repeating it.

Some medical men have stated that they do not think inoculation is of much value as a preventive but that it modifies the course of the disease when contracted. With this question in view I investigated three factors—(1) the mortality; (2) the average temperature both morning and evening for the first ten days after admission; and (3) the average number of days before the temperature finally became normal. I found that the death-rate among the inoculated patients was 2·3 per cent. lower than that of the not inoculated. The average temperature for the first 10 days was 0·9 per cent. lower, but it was 5·4 days longer before finally becoming normal.

The number of patients from whose charts these statistics were made were small. I took the average temperature and the date when finally they became normal in 50 consecutive not inoculated cases, but of my 39 inoculated patients I could only find the charts of 22.

Small as these figures are, however, they indicate that inoculation as at present practised cannot be regarded as a striking success. All the inoculations were recent, not one being more than six months old. No sane person will deny that an equal number of vaccination statistics would *decidedly* show its value.

It must be borne in mind, too, that a slight improvement in the figures of the inoculated patients will be of no value. The quieter and more intelligent men would be the first to take advantage of the measure of protection which it was hoped it would confer. They would be the men most conscious of their danger. They would be more careful than their comrades in other ways. As a matter of fact a large number of them were non-commissioned officers.

I purposely excluded all officers in my statistics. In the first place they are more careful and have better opportunities of avoiding sources of infection than their men. In the second place, I should estimate that about half of the officers who came out to this country had been inoculated, and thus would have hopelessly altered statistics according to whether they were added in greater or less proportion. Thus of 16 officers whose charts I examined seven were inoculated. If they had been added to my statistics among the men they would have materially altered the percentage of inoculated cases.

I am not at all sure that the immunity conferred by an actual attack of the disease is not exaggerated. Enteric fever at home is a rare disease so it is very rare for one individual to have it twice. But in taking past histories from soldiers so many of whom have lived in India it is not at all rare to hear that they have had a previous attack.

BRIDGEND COTTAGE HOSPITAL.—The committee of this hospital has decided to close the hospital for a time through lack of funds.

ROYAL CORNWALL INFIRMARY, TRURO.—The annual meeting of the friends and supporters of this institution was held on August 13th under the presidency of Colonel Tremayne. The report showed that during the past year 393 in-patients had been admitted; 790 out-patients had also been attended, against 650 in the previous year. The financial statement showed that the receipts amounted to £1902 and there was a favourable balance of £86 remaining. The Cornwall Convalescent Home for Men at Perranporth, in connexion with the infirmary, had received 114 patients, their average stay being 24 days and the cost per patient £2 5*s*. 8*d*. The high sheriff of Cornwall (Mr. R. Harvey) was elected president for the ensuing 12 months.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. MARY'S CHILDREN'S HOSPITAL, PLAISTOW, E.

TWO CASES OF TUBERCULOSIS OF THE PERITONEUM.

(Under the care of Mr. A. E. KENNEDY and the late Mr. E. A. T. STEELE.)

THE value of simple laparotomy in tuberculous peritonitis is now generally acknowledged and the explanation usually given is that opening of the abdominal cavity disturbs the previously existing conditions of exudation and absorption, so that the tubercle bacillus is no longer capable of living. Though this explanation is hardly satisfactory, yet the evidence we possess is sufficient to justify the performance of the operation. Drainage seems to be unnecessary and undoubtedly it adds largely to the risk of the laparotomy. Flushing with normal saline solution has appeared to be useful, but as this case shows it is not essential. The second case, so far as it goes, appears to suggest that merely making a small opening into the abdominal cavity, as in the performance of a radical cure of a hernia, is not sufficient to have any beneficial effect on the tuberculous peritonitis. For the notes of the cases we are indebted to Mr. T. B. Sellors, senior resident medical officer.

CASE 1.—A delicate-looking boy, aged four and a half years, with prominent forehead, anæmic complexion, and vacant expression, was admitted into St. Mary's Children's Hospital, Plaistow, on April 22nd, 1900, under the care of Mr. Kennedy, with rapid wasting and a general swelling of the abdomen. Though delicate from birth he had had no serious illness. His mental faculties had been always slightly impaired. A strong family history of tuberculosis on the maternal side was elicited. A little over a fortnight before admission the mother thought that the boy was losing flesh and during that time he became rapidly thinner, suffering also from severe diarrhœa, pains in the stomach, aching of the legs, and sweating. He became even more languid and silent. The mother stated that she noticed the swelling of the abdomen four hours only before admission and that it increased very rapidly, but the reliability of her statement is doubtful. On examination the abdomen was seen to be distended and swollen, the umbilicus being prominent. On careful palpation the muscular wall was tense, but neither rigid nor tender, and a few ill-defined lumpy swellings were made out in the umbilical region; the circumferential measurement at the level of the umbilicus was 21¾ inches; slight dulness in the flanks and an ascitic thrill were detected. The temperature was 101·8° F. and the weight 2 st. 3 lb. There were no signs of rickets, pulmonary or cardiac disease. On May 4th, as the symptoms had increased in severity and the temperature had risen to 101° each evening, laparotomy was performed. After the parietal peritoneum had been divided the intestines were found to be matted together by strong adhesions and a little fluid escaped. It had been intended to wash out the abdominal cavity with normal saline solution, but this would have proved a matter of difficulty owing to the number of adhesions present, and the condition of the child under the anæsthetic became so bad that the wound was closed as rapidly as possible without further interference. The temperature, with the exception of a short reactionary rise after the operation, remained normal until the 13th, when a sutural abscess was discovered; a month later the peritoneal suture came away, after which the wound healed rapidly without complications. By the end of May the circumference of the abdomen was reduced to 20 inches and most of the weight lost since admission had been regained. The patient was discharged on July 8th to a

convalescent home, the abdominal circumference being at that time 18¼ inches (a reduction of three and a half inches since operation), and the weight 2 st. 4 lb., the temperature having been normal for six weeks. He has stayed at the convalescent home for four weeks, has grown rapidly in health and weight, and a marked improvement has taken place in his mental condition. He walks without difficulty or pain and is not unduly fatigued on exertion. No medicinal treatment was employed.

CASE 2.—A healthy-looking male child, aged 14 months, was admitted into the hospital on May 14th, under the care of the late Mr. Steele, for radical treatment of double congenital hernia. A double truss had given good support to the right side but failed to properly retain the hernia on the left side. No other illness of importance had occurred since birth and no family history of tuberculosis was ascertainable. On the following day radical cure was performed on the left side. The usual incision having been made the dissection was carried down to the sac, which was only freed with great difficulty owing to close adhesions probably caused by the ill-fitting truss. The sac, which was large and contained a considerable amount of serous fluid, was opened at its lower extremity, and the child coughing at that moment a coil of intestine protruded. A granular appearance of the surface of the bowel being noticed, the loop was drawn out still farther and on closer investigation was seen to be studded with tubercles chiefly on its free border; tuberculous patches were also observed on the mesentery. The sac was slit up and was affected in a similar manner from the neck downwards for about three-quarters of an inch. It was removed after ligature of the neck, the size of the inguinal canal was reduced by sutures and the operation was concluded in the usual manner. The sac and a few of the tubercles which had been snipped away with fine scissors were given to Dr. Eyre, who kindly made an examination, identifying the bacillus tuberculosis by primary microscopical examination and reproducing the disease in a rabbit by inoculation. The circumference of the abdomen at the umbilicus on the day after the operation was 17 inches. Nine days later the stitches were removed, the union of the skin edges being perfect. On June 5th, three weeks after the operation, the abdominal measurement had increased to 18½ inches with some distension but no signs of fluid. On June 12th, nearly three weeks after removal of the stitches, the scar, which up to this day had appeared perfectly sound, broke down in the same manner that, after removal of tuberculous glands, an apparently healed wound in the neck breaks down some weeks later if at the time of the operation the tissues were infected by the escape of caseous matter. The wound healed in a week but the scar was now broader and of a less healthy appearance than formerly. The temperature for some time had risen each morning to 102° or 103° F. The patient remained in the same condition until the beginning of July when diarrhœa set in, the appetite failed, and weight was lost rapidly. On July 4th the scar again broke down. On the 7th two slight convulsions occurred, followed by the symptoms of tuberculous meningitis, from which the child died on the 9th.

Necropsy.—At the post-mortem examination a state of general tuberculosis was found. Both the visceral and parietal layers of the peritoneum were studded throughout with tubercles, which in many places were aggregated together so as to form masses as large as sixpences; there was a moderate excess of serous fluid. The lungs showed evidence of extensive tuberculous invasion. The pia-arachnoid covering the base of the brain and in the Sylvian fissures was opalescent and opaque, containing deposits of small greyish-white tuberculous nodules. There was no hydrocephalus and the dura mater was apparently unaffected.

Remarks by Mr. SELLORS.—Case 2 shows how a well-marked tuberculosis of the peritoneum may exist in an infant and its presence be unsuspected, for the patient from all accounts had enjoyed apparently perfect health up to the time of admission; and it also shows how rapid may be the development of a general tuberculosis starting from the peritoneum, for I am convinced that the disease must have commenced in that membrane, as no physical signs of pulmonary disease were observed till within a week and no nervous phenomena occurred till within two days of death. If the exposure of the abdominal cavity which occurs in the radical treatment of inguinal hernia may be considered as equivalent in value to a median laparotomy, the rapid course of the disease after the operation would be a strong argument against early surgical interference. The benefit resulting from the operative treatment of the disease in an advanced stage is well shown by Case 1.

HOSPITAL FOR WOMEN AND CHILDREN, LEEDS.

A CASE OF OSTEOMALACIA SHOWING THE EFFECT OF OÖPHORECTOMY IN CHECKING THE ELIMINATION OF PHOSPHATES BY THE URINE.

(Under the care of Dr. E. O. CROFT.)

OUR knowledge of the etiology of osteomalacia is so very slight that it is practically impossible to give any satisfactory explanation of the action of removal of the ovaries in improving the condition of these patients. Curato and Tarulli [1] suggest that the internal secretion of the ovaries has the power of oxidising compounds of phosphorus, such as those which exist in bones, so that after the removal of the ovaries there is an increased deposit of calcium and magnesium phosphate in the bones, which thus become stronger. Rossner [2] claims to have found hypertrophy of the vessel walls with extensive hyaline degeneration in the ovaries which had been removed in three cases of osteomalacia. Phosphorus and also bone-marrow [3] have been said to produce great improvement in several cases of the disease, and it is advisable that their action should be further studied.

The patient was a married woman, aged 35 years, who had had one pregnancy, the child having been born about two and a half years ago. She had always lived in Leeds and there was no history of rickets, syphilis, or other general disease. Menstruation commenced at the age of 17 years and was irregular, painful, and scanty, recurring three or four times a year until after the confinement. Since then the periods had been regular every four weeks, lasting about five days and being free from pain. The present illness dated from about the sixth month of her only pregnancy. She then experienced great difficulty in walking and severe pain in the back and thighs, especially on the right side. The difficulty and pain increased so that although she could stand alone she could not walk without assistance. The pregnancy advanced to full term. She was attended by Dr. Fergusson of Leeds who delivered her by means of forceps of a healthy living child. The labour, though tedious and troublesome, presented no very special difficulty, so that it is probable that no great amount of deformity could have existed at the time. The secretion of milk ceased spontaneously at the end of about a week after the labour. The child lived some few months and died from small-pox. After labour the pain in the back increased, although walking became somewhat easier and the pain in the thigh diminished. She became able to walk from 200 to 300 yards without help, but was much exhausted after doing so.

The patient came under the care of Dr. Croft in the Hospital for Women and Children, Leeds, in April, 1899. At that time she appeared to be fairly well nourished and healthy, but was very lame and had much pain. There was tenderness over the spinal column and on the ribs, sacrum, and pelvis, but not over the long bones of the limbs. The abdomen was prominent and pendulous, but otherwise revealed nothing abnormal. The symphysis pubis was very prominent, the pubic rami receding from it to such an extent that the beak-like projection of the pubes could be grasped between the fingers. By vaginal examination the pubic arch was much narrowed and the ischial tuberosities were brought much nearer together than usual. Owing to this last fact it was difficult to examine the upper parts of the pelvis and the exact position of the sacral promontory could not be defined. The external measurements were: widest part of the iliac crests, 11¼ inches; between the anterior superior spines, 9⅛ inches; and external conjugate diameter, 7⅞ inches. The patient was treated with rest, tonics, and various drugs to relieve pain and returned home in about a month somewhat relieved.

Dr. Croft saw the patient again in March, 1900. The symptoms had become much worse and the day on which he saw her was the last occasion on which she was able to walk

[1] Centralblatt für Gynäkologie, 1895, No. 21.
[2] Archiv für Gynäkologie, vol. xlviii., 1895, part 3.
[3] Edinburgh Medical Journal, May, 1896.

or stand alone. She was re-admitted to the hospital on April 23rd. Her condition then was such that not only was getting out of bed impossible, but movements of turning and reaching in bed caused severe pain in various parts of the back, pelvis, thighs, and lower ribs. Sleep was much disturbed by the pain and it was necessary to relieve it frequently by suppositories of morphia and hyoscyamus. The deformity of the pelvis had much increased. Externally the iliac crests were felt to present a much more acute curve so that the anterior superior spines approximated. The pubes was very prominent and its rami receded sharply. The external measurements were: between the iliac crests, 10⅞ inches; between the anterior superior spines, 8¾ inches; external conjugate diameter, 8⅝ inches; and inter-trochanteric width, 10¼ inches. The width of the pelvis had markedly diminished, the distance between the spines specially so, and the inter-trochanteric width was much less than normal owing to the inward and upward displacement of the acetabula. The sacrum presented an excessive curve. On vaginal examination the finger could only be passed behind the ischial tuberosities. The pubic arch was so narrow that, together with the tuberosities, it formed a slit-like space scarcely more than a quarter of an inch apart. It was impossible to reach the sacral promontory or upper part of the pelvis. Messrs. Reynolds and Branson kindly undertook to attempt to obtain a skiagram of the pelvis for Dr. Croft. The result was extremely indistinct. Whether this was due to the usual difficulties of obtaining a good result in the case of the pelvis or whether the failure was actually associated with the diminution of earthy matter in the bones it would be interesting to know.

The condition and amount of the urine were carefully noted. On May 23rd, a month after admission, and the patient being presumed to be in an average condition with regard to diet and so on, the urine was reported upon by the Clinical Research Association with the following result as far as regards the amount of phosphates present: phosphoric acid (P_2O_5), 0·170 per cent., or 0·74375 grain per ounce; there was no albumose present; quantity of urine in 24 hours, 40 ounces; total phosphoric acid per diem, 29·74375 grains. The good effect said to be produced by oöphorectomy in osteomalacia is stated to be brought about by its causing in some manner a reduction in the elimination of phosphates by the kidneys. Curatulo and Tarulli (Rome, 1896) experimented on this subject by removing the ovaries of bitches while under average conditions of diet and excretion, the urine being carefully examined at intervals. After oöphorectomy the amount of phosphates (as P_2O_5) in the urine was greatly and permanently diminished.[4] The result of observation in the present case, although only imperfectly carried out, is in accordance, so far, with these experiments.

On May 28th Dr. Croft performed double oöphorectomy. The operation was simple. At the time the condition of the pelvis could be thoroughly examined. In addition to the rostration of the pubes and the approximation of the ileo-pectineal eminences the depression of the sacral promontory and its inclination towards the left side were observed. Recovery was aseptic and normal, the wound being dressed and sutures removed on the tenth day, healing being perfect. During the four weeks after the operation the patient gradually improved. The pain became less so that no opiates were required and she became able to move about more easily and with much less pain. Standing was difficult and painful. On June 27th, one month after the operation, and the patient having resumed conditions of diet as before, an average sample of the urine was examined with the following result: phosphoric acid (P_2O_5), 0·08 per cent., or 0·35 grain per ounce; quantity of urine passed in the 24 hours, 55 ounces; total phosphoric acid per diem, 19 25 grains. Comparing this with the amount passed before the operation a diminution is shown in round numbers of from 30 to 20 grains of phosphoric acid per diem.

Remarks by Dr. CROFT.—Osteomalacia being a very rare disease in this country the above case is, I think, worthy of record, especially as a somewhat rough observation has been made on the effect of oöphorectomy in checking the progress of the disease by causing a diminution in the amount of phosphates eliminated by the kidneys. This observation is, of course, very imperfect and would be of greater value if more repeated analyses could have been made, but it is of interest as far as it goes, and I shall endeavour to trace the further progress of the case with a view to ascertain the ultimate effect of the treatment on the progress of the disease.

[4] See Kelly: Operative Gynæcology, vol. ii., p. 167.

Reviews and Notices of Books.

A Handbook of the Gnats or Mosquitoes, giving the Anatomy and Life History of the Culicidæ. By Major G. M. GILES, I.M.S., M.B. Lond., &c. London: John Bale, Sons, and Danielson, Limited. 1900. Pp. 8 + 374. Price 15*s*.

To the general reader, who is accustomed to speak of *the* mosquito, this work will be a revelation. Any smallish fly that bites is commonly labeled "mosquito," but if we restrict ourselves to the gnat tribe only, to which a large quantity of these belong, we are confronted with a swollen list of no less than 242 different species. Even in this country a man may, by judicious selection of the places which he visits, get himself bitten by some 24 different kinds of gnats. Naturally the vast majority of these forms have been discovered and described during the present century; in the year 1817, the author informs us, there were only 15 species known. It is probable, however, that there were quite as many bites then as now.

The reason for the aggressive attitude of these culicidæ, as the family name of the mosquito tribe runs, is not without mystery. It would seem that normally they feed upon the juices of plants. Mr. W. H. Hudson in one of his instructive and delightfully written contributions to natural history has pointed out how small a percentage of mosquitoes can ever get the chance of a good bite at a human being. This particular variety of food can therefore be hardly necessary to them or nature would either have abolished the mosquito or made better commissariat arrangements in their behalf. In such countries as Lapland, to which the author refers and which his present reviewer has visited, there is no doubt whatever about the attitude of the local gnat or gnats. Their mind is thoroughly made up from the first in favour of an animal diet. Instead of hovering in a tentative fashion round the victim they fly straight and with unerring precision to the most vulnerable spots upon the body of the pedestrian whom they desire to bleed. A few hundreds of their sharp lances is an experience which it is not easy to forget. In this more favoured country the common gnat (culex pipiens) and allied species do not, as a rule, gratify their appetites by a fill of human blood. When they are stirred up to do so it would seem, according to the author, that the weather is responsible. "It is noticeable," he observes, "that whenever there occurs a spell of unusually hot weather we find in the press notices of the occurrence of mosquitoes, which, however, always turn out to be common indigenous species when submitted to a competent expert." In the glare of sunshine, we may imagine, they see men as trees walking and desert their vegetarian for a carnivorous diet. Next to the intermittence in the ferocity of British gnats the most remarkable fact about their biting propensities is that the females alone, save in one ascertained case, are the culprits. It is, perhaps, natural to expect this, since that sex, being the egg-producing sex, has need of more abundant nutrition than have the males. These tiny anthropophagi, moreover, are not content with merely taking their fill of our vital fluid: they leave behind them an unpleasant memento of their visit in the form of an irritant liquid which causes the tender tissues of many of us to swell up. This habit is not due to a sheer wish to produce as much torture as possible: it appears that the liquid which the insects secrete is useful as a means of keeping the substances upon which they feed in a proper condition for

absorption and passage through the narrow canals along which they have to pass.

One of the principal authorities upon the structure and life of these tiresome culicidæ, with the curiously compound name of Lynch Arribalzaga, has divided the bloodthirsty gnats into four groups according to the localities which they affect; there are domesticæ, campestræ, palustræ, and silvicolæ. Major Giles naturally adds to this "that there is nothing absolute in such an attempt at a classification of habitats." Anopheles, for example, which is the only genus that conveys the deadly malarial parasite, is as much at home in a marsh as in a house. It oscillates, indeed, between the two habitats, conveying in the course of these oscillations the germ of malaria from its home in marsh-frequenting beasts to the human body. The author gives incidentally a useful method of distinguishing at a glance this infection-carrying genus from the more harmless culex. The former sits upon a wall with its head pointing towards the wall and the rest of the body jutting out, while culex sits with the entire body parallel to the surface upon which it is resting. This suggestion, however, will probably not secure too much consideration for the reclining culex—it has too many, though lesser, sins to expiate.

Major Giles devotes a reasonable space to the detailing of the structure of gnats, as perfect insects, larvæ, and pupæ. The only portion of this otherwise admirable section to which we take exception is the series of illustrations: these figures are massed in the form of plates of excessively coarse execution. Indeed, the general get-up of the book is far from attractive; and we are of opinion that the publishers might have seconded the author more liberally. His part is well done; theirs is inferior in more than one respect. Such figures as No. 7 on Plate 1, which should illustrate a transverse section through the body of an adult gnat, is simply abominable in its vagueness and poverty of execution. Nor can any excuse be made on the score of cheapness: the book is priced at 15*s*., which would be prohibitive in a less necessary work.

The author, being a medical man as well as a zoologist, devotes some little space to the prophylactic treatment of the injuries caused by these devouring flies. Into the question of malaria itself, which is at the present time being so extensively investigated and with such important results, the author does not enter at all. His book is merely intended as a handbook to those who are working at this part of the subject, apart, of course, from its importance as a monograph of the culicidæ. But various considerations which result from the descriptions of the life history of the gnat tribe lead to conclusions as to the best way of ridding a neighbourhood of these deleterious insect pests. As everybody knows the gnat tribe lay their eggs in water in the shape of little "rafts" made up of a number of separate eggs fastened together. War may be waged against the mosquito by preventing this laying of eggs at all, and in at least two ways. The eggs are the product of hibernated examples which often hang about infrequently dusted curtains. To shake these and to slay the enclosed females is a preventative measure which should be easy enough in a well-served house. The author suggests as a practical hint that the curtains should be taken down with care and then tightly rolled up so as to crush the enclosed flies. As a temporary method of getting rid of a population of already hatched and vigorous mosquitoes the author recommends the opening of doors and windows at dusk when the flies generally seek their vegetable nourishment outside, re-entering at sunrise when the same aperture of ingress should be closed. It has been found that gnat larvæ do not flourish in streams and ponds where there are fish. They prefer puddles which are of a sufficiently durable nature to give time for the due transformation of the little "dolphins" into flies. In such puddles there are usually no fish; but if they are something between temporary puddles and permanent pools small fishlets can be introduced in order to decimate the larvæ. It is necessary to bear in mind, so that much time, expense, and energy need not be wasted, that the larvæ need green algæ or other plants for their food; a barren puddle is as destitute of mosquito larvæ as the most fish-teeming tank. The mosquito may be confronted with a further series of destructive measures. One of the best ways of grappling with this aquatic creature is to spread a thin layer of paraffin upon the water which it is known to inhabit. The presence of this oil does not seem to be directly poisonous, but to interfere in a thorough and drastic fashion with its breathing arrangements. The larvæ, as a rule, rest at the surface of the water with two little respiratory syphons protruding. To choke up these tubes is absolutely to stop respiration. In doing this, however, in India at least, the suspicious mind of the native must be set at rest. To spread kerosene or paraffin about freely would in the time of a scare cause the people, thinks the author, to "gravely suspect their governors of setting fire alike to the soil and water of their habitations." It is as well, therefore, to be circumspect in purchasing and in sprinkling the insecticide. Or rather the thing should be done openly and in the bazaars, so as to allay any rising mistrust. We have not space to enter more fully into this very important part of Major Giles's book. It must be sufficient to say that the practical hints for the permanent removal of mosquitoes from a neighbourhood are very full, as will perhaps be gathered by the few extracts that have been given. The latter, and the larger, part of the volume is taken up with a full description of the known species of mosquito which fall into, at any rate, eight genera. This, the concluding, section of the work is of course for reference; for which purpose it will be found to be very full. There should be no difficulty in recognising a species and the genus to which it belongs, since the elaborate descriptions are rendered more useful by a series of tabular statements of the main characters of the species. The only reason which leads us to hesitate in recommending this book as a textbook of the family of the culicidæ is, as has been already said, the utter disproportion between the price and the quality of the insufficiently numerous illustrations.

The Ophthalmic Patient: a Manual of Therapeutics and Nursing in Eye Disease. By PERCY FRIDENBERG, M.D., Ophthalmic Surgeon to the Randall's Island and Infants' Hospitals; Assistant Surgeon to the New York Eye and Ear Infirmary. New York: The Macmillan Company 1900. Pp. 312. Price 6*s*. 6*d*. net.

ALTHOUGH in every complete ophthalmic treatise dealing with the diseases of the eye in general some details in regard to treatment will be found these details for the most part only constitute a kind of appendix to the chapters on cataract, purulent ophthalmia, and glaucoma, and many points of nursing are omitted. In the very sensibly written work before us the whole subject is considered in a manner that leaves little to be desired and forms a mass of information that should be carefully studied by those who are responsible for the building of a new hospital or who have to superintend the treatment of ophthalmic in- and out-patients.

No attempt is here made to supply a description of the various forms of ophthalmic disease. The author takes it for granted that the diagnosis is made and proceeds to consider the construction, ventilation, and illumination of eye wards with the furniture required in them. He points out how important are accurate histories and records of the symptoms present on admission, and then describes under the head of Ophthalmic Therapeutics the principal remedies in common use, both local and general. The various methods

of disinfection and of sterilising instruments and dressings are dwelt upon. A chapter is devoted to the arrangements for ophthalmic operations and for the due nursing after each. The dressing and bandages required after operations are given and the last chapter is devoted to eye-shades, dark glasses, and artificial eyes. The immense advance that has been made in regard to antisepsis is very striking. The use of glass or metallic trays, the sterilisation of knives, forceps, and instruments generally, and the employment of pure wool as a light compress, are important factors in maintaining the high standard of success that is now always anticipated. The work is illustrated by many drawings.

LIBRARY TABLE.

Betegségek és Egészségügyi Tekintetben Hiányos Lakások. Elöadta a Londoni Harvey-Társulat Körében CORFIELD, W. H., az Oxfordi Egyetem Orvosdoktora. Forditotta Frank Ödön dr. Kir. Közegészségi Felügyelö, Egyetemi M. Tanár. Budapest. 1900.—Two lectures delivered by Professor Corfield on Disease and Defective House Sanitation before the Harveian Society of London, were published in book form in 1896 and were reviewed in THE LANCET of Sept. 12th in that year (p. 752). They have now been translated into Hungarian by Dr. Frank of Budapest for the Royal Society of Public Health of Hungary, forming a 24-page pamphlet of tasteful appearance with numerous illustrations. Dr. Frank says in his preface: "The following two lectures by Professor Corfield merit the attention of Hungarian readers because they explain the views of the English hygienist and because the sanitary arrangements of dwellings in our country are much more unsatisfactory than those in England. Professor Corfield may accept this translation as a token of esteem and gratitude for the hospitality and kind advice which he has given to those of the Hungarian hygienists who have called upon him in London."

A Pocket Medical Dictionary. By GEORGE M. GOULD, A.M., M.D. Fourth edition. Philadelphia: P. Blakiston's Son and Co. 1900. Pp. 838. Price $1.25.—This is a handy little volume which sets forth the definition and pronunciation of some 30,000 words. It also gives a variety of other useful information, including a brief account of micro-organisms, certain anatomical facts relating to the muscles and the nerves, and a table of weights and measures, doses, and tests. It also gives a table of clinical eponymic terms. This is a new feature, so far as we are aware, among medical dictionaries, and it is one of considerable usefulness, for it not infrequently happens in reading of a symptom or disease which is described by the name of its discoverer that there is no clue as to its nature. This table seems on the whole to be very complete, and contains such up-to-date information as "Babinski's sign." The appearance of a fourth edition within a limited period of time speaks for the success of the work and we can cordially recommend it to medical men, particularly to those who are studious enough to keep abreast of medical literature. We cannot, however, say that we altogether approve of the practice, now becoming so common in America, of adopting phonetic spelling, and we notice with regret such terms as "exophthalmic goiter" and "center."

JOURNALS AND REVIEWS.

Revue d'Hygiène et de Police Sanitaire. Vol. xxii., No. 7. July, 1900. Paris: Masson and Co.—The hygiene of churches is not a subject which has as yet been at all exhaustively studied, and having regard to its obvious importance the article in the July number of this review from the pen of Dr. Paul Remlinger, chief of the Military Laboratory of Bacteriology, is of interest. Churches are there fully discussed from the point of view of their salubrity and of the opportunities which they afford of contracting disease. The author also points out how the conditions which at present obtain may be remedied. We commend the article to all those concerned with the construction and control of places of public worship. This number also contains a capital article on the Municipal Sanitary Service of Amsterdam by Dr. Ringeling. It deals with the mortality figures of Amsterdam beween 1880 and 1889, and it may be mentioned that the general death-rate of the city compares at the present time very favourably with those of other important towns in Europe. The whole sanitary administration of Amsterdam is touched upon, and for those who are not conversant with the Dutch language an excellent opportunity is afforded of becoming familiar with the modern hygiene of a Dutch city. The Pasteur Hospital is the subject of a paper by M. Martin which is well illustrated throughout.

The *Veterinarian* for August commences with a well-written and illustrated article by Dr. John Lindsay on a fœtal monstrosity (diprosopus diophthalmus) from a cow. The head was that of a full-time calf, the monstrosity being an instance of a rare and interesting form of anterior dichotomy. Dr. Lindsay dissected the specimen very carefully and has given clear details of all the abnormalities present. A report upon work done in New Zealand by the Government Veterinary Department under Mr. J. A. Gilruth, M.R.C.V.S., regarding the subject of swine fever is summarised by Mr. J. A. W. Dollar and extracts are given from American veterinary journals. In the "Month's Progress" and "Science Notes" short paragraphs are culled from English and foreign scientific journals and inserted as being likely to interest veterinary surgeons. The remainder of the journal is occupied by an account of the proceedings of council.

Edinburgh Medical Journal.—In the August number Dr. Dormer Harris gives some useful dietetic hints in a paper on the Feeding of Phthisical Patients. Dr. G. R. Murray's paper on the Treatment of Some Forms of Enlargement of the Thyroid Gland in Young Adults is noticed in another column. Dr. H. Macnaughton Jones, in a paper on the Influence of Conservatism on Surgical Gynæcology, recommends vaginal panhysterectomy as soon as malignant uterine disease has been diagnosed with certainty and deprecates hesitation in the removal of diseased adnexa and adnexal tumours. Dr. E. Arthur Gibson of Glasgow describes a case of uretero-cystostomy for uretero-vaginal fistula. He says that the operation has been performed many times in America and on the continent, but he has failed to find a report of any case done in this country. He operated on Dec. 30th, 1899, and the patient has not since that time had any urinary trouble whatever.

Scottish Medical and Surgical Journal.—In the August number there is a paper on General Blood-pressure in Sleeplessness and Sleep by Dr. L. C. Bruce, of the Perth District Asylum. He has found that in the majority of cases of sleeplessness in mental disease the blood-pressure is high—namely from 130 to 150 millimetres of mercury as tested with Barnard and Hill's sphygmometer and that for such patients the most certain hypnotic is paraldehyde in doses of at least two drachms. Dr. F. D. Boyd, of the Edinburgh Hospital at Norval's Pont, South Africa, discusses the question of enteric fever in the British forces. Altogether there are seven original articles.

La Grèce Médicale.—The principal article in the August number is the first part of a paper entitled "Continued Malarial Fevers (Des Fièvres Continues Palustres) and their Predominant Forms in Greece." It is by Dr. J. Cardamatis, vice-president of the Medical Society of Athens, who maintains that there is in Greece besides typhoid fever and

malarial fever a special class of fevers which are not attributable either to the plasmodium malariæ or to Eberth's bacillus, but belong to the auto-infections of the organism. He therefore divides the fevers of Greece into the three following principal classes arranged in order of frequency: (1) Fièvres paludéennes; (2) Fièvres par auto-infection; and (3) Fièvres typhoïdes. *La Grèce Médicale* and Ἰατρικὴ Πρόοδος—i.e., *Medical Progress*, a Greek journal of 36 pages—are published conjointly in Syra, the editor being Dr. Joannes Foustanos.

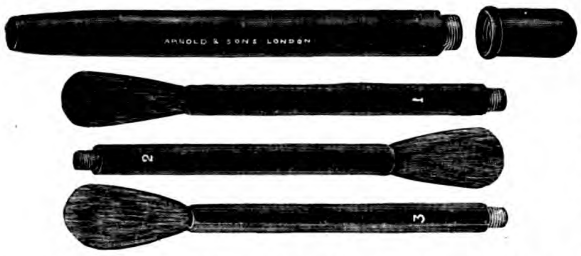
Friend of China.—In the July number the Rev. J. C. Kerr, M.D., of Canton, has a short paper on the effects of the opium habit, as observed by him in his experience of 40 years "in a large city and in a large hospital."

Mercy and Truth.—In the August number Dr. Mary Synge of Fuh-ning, South China, writes on Women Patients, Rich and Poor, and Mr. Walter Squibbs describes an attack on a medical mission at Kiang-peh in Western China in 1898.

New Inventions.

A POCKET CAMEL HAIR SURGICAL BRUSH.

MANY practitioners, in common with myself, must have often found the unsuitableness of the ordinary camel hair brush (for painting throats, &c.) for being carried in the pocket when on one's rounds. I have designed one on the principle of the pocket penholder, the use of which will be



at once apparent. There are two extra brush-ends adaptable to the vulcanite holder and each one is numerically marked, so that when used for infectious cases, &c., they can be easily differentiated and "put in quarantine" till thoroughly disinfected. Messrs. Arnold and Sons, surgical instrument makers, of West Smithfield, have carried out my directions *secundum artem* and a most useful and handy little instrument is the result.

W. L'HEUREUX BLENKARNE, M.R.C.S. ENG., L.S.A.,
Formerly Surgeon to the Leicester and Leicestershire
Worthing. Provident Dispensary, &c.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE council of the Metropolitan Hospital Sunday Fund met on July 30th at the Mansion House to receive the report of the committee of distribution and to order payment of awards. Sir SYDNEY H. WATERLOW, the Vice-President, occupied the chair.

The following are the awards recommended by the Committee of Distribution for the year 1900:—

30 GENERAL HOSPITALS.

Charing Cross Hospital, £1169 3*s.* 4*d.*; French Hospital, £325 16*s.* 8*d.*; German Hospital, £594 3*s.* 4*d.*; Great Northern Central Hospital, £622 18*s.* 4*d.*; Guy's Hospital, £1533 6*s.* 8*d.*; Hampstead Hospital, £210 16*s.* 8*d.*; Italian Hospital, £19 3*s.* 4*d.*; King's College Hospital, £1533 6*s.* 8*d.*; London Hospital, £4600; London Homœopathic Hospital, £622 18*s.* 4*d.*; Phillips Memorial Homœopathic Hospital, £33 10*s.* 10*d.*; London Temperance Hospital, £785 16*s.* 8*d.*; Metropolitan Hospital, £690; Mildmay Hospital, £258 15*s.*; Miller Hospital and Royal Kent Dispensary, £268 6*s.* 8*d.*; North-West London Hospital, £383 6*s.* 8*d.*; Poplar Hospital, £622 18*s.* 4*d.*; Royal Free Hospital, £1006 5*s.*; St. George's Hospital, £1935 16*s.* 8*d.*; SS. John and Elizabeth Hospital, £47 18*s.* 4*d.*; St. Mary's Hospital, £1974 3*s.* 4*d.*; St. Thomas's Hospital, £431 5*s.*; Seamen's Hospital Society, £1111 13*s.* 4*d.*; the Middlesex Hospital, £2012 10*s.*; Tottenham Hospital, £191 13*s.* 4*d.*; University College Hospital, £1245 16*s.* 8*d.*; Walthamstow, £86 5*s.*; West Ham Hospital, £392 18*s.* 4*d.*; West London Hospital, £622 18*s.* 4*d.*; and Westminster Hospital, £1341 13*s.* 4*d.*

SPECIAL HOSPITALS: 5 CHEST HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria-park, £670 16*s.* 8*d.*; Hospital for Consumption, Brompton, £1820 16*s.* 8*d.*; North London Consumption Hospital, Hampstead, £364 3*s.* 4*d.*; Royal Hospital for Diseases of the Chest, City-road, £383 6*s.* 8*d.*; and Royal National Hospital for Consumption, Ventnor, £287 10*s.*

17 CHILDREN'S HOSPITALS.

Alexandra Hospital for Hip Disease, W.C., £143 15*s.*; Banstead Surgical Home, £38 6*s.* 8*d.*; Barnet Home Hospital, £38 6*s.* 8*d.*; Belgrave Hospital for Children, S.W., £124 11*s.* 8*d.*; Cheyne Hospital for Incurable Children, S.W., £95 16*s.* 8*d.*; East London Hospital for Children, Shadwell, E., £651 13*s.* 4*d.*; Evelina Hospital for Sick Children, Southwark, S.E., £383 6*s.* 8*d.*; Home for Incurable Children, Maida-vale, W., £76 13*s.* 4*d.*; Home for Sick Children, Sydenham, S.E., £124 11*s.* 8*d.*; Hospital for Sick Children, Great Ormond-street, W.C., £910 8*s.* 4*d.*; North-Eastern Hospital for Children, Hackney-road, N.E., £335 8*s.* 4*d.*; Paddington-green Hospital for Children, W., £268 6*s.* 8*d.*; St. Mary's, Plaistow, E., £210 16*s.* 8*d.*; St. Monica's, Brondesbury, N.W., £100 12*s.* 6*d.*; Victoria Hospital for Children, King's-road, Chelsea, S.W., £575; Victoria Home, Margate, £23 19*s.* 2*d.*; and "The Vine," Sevenoaks, £38 6*s.* 8*d.*

6 LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C., £33 10*s.* 10*d.*; City of London Lying-in Hospital, City-road, E.C., £47 18*s.* 4*d.*; Clapham Maternity Hospital, £28 15*s.*; East End Mothers' Home, £81 9*s.* 2*d.*; General Lying-in Hospital, Lambeth, S.E., £38 6*s.* 8*d.*; Queen Charlotte's Lying-in Hospital, Marylebone-road, W., £335 8*s.* 4*d.*

6 HOSPITALS FOR WOMEN.

Chelsea Hospital for Women, S.W., £364 3*s.* 4*d.*; Hospital for Women, Soho-square, W., £239 11*s.* 8*d.*; Grosvenor Hospital for Women and Children, Vincent-square, S.W., £105 8*s.* 4*d.*; New Hospital for Women, Euston-road, W.C., £263 10*s.* 10*d.*; Royal Hospital for Children and Women, Lambeth, S.E., £215 12*s.* 6*d.*; Samaritan Free Hospital, Lower Seymour-street, W., £383 6*s.* 8*d.*

27 OTHER SPECIAL HOSPITALS.

Cancer Hospital, Brompton, S.W., £575; London Fever Hospital, Islington, N., £670 16*s.* 8*d.*; Gordon Hospital for Fistula, Vauxhall Bridge-road, S.W., £28 15*s.*; St. Mark's Hospital for Fistula, City-road, E.C., *nil*; National Hospital for the Diseases of the Heart, Soho-square, W., £76 13*s.* 4*d.*; Female Lock Hospital, Harrow-road, W., £239 11*s.* 8*d.*; Hospital for Epilepsy, Paralysis, and Other Diseases of the Nervous System, Regent's Park, N.W., £52 14*s.* 2*d.*; National Hospital for the Paralysed and Epileptic, W.C., deferred; West End Hospital for Diseases of the Nervous System, £115; Central London Ophthalmic Hospital, Gray's Inn-road, W.C., £57 10*s.*; Royal Eye Hospital, St. George's-circus, S.E., £172 10*s.*; Royal London Ophthalmic Hospital, City-road, E.C., £575; Royal Westminster Ophthalmic Hospital, Charing Cross, W.C., £115; Western Ophthalmic Hospital, Marylebone-road, W., £38 6*s.* 8*d.*; City Orthopædic Hospital, Hatton-garden, E.C., £115; National Orthopædic Hospital, Great Portland-street, W., £105 8*s.* 4*d.*; Royal Orthopædic Hospital, Oxford-street, W., £95 16*s.* 8*d.*; Royal Sea-Bathing Hospital, Margate, £287 10*s.*; St. John's Hospital for Diseases of the Skin, £76 13*s.* 4*d.*; Hospital for Diseases of the Skin, Stamford-street, S.E., *nil*; St. Peter's Hospital for Stone, Covent-garden, £76 13*s.* 4*d.*; Central London Throat and Ear Hospital, Gray's Inn-road, W.C., £33 10*s.* 10*d.*; London Throat Hospital, Great Portland-street, W., £33 10*s.* 10*d.*; Metropolitan Ear, Nose, and Throat Hospital, Grafton-street, W., £9 11*s.* 8*d.*; Royal Ear Hospital, Frith-street, W., £9 11*s.* 8*d.*; Dental Hospital of London, Leicester-square, W.C., £115; National Dental Hospital, 149, Great Portland-street, W., £47 18*s.* 4*d.*

29 CONVALESCENT HOSPITALS.

Metropolitan Convalescent Institution, Sackville-street, W., £603 15*s.*; Bexhill Convalescent Home, Sackville-street, W., £335 8*s.* 4*d.*; All Saints' Convalescent Hospital, Eastbourne, £383 6*s.* 8*d.*; Ascot Priory Convalescent Home, £67 1*s.* 8*d.*; Charing Cross Hospital Convalescent Home, Limpsfield, £67 1*s.* 8*d.*; Chelsea Hospital for Women Convalescent Home, St. Leonards, £43 2*s.* 6*d.*; Hahnemann Convalescent Home, Bournemouth, £23 19*s.* 2*d.*; Hanwell Convalescent Home, £26 16*s.* 8*d.*; Herbert Convalescent Home, Bournemouth, £23 19*s.* 2*d.*; Herne Bay Baldwin-Brown Convalescent Home, £33 10*s.* 10*d.*; Herne Bay Mothers' Home, £40 5*s.*; Homœopathic Convalescent Home, Eastbourne, £19 3*s.* 4*d.*; King's College Hospital Convalescent Home, Hemel Hempstead, £57 10*s.*; Mrs. Kitto's Convalescent Home, Reigate, £67 1*s.* 8*d.*; London and Brighton Female Convalescent Home, £9 11*s.* 8*d.*; Mary Wardell Convalescent Home for Scarlet Fever, £105 8*s.* 4*d.*; Morley House Convalescent Home for Working Men, £177 5*s.* 10*d.*; Police Seaside Home, Brighton, £47 18*s.* 4*d.*; St. Andrew's Convalescent Hospital, Clewer, £143 15*s.*; St. Andrew's Convalescent Home, Folkestone, £220 8*s.* 4*d.*; St. John's Home for Convalescent and Crippled Children, Brighton, £95 16*s.* 8*d.*; St. Joseph's Convalescent Home, Bournemouth, £47 18*s.* 4*d*; St. Leonards-on-Sea Convalescent Home for Poor Children, £95 16*s.* 8*d.*; St. Mary's Convalescent Home, Shortlands, £17 5*s.*; St. Michael's Convalescent Home, Westgate-on-Sea, £33 10*s.* 10*d.*; Seaside Convalescent Hospital, Seaford, £95 16*s.* 8*d.*; Warley Convalescent Cottage Hospital, Essex, £10 10*s.* 10*d.*; Friendly Societies' Convalescent Home, Dover, £19 3*s.* 4*d.*; Deptford Medical Mission Convalescent Home, Bexhill, £19 3*s.* 4*d.*

15 COTTAGE HOSPITALS.

Beckenham Cottage Hospital, £47 18*s.* 4*d.*; Blackheath and Charlton Cottage Hospital, £17 17*s.* 6*d.*; Bromley, Kent, Cottage Hospital, £83 3*s.* 4*d.*; Chislehurst, Sidcup and Cray Valley Cottage Hospital, £38 6*s.* 8*d.*; Eltham Cottage Hospital, £30 13*s.* 4*d.*; Enfield Cottage Hospital, £52 14*s.* 2*d.*; Epsom and Ewell Cottage Hospital, £57 10*s.*; Hounslow Cottage Hospital, £22 0*s.* 10*d.*; Livingstone Cottage Hospital, £57 10*s.*; Mildmay Cottage Hospital, £57 10*s.*; Reigate and Redhill

Cottage Hospital, £71 17*s.* 6*d.*; Sidcup Cottage Hospital, £38 6*s.* 8*d.*; Tilbury (Passmore Edwards) Cottage Hospital, £38 6*s.* 8*d.*; Willesden (Passmore Edwards) Cottage Hospital, £33 10*s.* 10*d.*; and Wimbledon Cottage Hospital, £33 10*s.* 10*d.*

8 INSTITUTIONS.

Establishment for Gentlewomen, Harley-street, £105 8*s.* 4*d.*; S. Saviour's Hospital and Nursing Home, £115; National Sanatorium for Consumption, Bournemouth, £86 5*s.*; Invalid Asylum, Stoke Newington, £57 10*s.*; Firs Home, Bournemouth, £19 3*s.* 4*d.*; St. Catherine's Home, Ventnor, £28 15*s.*; Friedenheim Home for the Dying, £239 11*s.* 8*d.*; and Oxygen Home, £38 6*s.* 8*d.*

56 DISPENSARIES.

Battersea Provident Dispensary, £81 9*s.* 2*d.*; Bloomsbury Provident Dispensary, £11 10*s.*; Brixton, &c., Dispensary, £46; Brompton Provident Dispensary, £21 1*s.* 8*d.*; Camberwell Provident Dispensary, £76 13*s.* 4*d.*; Camden Provident Dispensary, £12 9*s.* 2*d.*; Chelsea, Brompton, and Belgrave Dispensary, £38 6*s.* 8*d.*; Chelsea Provident Dispensary, £11 10*s.*; Child's Hill Provident Dispensary, £10 10*s.* 10*d.*; City Dispensary, £115; City of London and East London Dispensary, £23 19*s.* 2*d.*; Clapham General and Provident Dispensary, £24 18*s.* 4*d.*; Deptford Medical Mission, £14 7*s.* 6*d.*; Eastern Dispensary, £30 13*s.* 4*d.*; East Dulwich Provident Dispensary, £28 15*s.*; Farringdon General Dispensary, £42 3*s.* 4*d.*; Finsbury Dispensary, £50 15*s.* 10*d.*; Forest Hill Dispensary, £36 8*s.* 4*d.*; Greenwich Provident Dispensary, £22 0*s.* 10*d.*; Hackney Provident Dispensary, £10 10*s.* 10*d.*; Hampstead Provident Dispensary, £38 6*s.* 8*d.*; Holloway and North Islington Dispensary, £47 18*s.* 4*d.*; Islington Dispensary, £43 2*s.* 6*d.*; Kensal Town Provident Dispensary, £9 11*s.* 8*d.*; Kensington Dispensary, £57 10*s.*; Kilburn, Maida Vale, and St. John's Wood Dispensary, £36 8*s.* 4*d.*; Kilburn Provident Medical Institution, £28 15*s.*; London Dispensary, £19 3*s.* 4*d.*; London Medical Mission, Endell-street, £91 0*s.* 10*d.*; Margaret Street Infirmary for Consumption, *nil*; Metropolitan Dispensary, £44 1*s.* 8*d.*; Notting Hill Dispensary and Maternity (Provident), £8 12*s.* 6*d.*; Paddington Provident Dispensary, £34 10*s.*; Pimlico Provident Dispensary (Lupus-street), *nil*; Portland Town Dispensary, £16 5*s.* 10*d.*; Public Dispensary, £38 6*s.* 8*d.*; Queen Adelaide's Dispensary, £17 5*s.*; Royal General Dispensary, £23 19*s.* 2*d.*; Royal Pimlico Provident Dispensary, £60 7*s.* 6*d.*; Royal South London Dispensary, £38 6*s.* 8*d.*; St. George's and St. James's Dispensary, £46; St. George's, Hanover-square, Provident Dispensary, £28 15*s.*; St. John's Wood and Portland Town Provident Dispensary, £28 15*s.*; St. Marylebone General Dispensary, £33 10*s.* 10*d.*; St. Pancras and Northern Dispensary, £29 14*s.* 2*d.*; South Lambeth, Stockwell, and North Brixton Dispensary, £43 2*s.* 6*d.*; Stamford Hill, Stoke Newington, &c., Dispensary, £50 15*s.* 10*d.*; Tower Hamlets Dispensary, £36 8*s.* 4*d.*; Walworth Provident Dispensary, £10 10*s.* 10*d.*; Wandsworth-common Provident Dispensary, £7 13*s.* 4*d.*; Westbourne Provident Dispensary and Maternity, £12 9*s.* 2*d.*; Western Dispensary, £55 11*s.* 8*d.*; Western General Dispensary, £119 15*s.* 10*d.*; Westminster General Dispensary, £33 10*s.* 10*d.*; Whitechapel Provident Dispensary, £19 3*s.* 4*d.*; and Woolwich Provident Dispensary, £10 10*s.* 10*d.*

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Cholera and Plague in India.—The Famine.—The Pasteur Institute for India.—The Medical Officer of Health of Calcutta and the Corporation.—The Bombay Plague Commission.—The Fecundity of the Natives of India.

AN epidemic of cholera in several parts of India seems to have taken the place of plague. In Bombay it is increasing, and the deaths amount to about 400 per week. Several Europeans have succumbed and the disease has broken out among the bluejackets of H.M.S. *Magdala*. At Poona, also, the Shropshire Regiment has suffered, and an outbreak has occurred at the Deccan College. In Calcutta the number of cases is only slightly above the average—from 16 to 20 a week being the usual number.

An increase in plague is reported this week, the number of deaths for the whole of India having risen from 198 to 251. Of these Calcutta reports 86; Bombay city, 73; Bombay districts, 21; Bengal districts, 14; and Mysore, 57. There are indications that plague is reviving. It is increasing in Mysore, and the number of deaths from plague in both Bombay city and Calcutta represents a high minimum. This time of the year has generally shown the lowest returns, although the terrible outbreak at Poona last year considerably altered the usual figures. One explanation offered for this seasonal vicissitude is that during the cold weather the poor live more indoors and sleep crowded together in stuffy rooms. The Poona outbreak may be cited against this theory as may the outbreaks at Karachi and Calcutta in the increasing heat of the spring months. The continued high mortality in Calcutta is not explained by the existence of any epidemic disease. It is higher than last year. The number of deaths recorded as due to plague or suspected plague do not quite account for the excess. I am inclined to believe that there must be more plague extant than is recorded. With the defervescence of an outbreak many cases show less typical features, and it is very probable that the inquiries made after death fail to discover many of the cases. Whether this be the true explanation or not the continued high general mortality is very ominous.

The number of people in receipt of famine relief is still over 6,250,000. Of these 3,500,000 are on relief works, and the remainder are receiving gratuitous relief. The greatest distress is in the Central Provinces. A most generous gift has been made by the Maharaja of Jaipur of 15 lakhs of rupees (equal to £100,000) towards an "Indian People's Famine Trust." The income arising from this is to be applied for the purposes of charitable relief in seasons of general distress in any of the territories subject to the Lieutenant-Governor of Bengal. The prospects of the monsoon during the past week have brightened considerably. Heavy rain has fallen in many of the distressed districts and favourable news for the continuance of the rains is brought by the ships arriving at Bombay. The rainfall in Bombay city exceeded eight inches in 24 hours on July 31st.

I am pleased to be able to notify that on and after August 9th the Pasteur Institute of India will be open and all officers and soldiers bitten by rabid dogs are accordingly to be sent for treatment to Kasauli. The regulation authorising the despatch of officers and men to Paris becomes inoperative after the above date.

The medical officer of health of Calcutta (Mr. J. Nield Cook) has been prohibited from giving a course of lectures on hygiene at the Medical College. The corporation consider that he must devote the whole of his time to the duties of health officer. I understand that Mr. Cook has previously for the convenience of Government given the course of lectures, but it now appears that he has no right or privilege to do so. Notwithstanding that the suggestion for a further course emanated from the Government the Municipal Commissioners refused their sanction and then the Government replied that any claim put forward by the health officer to undertake outside work was quite untenable. As the Government of Bengal in withdrawing the proposal make the following observation—viz., that "the sole question was whether in a temporary emergency to meet the convenience of Government the Commissioners would place his services at the disposal of Government for the purpose of delivering the lectures on hygiene," I think that Mr. Nield Cook has hardly been fairly treated.

It is reported that the Commission which the Bombay Government recently appointed for the purpose of inquiring into the complaints as to the bad after-effects of inoculation against plague in Dharwar, Gadag, and Hubli have completed their work. Their report has not yet been published. Inoculation is still proceeding briskly in the Jullunder and Hoshiapur districts of the Punjaub, where it appears to have found much favour with the people. Elsewhere throughout India it is practically at a standstill.

The fecundity of the natives of some parts of India must be very high. In Bengal the birth-rate recorded for 1899 was 42·96 per mille and this notwithstanding the admittedly faulty nature of registration. In Madras some of the registrars appear to think that the deaths of infants under one year of age are too insignificant for registration. It is interesting to observe that the months of the greatest number of births are those from October to March. The figures for Bengal being on a large scale show unmistakeably, therefore, that the first six months of the year are accompanied by an increased virility. The high birth-rate which rules in most parts is counterbalanced by an almost correspondingly high death-rate. In Calcutta and Bombay the birth-rate is very low, partly because of the comparative paucity of women but also because pregnant women go to their native country before the time of childbirth.

August 2nd.

EPSOM COLLEGE.—Students educated at Epsom College had a gratifying amount of success at the recent Preliminary Scientific Examination of the University of London, for out of 14 candidates only two failed. Of the 12 who passed four were in Division 1, three were in Division 2, one passed in chemistry and physics, and four passed in biology. Moreover, both of the two Epsom candidates passed the Intermediate Science Examination—one in each class, two passed the First Conjoint Examination, and 16 out of 20 passed the Matriculation Examination.

THE LANCET.

LONDON: SATURDAY, AUGUST 25, 1900.

THE County of London is a big place to keep under such control that every part of its machinery may work in accordance with the requirements of public health and comfort. From the point of view of the number of persons within its area, and of the number of great industries pursued in that very congested area, the county of London surely holds the premier position amongst the cities of the world. All the more satisfactory is it to find that its administration is efficient, judging from the annual reports of the chief officer of the Public Control Department of the London County Council. From these reports a very fair idea may be gained as to how the various organisations of modern life and toil in the metropolis are regulated, and, though we may think it our duty to point out one or two places where stricter control is required, we are glad to think that year by year the story is one of progress. Such, at any rate, is the conclusion to which the annual report just issued would guide us.

Not the least important of the public powers and duties vested in the London County Council is the management of affairs in connexion with coroners and their courts. The appointment of coroners and payment of their salaries, the settlement of their districts, the regulation and payment of the cost incurred, and the provision and maintenance of the courts for the purpose are under the control of the London County Council. It would appear that during the year 1899 8271 inquests were held in London, which represents a rate of 1·8 per 1000 of the estimated population of 4,500,000. These results show an increase of 10·6 per cent. upon the number of inquests in the previous year (1898). The ratio of males to females upon the bodies of whom inquests were held was about 1·5 to 1, or half as many males as females. Commendable progress is apparently being made by the London County Council with the further provision and maintenance of proper accommodation for the holding of inquests. Mortuaries and post-mortem rooms are erected by consent of the sanitary authorities. The Council, however, as in other departments can bring the various vestries to a sense of their duty in this matter if such consent is in any way irrationally withheld. During the past official year several mortuaries have been erected and coroners' courts provided, while accommodation for the holding of inquests has been improved in certain places. Still more satisfactory is it to note that during the last year the Council has succeeded in putting a stop to the objectionable practice of holding nquests in public-houses. The practice became common undoubtedly on account of the utter want of special accommodation for this purpose. London is still in need of more accommodation for the holding of inquests, but Londoners may congratulate themselves that the day of public-house inquests is over and that little Swills no longer gives his lurid performances in the Sol's Arms.

A curious point is considered in the report as to the growing practice of weighing paper with goods purchased. The purchaser of, for example, one pound of tea often obtains, according to the chief officer of the Public Control Department of the London County Council, less than, say, 15½ ounces of tea and more than half an ounce of paper. This deficiency becomes a large item when the great number of sales of small parcels of tea and other commodities in this manner is considered. It amounts, in fact, to nearly 4 per cent. and represents a loss probably exceeding half a million sterling to the public in the course of a year. According to the Merchandise Marks Act it is contrary to the Act to sell as one pound of tea a package marked as containing one pound but which contains less than one pound, although with its wrapper it weighs one pound or more. On the other hand, it is not contrary to the same Act to sell as one pound of tea less than one pound when it is printed on the package that the tea and wrapper together weigh one pound. The Weights and Measures Acts decide that it is not fraud to sell as one pound of sugar a package containing less than one pound of sugar but which with the wrapper weighed one pound. From recent decisions, odd as it may seem, fraud cannot be charged under the 26th section of this Act where paper is weighed with goods sold, but apparently the placing of the paper on the scales for the reception of the goods is an offence within the contemplation of the 25th section. While upon this subject it is satisfactory to be assured that continuous improvement has taken place from year to year in the accuracy of the weighing and measuring instruments in everyday use, and that the improvement was maintained last year. It is interesting, also, to notice that the number of measures of capacity submitted to the Council's offices for control has been in a greater proportion to the number of weighing instruments submitted, a fact which is stated to be due to the substitution by publicans of glass for pewter measures.

Under the Bread Act several persons were convicted for failing to sell bread by weight. Under the Shop Hours Acts no less than 113,271 inspections were made during the year ending March 31st, 1900, when 14,424 offences were discovered, but only in 132 of these were proceedings taken. In regard to recent legislation upon this subject the Council has agreed to the principle of placing a daily limit on the hours of employment in shops, and it has also approved of the reduction of hours of work for young persons from 74 to 68 per week. That excellent measure the Seats for Shop Assistants Act came into force on Jan. 1st, 1900. It would appear that in 505 cases in which sufficient seats had not been provided the inspectors were mostly successful in making satisfactory arrangements.

Thanks to the work of an energetic association, the Coal Smoke Abatement Society, and, we may add, to the repeated representations of THE LANCET on the subject, the smoke nuisance has been actively dealt with during the year; but it is a pity that the Council has only very limited powers for dealing with this very real and present nuisance, for the sanitary authorities may

apparently fail to enforce the law and may disregard with utter impunity the representations of the Council. The Council should certainly have concurrent jurisdiction in this matter with the sanitary authorities. The present state of administering the law with the view of suppressing this nuisance is not satisfactory. We are glad to see that proceedings have been contemplated or begun against all classes of offenders, steam-shipping companies, railway companies (on account of the smoke discharged from the locomotives), electric light companies, and others, to mention a few, and we hope that a public feeling will soon be created in London in favour of pure air, against which feeling the managers of factories, &c., will not wish to run counter.

It is not surprising that the chief officer of the Public Control Department of the London County Council, Mr. SPENCER, should have devoted a large portion of his report to petroleum lamp accidents, since in previous years he has conducted some practical inquiries upon the question. He notes that the number of lamp accidents during the past official year shows a considerable diminution as compared with the preceding five years. Mr. SPENCER finds it difficult to assign a definite reason for this decrease, but he would infer that it is due to the fact of a much larger quantity of Russian oil having been imported into London during the past year than in previous years, a large percentage of which is of a high flash-point. We do not believe that this is the explanation, since we have found it very difficult to obtain any other oil than the so-called low flash-point oil at the oilshops. We are rather inclined to the view that the danger of employing a cheap and defective lamp is gradually becoming realised by the poorer classes amongst whom these accidents invariably occur.

The report relates to a very important section of the municipal affairs of the greatest city in the world, and therefore involves matters of interest and concern to an enormous number of people. It deals with facts and affords infinitely more instruction than abstract discussion could ever do in a number of related questions.

SCURVY has been known from the earliest times and has prevailed particularly in armies in the field and among sailors on long voyages. From the early part of this century, however, mainly owing to the efforts of Dr. LIND, and to accumulating knowledge of the conditions upon which the disease depends, scurvy is now not nearly so frequently met with as it was formerly. This is well exemplified by the opening words of a paper on "The Etiology of Scurvy" which we published on August 4th (p. 321). The author is Staff-Surgeon W. E. HOME, R.N., and he says: "I should like to offer some remarks ..... and to submit a suggestion as to the etiology of this important disease which has become so rare that I cannot be quite certain that I have ever seen a case." Such a remark from a naval surgeon is the strongest evidence of the enormous decrease in the prevalence of the disease, but the fact that in spite of the large fields that have been offered for the study of scurvy much doubt still exists in regard to its etiology and pathology makes it delicate for the medical profession to claim much scientific credit for the improved condition of things. Some recent work, however, has been of great value.

We have recently published three papers dealing with the subject, one of which we have already referred to; another by Mr. FREDERICK G. JACKSON and Dr. VAUGHAN HARLEY[1]; and the third from the pen of Professor A. E. WRIGHT of Netley appears in our present issue. Mr. JACKSON and Dr. VAUGHAN HARLEY reviewed the work done by previous observers, and came to a conclusion which is decidedly contrary to views which had hitherto been held by other authorities, namely, that neither lime-juice nor fresh vegetables prevent scurvy or cure it, that it is not the absence of these which is the cause of the disease, but that scurvy is a disease produced through the eating of tainted food. This view, that scurvy is essentially due to poisoning by the ptomaines of tainted animal food, was first propounded by Professor TORUP of Christiania. Mr. JACKSON and Dr. VAUGHAN HARLEY maintain that before giving to lime-juice the credit of having practically swept away scurvy from the naval and marine services it is necessary to remember that other causes have at the same time been at work to promote health, such as improved sanitation, better quarters for the men, shorter voyages owing to the enormous increase in the use of steam, and above all better food. They further consider that evidence has shown in certain instances in which men have unwillingly experimented on the effects of ptomaine poisoning that scurvy is produced by the eating of tainted meat and not by the want of fresh vegetables. In order to confirm or negative this view it was decided to carry out some experiments. Monkeys were therefore fed on a certain brand of tinned Australian beef. The experiments were divided into three groups. In the first the monkeys were given daily, together with boiled rice, 50 grammes of meat from a freshly-opened tin together with maize; in the second group the same food matters were given but the meat was obtained from tins which had been opened for a few days and had stood in the laboratory; in the third group the monkeys were given exactly the same diet as in Group 2, except that each received daily either an apple or a banana. In the first group no signs of scurvy appeared, but in the second and third symptoms showed themselves which Mr. JACKSON and Dr. VAUGHAN HARLEY considered were characteristic of scurvy. They concluded that their investigations afforded important confirmation of results derived from Arctic experience—viz., that the presence of fresh vegetables or lime-juice is not alone sufficient for the prevention or the cure of scurvy and that we must regard the condition of the food in general, and especially the state of preservation of the meat, as the essential factor in the etiology of the disease. Staff-Surgeon HOME, who is now with the China fleet in charge of the hospital ship *Jelunga*, disputes these conclusions, maintaining that lime-juice and fresh vegetables prevent scurvy by acting as antiseptics. He points out that Mr. JACKSON and Dr. VAUGHAN HARLEY in their experiments did not take care to administer

[1] THE LANCET, April 28th, 1900, p. 1184.

ptomaines only. As the "sour-smelling meat" on which they fed the second lot of monkeys had not been sterilised, the monkeys received not only ptomaines but also the living bacteria which produced the ptomaines. Basing his arguments on grounds similar to those adopted by Dr. WILLIAM HUNTER in his papers on the Etiology of Pernicious Anæmia,[2] Staff-Surgeon HOME asks "What is there in these experiments to prevent us from believing that the bacteria of putrefaction were taken alive into the mouths of the monkeys, there infecting the sordes round the teeth and setting up gingivitis, going on to ulceration, infecting also the gastro-intestinal canal later, these parasitic infections setting up the anæmia on which all the other symptoms of scurvy depend?" Staff-Surgeon HOME by his own confession is a theorist as to scurvy, but he makes out in his paper a strong case for the value of lime-juice as a preventive.

Professor WRIGHT places on record the results of a series of examinations of the blood of patients suffering from scurvy, his paper being a continuation of his previous investigations into the matter. The line of thought which runs through the paper is that the scorbutic condition is a pathological one which is induced by a dietary consisting of meat and cereals to the exclusion of green vegetables, tubers, and fruits. Inasmuch as the food-stuffs which are excluded from the dietary in question are those containing an excess of bases over mineral acids, while the food-stuffs (meat and cereals) remaining are those containing an excess of mineral acids over bases, it is obvious that the scorbutic condition is one which supervenes upon the ingestion of a considerable excess of mineral acids over bases. It would, in view of this consideration, seem probable that scurvy is a condition of acid intoxication very similar to the acid intoxication which can be experimentally produced in herbivora by the ingestion of a surplus of mineral acids. Professor WRIGHT further urges that justification of this theory is afforded by the consideration that the scorbutic condition is remedied or alleviated by the addition to the scorbutic dietary of any one of a whole series of different substances—tubers, green vegetables, decoctions of leaves and growing shoots, &c.—substances which contain an excess of bases over mineral acids. The results of the treatment of the cases recorded in Professor WRIGHT'S paper entirely bear out this theory. In all the cases the alkalinity of the blood was shown to be strikingly reduced and a marked amelioration of the condition followed upon the exhibition of lactate of soda and other similar substances. The treatment adopted by Professor WRIGHT in the cases which he records yielded most satisfactory results, and his method will no doubt be extensively followed.

WE published in our columns last week a full report of the proceedings at the extraordinary meeting of the governors and subscribers of the National Hospital for the Paralysed and Epileptic held on Saturday, August 11th; and in a leading article we pointed out that the attitude taken up by the board of management towards the two questions before it—viz., whether the hospital was properly managed, and whether the medical staff should be represented on the board—was contradictory. The board of management, being accused of maladministration, replied that inasmuch as it has itself examined the condition of its house and finds it in good order no other investigation is necessary, thereby constituting itself its own judge. The same board being asked to admit to its counsels representatives from the medical staff replied that this would be impossible, because if the medical staff were accused of defaulting in their duty in any way they would thus be placed in the impossible position of trying themselves. A board capable of committing itself after due deliberation to such illogical opinions, whatever its faculty for collecting money may be, is in want of reinforcement. It needs to have a little common sense infused into its counsels; and we trust that not only all the medical profession, whose views may be looked upon as interested, but also all the public who are in possession of the facts, will consider that the help which the board requires will come best from the distinguished medical staff of the hospital. They are willing and especially able to assist the board, and the presence of certain of them on the board would prevent the recurrence of the unseemly language used by certain of the speakers at the recent extraordinary meeting. This would be a good thing for the hospital, as appears from the letter on page 630 of our issue to-day, signed "A Life Governor."

No one reading our report of the proceedings at the extraordinary meeting can fail to be struck with the want of common civility displayed by certain of the speakers towards the medical staff who discharge the scientific work of the hospital. The medical staff abstained from attending the meeting for reasons which they made sufficiently clear in our columns. They knew that a gathering convened at the height of the holiday season could not possibly be representative of the governors and subscribers; while their position at the meeting would have been peculiar in that, although anything they said might be listened to by the courtesy of the meeting, the constitution of the hospital would preclude them from giving any votes. The medical staff, therefore, were absent from the meeting, and the occasion became a field day for such of the governors, subscribers, and members of the board of management as were sufficiently interested to attend. Mr. GEORGE RUSSELL, chairman of the extraordinary meeting, thought that the staff of the hospital, being specialists, had so narrowed the range of their mental capacities as to be unable to exercise a trusted voice in the practical business of the hospital. Wrapping the bolus in the gilt paper of circumlocution, the chairman of the extraordinary meeting asked the assembly to believe that the medical staff of the National Hospital for the Paralysed and Epileptic were unable to transact the ordinary business of this world. Mr. HOPWOOD, of the Railway Department of the Board of Trade, if not quite so impolite in meaning was blunter in phraseology. Mr. HOPWOOD was speaking, as he pointed out, as the man of experience. The case was one with the nature of which, he suggested, he was quite familiar, for similar situations occurred "with periodic recrudescence in almost every branch of philanthropic work." And, to show how completely he appreciated the position, he spoke of strikes and lock-outs; he told his audience that he

[2] THE LANCET, Jan. 27th (p. 221), Feb. 3rd (p 296) and 10th (p. 371), 1900.

had "never yet heard that servants in an undertaking, like, say, the London and North-Western Railway, have gone so far as to ask for direct representation on the board of directors," and gracefully compared the medical staff of the National Hospital to servants waiting upon Sir JOHN BLUNDELL MAPLE and threatening to destroy his premises unless he put two of them on his directorate. We are uncertain if Mr. HOPWOOD is a member of the board of management of the National Hospital, and we do not know where he obtained the droll familiarity with hospital management which considers a lock-out a thing of every-day occurrence; but we are sure that if he mediates at the Board of Trade between employers and employed with the delicate sympathy of manner which he displayed when discussing the relations of the medical staff to the management of their hospital he must be an awkward employé for a Government department in these thin-skinned days. Dr. SEPTIMUS GIBBON spoke on the ground that he subscribed £5 in 1858. That was very kind of Dr. SEPTIMUS GIBBON, but it gave him no right to say that the dignified and temperate letters from the medical staff which appeared in our columns and in those of the *Times* were attempts on the part of the medical staff to obtain free advertisement. The date when Dr. SEPTIMUS GIBBON was moved to give his £5 note to the National Hospital leads us to think that perhaps he is not quite abreast of the times, while his position as sanitary officer to the hospital the management of which has been impeached prevents his words from being regarded as impartial. There were other speakers who seemed entirely unable to recognise, even while they declared their high respect for the scientific standing of the medical staff, that the medical staff are an integral part of the institution to which they give their services, that they count in the treatment of the sick for as much as persons who give subscriptions, and that their knowledge of hospital affairs must necessarily be practical and intimate. We have selected for comment the remarks which offended against good taste, but the general tone of the meeting was unfriendly towards the medical staff.

We sincerely trust that, when the governors and subscribers of the National Hospital for the Paralysed and Epileptic meet in anything like representative numbers to debate the questions now at issue between the medical men and the laymen who are jointly responsible for the efficiency of the institution, they will repudiate the attitude which has been assumed by the board, and will give no hearing to those whose policy is simply to be against the medical staff. They will not allow their medical officers, through whose exertions the hospital has been raised to such a high pitch of scientific efficiency, to be labeled "self-advertisers" or "cabinet-makers"; nor will they endorse the view that a neurologist is necessarily an ignoramus away from his 'ology. The public, as well as that portion of the public which more particularly supports the hospital, will see that, if there are differences between the medical staff and the board of management, the fault may very well lie with that party to the differences which seems to be unable to treat its adversary with courtesy. The board of management complains that the circular letter from the medical staff to the governors of the hospital, dated May, 1900, alleging the administration of the hospital to be very unsatisfactory and the reputation of the institution to be in danger, was addressed to the governors and not to itself. This might have been a valid objection to the course of conduct pursued by the medical staff had the board of management shown itself in sympathy with the objects or work of the medical staff. But the board has displayed contempt alike for the common sense, business aptitude, and scientific work of the medical staff, so that the medical staff, having complaints to make, might well consider it wiser in the interests of the public to communicate them directly to the governors rather than to waste time upon the board. And now that the management of the hospital, as conducted by the board, has been impeached by the medical staff, it is necessary that there should be a full and unbiased inquiry into all the allegations.

Annotations.

"Ne quid nimis."

THE DANGER TO THE CHILD'S LIFE IN PRECIPITATE LABOUR.

A CORRESPONDENT sends us an interesting account of a woman, the mother of two children, who was confined by the roadside after about two pains of a fine, strong, lusty boy. As he remarks, precipitate labours are uncommon, and yet quite a large number of similar cases can be collected from current medical literature. The fact that in such cases the mother is often taken completely by surprise might lead to the idea that the danger to the child's life would be great. Such, however, does not appear to be the case. When the death of the child occurs from the rapidity and suddenness of the labour it must be due as a rule to one of two causes—either to the child being suffocated by falling into a closet at the time of delivery, or to the injury which the child receives from falling in cases where the woman happens to be delivered whilst standing. The first of these accidents has undoubtedly occurred from time to time. With a view to determining the effects upon the head of a child falling from different heights the following experiments were carried out by Licieux. 15 stillborn children were allowed to drop perpendicularly from a height of 15 inches on to a hard floor; in 12 of them a fracture of one or both of the parietal bones was found. In the same way another 15 stillborn infants were allowed to drop from a height of three feet and in 12 instances fractures of the parietal bones, in some cases extending to the frontal bones, were found. From these experiments it might well be supposed that children born while the mother was standing would almost certainly be fatally injured. The actual facts do not, however, bear out any such supposition. Klein of Stuttgart collected 183 cases of sudden expulsion of the fœtus. Of these, 155 children were expelled while the mother was in the upright posture, 22 when sitting, and six when on the knees. 21 cases occurred in primiparæ. Of the whole number no single child died, and no example of fracture of the bones or any severe injury occurred. Two of the infants suffered from temporary unconsciousness and one had a scalp wound with some bruising over the right parietal bone. An interesting legal case in which this question was involved is reported by Lee. An unmarried girl was indicted for murdering her illegitimate child. There were no marks of external violence but blood was found in

considerable quantity under the scalp over the frontal bones. The pericranium was separated from the bones and both parietal bones were fractured, the left in three places, the right in one place. Portions of the lungs floated in water. For the prosecution it was argued that the child was born alive and was killed by intentional violence applied to the head. For the defence it was contended that the prisoner had been taken suddenly in labour while in a standing position in the yard, and that the injury to the head was caused by the child falling upon the ground which was frozen and hard. The jury brought in a verdict of acquittal. There are several possible reasons why the sudden and unexpected occurrence of labour is so seldom attended with any injury to the child. It is probable that the majority of women under such circumstances instinctively assume as far as possible a somewhat squatting position and so the actual distance that the child falls is not great. The cord no doubt acts as a restraining force and breaks the fall, and even if it be completely torn through the descent of the child will be checked sufficiently to prevent serious injury. The occurrence of hæmorrhage from the torn cord is a possible danger. That a child may die from the accidental or intentional failure to tie the cord has been proved by several fatal cases. In 21 of Klein's 183 cases of sudden labour the cord was torn through close to the abdomen and yet in no single case was there any fatal hæmorrhage. The condition of the cord torn through by the sudden and forcible expulsion of the fœtus may well be compared to that of the cord of animals in which the mother is accustomed to gnaw it through. In both instances the vessels would be more likely to contract and retract than when cleanly cut, and the tendency to the occurrence of hæmorrhage would be very slight. An examination of the recorded cases therefore does not tend to confirm the common opinion that the danger to the child in a case of precipitate labour is considerable.

INOCULATION FOR CHOLERA AND TYPHOID FEVER.

A PARLIAMENTARY paper which has just been issued, containing official correspondence relative to preventive inoculation against cholera and typhoid fever in India, gives some interesting information on these much debated questions. Anti-choleraic inoculation was practised by Mr. Haffkine in Bengal in 1896, the cases treated being for the most part those of coolies proceeding to Assam to work in the tea-gardens. Captain J. C. S. Vaughan, I.M.S., who continued Mr. Haffkine's work, states in his report that the impression has gradually gained ground that the inoculated are not nearly so liable to be attacked as are the uninoculated. Anti-choleraic inoculation has always, so far as he knows, been voluntary and the work has increased. In Purulia he and his assistants had at first to go round the coolie depôts and inoculate such persons as they could persuade. Since then Messrs. Driver and Stainforth, the principal forwarding agents in Purulia, have given expression to a decided preference for inoculated coolies and Captain Vaughan mentions a case in which a tea-planter from Cachar arrived in Purulia, selected 200 coolies and quite spontaneously had every one of them inoculated. In the month before the date of his report he inoculated 1776 coolies. Mr. Haffkine's notes on anti-choleraic inoculation in Calcutta show that the total number of persons inoculated in the affected portions of that city was 7690, and from his statistics of the results it appears that among 654 uninoculated cases there were 71 deaths (a death-rate of 10·8 per cent.), whereas among 402 inoculated cases there were only 12 deaths (a death-rate of 3 per cent.). For every 11 deaths among the uninoculated there were therefore only three deaths amongst the inoculated. In the report of the Sanitary Commissioner with the Government of India for 1897 it is stated that preventive inoculation against cholera was carried on in Bengal throughout the year, upwards of 10,000 persons having undergone the treatment, most of whom were coolies proceeding to the tea-gardens of Assam and Cachar. In his report for 1898 the Commissioner says that if any conclusion is permissible from such figures as are available it is decidedly in favour of the operation. The portion of the Parliamentary paper which deals with the question of anti-typhoid inoculation contains some correspondence which has passed between the Indian Government and the Secretary of State for India. In 1897 the Government of India suggested that Professor A. E. Wright's system of preventive inoculation against typhoid fever should be tried on such British officers and soldiers embarking for India as might consent to the treatment. The War Office, however, raised some objections, and orders were issued that some voluntary experiments which had been carried out in India without official sanction were to be discontinued. Nevertheless the Commander-in-Chief had become persuaded of the advantage of these inoculations and strongly recommended them in the interests of the health and efficiency of the British army in India. It was known that over 2000 men were inoculated, that in no case did any bad or unfavourable symptoms follow the operation, and that only a very few (five or six) of those inoculated contracted typhoid fever subsequently. In a letter of date May 25th, 1899, the Government of India said:—

> The annual admissions per mille for enteric fever amongst British troops in India have risen from 18·5 in 1890 to 32·4 in 1897, while the death-rate has increased from 4·91 to 9·01, and we are of opinion that every practical means should be tried to guard against the ravages made by this disease. The anti-typhoid inoculations have been, we believe, on sufficiently large scale to show the actual value of the treatment, while the results appear to afford satisfactory proof that the inoculation when properly carried out affords an immunity equal to, or greater than, that obtained by a person who has undergone an attack of the disease; further, the operation is one which does not cause any risk to health. In these circumstances we are very strongly of opinion that a more extended trial should be made of the treatment.

In August, 1899, the Secretary of State for India approved of inoculation being performed at the public expense, and on March 8th, 1900, a despatch from the Government of India mentioned that "the measure had been widely resorted to."

THE EMPLOYMENT OF EPILEPTICS.

SIX years have now elapsed since the formation of the colony for epileptics at Chalfont St. Peter, Buckinghamshire, and the value of the work accomplished there is recognised on all sides. In the report of the honorary medical staff for the year 1899 it is stated that amongst the colonists "a marked improvement has been noted in the majority of instances both as regards the general state of health and the disease," and that the progress has been especially noticeable in the younger cases of both sexes, "the improvement both in their general bodily development and more particularly in their disease being highly satisfactory." On Dec. 31st, 1899, there were 63 male and 24 female colonists. Of the males about a dozen were principally employed in the building department at carpentering, plumbing, painting, bricklaying, and smith's work the remainder were chiefly employed in farm and garden work. Of the females, about 11 were usually employed in the laundry and the remainder in housework. The report of the executive committee presented at the annual meeting of the National Society for Employment of Epileptics, 12, Buckingham-street, Strand, London, W.C., contains a

brief review of the progress of the colony during the first five years of its existence, from its commencement with a temporary iron building in 1894 down to the opening of four new permanent homes by the Duke and Duchess of York in 1899. The applications for admission are in excess of the accommodation, and funds are urgently needed for the building of additional homes as well as for other purposes which the development of the colony has rendered necessary.

THE DRAPERS' COMPANY: THE "MERITS AND NEEDS" OF HOSPITALS.

IT is gratifying to report that the Worshipful Company of Drapers have sent their munificent annual subscription of £1000 to the Prince of Wales's Hospital Fund for London, and it is still more so to see that in forwarding their generous cheque they say that "they have learnt with much satisfaction that the committee have appointed visiting sub-committees consisting of persons practically acquainted with hospital management with the object of obtaining information as to the merits and needs of the various institutions. The company regard this as a most important step towards promoting the well-being of metropolitan charities and strengthening their claims on public benevolence." In having regard to the merits and needs of hospitals the Prince of Wales's Fund is following the excellent example of the Hospital Sunday Fund, though it takes perhaps a more practical way of carrying out the matter. If the public could be assured that hospitals acted discreetly in their charity there would be no end to its liberality.

TREATMENT OF SIMPLE GOITRE IN YOUNG ADULTS.

PROFESSOR GEORGE MURRAY of Newcastle contributes to the August number of the *Edinburgh Medical Journal* a valuable paper on the Medical Treatment of Some Forms of Simple Enlargement of the Thyroid in Young Adults. He states that the results appear to be scarcely as well known in this country as they deserve to be and that he had seen several cases of goitre in which operative treatment had been proposed as the only means of relief but which improved so much under medical treatment that no operation was needed. The most favourable cases for treatment were those of simple parenchymatous enlargement of the thyroid gland occurring in adolescents and young adults. In these there was a uniform general enlargement of the whole gland which came on gradually and painlessly until it attracted attention by the discomfort it caused to the patient when wearing a collar. As the enlargement proceeded there might be dyspnœa from compression of the trachea. This was probably a true hypertrophy of the thyroid gland occurring in response to some demand for an increased supply of thyroid secretion. In some cases the gland if left untreated would continue to enlarge beyond physiological limits, and to arrest this growth it was necessary to give the thyroid gland a period of enforced rest by supplying to the patient by the mouth preparations of active thyroid substance. The gland then passed into a resting condition and underwent a partial atrophy with corresponding diminution of size. This may be compared to the mammary gland during lactation, which, as soon as the child is weaned and the demand for milk ceases, returns to a resting condition and decreases in size. In selecting suitable cases for treatment it is most important to ascertain that symptoms of exophthalmic goitre, such as frequent pulse, exophthalmos, nervousness, and tremors, are entirely absent, for in cases of this disease the symptoms are often aggravated by thyroid extract. In carrying out treatment either liquid thyroid extract (15 minims) or dry thyroid (three or more grains) may be given three times a day. Each lobe of the thyroid of a sheep should yield eight grains of the dry thyroid substance. The following two cases are given as illustrative instances. Case 1.—A girl, aged 13 years, noticed after an attack of bronchitis which occurred two years previously, a swelling in front of the neck which steadily increased. On admission to the Newcastle Royal Infirmary early in February both lobes and the isthmus of the thyroid were found to be enlarged uniformly. The superficial veins in front of the thyroid were conspicuous and there was a little dyspnœa which was increased on exertion. The circumference of the neck over the swelling was 16½ inches. When pressure was made on either lobe towards the opposite side the breath-sounds became stridulous. She was treated with dry thyroid substance as above three times a day, and within a few days the goitre had distinctly diminished in size, the neck being reduced to 15 inches in circumference, and with continuation of the treatment to 14 inches. The breathing became easier in consequence and she continued to improve till on April 12th, when she left the hospital, the neck was 13¾ inches in circumference and the thyroid gland had returned nearly to its normal size. Case 2.—A lad, aged 16 years, suffered from a gradual enlargement of the thyroid for six months, the enlargement involving both the lobes and the isthmus, till he was unable to wear a shirt collar 15½ inches in circumference but could button on one of 16½ inches. He was ordered three grains of the dried thyroid three times a day and ordered to rub red iodide of mercury ointment over the goitre every night. After a month the thyroid substance was taken only once a day and after another month the ointment was discontinued. The goitre steadily diminished until it was reduced to half its size, the circumference of the neck being reduced to 14 inches.

CASE-MORTALITY IN METROPOLITAN ASYLUMS BOARD HOSPITALS.

THE Statistical Committee of the Metropolitan Asylums Board Hospitals have just issued their annual report for 1899 which as usual contains much valuable and well-arranged statistical information relating to the cases of infectious diseases treated in those hospitals during last year. The total number of admissions to the hospitals was 25,094 and considerably exceeded the number admitted in any previous year. The cases of scarlet fever, of diphtheria, and of enteric fever all showed a marked increase upon the number in the previous year. The increase in the cases of diphtheria and of enteric fever may be attributed to increased prevalence of those diseases in London, as the death-rate from each of those diseases was higher in 1899 than in the previous year. As regards scarlet fever, however, the metropolitan rate of mortality was very considerably lower last year than in any previous year on record and therefore if the increase in the admissions to the Asylums Board Hospitals was even partly due to increased prevalence of the disease, the type of disease must have been exceptionally mild. The report before us points out, however, that the proportion of total admissions to these hospitals to the total number of notified and legally admissible cases have increased from 33·6 per cent. in 1890 to 68·1 per cent. in 1899; the proportion of scarlet fever cases increased from 42·8 to 74·3 per cent.; of diphtheria cases from 17·9 to 69·7 per cent.; and of enteric fever cases from 22·5 to 40·8 per cent. The cases of scarlet fever admitted to the hospitals last year numbered 13,290, while the deaths did not exceed 353, the case-mortality being as low as 2·65 per cent., against 4·07 and 4·12 in the two preceding years. The decline in the case-mortality of scarlet fever in these Metropolitan Asylums Board Hospitals has been remarkable and constant during the past 25 years; the mean proportion was 12·88 per cent. in the five years 1875–79, whereas in the most recent

five years (1895–99) the mean proportion of case-mortality did not exceed 4·12 per cent. This marked decline may be partly due to the admission to the hospitals of a larger proportion of mild cases in recent years and partly to improved methods of treatment, but it seems impossible to doubt that it is mainly due to an alteration in the average type of the disease. Cases of diphtheria were first treated in these hospitals in the latter part of 1888, and the number of admissions have since steadily and rapidly increased from 722 in 1889 to 8676 in 1899, which exceeded by 2110 the number in the preceding year. With the increase of cases under treatment the proportional case-mortality has steadily declined from 35·0 per cent. in the three years 1889–91 to 15·7 per cent. in 1897–99; the proportion last year was 13·95, showing a marked further decline from the proportion in preceding years, in which it steadily fell from 30·42 in 1893 to 15·38 in 1898. It may be presumed that the same causes which have affected the rate of mortality from scarlet fever have also influenced the rate of mortality from diphtheria; it therefore seems impossible to attribute the marked decline in recent years, at any rate entirely, to the effect of antitoxin treatment. The number of cases of enteric fever admitted to these hospitals in 1899 (1535) was more than double the average number in recent years, and the nearest approach to so high a number since the hospitals were opened in 1871 was 869 in 1898. The case-mortality of enteric fever last year was 16·47 per cent., against 18·64 and 17·73 in the two preceding years. The case-mortality from this disease has fluctuated more or less from year to year since 1872, but has shown no marked decline; the lowest proportion was 13·20 per cent. in 1892, and the highest was 24·68 in 1875. 11 admitted cases of typhus fever are recorded in the tables, but none of them proved fatal, which suggests an exceptionally mild form of the disease. Not more than 18 cases of small-pox were admitted of which three proved fatal. Taking all notifiable infectious diseases in the aggregate, the rate of mortality resulting therefrom in the metropolis has shown a decided and marked decline since the Metropolitan Asylums Board Hospitals were established in 1870, and there is little reason to doubt that these hospitals constitute an important factor in the causation of this decline, which affords undeniable proof of improved sanitary conditions notwithstanding the constant growth of the population of London.

LAPAROTOMY IN TYPHOID PERITONITIS.

A REPORT on this question presented to the Boston Society for Medical Improvement by Dr. G. B. Shattuck, Dr. J. C. Warren, and Dr. F. Cobb, and published in the *Boston Medical and Surgical Journal* of June 28th is of great importance. It is based on 24 hospital cases of typhoid fever in which laparotomy was performed for symptoms of peritoneal infection in the years 1895–1900. Of these 17 were cases of peritoneal infection from intestinal perforation; two from threatened perforation or areas of necrotic peritoneum; one from a ruptured mesenteric gland; and one from an unknown cause, presumably intestinal perforation. In the remaining three the cause of the symptoms could not be ascertained. As the title of this annotation indicates the laparotomy was performed in cases of acute peritoneal infection, not necessarily of perforation, for no differentiation can be made between the symptoms of perforation and of general septic peritonitis otherwise produced. This, of course, was previously known, but its logical implication that the question should be discussed as that of operation for typhoid peritonitis and not for perforation seems not to have been grasped. The titles of all the previous papers refer simply to operation for perforation and this was diagnosed in all the present cases. Of the 21 cases in which a cause of the peritonitis was found seven presented sudden acute symptoms of grave abdominal infection without any premonitory ones. It is noteworthy that of these fulminating cases, which conform most closely to the hitherto established idea of intestinal perforation, only five were due to actual sudden perforation; one was not a case of perforation at all, and in the other the perforation and progress of the localised peritonitis did not cause any symptoms. In the 14 other cases distinct warning symptoms were present and preceded equally distinct diagnostic symptoms. The symptoms which marked the beginning of the peritoneal infection in the second group were various degrees of abdominal pain and tenderness, either localised or general. The importance of these symptoms was not recognised, and, therefore, as complete physical examination as might be desired was not made. In three cases it was noted that pulse and temperature were rising at this early period. The warning abdominal pain preceded the severe symptoms by from three to 60 hours. The severe abdominal symptoms which determined the diagnosis and the operation were those of general septic peritonitis—general abdominal pain, severe general tenderness and rigidity, abdominal distension, collapse, weak pulse, and anxious face. In only three cases was there vomiting. The classical fall of temperature was not often present. Of eight cases in which the leucocytes were counted four showed leucocytosis, four did not. In only two cases was obliterated liver dulness observed. The early diagnosis of peritoneal infection is important in reference to operation. Cushing has described a "pre-perforative stage" in which the symptoms (the "warning symptoms" described above) are due to the commencing involvement of the serosa.[1] A study of the above-mentioned cases and of those reported by Cushing show that abdominal pain, especially if localised, and especially in mild cases, should always be regarded as a danger-signal. It usually means peritoneal infection. This pain is most frequent in the right iliac region. Associated localised tenderness, spasm, and leucocytosis, would confirm this view. A rise of temperature usually accompanies it. But by "pain" is not meant the discomfort or uneasiness accompanying meteorism or tympanites. A special study of 70 cases of typhoid fever in the Massachusetts General Hospital shows that in the majority of cases of mild and moderately severe typhoid fever no genuine abdominal pain is complained of, even when distension, diarrhœa, and hæmorrhage are present. Out of the 21 cases recovery took place absolutely in 3 (14·3 per cent.); in another case the patient recovered from the operation and died from intestinal hæmorrhage. The present writers insist on the great importance of early operation in typhoid peritonitis, and of frequent enumerations of leucocytes in every case of typhoid fever. In the presence of abdominal pain an early count of leucocytes is necessary. When the warning "pre-perforative" symptoms are present a surgical consultation should at once be held.

THE PHYSICIAN'S DUTY.

THE *North Devon Herald* of August 16th contains a letter signed "A Physician," in which the writer lays it down as his opinion that it is justifiable for a physician to kill, or, as he prefers to call it, "to end a patient's inevitable suffering and hasten his certain death." He states with perfect calmness that he has relieved the sufferings of a good many patients in the course of 35 years' practice. So we trust has every medical man, but not in the sense in which "A Physician" evidently means it to be taken. He cites two instances in which he kept patients under chloroform for some six or eight hours until they died. With this procedure *per se* we

[1] THE LANCET, June 24th, 1899, p. 1730.

have no cause of quarrel. It is a recognised practice in cases involving great pain or suffering to keep patients under some anodyne until the end, and chloroform is as good as any other. But apparently "A Physician" gave the chloroform to kill, for he says, "I have always used chloroform ..... it arrests the heart's action in systole." We cannot see "A Physician's" line of reasoning. If he wanted to kill his patient why did he not push the chloroform, or directly that his patient was under its influence divide the medulla? According to him both the patient and the patient's friends were willing that life should be terminated. If so, why prolong the agony? We can only repeat the well-known opinion that it is not the duty of a medical man to take life.

A COMMISSION ON DYSENTERY AND ENTERIC FEVER IN ARMIES IN THE FIELD.

ON August 18th the *Carisbrooke Castle* sailed for South Africa. Among her passengers were Dr. W. J. R. Simpson, Professor of Hygiene at King's College, London, and Dr. J. Lane Notter, Professor of Military Hygiene at Netley. On their arrival at the Cape they will be met by Major D. Bruce, R.A.M.C. These investigators have been commissioned by the Government "to inquire into the nature, causation, pathology, and modes of prevention (more particularly as affecting armies in the field) of dysentery, and its connexion, if any, with enteric fever." These two diseases are of course the scourge of armies in the field and there is unfortunately no lack of cases into which research may be made, so that we may hope that the labours of the Commission will result in some means being found whereby the appalling loss of life from dysentery and enteric fever may be lessened in future campaigns.

A STUDY IN BACTERIOLOGY.

IN the July-August number of the *Bulletin of the Johns Hopkins Hospital* Dr. Harvey Cushing publishes a long and profusely illustrated paper entitled, "A Comparative Study of Some Members of a Pathogenic Group of Bacilli of the Hog Cholera or Bacillus Enteritidis (Gärtner) Type, intermediate between the Typhoid and Colon Groups." He says that in the large typhoid-colon group of bacilli very definite cultural and pathogenic peculiarities are possessed by the bacillus typhosus and the bacillus coli communis, the extremes of the group, but intermediate to these forms there is one especially recognisable sub-division, the clinical significance of which as a definite type has been much slighted. This intermediate group (including the bacillus enteritidis and its near allies) has been called the "Gärtner" group by Herbert E. Durham and the "hog cholera" group by Theobald Smith. Sanarelli's bacillus icteroides seems to belong to the same group. Norman B. Gwyn in 1898 reported in the *Bulletin of the Johns Hopkins Hospital* a remarkable case which presented all the clinical symptoms of typhoid fever, but in which no serum reaction was at any time demonstrable toward the bacillus typhosus. The subject of Dr. Cushing's communication was an organism almost identical with Gwyn's and belonging or closely allied to the hog cholera or Gärtner group; it was isolated from an abscess of the rib which appeared during convalescence from a prolonged fever of the enteric type. That a general infection had occurred was clear from the specific action of the patient's serum toward the isolated organism; there was no agglutinative reaction whatever evidenced toward the bacillus typhosus. Whether this infection was of intestinal origin and occurred through the typhoid lesions or whether it was itself the cause of the fever must remain undecided. The patient was a coloured man, 27 years of age, who was admitted into the surgical wards of the Johns Hopkins Hospital on March 1st, 1899, with a sinus on a level with the fifth rib at the edge of the sternum. From early in June, 1898, nine months before admission, he had suffered for ten weeks from what his medical attendant described as typhoid fever with a severe but typical clinical course. The bacillus was found in the pus from the sinus. It could not be distinguished from the typhoid bacillus in form or staining qualities. Dr. Cushing concludes that it might represent a division of the Gärtner group, growing less luxuriantly and more like the bacillus typhosus in various fluid media and resembling it in its pathogenic action on animals.

VACCINATION STATISTICS.

A PARLIAMENTARY return which has just been issued gives some valuable statistics relative to the working of the Vaccination Acts in the years 1898 and 1899 respectively. Section 2 of the Vaccination Act, 1898, authorised justices of the peace and police magistrates to issue certificates of conscientious objection on the application of parents who desired that their children might not be vaccinated. The Act came into force on August 12th, 1898, between which date and Dec. 31st of the same year the vaccination officers in England and Wales received more than 200,000 certificates of conscientious objection. During the following year these certificates showed a great falling off, for the number received by the vaccination officers and dated between Jan. 1st and Dec. 31st, 1899, was only 32,341, relating to 32,357 children. The total numbers of certificates of successful primary vaccination received annually by the vaccination officers from Jan. 1st to Dec. 31st were 500,314 in 1898 and 669,349 in 1899, being an increase of 33·8 per cent. in 1899. The number of births registered in England and Wales during 1898 was 923,265, and during 1899 it was 928,640. The ratios per cent. of successful primary vaccination to births registered were 54·2 in 1898 and 72·1 in 1899, an increase in ratio of 33 per cent. in 1899 as compared with 1898. These figures seem to show that the noisy opponents of vaccination are losing their influence with the public and that the outlook as regards the prevention of small-pox is proportionately improved.

SWELLING OF THE SUBMAXILLARY SALIVARY GLANDS IN PLUMBISM.

WE have recently called attention to parotitis in plumbism,[1] a condition which, though well known to French writers, appears to have been unnoticed in this country. The parotid is the salivary gland most usually involved, but others may be affected in rare instances. At the meeting of the Société Médicale des Hôpitaux of Paris on June 22nd MM. Louis Rénon and Latron described a case in which the submaxillary glands alone were affected. A painter, aged 45 years, entered hospital on March 23rd, 1900, suffering from lead colic. All the usual symptoms were present. The face was earthy and there was a characteristic blue line on the gums. The patient began to work as a painter at the age of 13 years, and had his first attack of plumbism in 1896 at the age of 41 years. He was in hospital eight months with paralysis of the upper limbs. Three months later he had gout in both great toes. In the present attack there was on admission almost complete saturnine paralysis of the right forearm. There was no albuminuria. On the 27th the submaxillary regions were swollen but painless. On each side was a rounded mass of the size of a chestnut, somewhat hard, slightly lobulated, and moveable on the deep parts. The superficial parts were moveable over the tumours and there was neither redness nor tenderness. The orifices of Wharton's ducts showed no signs of inflammation. This condition lasted for three days and then

[1] THE LANCET, Jan. 13th, 1900, p. 114.

gradually diminished, disappearing entirely 20 days after its onset. On April 2nd there appeared on the dorsal aspects of the feet and lower thirds of the legs a symmetrical bullous eruption resembling herpes zoster. It disappeared eight days after the drying up of the bullæ. The patient left hospital on April 20th free from all symptoms excepting paralysis of the extensors of the right forearm. MM. Rénon and Latron consider that the absence of signs of inflammation of the glands and of the orifices of the ducts of Wharton shows that the swellings were not due to an ascending infection of the glands from the ducts, and makes it very probable that lead was exclusively concerned in the causation. The theory is that the lead in the process of excretion by the salivary glands exercises an irritating influence on them.

NEGLECTED NOTIFICATION: A BAD EXAMPLE.

AT the Oakham Petty Sessions an unusually flagrant case of neglect to notify an infectious disease or to take the precautions enjoined by law has been brought before the magistrates. The culprit was described as a Primitive Methodist minister whose family of six children were, on the medical officer insisting on inspecting them, found to have had scarlet fever and to have reached the desquamation stage. The parents had had ample warning, for the sanitary inspector had already visited the house and had been told by the defendant and his wife that a daughter, the subject of his visit, was suffering only from nettle-rash. Charged, therefore, with failure to notify and with exposing his daughter in the public streets while suffering from scarlet fever the reverend gentleman in question may consider himself to have got off lightly with fines of £5 and £1. Ministers of religion of whatever denomination or sect are popularly supposed to be men of better education than the bulk of their congregations and to be qualified to instruct them by precept and example in their duty towards their neighbours. Those responsible for the public health of Oakham, where scarlet fever is stated to have been spreading rapidly, are to be congratulated on having, in a sense at all events, made an example of this minister, and it is to be hoped that his flock will regard his fate without sympathy. Those who may think themselves able to trace infection in their own families from contact with his family will at all events not feel disposed to subscribe to relieve him of his fine or to aid him in the purifying of a house which must need disinfection all the more from its owner's desire to regard scarlet fever as nettle-rash.

THE LONDON CHILD'S PLAYGROUND.

IT was stated recently, in the course of an inquest held upon the body of a child of seven who had been run over and killed in St. Pancras while playing in the street, that he would not have been there had it not been that it was holiday time and that his school was consequently closed. This gave occasion for the suggestion made in a contemporary that during holidays the playgrounds of all such schools as have playgrounds attached should be kept open, some provision being made for the supervision of the children at a time when they have nothing to do but to play. That the children of London and other large cities are but scantily provided with playgrounds is patent to everyone who ever walks through streets where the traffic admits of any semblance of a game being carried on or of children lingering in the roadway, and it certainly seems desirable that the playgrounds attached to the schools should be made use of at all seasons. Many schools other than board schools have no playground worthy of the name, and those who reside in proximity to them are well aware that the street is, to put it mildly, an extremely undesirable place in which to play. The children when released from lessons crowd the roadway for some time to their own danger, to the danger of passers-by from such missiles as balls, tipcats, or stones and to the anxiety and inconvenience of all drivers of vehicles, while when they have dispersed no better space is provided for them than the roadway outside their homes which may or may not be less frequented than that near their school. Without dwelling upon the hardship to those who may be made criminally or civilly responsible for injury done to the children by passing vehicles we may illustrate the dangers of the streets by pointing to the police news in the *Times* of August 16th. Out of five cases reported three were charges of manslaughter brought against drivers and two of the deaths that had occurred were those of children, neither of them being the St. Pancras case referred to above.

DISEASE OF THE MYOCARDIUM IN CONGENITAL SYPHILIS.

IT is not as yet sufficiently well known that congenital syphilis may produce grave vascular disease in children. G. Berghinz records in the *Gazetta degli Ospedale* of June 24th, two interesting cases which throw a light on the arterial and vascular lesions which may be produced in infants and which may result in death in the midst of apparent health. One case is that of an infant 18 months old who, while in apparent good health, suddenly developed a paroxysmal dyspnœa with cough and intense cyanosis, symptoms which possibly pointed to œdema of the lungs. There were no symptoms, however, of fever, renal disease, epilepsy, laryngeal spasm, or status thymicus, and the case ended fatally. The post-mortem examination disclosed syphilitic vascular lesions of a characteristic sort (arterio-sclerosis) such as occur in the subjects of congenital syphilis, and affecting especially the myocardium. No syphilitic history was ascertained in the parents, but in the second case in which the same group of symptoms occurred in a child and ended fatally inquiry revealed an undoubted syphilitic history in the child's father. Berghinz refers also to an article in the *Centralblatt für Kinderheilkunde* for June containing a summary of the post-mortem appearances in 22 cases of hereditary syphilis, in which it appeared that syphilis affected the ganglia of the heart and gave rise to a proliferation of the perivascular connective tissue of the blood-vessels in the cardiac walls which eventually resulted in arterio-sclerosis and death. It is clear, therefore, that arterial disease due to congenital syphilis may, when it affects the coronary arteries and nutrient vessels of the heart, result in rapid and sudden death when symptoms of dyspnœa and cyanosis supervene in a child otherwise apparently healthy. It is also interesting to note that many forms of cerebral palsy (hemiplegia and monoplegia) may likewise be the outcome of cerebral arterio-sclerosis when the latter occurs in the fœtus in utero or in infancy, the results appearing as various forms of paralytic idiocy and imbecility.

PUBLIC HEALTH IN TRINIDAD.

IN his annual report for the year 1899 Mr. Francis H. Lovell, C.M.G., Surgeon-General of Trinidad, says that malarial fevers were less prevalent than usual and that the general state of the public health of the colony was not unfavourable. The death-rate for the colony of Trinidad and Tobago for the year 1899 was 24·10 per 1000. The population was given as 269,478 in 1899. Yaws showed a great increase in most parts of the colony. The total number of cases treated in Trinidad and Tobago during the year was 2808, with 1193 recoveries. Hospitals for yaws have been established at Arima and in Port-of-Spain. The Arima yaws hospital, which has accommodation for 25 patients, was always overcrowded and 112 patients (with 77 recoveries) were treated here from May to December, 1899. Mr. F. A. de Vertueil,

the medical officer, says that Donovan's solution, either alone or in combination with cinchona or syrup of iodide of iron, was responsible for most of the cures in children. Out of 20 very severe cases in which thyroid extract was used 13 were cured with an average stay in hospital of about eight weeks each. Mr. E. A. G. Doyle of the Colonial Hospital had five recoveries out of eight cases treated with guaiacol in doses of 15 minims thrice daily; the remaining three patients absconded not quite cured. He says that arsenic and iodide of potassium are uncertain in their results and always require prolonged treatment, that mercury has some controlling power over the disease, but requires to be pushed to the limits of toleration in order to produce an effect, and that thyroid tabloids appear to do good, but their action is neither certain nor constant. Dr. R. C. Bennett in his report says that yaws is a dirt disease existing almost without exception in dirty people and that it is "spread by contagion and direct contact." He has made bacteriological examinations of yaws scrapings, but without finding micro-organisms pathogenic of the disease. Dr. T. B. Kenny of Tobago says that in his district fully 15 per cent. of the population suffer from yaws.

STREET NOISES.

A NEWSVENDOR was on August 14th summoned at Bow-street Police-court for shouting. Mr. De Rutzen is reported to have said that as the case was the first of the kind which had appeared in his court he would only bind the accused over to be of good behaviour and to pay costs. We must be thankful for small mercies, but why the negligence of the police in not summoning cases which they are empowered to do should result in a nominal punishment for one who is responsible for one of the greatest pests of modern life we do not know. If Mr. De Rutzen was only obliged to do his work in say the Strand instead of in the seclusion of Bow-street Police-court, we are quite certain that the number of arrests would vastly increase and we should hope that the full fines would be exacted. The constant howling of "Two o'clock winner," "Two forty-five winner," "Three o'clock winner," and so on up to 7 P.M., when the subject changes to "All the Cricket," is enough to exasperate the most placid nature and is by no means conducive to brain work. Let us, however, offer grateful thanks that the vendors of the dying Boer, of the Armenian paper, of the little penny pocket Bible, and other street toys and trifles do not yell their wares, but we sincerely hope that in future cases of news-yelling which come before Mr. De Rutzen the offenders will be mulcted in full.

MODERN VIEWS ON LOVE.

"ONCE, in a word, I was a fool: and then I was in love." So wrote a cynical seventeenth century writer with let it be confessed a modicum of truth. We have recently received two American publications which claim to show that their authors have localised love. One of these, Dr. Wallace Wood, places it in what he calls the "anterior metopic lobule." The other, Mr. John M. Dagnall, crudely states his idea thus—"Love is in the stomach not the heart." Dr. Wood's thesis, which is reprinted from the *New York Medical Journal* for June 23rd, 1900, is as follows: A "ramp" is an S-shaped curve and "every fibre and artery in the living body is a ramper. ..... The humblest worm aspires, ramps, stands upon his base, and lifts nose and feelers skyward." Darwin, it will be remembered, studied worms with peculiar care but we do not recollect that he mentions their ramping. On the other hand, we do remember that he mentions that they were quite indifferent to the loudest sounds of the bassoon. Perhaps, however, Dr. Wood's worms would moderate their rampings if he were to play to them. However to proceed. The brain, says Dr. Wood, flowers at both holes, the brain surges forward and upward, and overarching, the Psyche seems to lift up her head. The top of the forehead appears to be ever ramping heavenward or sunward and life is rampancy, perennial life is double rampancy, immortal life is supernal rampancy. We must confess that we have not the slightest idea what this last sentence means, but somehow "supernal rampancy" does not seem a thing to which to look forward. But we understand from Dr. Wood that in this godlike peak, the anterior metopic lobule, lies the centre for the higher sympathy. "As *eunoia*, or the *vis passiva*, this divine force is willingness to give your heart away; as *prothymia*, or the *vis activa*, it is uncontrollable impulse forcibly to give or *throw* your heart away." Further, "it is a divine artery through which is poured the milk of women and the blood of men; it is the navel string that connects the faithful hound to his master." A divine force which is at once a willingness to give your heart away, an artery which carries both blood and milk, and is a navel string, is, to quote Calverley, "a thing imagination boggles at." Mr. John Dagnall writes in what he calls "rhythmical phraseology." We do not find the rhythm although the sentences are cut up into lines, e.g.:—

> "But now comes the mystery of locating
> Love's permanent seat. Is it in the bosom
> Or in the stomach? It is so believed
> That the bosom hath yet Love for a tenant:
> But I can prove that Love's lease there hath
> Long since expired, and that it hath vacated
> The apartment it once occupied in the heart
> To dwell in the stomach."

Needless to say, Mr. Dagnall does not prove this remarkable thesis. If he has not already done so he had better communicate with Dr. Wallace Wood.

IN our issue of August 18th (p. 495) we referred to a report that the members of the expedition of the Liverpool School of Tropical Medicine had telegraphed that they had discovered the filaria in the proboscis of the mosquito. The actual discovery was, however, we may point out, due to two independent observers, Dr. G. C. Low working in the London School of Tropical Medicine, and Captain James working independently in India, who noted filariæ in the proboscis of the mosquito in April, 1900. Probably the telegram really meant to say that the members of the expedition had confirmed the discovery.

IN a telegram to the Colonial Office the Governor of New South Wales gives the following statistics of plague in Sydney up to August 18th, namely: Remaining for treatment August 11th, 13; admitted during the week, none; discharged recovered during the week, five; died during the week, one; remaining for treatment August 18th, seven. Total cases, 303; total deaths, 103; total discharged recovered, 193; total contacts isolated, 1707; total contacts remaining, seven; total Chinese attacked, 10; total deaths among Chinese patients, eight.

A TELEGRAM from the Officer Administering the Government of Mauritius to Mr. Chamberlain, received at the Colonial Office on August 17th, states that for the week ending August 16th seven fresh cases of bubonic plague with three deaths occurred.

A TELEGRAM from the Governor of Hong-Kong, Sir H. A. Blake, to Mr. Chamberlain, received at the Colonial Office on August 20th, states that 26 cases of bubonic plague with 26 deaths occurred last week.

IT is announced that H.R.H. the Prince of Wales has been pleased to appoint Dr. William Job Collins, L.C.C., to be a

member of the Council of the Prince of Wales's Hospital Fund for London.

THE authorities of the Paris Exhibition, 1900, have awarded to Sir F. Seymour Hadden, F.R.C.S., the Médaille d'Honneur for Engraving and Lithography in Group II., Class 8.

DR. GEORGE WM. BALFOUR has been appointed Physician in Ordinary to Her Majesty in Scotland in the place of the late Sir Thomas Grainger Stewart.

THE WAR IN SOUTH AFRICA.

WHEN we wrote last week the interest was centred in the pursuit of General De Wet by Lord Kitchener's and Lord Methuen's troops and we said that nothing short of the capture of that energetic and skilful Boer leader being an accomplished fact would remove all our doubts or put an end to the harassing raids and surprises to which the British forces have been subjected. That De Wet has again eluded his pursuers and made his escape is now beyond question. He is ubiquitous in his tactics. Presumably he will try to effect a junction with Delarey's or with Botha's force. The theory is that when closely pressed he orders his following to dissolve and meet at some distant rendezvous and that their facilities in getting supplies and their familiarity with all the topographical features of the country enable them to do this with comparative ease. Be this as it may, Mr. Kruger and his followers show no sign of being willing to submit to their fate, and there yet remain De Wet, Olivier, Botha, and Delarey to be reckoned with. Meanwhile the junction of General Buller and General French and their progress towards Mr. Kruger's last stronghold seem to indicate an attack on Botha's force and an attempt to cut off the Boers' railway communication with Lorenzo Marques. Moreover, in view of bringing the war to an end, Lord Roberts has issued an important proclamation, and has reluctantly adopted a far more severe line of policy towards those recalcitrant Boers found guilty of treacherous conduct.

Amid so much unfriendly criticism as has taken place in regard to our military operations in South Africa it will prove refreshing to the officers and men of the force to read what Colonel Tolschin of the Imperial Russian Army has to say of them, for he recognises the exceptional difficulties that had to be encountered and, speaking generally, gives high praise to those charged with the conduct of the war. He expresses his profound admiration for the British troops and evidently has the highest opinion of Lord Roberts, General French, and of many of the other generals. Colonel Tolschin does not at all agree with the attitude assumed by some of the unfavourable critics in this country. Although it is very pleasant to read such generous expressions of praise on the part of a Russian officer actually present in the field, and while we have very little sympathy with much of the captious criticism which has taken place, the fact still remains that the campaign in South Africa has taught us a good deal from which we may hereafter hope to benefit.

That there should be a large amount of disease, and more especially of enteric fever, in South Africa was only to have been expected, for this fever occurs in every campaign, and our experience in previous wars in that country must have led the medical branch of the War Office to anticipate the occurrence of a large amount of it. But it seems clear that a sudden and devastating epidemic such as actually took place was not foreseen. The time of its occurrence after the more or less worn out and badly supplied army, exhausted by fatiguing marches, had reached Paardeberg and had been exposed to all its insanitary conditions, points to that source as the beginning of that particular epidemic. It will be remembered that the enemy's forces at Paardeberg also suffered from an outbreak of enteric fever. Unfortunately its extent and severity among Lord Roberts's force were greatly augmented by the subsequent capture by the Boers of the waterworks at Bloemfontein and the inadequacy and probable fouling of the water-supply, for the sickness and deaths afterwards went up at enormous rates as compared with what they had been. It looks, therefore, very much like a case of water-poisoning on a large scale. We must, however, be content to await the results of further investigation as to the real explanation and causes of this epidemic outbreak. Be the true cause of enteric fever what it may, whether the typhoid bacillus or not, there can be no doubt that troops in the condition in which the British are described to have been were eminently predisposed to become the victims of any disease causes. The bacillus must also be much more widely distributed in nature than it is commonly supposed to be in order to account for the occurrence of all the cases of a disease which is so commonly the scourge of European and American armies in modern warfare.

Of course modern armies are composed of young soldiers of the enteric fever age, but, if we may judge by our statistical experience of the British army in India, recent arrival in a country is a more powerful factor than immaturity of age, for it is notably during the first and (though to a less extent) during the second years of his Indian service that the British soldier is most liable to contract enteric fever, after which the liability rapidly decreases. Our army in South Africa was mainly composed of young men and all were new arrivals there, so that conceding the presence of the disease-cause they made up a very susceptible material for the spread and development of this fever. The climate of South Africa is notoriously a healthy one, but it is, nevertheless, very hot during the hot season—that is at the time when our troops were in the field—and the diurnal changes of temperature are marked at the present time, which is the cold season. In addition to the enteric fever cases there has been a good deal of dysentery as well as many cases of pulmonary disease. The total deaths from disease among officers and men since the beginning of the war amount to over 5000, exclusive of those that have occurred among the sick invalided home and among the patients now in British hospitals in South Africa.

THE PORTLAND HOSPITAL.

Major-General the Honourable Herbert Eaton, 43, Upper Grosvenor-square, W., has by this week's mail (August 13th) received the following final report of the work done by this hospital since it has been in South Africa:—

Total patients received	1009
Total patients discharged	560
Total deaths	37
Patients transferred to base and other hospitals ...	412

In sending his final report Major C. R. Kilkelly, R.A.M.C., of the Grenadier Guards, principal medical officer, mentions that five of his hospital orderlies still remain on the sick list, and that in closing the Portland Hospital these have been transferred to No. 10 General Hospital (Dames' Institute, Bloemfontein). These men, Major Kilkelly adds, are all doing well, and he expects to send two if not three of them home on the transport *Canada* with the rest of the hospital staff. Major Kilkelly further reports that Nursing Sister Cox Davies has been transferred by request of the army authorities to work at Pretoria and that Nursing Sister Pretty (who had been seriously ill with enteric fever) was at the date of writing quite convalescent and was returning with Nursing Sisters Davies and Russell in the *Canada*.

The civilian medical officers attached to the Portland Hospital were leaving to visit various hospitals in Pretoria and elsewhere before sailing for England. Staff Sergeant Noble, R.A.M.C., and Staff-Sergeant Favrell, R.A.M.C., were being transferred to No. 3 General Hospital at Springfontein. Ward Orderly Private Collins had been allowed to take permanent employment on the Imperial State Railways. Ward Orderly Pottinger had been allowed to join the Langman Hospital and left for Pretoria.

The subscribers and those who are interested in the hospital will be gratified to read the following order which has been published officially by the Lieutenant-General Commanding at Bloemfontein, in respect to the work of the Portland Hospital:—

> The Lieutenant-General Commanding cannot allow the staff of the Portland Hospital to leave this station without expressing his appreciation of the good work and devotion to duty performed by all ranks therein.
>
> Bloemfontein, July 28th, 1900.

The Surgeon-General has also written a most gratifying letter of thanks to Major Kilkelly who has now transferred

his services to the new branch of the Imperial Yeomanry Hospital which has been opened at Pretoria.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

We have not had any ambulance train-load sent to us for over a fortnight, but the stream of small arrivals of Yeomanry has been kept up so regularly that, with the large staff of our new branch hospital lodging with us, the wards are kept pretty full. The second instalment has now arrived and has completed the new staff, and it is waiting here until facilities are given to it for going up to Johannesburg. We have had to turn the patients out of one of our huts so as to find sleeping accommodation for the 36 sisters and eight wardmaids, while the 80 orderlies are housed in the tents usually used by convalescent patients, and room is made for the nine medical officers in some of the other tents. As it is such a long time since we have taken in any large batch of acute cases the wards throughout the hospital are what is known technically as "light." A couple of months ago the work was so heavy that we should have been glad to have had these 36 new sisters as a reinforcement, but really now there is not enough work to occupy our own 48, and it is very much to be hoped that the new arrivals will, without much waste of time, be got on to Johannesburg.

Telegrams have just come in from Surgeon-General Wilson saying that the idea of Pretoria has been given up and that a site has been selected at Johannesburg. As a matter of fact, I believe Mr. Barnato's house has been lent for the purpose, and as it has never been occupied and contains no furniture but is complete as to the building it ought to prove very suitable. One of our sergeant-majors, who has proved himself a very good man here, went up there some fortnight ago to make preparatory arrangements, and last Tuesday Colonel Sloggett went up again, accompanied by Dr. Barclay Black, who has done such good work here as sanitary officer that it was felt by Colonel Sloggett and myself that the greatest help we could render to the new hospital would be to spare him for a time from his work here, so that he might go up and scheme out the working details of the new hospital on lines similar to those which have proved so successful here.

De Wet's swoop upon the railway last week seems to have been particularly daring and very skilfully carried out. He knew, it seems, that a quarter of a million of specie was to be taken up from Bloemfontein to Johannesburg and he lay in wait for the train in which it was to travel, allowing two other trains to pass him before he captured the one which he thought would contain the money. Luckily they had been unable at the last moment to get the money away by that train and so, though he was right in his calculations, he most fortunately failed in his object except that he has again buoyed up the spirits of his followers and dislocated our railway service. Colonel Sloggett and Dr. Barclay Black happily left here just too late to be in any danger of finding themselves among the 200 prisoners. They were delayed at Bloemfontein, and we are told that since this last swoop trains have only been allowed to run past the region of De Wet's operations during daylight. The continuance of these difficulties of the railway service makes it very doubtful how soon it will be possible for any or all of the staff of the new branch to get away from here to Johannesburg. The stringency with which any but military travellers are prevented from proceeding north of Bloemfontein may be gathered from the fact that even our civilian director, who has just left us after a visit of 24 hours and who wanted to go on to Johannesburg, although he was well known in that place had to travel as a civilian medical officer. I hope he got through safely, for he was very anxious to get up there. Whether the rest of the staff of the branch hospital are able to follow him soon or not, the Yeomanry hospitals are, we hear, already represented in the Tranavaal, for Surgeon-General Wilson telegraphs that our field hospital which is established in Pretoria has detached part of its staff to open a small hospital in some building in the same town, in which, he adds, it is "doing good work." At least they will not find themselves deficient in supplies, for in addition to a lot of equipment and stores sent out from England for the new branch, a great quantity of things sent up from Cape Town for our use here has by mistake been carried on up-country, and a good deal of shortage has resulted here in consequence. For instance, for the first time in our existence we have run short of tobacco for the patients and I am afraid they will have to go without it for some few days.

From accounts of officers just down from Pretoria there seems to be very little enteric fever there or at Johannesburg, and the opinion of those who know the climate and place is that there will not be any increase in that disease until the spring weather sets in at the end of September, when we ought, they say, to anticipate an even heavier epidemic than the one which is just dying out. Unless, as we all hope, the war has ceased and the bulk of the army has been got out of the country by that time—though as we are already within two short months of it—it is none too soon for precautionary measures to be taken.

What with the arrival of so many new faces and the departure of several of the faces we are accustomed to there is quite an air of change about this place. From among our staff Mr. Raymond Johnson and Dr. Saunders have gone home this week and Mr. Turner and Mr. Thornton have gone down to Cape Town to take over the work of the hospital at Maitland Camp in view of the probable re-massing there of the Yeomanry prior to their departure from the country. Three sisters also are going. Mr. Newland-Pedley, Mr. Hay, and Mr. Ayre Smith have already left us some time ago for home. Mr. Parker has been back at work some time and Mr. Blathwayt has just returned after several weeks' imprisonment in the scarlet fever camp, but Dr. Elliot and Mr. Greenfield, though quite convalescent, have not yet recovered sufficient strength to return to work. In our sisters' sick ward there are several of our own sisters slightly indisposed, but the only serious case is that of a nursing sister whom we were asked to "take in" from De Aar. She had enteric fever, but there was no accommodation or facilities for nursing her at that place and therefore our sisters' sick hut has proved a godsend to her. I am glad to say that she is doing well.

A smart epidemic of what has now become known as "Karoo-itis" has been going the round of the new-comers from England with just the same symptoms as were presented by those of our own staff who were attacked when we first came here. One at least of the many reputed causes of this complaint has disappeared since then—namely, the hot weather; and if a similar process of exclusion can, by comparing notes with other places—for the disease has affected a very wide area—be applied to some of the other theories, we shall perhaps arrive at a true explanation of its cause, and then I hope we shall know how to prevent these distressing symptoms. At present we certainly do not.

The high wind continues and is a great nuisance in many respects, as we have been quite unable to get the large tent which formed the body of the church to stand up, and as only 50 persons at the most can be crowded into the small wood-and-iron structure which hitherto has been looked upon as the chancel we have had to enlarge it, a process which was easy, thanks to the method of construction of the huts in ready-made sections. All the name-boards are stuck up outside the huts now and the interiors are in many cases most prettily decorated with cuttings from the illustrated papers which, thanks to friends at home, come to us in great profusion. Another decoration, the arrival of which has given very great pleasure, is a large signed portrait of the Princess of Wales which Her Royal Highness, as president of the Yeomanry Hospital, has most kindly sent out. A concert is still given each week and at the last one a little play was produced. There is a fresh variety of talent and there are banjos and bagpipes too here now, so that music is generally to be heard in some part or other of the camp throughout the day. One comes upon listening groups outside the tents and huts, several of the audience being busy meanwhile with needlework and woolwork of one sort or another. At the present moment no fewer than 70 patients are working themselves gorgeous belts.

P.S.—Since dictating the above a later telegram has come from Surgeon-General Wilson saying that Lord Roberts has decided after all to have the branch hospital located in Pretoria. It is a splendid thing that Major Kilkelly's services have been secured. His services to the Portland Hospital were of the greatest value and conduced not a little to the success of that institution, and it is most fortunate that its disbandment has come just in time to enable Major Kilkelly to become commandant of our branch hospital.

Deelfontein, July 30th.

CAPTURE OF THE IMPERIAL YEOMANRY FIELD HOSPITAL.

Major C. Stonham, writing on July 6th, sent to Lady Georgiana Curzon an interesting account of the capture and subsequent release of the Imperial Yeomanry Field Hospital

at Roodeval. The letter has been submitted to us and we are glad to give the following extracts :—

"The Imperial Yeomanry Field Hospital and Bearer Company, Camp, Pretoria, July 6th, 1900.

"On June 6th we camped two or three miles beyond Serfontein—i.e., on the Roodeval side—having come up with 14 scouts under Sergeant May of the New Zealand Contingent. These men camped close to us. We heard at Kroonstadt that the Boers were about, and this evening on camping were told that Captain Knight, D.A.A.G. Imperial Yeomanry (who left Bloemfontein two days after we did), and the men with him had been captured by the Boers about four or five miles further on our line of march; but we hear so many rumours that now we hardly take any notice of them. This time we were to find that the cry 'wolf' was well justified.

"*June 7th.*—Reveillè at 5.30. Shortly after we had started the scouts, who had camped near us, came galloping by and made for the crest of some rising ground ahead of us. When we had almost reached this point the scouts, who had remained mounted on the ridge, came galloping back in a procession with the Boers—Boers behind. The Boers fired on the scouts, who made for our wagons, and in spite of our orders to the contrary fired from the other side of them, thus drawing the Boer fire on us. A horse was shot in the leg just in front of me and one bullet passed between a driver's legs and the box of the wagon; fortunately no harm was done. As the wagons were moving from the high ground I rode along them (Hale was seeing after a broken wagon) and ordered the men to wave the flags. As soon as this was done the Boer fire ceased and I was assured by an officer later that they ceased firing as soon as they saw we were an ambulance. When I had reached the last wagon but two I saw the Boers had come up and taken possession and one came riding towards me and directed me to their lieutenant. I found him with about eight Boers by our last wagon, with one scout as a prisoner. He behaved very courteously, regretted that we had been fired on, but said that we must halt our convoy and wait for the general's orders. He had one of our conductors a prisoner, but on my pledging my word that he should not act in any way against the Boers the lieutenant at once handed him over. While we remain halted before going on to the station, about a quarter of a mile distant, I will tell you what we found (subsequently) had actually happened.

"About 150 of the 4th Derby Militia had been trying to hold the station, which they had roughly protected with bags of mails, clothing, &c. The rest of the regiment—about 600—had been attacked in their camp under the kopje. For some reason or another these men had camped at the foot of the kopje and had fought there instead of on the top, although some men were posted there also. At reveille the Boer guns had shelled them and had thus got them most completely, shelling them out of rifle range, or nearly so, and as the Derbys had no gun they were completely at the mercy of the Boers. These men gave it up by 10 A.M. During this attack one Boer gun was engaging the station, but the Derbys remained behind their improvised defences and did not attempt to come out in extended order and capture the gun. At about 11 A.M., when the main body had capitulated, the Boers brought up another gun and shelled the station, which capitulated about 12 o'clock. It was then we drew into the dip, as we thought the gun was being trained on us. As soon as the firing had ceased we marched to the station, although De Wet had not sent orders for us to move, where we found General De Wet, Commandant Faurie, and about 200 Boers. I am sorry I am not of a literary turn of mind, so that I might adequately describe to you a scene which none of us are likely to forget. The bags of clothing, mails, provision boxes, indeed anything which would answer the purpose, had been piled up between the station sheds to form a defence against the shells. The railway trucks were splintered and in places shattered by shell and rifle bullet. The Boers were busily engaged in looting. About 2000 mail bags were being torn open, and letters, parcels, and all conceivable things were scattered out, being tossed from hand to hand and duly investigated. Warm clothing and blankets seemed to attract special attention, most of the Boers carrying off some. Cigarettes, tobacco, socks, cocoa, and milk, and luxuries of all kinds simply littered the place. On the siding were heaps of shells of all kinds, huge lyddites of 280 lb. each, many howitzer shells, shrapnel, solid armour-piercing, and various others. In the tin sheds and behind the improvised defences were the dead and wounded, eight dead, including Colonel Baird Douglas. These were buried by the Derby prisoners before they were marched off, but there was no time for any formal funeral. I saw the graves subsequently neatly marked out with stones by our own men after Methuen's arrival on June 11th. The wounded (14) had been dressed with the first field dressing. This had been done by the Boer doctor, Commandant Faurie's son. I visited all these and saw that they were as comfortable as circumstances permitted. I heard then that there were many wounded in the Derbys' camp about two miles off on the other side of the river below the kopje. I at once arranged with Major Hale that the bearer company should remain at the station and bring on the wounded in the ambulances, while I went on to the camp and pitched the hospital. Commandant Faurie gave me permission to advance, and without delay the hospital moved forward to the drift across the Rhenoster, towards which also the Boers were moving with their buck wagons and guns. The guns, by the way, were some of our own which they had captured some time previously. I rode with a lieutenant who discussed the war with me, and was quite friendly, as, indeed, I found all the Boers were during the time we remained in their hands. Arrived at the river I found four bullock wagons were coming over and that many of the Boer wagons were ahead of our convoy. This necessarily meant a very long delay in our reaching the camp, a delay which might have serious consequences for the poor fellows whom we were hastening to help. On my representing this to the commandant he at once stopped the wagons and allowed all the hospital transport to pass over first. As soon as my first tin wagon, which contained our dressings, &c., had safely crossed the drift I rode on to the camp leaving the others to follow. The full extent of the disaster was now apparent—huts were riddled with bullets, ammunition, papers, provisions, clothing, were all scattered about, and were being turned over by the Boers. In the centre of the camp the dead, dying, and wounded Derbys were collected together, some moaning with pain, others crying for water, and the least severely wounded smoking and doing what they could for the less fortunate. I at once gave orders to have the dead removed to a tent, that those in pain should be given morphia, and that one of our marquees should be pitched as an operating tent, and all things prepared. The Boer commandant told me I might take any tents I liked for hospital purposes, and eventually we were allowed to keep all the huts, although they had intended to burn some of them. The Derby men were delighted at our arrival, and it is not too much to say that so far as the wounded were concerned we saved the situation, for they had but one doctor (Dr. Buchanan, a civil surgeon), who had not the appliances which were necessary, nor, indeed, could he have done the work single-handed, for we found nearly 100 wounded, many of them requiring operations. Dr. Buchanan had dressed most of the cases, and had done everything in his power to give relief.

"Meanwhile Hale was busy at the station. In order to accommodate the wounded we had to throw out of the wagons most of our provisions—a very serious matter, as we had started from Kroonstadt with only enough for four days and we did not know when we could get any more under present circumstances. Hale saw De Wet and represented to him the difficulty we might be in. De Wet at once gave Hale permission to load an empty railway-truck with food, milk, and, indeed, anything he might require. This was done and the truck was moved about a quarter of a mile along the line towards the Rhenoster. Unfortunately it was blown up with the station, the Boers evidently thinking that the bearer company had taken with them all we needed, whereas they had moved on with the wounded first and intended to return for the food immediately on arriving at the Derbys' camp, and finding out about the mishap to the truck Hale collected all the food he could find and set about arranging matters in the camp.

"By this time we were hard at work with the wounded and operations and dressings went on till far into the night, when we all went to bed thoroughly tired. My tent was riddled with bullets and splashed with blood. The next two days we were again all very hard at work in the hospital, but I need not recount to you the horrors of the operating tent. I will only say that we found our equipment most excellent. We had all we wanted and more, and everyone was delighted with the facilities we had for carrying on our work.

"On June 8th many Boers came to see us, and Commandant Duplovy came into the theatre while an operation was going on. He expressed much surprise at our arrangements and was so impressed with the work being done that he at once gave an order that no Boers were to come along the sick lines for fear of disturbing the wounded and hampering our work. I may say at once that the Boers behaved most admirably throughout, asking for next to nothing, not taking that unless permitted by us, and, as you will see if you read on, giving us much.

"I went out to see General De Wet, accompanied by Lieutenant H. Langman of the Langman Hospital, who had come up with us from Bloemfontein, and escorted by Du Wit (De Wet's secretary), Steyn, a relation of the late President, and his son. At last De Wet came—a man of powerful physique, but with weak eyes which necessitated his wearing tinted glasses in the sun, a good face, and one showing, as I thought, shrewdness and determination, a quiet, kindly manner, and the general bearing of a gentleman. He shook hands cordially, and not speaking more than a few words of English, asked me through Du Wit what he could do for me. I asked him to send my casualty list and some telegrams (one to you—did you get it?) if he had the opportunity. This he agreed to do. I also asked for a safe conduct for a sick convoy to go to Kroonstad, but he said that at present he could not accede to this but would give me one in a few days. He also said that I might come to him when I wished to, only accompanied by an orderly with a white flag. We then left him and were allowed to go right across the Boer laager, so that we had an excellent chance of seeing a good deal. I forgot to say that as soon as the bearer company had left Roodeval station on June 7th the Boers fired it. All that night the most terrific explosions took place, and these recurred at intervals until June 11th, at about 9 A.M., so that no one was allowed to go anywhere near the station. The wreck of this was complete and astonishing. The situation was merely marked by holes made by the lyddite shells, and the veldt for about half a mile round was littered with burnt clothes, blankets, mail bags, letters, parcels, unexploded shells, fragments of shells, and of the station buildings. Anything more desolate it is difficult to imagine."

NOTES FROM BLOEMFONTEIN.

(FROM OUR SPECIAL CORRESPONDENT.)

Bloemfontein is now a healthy station, while the tonic and bracing qualities of its climate render it most suitable for convalescents, to which class a large majority of the patients in the military hospitals belong. Cases of enteric fever in the garrison are now rare, and the few brought down the line from the north are of a mild type or convalescent. Sporadic cases of catarrhal dysentery are still frequent, but the ulcerative form is seldom seen, and as a matter of fact was never truly epidemic. Notwithstanding the sudden fall of temperature at sundown and the cold nights, bronchitis, pneumonia, and acute rheumatism are uncommon, though many cases of sub-acute and muscular rheumatism have lately been admitted from the front. A very large number of cases of "simple continued fever," "diarrhœa," "diarrhœa and debility," have been admitted to the various hospitals since the occupation; many of these, I think most, were probably cases of mild, ambulatory, or aborted attacks of enteric fever, and had they been so diagnosed the subsequent official statistics would show a strikingly low mortality for an army in the field—probably the lowest on record. An experienced medical officer in charge of the medical division of one of the general hospitals informs me that he kept notes of 1000 consecutive cases admitted into his division during the epidemic. Of this number over 100 had been sent in as "simple continued fever," "diarrhœa," &c., but, in his opinion, they were undoubtedly cases of enteric fever. The mortality in the 1000 cases was only a little over 12 per cent., a low one compared with the ratio in civil hospitals at home, and strikingly low compared with the ratios of the American and other armies. It must be admitted that the diagnosis of mild cases of enteric fever, especially of the ambulatory form, often presents almost insuperable difficulties out here; some cases of fever are very difficult to classify, such as the so-called "veldt fever" and "African fever." Probably a few of these are cases of Malta fever and some recent serum experiments tend to support this view, but the question is hardly ripe for discussion yet. Cases of malarial fever are frequent enough, but they occur in men who have previously suffered from malaria in India and elsewhere. None have been shown to have originated in this colony.

Of the surgical cases in the hospitals at the present moment few present features of special interest and the wounded are, almost without exception, convalescent or on a fair road to recovery.

A brief sketch of the medical arrangements in Bloemfontein at the time of writing should prove of interest to your readers in the present dearth of "interesting" cases here and may be of service in removing misconceptions.

The three general hospitals (Nos. 8, 9, and 10) and the stationary hospital (No. 5) at the Raadzaal, provide a total of over 1750 beds for the reception of sick and wounded. At present these hospitals are not nearly full. The Langman Hospital and the Irish Hospital were recently sent on to the front, while the Portland Hospital has left, or is about to leave, for home. During the epidemic of enteric fever bell-tent annexes to No. 8 and No. 9 General Hospitals were established and were employed for convalescent patients, who spent a few days there before proceeding to the convalescent or rest camps. The system worked so well that there was never the slightest overcrowding of the marquees or bell-tents. No. 8 General Hospital, a marquee hospital, occupies an excellent site on the veldt about a mile to the south-west of the town. No. 9, also a marquee, is pitched on a gentle slope about half a mile to the north-east, between the large kopje known as "Bloemfontein mountain" and the railway, and has the advantage of a special railway siding running into the camp. No. 10 is distributed amongst various buildings in the town, Grey's College, Dames' Institute, St. Michael's Home, Industrial House, and the Volks Hospital. These three hospitals, No. 8, No. 9, and No. 10, provide 1650 beds now and have surplus beds, marquees, and equipment sufficient to increase the accommodation to over 1800. No. 5 Stationary Hospital occupies the Raadzaal (House of Parliament), is fully equipped for 100 patients, and is a model of what military medical organisation can do at short notice.

The "convalescent camp"—a distinct establishment not to be confounded with the bell-tent annexes of the general hospitals—is situated on the veldt behind the fort to the south of the town; here men who are practically well, but debilitated, remain till they are fit for duty, when they are transferred to the large "rest camp" close to the station, whence they are sent back to their units or to garrison duty. The convalescent camp is in charge of a commandant and two medical officers and has a large detention ward.

Saloon trains with lying-down accommodation and medical comforts, with a medical officer in charge of each, and hospital trains—fully equipped hospitals on wheels—leave periodically for Cape Town, carrying men who are convalescent but who are unlikely to prove efficient soldiers within a reasonable period.

On the whole the arrangements for the treatment of the sick and wounded are wonderfully complete and have borne the strain of the recent epidemic with conspicuous success. As regards the alleged overcrowding of field hospitals before the establishment of general hospitals I have no personal knowledge and in any case I would refrain from comment as the matter is *sub judice*. The same remark applies to the allegations as to defects of transport, as regards which, however, it is permissible to point out that transport arrangements are not under the control of the Royal Army Medical Corps.

July 27th, 1900.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of London.—In relation to its resident, or what may be termed its night, population the City of London possesses altogether a unique interest. Much of this is doubtless due to the traditions and associations of the corporation and to the fact that the City embraces within its limits many historical and world-influencing institutions; but although looked at in contrast with the civic grandeur of the City its sanitation may be regarded by some as holding but a secondary position, there is occupying the

City by day an enormous population the environment of which is a matter of grave concern not only to the City but to the country as a whole. Moreover, there are in one or another of the 113 parishes which make up the sub-districts of St. Botolph, Cripplegate, St. Sepulchre, and All Hallows, Barking, food-distributing centres, such as Billingsgate and the London Central Meat Market, the proper control of which is a matter of considerable importance to the vast population in and around the metropolis. It is from considerations such as these that the position of the medical officer of health of the City is no mere sinecure but carries with it enormous responsibilities. The general death-rate of the City during 1899 was 18·5 per 1000 as against 19·8 for the metropolis and 20·2 per 1000 for the 33 great towns, but in the absence of a proper correction for age and sex distribution these figures for the City do not afford much indication of its sanitary condition, and the same remark, of course, applies to the other City rates. It is of interest, however, to note that of the City deaths 6·56 per cent. were the result of injury or violence, a rate which is 1·96 below the average for the previous five years. This may be regarded, perhaps, in one sense as a tribute to the City police. In the matter of public lavatories the City is relatively to other districts well provided, there being 24 such conveniences, and it is satisfactory to be able to record that the accommodation for women includes 33 water-closets. Dr. Sedgwick Saunders furnishes in his report a map of the City, showing among other things the lavatories in question, and it might prove advantageous if these maps were exhibited in certain convenient situations. There is no doubt that as regards public lavatories England is behind many other European countries. Some idea of the meat-supplies dealt with in the City may be gathered from the fact that during 1899 there was delivered at the corporation markets, Smithfield, over 405,456 tons of meat—the average supply per diem being 1321 tons, and the largest monthly supply being in December. Of the amount in question during 1899, 27·3 per cent. was "country killed" (including American meat killed at Birkenhead); 15·5 per cent. "town killed" (including American and continental cattle slaughtered at Deptford), 14·2 per cent. "foreign killed," 23 per cent. "American killed," and 20 per cent. "Australian and New Zealand killed." The most noteworthy feature of the year's statistics in this sense is the marked increase in the American and foreign deliveries. Dr. Sedgwick Saunders points out that the figures tell two tales: firstly, that London depends more than heretofore upon her dead-meat supply, and, secondly, that as the sources of supply become more and more distant the risk of decomposing meat arriving in the market is increased. The latter fact would seem to point to the necessity of some sort of preservation whether by cold or chemicals. But more rapid transit might, perhaps, modify matters a little. Upon the question of tuberculous meat Dr. Sedgwick Saunders takes a firm stand and he disagrees *in toto* with the views of certain veterinary surgeons to the effect that unless the whole mass of muscular tissue shows signs of degeneration the meat may be eaten with impunity if properly cooked. The medical officer of health of the City will have nothing to do with the thesis of "localised tuberculosis"—a proposition which he regards as based upon "the inexcusable ignorance of the elementary principles of physiological induction," and, in his opinion, "no competent pathologist would dare to assert that where pathogenic organisms have once entered the body of an animal one part of its anatomy (the muscles) is free from infection, and another part (the viscera) infected." But we expect the tendency of opinion to which Dr. Sedgwick Saunders refers may have its origin to some extent in the report of the Royal Commission on the Administrative Control of Tuberculosis which reported in 1898. The seizure of diseased and unsound meat during 1899 amounted to no less than 1172 tons, the largest amount on record. Importation of rabbits into this country is on the increase, and last year Australia and New Zealand furnished over 2,000,000 of these animals. They are imported in crates, and as many as 20,000 have been daily received, their frozen state rendering it difficult to ascertain their precise condition, and Dr. Sedgwick Saunders states that at times as many as 20 per cent. are unsound. As regards fish 179 983 tons were received at, or near, Billingsgate during 1899, the amount condemned being 0·42 per cent. There would appear to be a house-to-house inspection in progress throughout the City, and the result of such progress should be interesting reading. There must be much antiquated property within the boundaries, and it is to be expected that the housing of the day population leaves in certain instances much to be desired.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6014 births and 4520 deaths were registered during the week ending August 11th. The annual rate of mortality in these towns, which had increased from 14·5 to 20·5 per 1000 in the five preceding weeks, declined again to 20·3 during the week under notice. In London the death-rate was 20·5 per per 1000, while it averaged 20·2 in the 32 provincial towns. The lowest death-rates in these towns were 11·2 in Burnley, 11·9 in Halifax, 12·1 in Cardiff, and 12·2 in Bradford; the highest rates were 25·6 in Brighton, 26·1 in Sheffield, 26·3 in Liverpool, and 26·8 in Preston. The 4520 deaths in these towns included 1263 which were referred to the principal zymotic diseases, against numbers increasing from 346 to 1330 in the five preceding weeks; of these 1006 were referred to diarrhœa, 84 to whooping-cough, 65 to diphtheria, 64 to measles, 23 to scarlet fever, and 21 to "fever" (principally enteric). The lowest death-rates from these diseases occurred in Cardiff, Blackburn, Halifax, and Bradford, and the highest rates in West Ham, Norwich, Liverpool, Salford, and Sheffield. The greatest mortality from measles occurred in Brighton and Derby, from scarlet fever in Blackburn; from whooping-cough in Brighton and Bolton; and from diarrhœa in West Ham, Norwich, Liverpool, Salford, and Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The 65 deaths from diphtheria included 25 in London, nine in Sheffield, seven in Leeds, four in Leicester, and four in Liverpool. No fatal case of small-pox was registered during the week under notice in any of the 33 large towns. There were five small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday August 11th, against numbers decreasing from 17 to seven at the end of the four preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1838, against 1877, 1859, and 1827 on the three preceding Saturdays; 155 new cases were admitted during the week, against 222, 207, and 156 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 196 and 136 in the two preceding weeks, further declined during the week under notice to 128, and were 47 below the corrected average. The causes of 56, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Oldham, Bradford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, Salford, and Sheffield.

In 33 of the largest English towns 7074 births and 4346 deaths were registered during the week ending August 18th. The annual rate of mortality in these towns, which had been 20·5 and 20·3 per 1000 in the two preceding weeks, further declined to 19·5 last week. In London the rate was 19·4 per 1000, while it averaged 19·6 in the 32 provincial towns. The lowest death-rates in these towns were 12·7 in Bristol, 13·0 in Huddersfield, 13 8 in Burnley and in Bradford, and 14·0 in Cardiff; the highest rates were 23·6 in Salford, 23·9 in Sheffield, 24·2 in Manchester, and 25·0 in Norwich and in Liverpool. The 4346 deaths in these towns included 1061 which were referred to the principal zymotic diseases, against 1330 and 1263 in the two preceding weeks; of these 797 resulted from diarrhœa, 90 from whooping-cough, 62 from measles, 59 from diphtheria, 35 from "fever" (principally enteric), and 18 from scarlet fever. No fatal case of any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Bristol, Burnley, Halifax, Oldham, and Blackburn, and the highest rates in West Ham, Leicester, Sheffield, and Hull. The greatest mortality from measles occurred in Brighton and Swansea; from whooping-cough in West Ham, Nottingham, and Derby; from "fever" in Portsmouth, Swansea, and Halifax; and from diarrhœa in West Ham, Leicester, Salford, Sheffield, and Hull. The mortality from scarlet fever showed no marked excess in any of the large towns. The 59 deaths from diphtheria included 17 in London, 8 in Leicester, 7 in Leeds, and 6 in

Sheffield. No fatal case of small-pox was registered in any of the thirty-three large towns; and only three small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 18th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1793, against 1827 and 1838 on the two preceding Saturdays. 157 new cases were admitted during the week, against 207, 156, and 155 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 136 and 128 in the two preceding weeks, rose again last week to 132 but were 35 below the corrected average. The causes of 47, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, Manchester, Halifax, and Leeds.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·5 and 17·2 per 1000 in the two preceding weeks, further declined to 17·0 during the week ending August 11th, and was 3·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Paisley and 13·7 in Dundee to 19·9 in Leith and 24·0 in Greenock. The 526 deaths in these towns included 60 which were referred to diarrhœa, 27 to whooping-cough, 11 to measles, five to "fever," three to scarlet fever, and one to small-pox. In all 107 deaths resulted from these principal zymotic diseases, against 87 and 109 in the two preceding weeks. These 107 deaths were equal to an annual rate of 3·5 per 1000, which was 2·2 per 1000 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 36 and 60 in the two preceding weeks, were again 60 during the week under notice, and included 39 in Glasgow, seven in Edinburgh, six in Greenock, and four in Dundee. The deaths from whooping-cough, which had been nine and 12 in the two preceding weeks, further rose during the week under notice to 27, of which 19 occurred in Glasgow, three in Dundee, two in Edinburgh, and two in Greenock. The fatal cases of measles, which had been 24 and 19 in the two preceding weeks, further declined to 11 during the week under notice, and included eight in Glasgow and two in Edinburgh. The deaths referred to different forms of "fever," which had been six and 11 in the two preceding weeks, declined again during the week under notice to five, of which four were registered in Glasgow. The three fatal cases of scarlet fever showed a slight decline from recent weekly numbers and included two in Glasgow, where the death from small pox was also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 67 and 73 in the two preceding weeks, declined again during the week under notice to 52, but were slightly in excess of the number in the corresponding period of last year. The causes of 23, or more than 4 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in the eight Scotch towns, which had declined from 19·0 to 17·0 per 1000 in the four preceding weeks, further declined to 16·9 during the week ending August 18th, and was 2·6 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·7 in Dundee and 13·9 in Leith to 19·1 in Glasgow and 21·9 in Perth. The 523 deaths in these towns included 56 which were referred to diarrhœa, 18 to whooping-cough, 16 to measles, seven to diphtheria, six to scarlet fever, and five to "fever." In all 108 deaths resulted from these principal zymotic diseases, against 109 and 107 in the two preceding weeks. These 108 deaths were equal to an annual rate of 3·5 per 1000, which was 1·3 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 60 in each of the two preceding weeks, declined last week to 56, of which 31 occurred in Glasgow, seven in Dundee, six in Edinburgh, and five in Aberdeen. The deaths from whooping-cough, which had increased from nine to 27 in the three preceding weeks, declined again to 18 last week, and included 13 in Glasgow and two in Aberdeen. The fatal cases of measles, which had declined from 24 to 11 in the three preceding weeks, rose again last week to 16, of which 13 were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had been five and none in the two preceding weeks, rose again to seven last week, and included three in Edinburgh and two in Aberdeen. The six fatal cases of scarlet fever showed an increase of three over the number in the preceding week, and included four in Glasgow. The deaths referred to different forms of "fever," which had been 11 and five in the two preceding weeks, were again five last week, and were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 80, 67, and 52 in the three preceding weeks, rose again last week to 59, and were slightly above the number in the corresponding period of last year. The causes of 16, or more than three per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·3 and 24·0 per 1000 in the two preceding weeks, declined again to 23·0 during the week ending August 11th. During the past four weeks the death-rate in the city has averaged 22·2 per 1000, the rate during the same period being 19·4 in London and 16·8 in Edinburgh. The 154 deaths belonging to Dublin registered during the week under notice were seven below the number in the preceding week, and included 23 which were referred to the principal zymotic diseases, against five and 14 in the two preceding weeks; of these 19 resulted from diarrhœa, three from diphtheria, one from whooping-cough, and not one either from small-pox, measles, scarlet fever, or "fever." These 23 deaths were equal to an annual rate of 5·2 per 1000, the zymotic death-rate during the same period being 5·6 in London and 2·1 in Edinburgh. The deaths from diarrhœa, which had been four, four, and nine in the three preceding weeks, further rose during the week under notice to 19. The three fatal cases of diphtheria exceeded the number recorded in any previous week. The 154 deaths in Dublin last week included 45 of infants under one year of age and 28 of persons aged upwards of 60 years; the deaths of infants exceeded the numbers in the preceding week, while those of elderly persons showed a decline. 10 inquest cases and five deaths from violence were registered; and 57, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city were not certified.

The death-rate in Dublin, which had been 24·0 and 23·0 per 1000 in the two preceding weeks, further declined to 21·2 during the week ending August 18th. During the past four weeks the death-rate in the city has averaged 21·6 per 1000, the rate during the same period being 20·3 in London and 16·2 in Edinburgh. The 142 deaths belonging to Dublin registered during the week under notice showed a decline of 12 from the number in the preceding week, and included 28 which were referred to the principal zymotic diseases, against five, 14, and 23 in the three preceding weeks; of these, 24 resulted from diarrhœa, three from "fever," one from whooping-cough, and not one either from small-pox, measles, scarlet fever, or diphtheria. These 28 deaths were equal to an annual rate of 4·2 per 1000, the zymotic death-rate during the same period being 4·4 in London and 2·1 in Edinburgh. The fatal cases of diarrhœa, which had been 4, 9, and 19 in the three preceding weeks, further rose to 24 last week. The three deaths from "fever" were in excess of the numbers recorded in recent weeks. The 142 deaths in Dublin last week included 37 of infants under one year of age and 30 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in the preceding week. Six inquest cases and four deaths from violence were registered; and 43, or nearly a third, of the deaths occurred in public institutions. The causes of nine, or more than 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon J. C. Dow to the *Dædalus*. Staff Surgeons: W. J. Maillard, V.C., to the *Archer;* H. Canton to the *Tamar;* D. T. Hoskyn to

the *Jupiter*; J. Acheson to the *Warspite* for the *Phaeton*; and R. Miller to the *Arrogant*.

IMPERIAL YEOMANRY.

14th Battalion: Sergeant Richard Galway Murray, to be Medical Officer, with the temporary rank of Captain.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Miller, Captain Riddick, and Lieutenant Gwynn are detailed for duty with the general hospital going to Ceylon for the Boer prisoners. One warrant officer and 59 men under the charge of Lieutenant W. Jagger, have embarked on the s.s. *Aurania* for South Africa. Lieutenant A. D. Jameson has joined the hospital ship *Princess of Wales* for duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotion among the officers of the Indian Medical Service:—To be Surgeon-General: Colonel George William Robertson Hay, Bombay Establishment. The Queen has also approved of the retirement from the service of the under-mentioned officers:—*Bengal Establishment:* Colonel John Henry Newman. *Madras Establishment:* Surgeon-General Charles Sibthorpe, C.B., and Lieutenant-Colonel James William Evans.

VOLUNTEER CORPS.

Artillery: 1st Essex (Eastern Division, Royal Garrison Artillery): Surgeon-Lieutenant C. Forsyth to be Surgeon-Captain. 1st Renfrew and Dumbarton: Surgeon-Captain W. R. Sewell to be Surgeon-Major. *Royal Engineers* (Volunteers): 1st Sussex: Surgeon-Captain W. P. Morgan resigns his commission. *Rifle:* 1st Volunteer Battalion the Lincolnshire Regiment: Surgeon-Lieutenant J. W. Nicholson to be Surgeon-Captain. 9th Lanarkshire: Surgeon-Lieutenant T. W. Banks to be Surgeon-Captain.

VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force:—*Home District: Rifle:* 4th Volunteer Battalion the East Surrey Regiment: Surgeon-Lieutenant-Colonel Edmond James Lawless. *North-Western District: Engineers:* 1st Flintshire (Buckley) Royal Engineers (Volunteers): Surgeon-Major Robert Thomas Alexander O'Callaghan. *Rifle:* 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major Charles Henry Gwynn. 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Surgeon-Major Herbert John Fausset. *Western District: Artillery:* 1st Cornwall (Duke of Cornwall's) Volunteer Artillery (Western Division, Royal Garrison Artillery): Surgeon-Lieutenant-Colonel William Mason.

TRANSVAAL WAR NOTES.

Mr. J. Paul Bush, M.R.C.S. Eng., L.S.A., surgeon to the Bristol Royal Infirmary, who has been in medical charge of the Princess Christian Hospital, sailed from Durban on August 6th, having under his care the sick and wounded troops on the *Lismore Castle*. He is due to arrive in Bristol the first week in September.

The Welsh Hospital is now completely established at Pretoria after its transfer from Springfontein, and 122 patients were admitted on August 14th. At a meeting of the executive committee of the hospital held on August 15th it was decided to erect memorial crosses over the graves of those members of the staff who had died at Springfontein.

Of the 180 invalid soldiers from South Africa who arrived in Plymouth last week only 38 are being treated at the Military Hospital, Devonport. The remainder have been sent to the Raglan Barracks, Plymouth, and when outfits can be procured for them from their respective depots they are to be sent on sick furlough.

The Lady Georgiana Curzon has received a cable from Lady Roberts, stating that her ladyship had opened the Imperial Yeomanry Branch Hospital at Pretoria, and concluding with the words "everything is perfect." Surgeon-Major C. R. Kilkelly of the Grenadier Guards, principal medical officer to the hospital, cables that a convoy of 100 sick and wounded was hourly expected to arrive at the hospital, and that everything was in excellent order for their reception. Major Stonham, R.A.M.C., of the Imperial Yeomanry Field Hospital, reports that he had up to July 20th treated 312 cases.

Major Stonham, with the field hospital and Imperial Yeomanry bearer company under command of Major Hale, D.S.O., R.A.M.C., is at present engaged on active service with Colonel Mahon's force. Colonel Sloggett, commandant and principal medical officer of the Imperial Yeomanry Base Hospital at Deelfontein, reports that there are amongst other patients in this hospital (numbering over 1000) 337 of the Imperial Yeomanry, seven of whom are officers.

The following have been discharged from hospital for duty:—Lieutenant H. P. W. Barrow, R.A.M.C., Major Kirkpatrick, R.A.M.C., Captain Watson, R.A.M.C., Lieutenant Faulkner, R.A.M.C., Lieutenant R. D. Jephson, R.A.M.C., and Civil Surgeons Betts, Watson, Steele, Ekins, and Bayley.

Among those who arrived in England last week in the transport *Canada* from South Africa was Mr. Raymond Johnson who has for six months been serving with the Imperial Yeomanry Hospital.

The Queen paid a visit to the convalescent homes at East Cowes on August 21st and also on August 22nd. The men being treated there visited Osborne and were conducted over the palace. Subsequently they were entertained to tea in the servants' hall.

THE CRISIS IN CHINA.

The American hospital ship *Maine*, entirely equipped and maintained by a committee of American ladies in London, has now been sent to China after her six months' work in South Africa. Her expenses on this new mission will be greater than hitherto, but it is hoped that she will be as generously supported. The *Maine* will receive American, English, and other sick and wounded. The following subscriptions have been received since August 3rd, 1900:—Baron Alphonse de Rothschild, £100; Mr. M. P. Grace, £50; Miss Elena M. Grace, £50; Mrs. Adair (two months' subscription), £40; collected on White Star s.s. *Cymric*, £30 13*s.* 6*d.*; Mr. Jules Porges, £26 5*s.*; Mr. Ferdinand Bischoffsheim, £10; and Lady Stanley Clarke, £2. Subscriptions may be sent to Mrs. Adair at the headquarters, 30, Curzon-street; Mrs. Arthur Paget, 35, Belgrave-square; Mrs. Bradley Martin, 4, Chesterfield-gardens; and to the honorary treasurer, Mrs. Ronalds, 7, Cadogan-place, S.W.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The autumn classes for the training of stretcher bearers will commence on October 4th, 1900, at 7.40 P.M., at the headquarters of the London Rifle Brigade, 130, Bunhill-row, E.C., by permission of Lieutenant-Colonel E. Matthey, commanding the London Rifle Brigade. There will be the usual class for new members and also a class for passed members under the charge of Surgeon-Captain E. M. Callender, Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., and Surgeon-Lieutenant G. A. Cohen, 1st Volunteer Battalion Middlesex Regiment. Officers, non-commissioned officers, and men will be admitted to the classes on presentation of application forms properly endorsed by their adjutant or captain. Application forms can be obtained from the honorary secretaries, from Ambulance-Sergeant H. J. Bussell, 13, Gower-street, W.C., and from Ambulance-Corporal E. G. Davies, 1, Lombard-court, E.C., or at the office of the school, 8, Portman-street, W.

THE RELIEF OF KUMASI.

Public attention has been so exclusively drawn to the stirring events which have been taking place in China and South Africa that those connected with Ashanti have failed to attract the attention which they deserve, for the services of our officers in that unhealthy climate have been heroic. Major Morris, for example, although he was badly wounded, displayed great courage and fortitude and did some brilliant work with his small native force under the most trying circumstances. In addition to an insufficient amount of food-supply and ammunition the force suffered a good deal from sickness (mainly fever and dysentery) as the result of their long march in the rainy season through the forest jungle and they had too a good deal of fighting on the way. Major Morris's small force of Haussas had lost one officer and 80 men on their arrival at Cape Coast Castle.

DEATHS IN THE SERVICES.

Deputy Inspector-General John Burton St. Croix Crosse on August 21st at Leigh House, Surbiton, aged 85 years. He entered the Army in 1840 and served with the 11th Hussars during the Eastern campaign of 1854-55 (medal with four clasps, Turkish medal, and the Legion of Honour).

THE SOUTH AFRICAN ROYAL COMMISSION.

The Commissioners have resumed work at Cape Town, where several witnesses have been examined. Woodstock and Greenpoint have been visited.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT IPSWICH.

THE SECTIONS.

SURGERY.

THURSDAY, AUGUST 2ND.

Lateral Curvature, Knock-knee, and Flat-foot.

IN the absence of Mr. ARBUTHNOT LANE (London) this discussion was opened by Mr. JACKSON CLARKE (London). After defining the meaning of the terms the scope within which the discussion should be limited was then suggested. It was only when these three deformities were considered as *habitual pressure deformities* that they could profitably be compared. Thus cases of lateral curvature due to paralysis or consecutive to empyema, &c., and instances of knock-knee or of flat-foot due to severe arthritis, need not be considered save for purposes of comparison. By a habitual pressure deformity was meant a deviation from the normal form caused by the force of gravity acting on the ligaments and bones owing to the preponderating use of one to the exclusion of other attitudes. In certain circumstances a *habitual posture* was gradually converted into a *deformity*. As applied to the subjects under discussion Mr. Clarke observed that the majority of cases of lateral curvature arose from faulty attitudes assumed by school-children when sitting at a desk, especially during writing. Knock-knee and flat-foot arose in what Annandale had termed the "attitude of rest," as seen, for instance, in the apprentice who stood with the feet everted and somewhat widely separated. The main point for discussion might be formulated thus: "To what extent do pathological processes enter into the causation of pressure deformities?" The danger in giving names was that they might be misinterpreted. The term "pressure deformity" originated in Germany with Roser and Volkmann and Mr. Clarke thought it was as good a one as could be found; at the same time he strongly believed that in the vast majority of cases of these deformities there was something more than the force of gravity and a habitual attitude at work. There was, he believed, a pathological predisposing cause to be found in nearly every case at the time of the development of the deformity. Healthy children did not long remain in any one posture. According to Danish observers about 1½ per cent. of school-children became affected with lateral curvature. According to German observers about 90 per cent. of school children assumed abnormal spinal postures during writing. Why did not more than a fraction of those who assumed faulty attitudes become deformed? Mr. Clarke had no hesitation in expressing his belief that it was only those who suffered from some abnormal softness of ligament and bone who became affected by these pressure deformities. Slight rickets and an inherited tendency to rheumatoid arthritis were the two chief causes of this diminished resisting-power of the skeleton and ligaments. These same two affections were, he believed, the chief causes of naso-pharyngeal adenoid vegetations which played no small part in the production of deformities of the chest. If this contention were correct the physician could do much towards the prevention of pressure deformities by insisting on a rational diet for children. If all school-children could have an abundance of fresh—i.e., unboiled and unsterilised—milk cases of deformity of this class would be diminished and, he believed, almost abolished. Failing a safe milk-supply raw eggs or raw meat might be substituted. In comparison with this broad prophylactic or medical aspect of the matter the strictly surgical aspect was unimportant; to the individual patients, however, proper surgical treatment was of the highest moment. Mr. Clarke then reviewed muscular training, instrumental, and operative treatment. Seeing that the majority of the patients who came for treatment during the course of development of the deformity required supervision on an average for a period of two years he found that routine courses of special gymnastic treatment of two or three months' duration were less effectual than simple exercises devised for each patient and practised at home under the supervision of the patient's medical adviser. Of instruments some form of the rigid splint was of most service: in flat-foot an outside leg-iron, in knock-knee an outside splint or iron, and in lateral curvature a posterior support with lateral plates. At some children's hospitals it was still recommended that for these deformities the patients should be taken "off their feet" for a year or more. Save for rare complications this was not necessary. All these conditions could be treated successfully on the ambulant plan and thus no interference with the course of education was involved. There was room for much improvement in this department, an improvement that, in Mr. Clarke's opinion, could only be brought about by arranging for a more systematic scheme of teaching orthopædic surgery in the medical schools.

FRIDAY, AUGUST 3RD.

The Use of Roentgen Rays in Surgery.

Mr. J. MACKENZIE DAVIDSON (London) gave an account of the recent progress in this direction. He showed that a single skiagram was often very misleading, as the relative position of parts might be completely misrepresented. He now took two photographs with the Crookes's tube in different positions, about two and a half inches apart. These two pictures differed slightly from one another and they were combined by a Wheatstone's stereoscope so that one mental image was obtained in which the relative depths of objects could be distinguished. He had also been able to adapt the stereoscopic method to the fluorescent screen by employing two Crookes's tubes, which were alternately eclipsed, and the eyes of the observer were correspondingly shut out from a view of the screen. (A demonstration of this important step in stereoscopic radiography was afterwards given by Mr. Davidson.)

The Open Incision for Club-foot, its Indications and Abuses.

Dr. A. M. PHELPS (New York) read a paper on this subject. In 1878 Dr. Phelps performed his first operation by open incision on a relapsed club-foot and since that date he had operated on 1650 cases. In the last 700 cases he had not performed a single osteotomy and the mortality of the whole 1650 had been *nil*. Up to the age of four months it was unnecessary to do more than attempt to straighten the foot by the employment of the surgeon's hands and the use of adhesive strapping, but if the fourth month had passed and the foot refused to straighten then the surgeon should perform subcutaneous tenotomy, dividing first those tendons which were most tense. The tendo Achillis generally first needed division. It was only after tenotomy had failed that any open operation should be considered. The soft parts were really responsible for all forms of congenital talipes and the complete division of any restricting band would nearly always suffice for the straightening of the foot. The incision was made on the inner side of the foot from just in front of the internal malleolus to the neck of the astragalus. The foot was then wrenched into an over-corrected position and fixed in that position. The most important structure to divide was the anterior limb of the deltoid ligament. In most cases the wound filled up with blood-clot which organised. If, however, as occasionally happened, it were found impossible to get the foot straight an osteotomy might be done, the simplest being division of the neck of the astragalus, or, if that were not sufficient, a wedge-shaped piece of the os calcis might be removed. Very rarely indeed it might be necessary to amputate and then Pirogoff's operation should be performed. The results of the open incision could not be surpassed by any other method of treatment and much time was saved.

Mr. JACKSON CLARKE (London) said that he would much like to see the present condition of Dr. Phelps's earlier cases. He considered that treatment should guide the growth of the foot, and by manipulation with one or two tenotomies it was possible to make any congenital club-foot into a perfect foot in two or three years.

Mr. A. H. TUBBY (London) did not consider Dr. Phelps's operation a good surgical procedure. The scar filling the gap on the inner side of the foot must contract and cause a return of the deformity which would then be irremediable. The results of the mechanical treatment were, in his opinion, better than those obtained by any other method.

Mr. NOBLE SMITH (London) thought that if all cases which could be treated by manipulation and tenotomy were excluded none would be left for the more severe operations. He considered that Dr. Phelps's operation would leave a very inelastic foot.

Mr. CHISHOLM WILLIAMS (London) had never seen a case

in which he had considered it advisable to recommend any such operation as that described by Dr. Phelps.

Dr. PHELPS, in reply, expressed his pleasure in being criticised, but he thought that the criticisms were founded on a misunderstanding. Experience showed that the scar formed did not contract, and cases had been followed up for 12, 15, and, in one case, even for 20 years.

The Substitution, when Practicable, of Subastragalar for Syme's Amputation.

Mr. JONATHAN HUTCHINSON, jun. (London), read a paper on this subject. He acknowledged that the results of Syme's amputation were sometimes very good and he had seen one case in which the stump had remained in perfect condition for 22 years. For several reasons, however, union by first intention was somewhat rare in Syme's amputation and in many cases some months elapsed before the stump was healed. Mr. Hutchinson had performed the subastragalar amputation six times, five times according to Faraboeuf's method which was the best. The advantages of the subastragalar amputation over that of Syme were: (1) that the stump was some two inches longer; (2) that it gave a broader base of support; (3) that the elasticity due to the ankle movements was a marked advantage in walking; (4) that the pad of soft tissue at the end of the stump was much thicker; (5) that the arterial supply of the flap was better; and (6) that an artificial leg could be better fitted to the stump. Syme's amputation could, however, sometimes be done when the tissues were quite insufficient for the subastragalar method. For the subastragalar amputation the flap could not be too thick and it was remarkable how much movement was retained at the ankle. Sometimes it was advisable when the flap was scanty to remove the head of the astragalus.

Mr. WALTER G. SPENCER (London) agreed that the subastragalar operation should be better known and he was specially inclined to think that the operation would usefully replace Chopart's amputation.

Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-joint.

Mr. JOSEPH GRIFFITHS (Cambridge) in a paper on this subject pointed out that the internal lateral ligament only prevented the giving way of the knee-joint during semi-flexion. The tearing of this ligament was one of the chief causes of a "weak knee" after an injury, such as a sprain. He had devised an apparatus which prevented the separation of the femur and tibia on the inner side, and so took the place of the torn internal lateral ligament. It consisted of a band above and below the knee connected by a metal band at the back which allowed flexion. Its effect in suitable cases was frequently very marked and immediate. The internal semilunar cartilage was fixed in position chiefly by what might be called its suspensory ligament, which fastened it to the internal lateral ligament of the knee-joint. When either of these ligaments was torn the two bones might separate and the cartilage might be displaced outwards. The treatment of this condition was by an apparatus very similar to the other and the results were equally satisfactory.

Mr. NOBLE SMITH expressed his approval of the apparatus exhibited.

Dr. TURNER thought that rupture of the coronary ligament had much to do with displacement of the internal semilunar fibro-cartilage, which was liable to be rotated outwards when the knee was flexed.

Mr. JOSEPH GRIFFITHS could not agree that rupture of the coronary ligament only would allow of displacement of the cartilage.

Three Cases in which the Superior Cervical Ganglia were Excised, with Remarks on the Operation.

Mr. F. F. BURGHARD (London) communicated notes on these cases. The first case was one of chronic glaucoma in a woman. When the patient recovered from the anæsthetic she complained of intense pain in the head; at times it was excruciating, requiring morphia. Gradually the pain decreased but the glaucoma was in no way relieved. The best incision was in front of the sterno-mastoid and then the internal jugular vein was drawn inwards and the sympathetic was exposed. The vagus was usually not seen at all. The double operation took half an hour. Jonnesco of Bucharest performed the operation eight times for glaucoma, in all cases with much improvement of the symptoms. Mr. Burghard's second case was one in which a recurrent epitheliomatous gland caused pain in the neck and arm. The gland was excised and was found to involve the ganglion. The pain was at once removed. In the third case the patient, a man 44 years of age, had a swelling in the neck which was thought to be a gland but when it was removed it was found to be a false diffuse neuroma of the cervical sympathetic. The constant symptoms which followed removal of the superior cervical ganglion were: (1) ptosis; (2) severe pain in the head with flushing of the face; and (3) contraction of the pupil. There was neither alteration of intra-ocular tension nor change in the pulse.

Mr. WALTER G. SPENCER remarked that Jonnesco's results had been received with some hesitation. He was inclined to think that the operation might be usefully employed for some cases of severe persistent pain in the head and neck.

OBSTETRICS AND GYNÆCOLOGY.

FRIDAY, AUGUST 3RD.

Post-partum Hæmorrhage: its Prevention and Treatment.

In the unavoidable absence of Dr. W. R. DAKIN the discussion on this subject was opened by Professor J. W. BYERS (Belfast). He defined post-partum hæmorrhage as excessive hæmorrhage after labour, depending on certain pathological conditions. The amount of blood necessary to mark the case as one of post-partum hæmorrhage could not be arbitrarily defined; the case must be judged by the effect of the bleeding on the general condition of the patient and by the local conditions found. The pathological conditions leading to hæmorrhage were—(1) abnormal state of the blood and atony of the vessels; and (2) lacerations of the genital tract. The indications of predisposition to hæmorrhage were as follows: (*a*) Conditions during pregnancy: (1) history of hæmorrhage in previous labours; this was of value in two sets of cases—viz., among the poor where pregnancies succeeded each other rapidly, and among the wealthier classes where there had been over-feeding or over-drinking; (2) over-distension by hydramnion, twins, or a tumour; (3) albuminuria; and (4) extreme mental depression, as, for instance, when delivery followed soon after the death of the husband. (*b*) Conditions found during labour, such as a persistently quick pulse or a type of pains characterised by sharpness and short duration with long intervals. With regard to the influence of chloroform some obstetricians seemed inclined to regard it as predisposing to hæmorrhage, but Professor Byers thought that this was not so, at least when chloroform was given only with the pains. And although when given in full surgical quantity, as in cases of forceps, version, &c., post-partum hæmorrhage might follow, the result here was probably due rather to too rapid delivery than to the chloroform. Passing on to the question of prophylaxis Professor Byers observed that the treatment of post-partum hæmorrhage consisted mainly in its prevention, and for this purpose two points especially were to be borne in mind—viz., first, the importance of not delivering in the absence of a pain, and secondly, the necessity for careful management of the third stage. As to the first point, the case might be one of secondary inertia and the temptation to use forceps might be great, but the proper treatment was to give opium, and after a rest the pains would come on again. Or, again, they might have to do with placenta prævia, where the proper treatment was bimanual version; but this should not be followed by immediate extraction, for this would bring about precisely the two conditions he had first mentioned as leading to hæmorrhage. With regard to the management of the third stage he believed that there was some meddlesome midwifery done. The separation of the placenta should be allowed to be effected naturally, and it was bad practice to squeeze out the placenta before it had become naturally separated. Twenty minutes or more might be necessary for this purpose. Special measures of precaution when hæmorrhage was to be feared consisted in the adoption of hygienic measures during pregnancy; and chloride of calcium might be given for a short time before labour. The modes of treatment on which chief reliance was to be placed were as follows: in the first place external uterine massage; then the injection of hot salt solution. For injection it was important not to use mercurial solutions, since the vessels were open and absorption might occur very readily. The introduction of the hand into the uterus should not be resorted to unless one felt sure

that some portion of placenta or membrane had been left behind. The use of perchloride of iron was, he thought, rightly going out; it was risky and was not always of use. If these measures failed the uterus should be plugged and it should be done thoroughly. Gauze ready sterilised in tins could be obtained for this purpose. If this failed the gauze should be withdrawn, the uterus washed out, and the packing replaced; and if bleeding still went on they had to do with a very serious state of things. In one case, under these circumstances, he adopted the plan of taking hold of the cervix and drawing down the uterus, the result being satisfactory. Wounds of the parturient canal were important, as they might lead to errors of diagnosis. The uterus might then be firmly contracted while bleeding went on—a condition described in the old text-books as post-partum hæmorrhage with contracted uterus. They could be sure that with a firmly contracted uterus the bleeding was not from the placental site and they should then look for injuries. The after-treatment was the treatment of anæmia. Quiet was necessary. Saline solution was of the greatest value and intravenous injection was best, but was often very difficult to carry out single-handed, and nearly as good results followed injection into the connective tissue under the breast. This was better than injection into the rectum.

Dr. ROBERT BOXALL (London) considered that 20 ounces of blood lost constituted a pathological quantity and on this estimate the cases of post-partum hæmorrhage at the General Lying-in Hospital amounted to about 10 per cent. He had paid some attention to the subject of the collarette placenta as described by Auvard and it had seemed to him that this might have a relation to post-partum hæmorrhage. On further inquiry he found that out of 22 cases of post-partum hæmorrhage the collarette placenta was found in no fewer than 15 cases. The causation of hæmorrhage under these circumstances was not difficult to understand, because the turned-up placental edge which characterised the "collarette" placenta was very soft and friable, tearing very readily.

After some remarks by Dr. JOHN HADDON (Hawick) Mr. E. STANMORE BISHOP (Manchester) advocated greater simplification of the subject of post-partum hæmorrhage; such rare or theoretical causes as hæmophilia or the influence of the ganglion cervicale uteri should be eliminated from their teaching, and the really practical aspects of the matter dwelt upon. The most frequent cause of hæmorrhage was a tired condition of the uterine muscle, which was apt to be brought about by prolonged labour, chloroform, alcoholism, and mental depression. Venous hæmorrhage could be arrested simply by raising the foot of the bed.

Mrs. SCHARLIEB (London) mentioned that in India and other hot climates post-partum hæmorrhage was common, especially in Englishwomen exhausted by the climate, and that quinine given during labour strengthened the uterine contraction, accelerated the labour, and was also a prophylactic against hæmorrhage.

Dr. JOHN CAMPBELL (Belfast) said that the duty before them in a case of hæmorrhage was at once to get as near the source of bleeding as possible. To do this they should seize the anterior lip of the cervix and draw it well down into the vulva with a strong volsellum. This would stop or materially diminish the hæmorrhage. If the bleeding were intra-uterine they might then wash out the cavity with hot sterilised salt solution, using a flushing curette, which removed thoroughly all clots and placental débris which might have remained behind. After this the gauze-packing might be applied.

Dr. C. E. PURSLOW (Birmingham) differed from Professor Byers in that he placed plugging of the uterine cavity before the introduction of the hand as a method of treatment. He thought the latter plan should be used only as a last resource.

Dr. W. J. SMYLY (Dublin) said that Dr. Haddon had properly called attention to two striking conditions; in the first of these the uterus might be relaxed and yet no hæmorrhage take place, and if violent measures were adopted to make such a uterus contract the effect would be like flogging a tired horse, and it was better to leave it alone. This condition was sometimes met with after chloroform had been given. The second condition was that in which the uterus was firmly contracted and yet hæmorrhage was going on. Such bleeding could not come from the placental site and it was necessary to look carefully for its source. If it were a case in which forceps were applied before full dilatation of the cervix, or in which early rupture of the membranes had taken place, then the hæmorrhage was very likely to be from a torn cervix. Otherwise it might be from the vulva or the vagina. An exact diagnosis was of the utmost importance, for to go through the usual programme of uterine massage, hot douche, packing, &c., and other means of inducing contraction while bleeding was going on from other causes might lead to much loss of valuable time. With regard to prophylaxis he thought that this should go back much further than the third stage of labour; not only the tired uterus but also the diseased uterus would bleed—for example, the hæmorrhage might be due to an antecedent metritis or endometritis. Consequently from one point of view post-partum hæmorrhage in one labour might be looked upon as the punishment for neglect of asepsis in a previous labour.

Dr. HENRY BRIGGS (Liverpool) said that he had shown some time ago before the North of England Obstetrical and Gynæcological Society that drawing down the uterus would check hæmorrhage; he employed the plan of seizing the cervix with volsella forceps. He believed that Dr. Galabin had advised iodoform gauze packing before it was suggested by Dührssen and had remarked that enough gauze might be stuffed into the uterus to supply material for two ball dresses. If the uterus were drawn down in the way he had suggested while packing much less gauze would be required.

The PRESIDENT (Dr. W. S. A. GRIFFITH) endorsed Mr. Stanmore Bishop's view that the whole question ought to be simplified and believed that much had been done in this direction by the introduction of heat for the checking of hæmorrhage. The first thing was to aim at securing an empty and contracted uterus, and this was not always an easy matter. The only way to be sure about it was by introducing the hand into the uterus, and this was not to be undertaken lightly. It was to be remembered that clots as well as placental fragments might be keeping the uterus from proper contraction. He wished to emphasise the necessity of managing the third stage of labour with the patient lying on her back; this not only made the control of the uterus much easier but greatly facilitated the detection and repair of lacerations. The latter were most important; he had seen a case in which death resulted from the laceration of the vestibule during the application of the forceps. He felt sure that chloroform, when given deeply, did interfere with the power, duration, and frequency of uterine contractions. This effect was exactly the opposite of that produced by ergot; and he had for some time been in the habit of giving ergot in cases in which he was about to administer chloroform. The administration of ergot before delivery was, of course, contrary to the usual rules given in text-books, but he could testify that when used with discretion it answered very well. It must be remembered that there were times when the administration of opium, allowing the patient to sleep for several hours, would result in a stillborn child. He did not agree with a previous speaker that an approximate estimate of the heat of a douche was sufficient. On the contrary, the temperature should be regulated with the thermometer, the best temperature being from 117° to 120° F. The use of this plan would make gauze-packing very seldom necessary; he had only had to pack once since using the douche as described. If packing were required and gauze were not at hand other things would answer very well; for instance, strips of clean linen boiled and then soaked in weak perchloride of iron, if at hand, or in whisky or some other spirit. The effect of passing such strips right up to the fundus of the uterus was nearly always immediate.

After a brief reply by Professor BYERS two papers were read, one by Mrs. STANLEY BOYD (London) on the Conservative Surgery of the Tubes and Ovaries; and the other by Dr. C. E. PURSLOW, being an Account of a Case of Complete Inversion of the Uterus of Three Years' Duration.

The proceedings of the section then terminated.

STATE MEDICINE.

THURSDAY, AUGUST 2ND.

The Hygienic Aspect of the Use of Water Gas.

Mr. J. C. MCWALTER (Dublin) read a paper on the above subject. He considered that great dangers were attached to the increasing use of water gas by many gas companies. The risk he attributed not only to leakage but also to actual osmosis through the walls of the pipe. He traced an increased mortality of deaths from carbon monoxide poisoning in towns where water gas was used. The saturation of

the ground air with carbon monoxide he thought was a cause of endemicity of such diseases as enteric fever and cerebro-spinal meningitis.

The paper was discussed by Dr. H. PECK (Chesterfield), Dr. J. C. THRESH (Chelmsford), and others.

FRIDAY, AUGUST 3RD.

Should Municipalities provide Common Lodging-houses and Workmen's Dwellings?

A discussion on this subject was opened by Dr. H. COOPER PATTIN, medical officer of health of Norwich. He said: "I apprehend that the reply of those of us who are medical officers of health will be in the affirmative with varying reservations. My own reply is a distinct affirmative with, however, definite limitations. About what we mean by common lodging-houses there can be little doubt, but I think what most of us have in our minds when we speak of workmen's dwellings are the wants of poor men rather than artisans, at any rate, skilled artisans; and those of us who are medical officers of health will inevitably look at the problem from the standpoint of officials who are anxious to have what I may call 'slummers' provided with healthy and cheap habitations. I think we mostly find that the average workman, certainly the average skilled workman, can and does provide himself with the home he wishes. So if we are to keep to our definition let us agree that we are considering the question of municipalities providing dwellings for workmen below the rank of skilled artisans and poor men and women generally, and in particular those of our brethren to whom we may give the designation of 'slummers.' The general propositions in favour of municipalities providing common lodging-houses and poor men's dwellings are something like these. That anything which damages the health of the community included in a municipality injures that municipality in its most valuable asset—vigorous humanity. That inefficiently equipped and managed common lodging-houses and badly situated tenements and dwellings do this. That the credit of the municipality being greater than that of an individual it can erect and carry on common lodging-houses and provide poor men's dwellings more cheaply than private persons trading for profit are likely to do, or as experience teaches us can do. That the direct control which it obtains over common lodging-houses enables a municipality more easily to check the importation and the propagation of various communicable diseases, and that by securing to its people more air space and healthier surroundings than these find in the slums, &c., it is laying up a richer harvest of healthy dwellers for the succeeding generation as well as actually diminishing ill-health and disease in the existing community. The general objections to all schemes may be summarised thus: that the carrying of them out commits the municipality to trading; that it interferes very seriously with private enterprise; that it will add to the already enormous amount of municipal debt; that it imposes an improper amount of strain upon members of municipalities in the matter of management; and that the further progress of such socialism threatens municipalities with becoming in time, not the servants, but the slaves of their tenants. Well, then, I say municipalities should provide common lodging-houses upon precisely the same principle which leads the State to insist that every child shall have a certain amount of education or every starving person a certain amount of food and shelter—the principle of common interest dictating a minimum standard below which the education, the sustenance, or in the special case before us the lodging of the poorest members of the community shall not be suffered to fall. Pray do not misunderstand me. I by no means believe that it is the duty, that it is wise, or even prudent for the municipality to provide all the common lodging-house accommodation which may be needed by its permanent and temporary population. What I do feel is that it is desirable, wise, and prudent for a municipality to say: 'We will not, out of regard alike for the healthiness of our city and for the welfare of our common humanity, suffer any persons to be lodged in a common lodging-house within our boundaries below a certain minimum standard of healthiness and comfort, and to insure this we will provide such minimum ourselves and leave it for private enterprise to attract custom by offering a higher standard of comfort, &c., for the same money, or, for those who can pay it, for a higher sum of money.' Of course, I know that it may be urged that by owning all common lodging-houses a municipality can simplify administrative control and inspection, but I am at present satisfied that the principle I urge is the soundest basis for action—viz., the establishment by the municipality in its own common lodging-houses of the minimum standard of accommodation, &c., it will tolerate; just as although a starving man is now fed and sheltered by the community in a workhouse one by no means desires to see every other place where food and shelter can be obtained in the direct possession of the State. There can be little doubt, too, that the provision of all the lodging-house accommodation needed in any locality of the municipality will favour the tendency to crowd large numbers upon a given site, if only to reduce administrative expenses—a tendency I regard with disapproval. Moreover, it is hard upon the wayfarer to be compelled to tramp perhaps right across a town before he can reach a common lodging-house in which he can find accommodation. My personal attitude of approval of the provision of dwellings for poor people by municipalities is conditioned by the limitation I apply to the provision of common lodging-houses—viz., that the municipality is entitled to say, and wise to say, "We will not permit any members of our communal family to be housed under conditions below a certain standard in healthiness, which minimum standard we will ourselves supply, leaving private enterprise to provide greater conveniences, &c., for those who desire to live on a scale exceeding our minimum," just as we now say that it is to the public advantage that every child shall receive a certain minimum amount of education, which minimum we provide, but leave the way open for the attainment of any desired maximum through private expenditure. I feel tolerably sure that the influence of what I may term 'standardising' municipal common lodging-houses and poor men's dwellings will be of even more indirect than direct benefit to the affected municipality—they will act as perpetual spurs to private competition, which to prove remunerative must offer accommodation more attractive."

Dr. A. HILL (Birmingham) said that the common lodging-house was one of the least difficult kinds of building to provide. Men who had only 18*s*. per week could not pay a rent of 5*s*. or 6*s*.; what was most wanted in his opinion were rooms at 1*s*. per week. Unfortunately, however, houses with such rooms could not be furnished by the municipalities except at a loss. He thought that could be done only by throwing the cost upon the ratepayers. Lodging-houses, on the other hand, could be directed by private enterprise. It was, therefore, only necessary for municipalities to supply lodging-houses where private enterprise failed. At present in Birmingham they were trying the dual system, one house above the other, let at a weekly rent of 4*s*. 6*d*. One of the great difficulties to the supply of houses for the very poor was the dirty and destructive habits of that class.

Dr. E. P. MANBY (Liverpool) gave some account of what had been done in Liverpool for the housing of the working classes.

Dr. WALTER SMITH (London) was in favour of the municipality providing houses for the poorer working classes, but there were obstacles in the way of carrying it out owing to the difficulty of obtaining land and to the complication of administering the Act. He brought forward a motion to the effect that Government should be petitioned to amend the Act with a view to its simplification and that the time for repayment of loans be extended for buildings to 60 years, the land being considered as a permanent asset.

Dr. J. S. TEW (Tonbridge) observed that at the Conference on the Housing of the Working Classes lately held in London the plans of the Liverpool cheap dwellings, designed by Mr. P. Boulnois, were shown, and he gathered that the 3½ or 4 per cent. paid referred to the total revenue derived from the rents, less repairs and management, but did not represent profit. It appeared quite impossible to provide municipal dwellings at anything like 1*s*. per room per week. The municipal dwellings erected in London and other large centres cost an amount requiring a weekly rent of from 2*s*. to 3*s*. a room to pay their way. The three-room and four-room dwellings erected by the Richmond Corporation and letting at a rental of from 4*s*. 6*d*. to 5*s*. 6*d*. respectively were comfortable and healthy and self-supporting. These were built as double cottages in flats with a small garden for each tenant at the rear and were well worth a visit by anyone interested in the question. All details were given in Alderman Thompson's excellent description of these dwellings.

Dr. COOPER PATTIN, in reply, said that in dealing with cottages in rural districts it was necessary to simplify legislation. He agreed with Dr. Hill and the President that

the position that a loss would be incurred by the erection of proper houses for the poor must be faced.

The following was the motion which Dr. WALTER SMITH brought forward. It was seconded by Dr. PECK and carried *nem. con.* :—

The public must be taught that money would have to be sunk as an investment which would not make an immediate money return.

Food Preservatives and Colouring Matters in Food, with Reference also to Foreign Law and Conditions.

Dr. A. S. GRÜNBAUM (Liverpool) then read a paper upon this subject. The enormous extent, he said, to which food preservatives were now being used, the abuses to which they were put, and the injuries which they might cause, made stringent and definite legislation on the subject necessary. At present the law was too vague and narrow, and trade interests were too selfish and magistrates for the most part were too ignorant for much progress in this direction. Meanwhile continental nations were going rapidly ahead and they would, if they were not careful, soon lose their front place in matters relating to public health and state medicine. The addition of preservatives, regarded independently of their action, might be classified as follows. They might be added (1) either (*a*) *bonâ fide* or (*b*) with fraudulent intent; or (2) with a view to either (*a*) permanent (e.g., ham) or (*b*) temporary (e.g., milk) preservation. The addition might be considered *bonâ fide* if (*a*) the purchaser was made aware of the addition, and (*b*) if the article was well known to usually contain a preservative, always provided that the preservative had no injurious action. The use was fraudulent if (*a*) the addition was concealed, (*b*) if used to make a stale article appear fresh, and (*c*) if the preservative was injurious. Consequently preservatives added to articles intended for consumption when fresh were generally added with fraudulent intent, since they concealed the inferior quality of the article to the prejudice of the purchaser. Milk might be taken as the most important type of food under this heading. Dr. Grünbaum thought that in a strictly legal sense any addition of preservatives to milk was illegal, because any customer if offered his choice of fresh milk or of milk apparently fresh to which the preservative had been added would undoubtedly choose the former; that would be the quality demanded. The saving clause in the statute did not cover milk, since it was not produced nor did it require preparation as an article of commerce. In the case of cream the defence had sometimes relied upon the fact that the addition of the preservative had been noted upon the bottle, but he was not aware of any case in which the milk-dealer had informed his customers of the presence of a preservative. Continental opinion seemed pretty unanimous regarding the inadvisability of permitting the addition of preservatives to milk. Although not specifically prohibited by the Foods Act the German Ministry in a circular letter as far back as 1884 advised the local authorities to make by-laws to this effect, and repeated the advice in another letter last year. In Hamburg the local law had been so effectual that in milks examined with that object the percentage of those containing boric acid fell from 23 in 1895 to 4·9 in 1897. A similar regulation held good in Vienna. It did not, therefore, appear that such restrictions caused difficulty in the adequate supply of milk to large towns. He wished to emphasise that point because the opponents of preservatives were usually considered to be mere theorists. In regard to wine the German law was very particular and there was a statutory prohibition against the addition of certain things to wine or to drinks like wine. Amongst these were salicylic acid, glycerine, and aniline dyes, also the addition of saccharin to sparkling or fruit wines. It would be well if precautions were instituted in this country against the addition of salicylic acid and dyes to the so-called fruit wines. A favourite preservative on the continent was sodium sulphite. It was used principally for giving a fresh appearance to minced meat. There had been numerous convictions against its use, sometimes with imprisonment. There was reason to believe that the sulphites were used also in this country, although for a different purpose, but Dr. Grünbaum was not aware that any cases had, although such cases certainly should be, taken into court. In examining into the question of preservatives and colouring matters he had not, unfortunately, been able to find evidence of a high standard of commercial morality. He would take two instances from the price lists of firms engaged in supplying confectioners and brewers. Concerning saccharin there was the following paragraph: "As a cure for 'sick' beers.—Even when such a dubious lot of beer already begins to show signs of incipient 'taint' there may yet be time to save it by quick action in introducing, as may be needed, from one to two ounces of saccharin per 500 gallons and thereby arresting the souring process and at once making the beer drinkable and marketable." Even apart from its preservative qualities the substitution of saccharin for sugar was undesirable as diminishing the nutritive value of the food. Another list had amongst its "brewers' materials" in the largest letters potassium metasulphite, directing one ounce per barrel to be used, with the remark that "it is a perfect antiseptic in crystals, &c." This quantity was equivalent to 1·5 grains per pint. On another page was a list of brilliant aniline colours for boiled sugars, fondants, lozenges, jujubes, &c. The law was at present somewhat too lenient since it permitted imprisonment as punishment only with the second offence and if the fine amounted to £50. If it could be relied upon that the quantity and quality of a preservative would always be intimated to the purchaser it might be possible to permit the use of preservatives within certain limits, but Dr. Grünbaum could see no hope of inducing any trade at large to make such intimation. Occasionally and exceptionally instances were met with where the addition of a preservative was noted on the label; but having regard to the inherent selfish characteristics of commerce the regulations should be definite and the punishment severe. In most articles of food the addition of preservatives should be uncompromisingly forbidden and the only class in which it seemed in any way admissible was that of preserved meat of various kinds—e.g., ham, bacon, &c.—but not potted meat. The chief reasons for this hostile attitude to preservatives were the following. 1. The addition of a small quantity of a preservative like borax did not hinder the growth of micro-organisms as a whole, although it did repress the putrefactive ones and interfered with the digestive functions. As Professor Halliburton had shown, the addition of even a small quantity of borax (0·05 per cent.) inhibited the action of rennet ferment. Dr. Grünbaum confirmed this experiment and could add that the reason was to be found in the precipitation of the calcium by the borax. It exerted practically no antiseptic action. [A photograph showing this was passed round.] Adding calcium to make up for that precipitated only made matters worse from a bacterial point of view. 2. The addition of a large quantity sufficient to inhibit all growths was injurious to the cells of the digestive tract. These cells were known to be more sensitive than bacteria. Milk treated with 0·1 per cent. of formalin formed larger clumps in the stomach, which thereafter were digested with more difficulty than those formed from pure milk. 3. The same end could be attained by harmless means. He considered the occurrence of putrefaction to be a good indicator of when other bacteria were assuming dangerous proportions, and to repress their growth in an article like milk was like sitting on the safety-valve of a steam-engine. If milk had once gone bad the dealer could mix it with that which was new and sweet; if a preservative were added and it remained apparently good, no doubt yesterday's milk or that of the day before would be added to to-day's and indefinitely, and no legal prohibition without inordinate expenditure on inspection could control such a procedure. The experience already gained in surgery should be put to use. Asepsis now ruled instead of antisepsis and what was required was aseptic, not antiseptic, food. Two physical means were at command for this purpose—heat and cold. The former was chiefly applicable to articles not intended for fresh consumption, the latter chiefly to more perishable foods, like milk and cream. That they were effectual was well known; certainly they were more effectual than antiseptics at ordinary temperatures. Cooling and keeping cool would keep the number of bacteria in milk down to that with which it started. Colouring matters were, he thought, even less defensible than preservatives, especially those containing aniline dyes. To add colouring matter to milk, butter, cream, &c., for the purpose of apparently improving its quality was not, of course, as culpable as the addition of a preservative, but their addition for making a food more attractive required restraint. Nearly all colours could be obtained by harmless although sometimes more costly means. The addition of copper sulphate was quite indefensible. Coming to the conclusion of his remarks Dr. Grünbaum said that he was anxious that the blame in this matter should be correctly apportioned. As regarded colouring matters the public were chiefly to blame, but they could soon be educated to a sanitary level. If brightly coloured foods could

nowhere be obtained the public would buy the other. As regarded preservatives in milk, cream, &c., the blame seemed to rest chiefly with the railway companies and with the ice-vendors. Ice was used far too little in England principally on account of its exorbitantly high price, for most people, he imagined, preferred to have their summer drinks cold. He believed the cow-keeper would use a refrigerator if ice could be obtained at a reasonable price. But the railway companies were the chief offenders. They did not supply refrigerator vans, they required milk-cans to be sent open (unless they were full) in spite of the obvious risks of contamination, their rates were too high, and their servants were too careless. Indeed, they seemed almost to take a malicious pleasure in putting milk-cans in the sun. It would appear, therefore, that some injustice might be done by legislating too hardly for the purveyors of perishable foods, unless at the same time rational treatment of the same from their carriers were required.

Dr. A. HILL unreservedly endorsed the views set forth in Dr. Grünbaum's paper. He himself two years ago, at the meeting of the Sanitary Institute in Birmingham, proposed similar measures, and emphatically laid down the proposition that no antiseptic should be added to food unless its nature were declared. He also maintained that in cold a perfect means of preservation existed, while it had the advantage of adding nothing, subtracting nothing, and of not affecting the flavour or digestibility of the article. He had also brought forward a motion, which was carried unanimously, advising that Government should take steps to prevent the use of antiseptics in food. He quite agreed with Dr. Grünbaum as to the danger of using aniline or other dyes and he described a case of prosecution for dyeing sugar with an aniline dye in which the surprising decision of the bench was in effect that though they found it was proved that the sugar was dyed, yet *it was of the nature, substance, and quality demanded by the purchaser*.

Mr. W. C. C. PAKES (London) said that sodium sulphite was largely used by pork-butchers. Although he agreed entirely with Dr. Grünbaum as to the desirability of preventing the addition of preservatives to such food-stuffs as milk and butter, he doubted whether they would be able to prevent such additions in the immediate future.

Dr. D. WALSH (London) said that though the vendor might declare the addition of a preservative and the purchaser might buy the food so preserved with his eyes open, and the transaction would then be *bonâ fide* according to Dr. Grünbaum's definition, nevertheless, a vast amount of harm might be done to the individual by their consumption. What was wanted was a more accurate knowledge of the remote effects of the drugs so used on the human system. Without such knowledge the demonstrated facts upon which to base legislation on the matter of food preservatives were lacking. While the whole matter was in this transition stage Dr. Grünbaum's suggestion of food asepsis as against antisepsis was of great practical value and formed one of the most important contributions yet made to the subject.

Dr. MCWALTER thought that the motion was far too sweeping. It would involve the disuse of salt in food and would injure trade.

Dr. THRESH thought that salt must be left out of the list of condemned preservatives because it was a necessary article of food and must be used in many instances to procure palatability.

Dr. GRÜNBAUM, in replying, thought that if a strong enough stand were taken it would be possible to enforce any standard of purity that might be considered necessary.

Dr. GRÜNBAUM'S motion was then put:—

That in the opinion of the Section of State Medicine of the British Medical Association the addition of preservatives to milk, butter and similar products, beer, and wine should be prohibited and their additions to other foods regulated by statute.

Dr. COOPER PATTIN seconded the motion and it was carried unanimously.

PSYCHOLOGY.

FRIDAY, AUGUST 3RD.

Dr. C. C. EASTERBROOK (Edinburgh) read a paper on

Organo-therapeutics in Mental Diseases.

Brown-Séquard in 1889 enunciated his doctrine of internal secretions as the results of experiments made with the extracts of healthy organs and stated that "all glands and all tissues have an internal secretion: all injected subcutaneously have a tonic effect." The use of the thyroid first as a grafting and then as a preparation to be administered by the mouth, due to the work of Mr. Victor Horsley (1891) and Dr. G. R. Murray in this country, gave a further impetus to organo-therapeutics. Organo-therapeutics in the insane was based on the assumption that the various organic substances administered had a therapeutic effect on the brain and nervous tissues. During the five years past Dr. Easterbrook had administered to patients suffering from insanity the following organic extracts: thyroid gland, thymus, pituitary body, cerebrin, splenin, orchitin, ovarin, supra-renal extract, &c., to determine their value and to ascertain their pharmacological action. An essential point in the work thus undertaken was to administer the organic extracts only to patients whose insanity was definitely making no progress towards recovery under the methods adopted in the asylum, or whose insanity was becoming chronic or incurable. It was necessary always to exclude the effects of "mental suggestion." The sheep was the animal used to supply the organic extracts and these were administered in dry tabloid forms as prepared by Messrs. Burroughs and Wellcome. Each patient was put to bed during the period of experiment and was given a staple diet sufficient to maintain body-weight at its usual level, the administration of the extract beginning on the fifth day. The patient was weighed weekly during treatment and for a month after. The urine was regularly examined and the urea was estimated by the hypobromite method. The phosphates in the urine were determined by the uranium method. The thyroid extract was administered in 130 cases of insanity (45 males and 85 females) with the following results. Where large doses were given there followed pyrexia in most of the cases to a slight or moderate degree. Loss of weight was a constant symptom, also increased sweating, pains, and tinglings in various parts of the body, and a slight or moderate degree of exaltation or restlessness. There was tachycardia in most cases, and the respirations were increased by about six per minute. Appetite and thirst increased, and in females menstruation was made more profuse than usual. Urea and nitrogenous products were increased in the urine, showing an enhanced metabolic activity. Slight transitory albuminuria was found in 10 per cent. of the cases. In moderate and small doses the above results were present in a correspondingly less degree, and it was concluded that the thyroid extract acted as a powerful metabolic (katabolic) stimulant. The patients included five idiots and imbeciles, seven pubescent or adolescent cases, and cases of mania, melancholia, myxœdema, alcoholic, and general paralytic insanity, &c. Of a total of 130 patients 12 recovered, 29 were improved, and 89 were unimproved. The recoveries included four cases of stupor, three of puerperal mania, one of lactational melancholia, one of myxœdema, one of simple melancholia, and two of climacteric melancholia. These patients also improved physically. The threatened attacks of *folie circulaire* were aborted by thyroid administration. Parathyroid extract was given to a few patients with slight or practically negative results. Thymus extract given in two cases produced no improvement, and pituitary extract given in four cases (two being cases of general paralysis, one of adolescent melancholia, and one of monomania of persecution) produced no improvement. Cerebrin was given in 19 cases; in 14 the patients remained unimproved, three were improved (females with adolescent, climacteric, and senile mania), and two recovered (females). Orchitic extract was given in eight cases and three were slightly improved. Ovarian extract was given in 36 cases (all females); four of these were stuporous and improved temporarily, the others were unimproved. It was concluded that the thyroid had an active principle (Baumann's iodothyrin) the effect of which was to increase tissue-oxidation far above all other substances, and this continued so long as the drug was taken, so that the beneficial changes in metabolism (in suitable cases) might be made to endure for a considerable period.

Dr. J. G. SOUTAR (Gloucester) regarded the subject of organo-therapeutics as one of great importance, and the statements in Dr. Easterbrook's paper as cautious and moderate. It brought them to the point which those of them who were not over-sanguine had desired to reach—viz., the value of organic extracts as an aid to treatment in a limited number of cases of mental disease. The first case treated at Barnwood House Asylum was apparently one of confirmed dementia of long standing secondary to puerperal mania, which improved rapidly and surprisingly under thyroid treatment. Since then cases of many types of

insanity had been treated, but although a degree of improvement was obtained in some cases no other recovery had followed.

The PRESIDENT (Dr. PERCY SMITH of London) said that like Dr. Soutar he had expected a great deal from the treatment of mental cases with thyroid extract, but had been on the whole disappointed. He had seen marked improvement up to a certain point result in some chronic cases but without positive recovery.

On some Cardio-psychical Associations.

Dr. JAMES WHITWELL, medical superintendent of the Suffolk County Asylum at Melton, read a paper on this subject. He pointed out that imbecility might be associated with cardiac hypoplasia and gave an account of a case (non-syphilitic) in illustration. Two cases of a similar type had been previously recorded by Hagen.[1] In a second class of cases congenital or infantile cardiac disease was present and compensation had been established. The intelligence in such cases remained at the childish level. Varieties of mood and disposition towards impulsiveness, sexuality, &c., might be present in different subjects of this class, the permanent condition common to all being that of physical and psychical immaturity. In cases of another class—viz., adults with cardiac disease—the symptoms varied as follows. A class of case showing mitral disease (especially stenosis) had gradually developing irritability, distrustfulness, and impulsiveness. Such patients were hyper-sensitive and morbidly suspicious, sometimes apparently with definite hallucinations. In connexion with aortic disease Dr. Whitwell had no case showing any evidence of intimacy of association leading to the production of mental symptoms. These cases, he added, were complicated by syphilis or general paralysis, themselves such potent bases of cerebral and mental disorders. A final group included cases of senility with cardiac asthenia and associated cerebral erethism, the evidence suggesting that the cardiac condition was primary, the mental symptoms being but an exaggeration of the mental condition typically present in acute cardiac asthenia. In advanced and hopeless cardiac cases where the heart refused to respond any longer to cardiac stimulants and failed beyond hope of recovery the patient might exhibit a condition of mental buoyancy and *bien-être*, this condition being probably due to an illusion of the muscular sense, so that the patient put forth unusual muscular efforts which he would not attempt in health, with the result that sudden death was frequently the result.

Blood-pressure in the Insane.

Dr. MAURICE CRAIG, assistant medical officer at Bethlem Hospital, read a paper on this subject. He stated that the blood-pressure was high in cases of simple melancholia and low in mania and agitated melancholia. Altered blood-pressure was a symptom rather than a cause in these mental disorders. A parallel was drawn between mania and the condition of sleeping and dreaming in regard to the absence of attention and the fantastic arrangement of ideas. In both conditions the blood-pressure was low. In general paralysis, after the initial stage, the blood-pressure was remarkably low and it was surmised that the same would probably be found in somnambulists. Low blood-pressure was present in states of restlessness, and with the idea of raising the blood-pressure a saline injection into the bowel should be attended with good results. In several restless patients, otherwise also suitable for treatment, the injection of from eight to 10 ounces of water into the rectum every morning was followed by an improvement of symptoms if the water was retained. The observations collected were necessarily few and not complete enough to make definite and reliable statements and more might be learnt could the experiences of other observers be collated.

Brief remarks on the above papers were made by Dr. E. S. PASMORE (Banstead Asylum), Dr. HARRY CORNER (London), Dr. ROBERT JONES (Claybury), Dr. LLOYD ANDRIEZEN (London), Dr. SEYMOUR TUKE (London), and the PRESIDENT, after which Dr. WHITWELL and Dr. CRAIG briefly replied.

The PRESIDENT read a paper on

Peripheral Neuritis and Insanity,

referring especially to the conditions described as "psychosis polyneuritica" by continental alienists. This condition was always secondary to toxæmia resulting from either alcohol, metallic intoxication, acute or chronic fevers, or septic processes. The mental disorder in these cases was a disturbance of attention, a loss of memory (amnesia) and of orientation, mental confusion and restlessness, especially at night, together with hallucinations. A summary of cases of peripheral neuritis associated with insanity at Bethlem Hospital during the years 1885 to 1898, and private cases during the past two years, included 20 in all, four being males and 16 females. Of the male patients, three were undoubtedly alcoholic, and of the females 11 were certainly alcoholic. Varying degrees of anæsthesia, analgesia, and paralysis were present in the limbs and body, with tenderness in the muscles and nerve-trunks. The mental symptoms were well-marked as stated above and could be variously grouped as maniacal, amnesic, delirious, hallucinatory, &c. He had not seen a single case of polyneuritic psychosis due to septic or metallic poisoning.

In the discussion following the paper Dr. JAMES P. STEWART (Clifton) mentioned two cases, one associated with alcoholic intemperance and the other with lead poisoning, while Dr. J. G. SOUTAR had seen two cases due to sulphonal poisoning. In all four cases the characteristic symptoms of polyneuritis, marked amnesia, loss of orientation (sense of locality), and more or less loss of the sense of personal identity were present.

Dr. E. S. PASMORE had seen two cases, one of alcoholic origin and the other associated with diabetes, both suffering from polyneuritis and amnesia as described by the President.

The following resolution was then passed by the meeting unanimously:—

That this section of the annual meeting held at Ipswich, 1900, begs to draw the attention of the Council of the Association to the fact that the present title of the section—viz., "Section of Psychology"—is a misnomer, and recommends that in future the section should be called "Section of Psychiatry."

A vote of thanks to the President and secretaries brought the meeting to a close.

[1] Psychiatrisches Centralblatt, 1872.

PHYSIOLOGY.

FRIDAY, AUGUST 3RD.

Anæsthetics and Urinary Secretion.

Dr. W. H. THOMPSON, Professor of Physiology in Queen's College, Belfast, read a paper on the above subject. He had worked with dogs and had obtained the urine usually through a cannula in the ureter, though occasionally from the bladder. The anæsthetics studied were (1) ether, (2) chloroform, (3) the A. C. E. mixture, and (4) ether-chloroform (2 to 1). Ether usually produced diuresis, with increase in the total nitrogenous excretion. Chloroform, on the other hand, generally reduced the quantity of urine as well as the total nitrogenous output; the diminution, however, was followed by increase in both during the hour following the anæsthesia. The immediate effects of the A.C.E. mixture were variable, but its administration was invariably followed by diuresis. The ether-chloroform (2 to 1) mixture produced negligible effects on the renal secretion. After all anæsthetics the urinary chlorides were reduced in quantity. Albuminuria also occurred in some cases, probably rather from hæmorrhage due to mechanical injury than to renal disturbance. Grape sugar was found in most cases after anæsthesia. Glycuronic acid compounds and pentose could not be detected.

Dr. DUDLEY W. BUXTON (London) and Dr. A. G. LEVY (London) read a paper on

The Effect of Some Anæsthetics on the Kidney.

These observers had made physiological experiments on animals, and observations on human beings undergoing surgical operations. In dogs they had repeated experiments published by Kemp and Thomson, who found that ether produced shrinkage of kidney volume, accompanied by albuminuria and partial or complete suppression of urine. Dr. Dudley Buxton and Dr. Levy had only been able to corroborate this in five dogs out of 12, although the anæsthetic was fully pushed, and then only when the administration had been prolonged and the dosage great. They had never observed complete suppression, and such retardation as did occur passed off on cessation of anæsthetisation. In man they found that during the 24 hours following anæsthetisation the urine was diminished in quantity, but of higher specific gravity. The latter suggested that excretion had not been impaired by the anæsthetic, and the former was (at all events largely) due to—e.g., purgation, diminution of intake, and occasionally to vomiting. In only 2·7 per

cent. of their cases had they found albuminuria after anæsthetics unless present before, though albuminuria when already present was not infrequently increased by the anæsthetic. They attributed Kemp and Thomson's "ether-effects" to excessive use of the drug.

The paper by Professor W. H. THOMPSON and that by Dr. DUDLEY BUXTON and Dr. LEVY were discussed together.

Dr. AUGUSTUS D. WALLER, F.R.S. (London), commented on the great difference between the anæsthetic properties of ether and chloroform, the relative strength of which he estimated as being in the ratio of 1 to 8. He referred to the supposed injurious effects of ether, intimating that in spite of the apparently greater safety attached to the use of that drug, he would prefer chloroform in the hands of an expert anæsthetist.

Mr. B. MOORE (London) asked Professor Thompson whether he had observed the rate of flow of urine when ether was pushed so far as to bring about a fall in blood-pressure. He also asked how soon after the commencement of anæsthesia sugar and albumin appeared in the urine. He had himself failed to find either sugar or albumin in urine excreted immediately after operations.

Professor R. J. ANDERSON (Galway) alluded to the well-known direct action of chloroform on mucous membranes and to possible reflex effects on other organs arising therefrom. He advocated detailed study of the effects of anæsthetics on the mucosæ with which they came in contact, suggesting that the renal effects of anæsthetics might possibly be conditioned by influences reaching the organ from the central nervous system and initiated in the respiratory mucosæ.

Professor THOMPSON, in reply, stated that he had never pushed ether to the extent of causing a fall in blood-pressure. He had never estimated the quantity of sugar found, although it was usually present in measurable quantity.

Dr. DUDLEY BUXTON, in replying, expressed great appreciation of Professor Thompson's paper. He had not attended to the possible effects of anæsthetics on the respiratory mucosæ. He regarded the initial rise in blood-pressure which sometimes occurred in the early stages of chloroforming as being due less to the direct action of the drug than to the muscular movements which were incidental to its administration. He thought that much distrust of ether was caused by clumsy administration. It was not unusual to see ether pushed to a largely unnecessary extent. Once anæsthesia was established the amount of anæsthetic necessary to maintain the state was very small. This fact was overlooked by many administrators of ether.

Dr. AUGUSTUS D. WALLER, lecturer on physiology at St. Mary's Hospital Medical School, London, read a paper on

A Digital Sphygmograph,

and gave a demonstration of the instrument. The instrument consisted essentially of a stiff spring on which lay a light lever which when in use rested on the nail of the middle (or other) finger. The finger rested on a support which could be screwed towards or from the spring, and so the finger could be subjected to any desired pressure. The "law" that the "pulsations of an artery are at maximum when the pressure on it externally is equal to the pressure of the blood within it" enabled them to use this instrument to ascertain the pressure in the vessels of the nail bed. This the digital sphygmograph indicated to be about 2 cm. of mercury. Measurement of the interval between the "digital pulse" and the heart-beat suggested that the pulse in question was that of pre-capillary arterioles. The pressure (2 cm. of mercury) above quoted was not a constant one, but varied in different individuals and in the same individual at different times.

The PRESIDENT (Professor W. D. HALLIBURTON) had seen and used Dr. Waller's sphygmograph before and had a high opinion of the possibilities that it offered for future investigation.

Dr. WALLER also read a paper on

The Retinal Response to Light.

Frogs' eyes were employed and connected with a galvanometer in such wise that their electromotive condition was shown by movements of the galvanometric mirror. The eyes were subjected to alternate light and darkness. At the commencement of illumination the galvanometer indicated a "positive variation" of the initial current of injury, and at the close of illumination another variation in the same direction. Massage of the eyeball reversed this variation. At the close of the paper Dr. Waller alluded to a distinction between living and non-living matter exemplified in his above-quoted experiments, to which he had lately devoted his attention and which he proposed to demonstrate on a subsequent occasion.

The Intermittent Pulse.

Professor A. R. CUSHNY (Ann Arbor, Michigan) demonstrated tracings of an intermittent pulse. He had already read a paper on the subject in the Section of Medicine. He called attention to occasional omission of a pulse-wave in the sphygmograms, and pointed out variations in the interval between the waves preceding and following the one dropped. He had succeeded in experimentally producing a like phenomenon in dogs.

The Structure of the Mucous Membrane of the Œsophagus.

Professor D. J. COFFEY (Dublin) read a paper on this subject. Rüdinger had noticed in 1879 certain glands in the human œsophageal mucosa, and Schaffer had described them in detail some 18 years after. They were restricted to the upper end of the tube and were said to lie in the lateral "bays" of the mucosa. They were confined to the mucous membrane itself, whilst the ordinary, well-known mucous glands of the viscus reached beyond the muscularis mucosæ. They differed morphologically from mucous glands in being markedly tubular. They were, according to Schaffer, very like the cardiac glands of the stomach, even at times to the extent of possessing "oxyntic" cells. Where they were found the muscularis mucosæ was quite distinct and their relation to it was beyond doubt. They exhibited *inter se* minor differences in structure and distribution.

The PRESIDENT and Professor W. H. THOMPSON expressed great appreciation of Professor Coffey's paper. The latter had had the privilege of seeing many of Professor Coffey's sections and was much struck with their clearness.

Influence of Salicylate of Sodium on General Metabolism.

Dr. FRANCIS W. GOODBODY, Assistant Professor of Pathological Chemistry in University College, London, read a paper on the above subject. He had experimented on two individuals, one of whom had a tendency to excessive excretion of uric acid and to occasional gravel, whilst the other appeared to be free from such tendencies. Both were fed on a carefully-weighed and analysed diet, and their excreta were analysed daily, both prior to and during adminstration of salicylate of sodium. He concluded (1) that sodium salicylate increased the quantity of water excreted and also the specific gravity of the urine, the latter being due to increased elimination of nitrogenous substances, especially urea; (2) that the drug increased the breaking up of the proteids in the body; and (3) that in spite of its cholagogue action the drug had no influence on general metabolism so far as the absorption of proteids and fats was concerned.

Changes in Volume of the Sub-maxillary Gland accompanying Secretion.

Dr. J. L. BUNCH (London), Research Scholar of the Association, read a paper on this subject. The gland was found to vary in volume through change (1) in the amount of blood going to it, or (2) in the amount of secretion coming from it. It reacted passively to changes in general blood-pressure and actively by local vaso-dilatation and secretory discharge. Pure vascular effects were shown by an atropinised gland on excitation of the chorda tympani. Excitation of the chorda tympani in the absence of atropin caused shrinkage of the gland in spite of vascular dilatation therein. Allowing for this dilatation the shrinkage due to extra-vascular structures (cells) could be estimated. Comparison of the volume of saliva secreted during an experiment, with the volume lost by the extra-vascular structures in the gland, showed that at least 90 per cent. of the secretion came from the extra-vascular structures in question.

The PRESIDENT complimented Dr. Bunch on his interesting results, commenting on the great value of the plethysmograph as a means of research.

Mr. W. LEGGE SYMES (London) showed an Embedding Bath designed with special reference to stability, constancy, economy, and convenience. The most striking features were the shape of the bath and the means by which the size of the by-pass of the thermostat was controlled.

PATHOLOGY.

THURSDAY, AUGUST 2ND.

The Etiology of Tropical Dysentery.

Professor SIMON FLEXNER (Philadelphia) in reading a paper on this subject stated that attempts to establish a common etiological factor for all cases of dysentery had thus far

failed. As must always happen when classification of a disease proceeded upon clinical and pathological rather than upon etiological lines the literature of dysentery was burdened with an interminable mass of appellations indicating either the nature of the disorder or the individual author's conception of its pathological anatomy. Dysenteries, however, were now divided by the chief writers into several groups depending upon the clinical history or the mode of prevalence. Thus Osler wrote of the acute catarrhal, the tropical or amœbic, the diphtheritic, and the chronic dysentery. Davidson considered the subject under two headings; first according to prevalence, as epidemic, as endemic, and as the dysentery of war and famine; secondly, and clinically, as acute, as fibrinous or pseudo-diphtheritic, and as chronic dysentery. Kartulis described endemic, epidemic, and sporadic varieties. Manson spoke of catarrhal and ulcerating dysentery; whilst Delafield distinguished at least five distinct types of the disease as occurring in the environs of New York, and only one of these five types appeared to be due to a specific agent, the amœba coli. The history of the bacteriological investigation of dysentery was then referred to, but the majority of the micro-organisms enumerated, except that described by Chantemesse and Widal, did not appear really to be possessed of any specific properties. Investigations carried on by Ogata in Japan in connexion with an epidemic of dysentery had given more convincing results. Ogata had isolated a fine bacillus, which stained by Gram's method, which liquified gelatin, and which caused intestinal ulceration in guinea-pigs and cats. Vivaldi in Padua had isolated from cases of dysentery a bacillus which resembled Ogata's, but the organism had not been isolated again. Shiga investigated the dysentery which occurred in Tokyo in 1897, and succeeded in isolating from the intestinal dejecta and from the mesenteric glands a bacillus which appeared to bear a causative relation to the cases of disease in which it occurred, and which resembled a bacillus which Professor Flexner himself had isolated from cases of dysentery occurring amongst American troops in the Philippines. In the Philippines the disease had occurred mainly in two forms—the acute and the chronic. Amœbæ were either absent or very difficult to find in the dejecta from the acute cases, whilst they were commonly found in the chronic cases in which ulceration was present. In the chronic cases, however, they were variable both as to occurrence and as to the number of them present. Large hepatic abscesses, usually single, were met with in a number of these cases. In the bacteriological examination of both acute and chronic cases pyogenic bacteria were always present, but their presence was held to be accidental. From many of the cases a bacillus undoubtedly identical with that isolated by Shiga from cases of dysentery in Japan was identified. The cultural characteristics of this organism, its morphology, and the evidence connecting its presence with the causation of the disease were then fully described. In concluding, Professor Flexner said that he was disposed to view tropical dysentery as including a bacillary variety and an amœbic variety, separable both in their early and later stages by their clinical history, by their etiology, and by their morbid anatomy. Whether epidemic dysentery might have a simpler etiology future studies would be necessary to decide.

Dr. PATRICK MANSON (London) in his remarks on Professor Flexner's paper, agreed that they must look for more than a single cause for cases of dysentery. There were clinical varieties of dysentery, each of which probably had its specific cause. He felt sure that recurring or relapsing dysentery was not always due to the presence of amœba coli.

Papers by Dr. LAZARUS-BARLOW (London) on Lipomata of the Kidney and by Dr. WILFRED J. HARRIS (London) on the Pathology and Significance of the Argyll-Robertson Pupil concluded the proceedings of the section.

DISEASES OF CHILDREN.

THURSDAY, AUGUST 2ND.

Mr. NOBLE SMITH (London) read a paper on

Ambidexterity as a Method of Teaching Children.

Replying to the President's query concerning fencing in the discussion upon lateral curvature he said that there were a few cases in which lateral curvature had been attributed to its influence, but more evidence was wanted. Given a predisposing cause a very small exciting cause was needed to develop lateral curvature. One patient he had cured who having taken to fencing relapsed. When the fencing was stopped the patient at once improved. Mr. Noble Smith advocated fencing with both hands alternately. He then dwelt on the great value put by employers on ambidexterity in all trades and arts. For this reason pianoforte players were superior to their fellows as they were able to use both hands. There was a popular idea that right-handedness was natural. There were disadvantages in onesidedness, as it led to over-work of one-half of the brain. It was curious and interesting that evidence showed that if the left hand was being educated the right hand did better work also, especially in drawing and writing. He then drew attention to the production of deformity by the use of one side, hand, and arm, especially in lateral curvature of the spine. It was noteworthy that in so many of these cases there was a bend to the right of the upper part of the spine. The exciting causes were mainly unilateral, standing on one leg, playing the violin, wrong position in sitting, and use of the right arm. In his experience shortness of one leg had produced lateral curvature in many cases, the lumbar curve being the chief and primary one, the dorsal one being the secondary one. The left leg was the short one most frequently. The onesidedness in such patients was undoubtedly a great cause of curvatures. They seemed to have a great tendency to lean to the left and to walk in the dark or when they had lost their way to the left, the right side leading, so to speak. He here mentioned cases of right- and left-sidedness among the lower animals and mentioned that flies seemed to move to the right, as they always flew into his left eye.

The PRESIDENT (Dr. FREDERICK TAYLOR of London) questioned whether they might not be retrograding in civilisation by becoming ambidextrous after one hand had got so specialised for many generations. He then dwelt humorously on the many inconveniences which might occur if bimanualism became common, the difficulties of knowing which hand to shake hands with, how to place the knife, fork, and spoon on a table, and the like.

Mr. W. GREEN (Portsmouth) made a few remarks.

Mr. MUIRHEAD LITTLE (London) drew attention to the great slowness with which the left hand learned any new movement.

In reply Mr. NOBLE SMITH said that he had only dealt with the fringe of the subject and hoped to pursue further investigations.

Mr. MUIRHEAD LITTLE read an analysis of

A Series of Cases of Infantile Paralysis with some Notes on Treatment.

There were over 115 cases with 147 limbs involved. The palsies were much more severe in the legs. The palsy was on the left side in 78 cases and on the right in 68 cases. One-third of the cases occurred in the second year of life. In some there was no acute loss of power. In 43 there was a sudden paralysis. In 19 the child was found palsied in the morning after having been put to bed all right overnight. There were convulsions (fits) only in four cases and there was unconsciousness in six others. Teething was hardly ever a cause of infantile palsy. Accidents, including falls, accounted for nine cases. One case only was said to come from sitting on damp grass. There were 20 cases of talipes equinus, 20 cases of talipes varus, 14 of talipes equino-valgus, 5 of talipes calcaneus, 18 of talipes calcaneo-valgus, 21 of talipes valgus, 14 of pes cavus, 15 of "flail ankle," 1 of weak foot, and 1 of weak knee. In four cases the upper extremities were involved. Probably the proportion given was not a true one of the ratio of affection of the upper limbs, because disease of the upper portion of the spine was more likely to kill and deformities of the feet and legs were more likely to be brought before the notice of the surgeon by the parents. Among the principal muscles affected were the following: the flexors of the great toe in 64 instances, those of the four outer toes in 66 cases, the tibialis posticus in 90 cases, the tibialis anticus in 100 cases, the extensor proprius pollicis in 79 cases, that of the four outer toes in 88 cases, the peroneus longus in 74 cases, the triceps cruris in 55 cases, the flexors of the knee in 66 cases, and the quadriceps extensors in 52 cases. Attention was drawn to the cases wherein a wasted thigh was succeeded by a well-developed and well-nourished leg and calf. Under the head of treatment Mr. Muirhead Little considered tenotomies and

the suitable training of weak muscles. Eight cases were dealt with by tendon grafting, of which details were quoted. In four cases a stiff ankle was purposely made.

Mr. NOBLE SMITH remarked on the transplantation of tendons, or rather the transference of muscular power from one place to another. This should be considered, to be successful, as, in fact, an addition to their methods of treatment, not as a substitute. The deformity should be removed first, then the tendons might be transplanted. The improvement in the nutrition of the foot was very marked after tenotomy, although the operation was not on or very near the palsied muscles. This fact suggested whether it might not be well to try doing tenotomy of the palsied muscles in order directly to affect their nutrition in the same way.

Mr. JACKSON CLARKE (London) was glad that the question had been brought forward by Mr. Little as Mr. Little's father had introduced the subject of the surgical treatment of paralysis to the profession. He discussed the effects of the transplantation of tendons.

Mr. NOBLE SMITH related one case of transplantation of tendons with complete success.

Mr. MUIRHEAD LITTLE, in reply, dwelt more fully on the tenoplastic operations. He was always careful to get reduction as far as possible of the deformity first. He also advocated the use of instruments after the operations to support the new tendons.

FRIDAY, AUGUST 3RD.

Dr. SAMUEL WEST (London) introduced a discussion upon

Enlargement of the Spleen in Children,

as follows. Children are subject to the same enlargements of the spleen as adults, but with a frequency which varies according to the degree to which they are exposed to the common exciting causes. In childhood growth is active; this presumes active growth in the blood and blood-making organs to keep pace with the general demands of the body. Active growth implies instability of structure, so that slight causes may produce great disturbing effects. It might therefore *a priori* be expected that children would be subject to enlargements of the spleen of a kind and with a frequency uncommon in the adult. Besides this, enlargements of the spleen are more easy to detect in the child. In what now follows I shall address myself to enlargement of the spleen as it is met with in children, drawing attention to the points in which adults and children differ, and finally dealing fully with the forms of splenic enlargement which are more or less peculiar to children and infants.

In all the specific fevers and the septic diseases alike post-mortem observation proves the spleen to be almost without exception enlarged, though it is by no means always easy to demonstrate this enlargement during life. I do not know that there are any post-mortem statistics to prove that enlargements of the spleen are more common in these fevers in the child than in the adult.

Malaria.—Malarial enlargement of the spleen in this country is certainly rare in children, for ague is rare, but not so in countries where malaria is common. It may then be found where there is little or no evidence of definite malarial attacks.

Leucocythæmia is usually met with in the middle periods of life and is comparatively uncommon in children and very rare in the very young, yet well-marked instances have been recorded in infants of a few weeks—e.g., from eight to ten weeks old.

With *Hodgkin's disease* the difficulties are greater but they arise chiefly from the indefinite character of the disease itself. Hodgkin's disease occurs fairly frequently in children but it is very rare before the age of eight years and is, I believe, unknown in infants. Regarded as the cause of splenic enlargement the difficulty of diagnosis with Hodgkin's disease is not nearly so great as it appears, for the spleen becomes enlarged as a rule only subsequently to the enlargement of the lymphatic glands in general, so that there is this general glandular enlargement to assist the diagnosis.

Tubercle.—The spleen is almost the favourite seat of tubercle and rarely, if ever, escapes when tubercle is disseminated either in the acute or chronic form. In the chronic form the enlargement may be considerable, for the spleen may be stuffed with caseous nodules as large as a cob-nut.

Syphilis.—Syphilitic enlargement of the spleen is of clinical importance in one class of cases only—viz., that of infants and very young children.

Splenic anæmia.—All that has been hitherto said has been somewhat of a preliminary and introductory nature leading up to the important subject which we have now more especially to consider—viz., that in which the enlargement of the spleen is associated with profound anæmia and which has been named "splenic anæmia." The name is unfortunate for two reasons: first, that it seems to imply or assume what really is not yet proved, that the anæmia in some way depends upon, and is caused by, the affection of the spleen; secondly, because the same term is applied to two entirely different clinical affections—the one a rare disease affecting adults chiefly and only very rarely children and so far as I know not recorded at all in very young children and in infants, and the other a not uncommon disease to which infants are especially liable, though it may continue from infancy through the first two or three years of life. In either case splenic anæmia has many synonyms—e.g., splenic cachexia, splenic pseudo-leucocythæmia, lymphadenoma splenica, splenomegalie primitive, and many others—names which, on the one hand, indicate the difficulties of diagnosis and, on the other, show how much there is still to be learnt of the real nature of the disease. If the term "splenic anæmia" be retained we must distinguish the two groups as splenic anæmia of the adult and splenic anæmia of the infant.

I do not think it is necessary in this connexion to enter into any details of cases of splenic anæmia of the adult, for they are so rare in children.

Splenic anæmia in the infant.—The nature of the case is often clearly indicated by the peculiar anæmia and the enlargement of the abdomen. The complexion has a peculiar, waxy, ivory-like colour with a tinge of olive-green in it which is very characteristic. The abdomen is tumid and the enlargement of the spleen is often obvious to the eye. The child is usually not emaciated and may be plump, but is very feeble. The blood shows no changes but those of simple anæmia and there is little or no general enlargement of the lymphatic glands. The child is brought under observation usually on account of general ill-health, weakness, and pallor, occasionally on account of respiratory catarrh or gastro-intestinal disturbance or some other accidental complication, but only rarely because the abdomen is enlarged. Most of the other symptoms are accounted for by the extreme anæmia. The splenic enlargement is easy to make out; it may be enormous, so that the organ may extend forward beyond the umbilicus and downwards as far as the anterior superior iliac spine. It moves freely on respiration, is smooth on the surface, and even when much enlarged is not tender to palpation. The changes in the blood are those of simple anæmia, the cells being greatly reduced in number but retaining their relative proportion to each other. The number of red cells may fall as low as 40 per cent. of the normal; if below this the result is almost invariably fatal. The red cells retain their normal amount of hæmoglobin, though some writers maintain that it is reduced as in chlorosis. Nucleated red cells and megalocytes are often present in small numbers, but the eosinophile cells do not vary. If there be any increase in the number of white cells it affects only the lymphocytes and this stands in direct relation, it appears, with the fever. The affection commences almost invariably in infants or very young children, and when discovered for the first time in older children has in all probability dated from infancy. The liability of the sexes is equal. The affection runs a chronic course, lasting some months, but in the end many patients get quite well. But on the ultimate prognosis in general very varying opinions are held by different writers.

The treatment is that of anæmia, and consists of good food, plenty of light and air, cod-liver oil, hypophosphites, iron, and similar remedies. Quinine is useful in malarial cases, mercury and iodide of potassium in syphilitic cases, but the specific remedies, especially mercury, not only do no good, but are actually harmful where the specific cause is absent. Arsenic is a favourite remedy as in other forms of anæmia, but is far inferior to iron.

The association of enlargement of the spleen with rickets and syphilis has been already mentioned, but it is important to consider the relation in which these conditions really stand to one another. Enlargement of the spleen is almost constant in active syphilis of the child. Among infants with congenital syphilis it is found in at least 50 per cent. and in a yet larger percentage among still-born syphilitic fœtuses. The association of syphilis with enlargement of the spleen is, as already stated, held by many to be unfavourable and it is

only in the syphilitic cases that antisyphilitic remedies do good. No doubt rickets and syphilis are often associated, but the figures given by different authors vary. On the other hand the enlargement of the spleen is not constant in rickets. There is no relation between the degree of the rickets and the size of the spleen. Further it must be borne in mind that most of the children of the poor attending hospitals are rickety, irrespectively of the complaint for which they present themselves. The facts bearing on the relation between syphilis, rickets, and enlargement of the spleen appear to be these—(1) that syphilis is occasionally, and rickets frequently, associated with splenic anæmia; (2) that in neither case is the association constant; and (3) that they are neither of them the sole cause and are probably not the cause at all, except perhaps indirectly by means of the ill-health to which either leads.

Another question of interest remains—viz., the relation which exists between the anæmia and the splenic enlargement. There are three possible alternatives: (1) the enlarged spleen may be the cause of the anæmia; (2) the anæmia may be the cause of the enlarged spleen; and (3) both the anæmia and the splenic enlargement may be joint results of some common cause. To the first two there are very strong objections. If neither of these be correct it would seem to follow that the third explanation must be the true one—viz., that both conditions depend upon some common cause. It may be, as some hold, that any condition of the health serious enough to lead to profound anæmia in infants may be associated with splenic enlargement. If this be true it would follow as a corollary that when the health is restored the splenic enlargement would disappear. At the same time there are many objections to so wide a view as this, and it follows that if there be a common cause we do not yet know what it is.

The points to which I would specially draw attention in the discussion which is to follow are:—

1. In the splenic anæmia of infants: (*a*) to its course and duration; (*b*) to its prognosis as regards life and recovery; (*c*) to the relation in which it stands to rickets and syphilis; (*d*) to the relation in which the enlargement of the spleen and the anæmia stand to one another; and (*e*) to the treatment. 2. In other forms of splenic enlargement in children to the frequency in the very young of malaria, leucocythæmia, and Hodgkin's disease.

Dr. MURRAY LESLIE (London) asked for the distinctions between splenic anæmia in adults and in children. He quoted a case in a child, aged 18 months, in which after death simple hyperplasia of the spleen with some fibrosis was found. He also quoted a case of enlargement of the spleen without anæmia or marked leucocytosis.

Dr. A. M. GOSSAGE (London) quoted two cases of splenic anæmia in children in which there was slight increase in number of the leucocytes of all classes and in which there were some myelocytes. One patient died and showed only hyperplasia of the splenic tissue. In his experience syphilis was a more common cause of splenic anæmia than Dr. West had represented. Some cases showed no evidence of either syphilis or rickets. The majority of patients recovered. The anæmia was not proportional to the splenic enlargement.

Dr. THEODORE FISHER (Clifton) said that splenic anæmia was rare in Bristol. In the post-mortem room he did not find the spleen more often enlarged in children than in adults, and sometimes in the specific fevers the spleen was notably small. He had seen several cases of large spleen occurring in members of the same family.

Dr. JOHN THOMSON (Edinburgh) also found that a large proportion of the patients recovered. The anæmia was not proportional to the splenic enlargement. The prognosis was worse with the greater severity of the anæmia. He had seen a large spleen in twins.

The PRESIDENT referred to Dr. C. Wilson's and Dr. J. D. Stanley's cases of enlarged spleen in several members of one family.

Dr. WEST, in reply, stated that the clinical course of splenic anæmia in adults was different from that in children: the result was fatal, and pathological changes were found in the Malpighian bodies. The splenic enlargement was possibly due to a chemical poison absorbed from the intestine. Much attention should not be paid to slight changes in the blood.

Dr. J. H. NICOLL (Glasgow) read a paper on

Congenital Hypertrophic Stenosis of the Pylorus with an Account of a Case successfully treated by Operation.

The patient at birth was healthy, but had always vomited 15 minutes after food, bringing up the whole contents of the stomach, and had rapidly wasted. There was no nausea and constipation was complete. Operation was performed at the age of six weeks. The stomach was found to be much dilated and the pylorus could be felt as a thick ring. The stomach was opened and a pair of forceps was passed into the pyloric opening, which was stretched until the peritoneum burst. The wounds were then closed. There had since been complete relief of the symptoms, and the child, 12 months after operation, was well. Several other cases had been operated on by gastro-enterostomy and pylorectomy but with fatal results. He believed that two successful operations had been performed since his own.

Dr. THOMSON had seen six cases of the complaint in which all of the patients died. Two had been operated on but unsuccessfully.

The Causation of Infantile Scurvy.

Dr. C. E. CORLETTE (Sydney, N.S.W.) in a paper on this subject considered that infantile scurvy was due to the use of boiled or sterilised milk or cooked infant's foods, and was therefore commoner amongst the upper classes. He considered that the anti-scorbutic element in milk was citric acid which existed in milk as calcium citrate to the extent of one gramme per litre (one quart of milk contained as much citric acid as a large lemon). The neutral calcium citrate existed in two forms, the amorphous and the crystalline, the former being much more soluble than the latter. The more soluble form was converted into the other on boiling, and hence when milk was boiled calcium citrate was partly thrown out of solution. Scurvy might be prevented by adding alkaline phosphates which helped to keep the citrate in solution, or by merely pasteurising the milk when so much of the citrate would not be deposited.

Dr. GOSSAGE suggested that alkaline citrates might be added to the milk instead of the phosphates. Scurvy was not really common even amongst children fed on boiled milk. It was met with not so very infrequently amongst the poorer classes in the East End.

PHARMACOLOGY AND THERAPEUTICS.

FRIDAY, AUGUST 3RD.

Dr. F. W. BURTON-FANNING (Norwich) opened a discussion on what he preferred to call

The Hygienic Treatment of Pulmonary Tuberculosis.

The result of living in the open-air was a feeling of well-being, increased appetite, improved sleep, and an inability to remain in a closed room; with this change there was a decided reduction of the micro-organisms in the sputum. The remedial effects were not limited to pulmonary affections but could be extended to other forms of tuberculosis, whether affecting bones, joints, or serous membranes. Lupus also was benefited. Modern experience also pointed to the amelioration of such specific fevers as enteric fever, variola, morbilli, and pertussis treated by the open-air method. Functional nervous diseases, like neurasthenia and migraine, were also benefited.

Sir J. W. MOORE (Dublin) referred to his experiences in the grounds of the Dublin Hospital. He insisted specially on the importance of free ventilation at night, windows being opened to leeward.

Dr. CHOWRY-MUTHU (London) attributed much of the benefit of sanatorium treatment to variety and excellence in cooking. A gain of about eight pounds a month was usual. Chronic cases and those complicated with gastric or bronchial catarrh were less suitable. The inhalation of igazol seemed to accelerate the cure. The principal elements in sanatorium treatment were a strong head and good organisation.

Dr. ERNEST KINGSCOTE (London) dwelt on the importance of avoiding draughts though following an open-air life.

Dr. W. CALWELL (Belfast) said that under systematic treatment gain in weight took place in spite of fever. Ordinary catarrh did not occur in the absence of artificial heating. Complicated cases were ill suited to the method. He recommended abundance of fresh air in the nursery.

Dr. JANE WALKER (London) thought that the patients did better in warm weather, though wind was injurious. Warmth and comfort could be maintained by proper clothing and management without artificial heat. Diminution of expectoration was noticed in most cases. She agreed that bronchitic cases did not do so well as others.

Mrs. ESTHER COLEBROOK (Peppard, Oxon.) referred to the overcrowding of the shelters in windy weather, which had an unfavourable influence.

Dr. D. SOMMERVILLE (London) stated that under the influence of light and oxygen tubercle bacilli might lose their pathogenic qualities and become saprophytic. He quoted instances of patients who had successfully carried out the treatment without going to a sanatorium.

Dr. S. WOODCOCK (Manchester) also spoke.

Dr. F. HOWARD SINCLAIR (Belfast) read a paper on

The Open-Air Treatment of Consumption in Ireland,

in which he showed that in spite of the greater humidity of the atmosphere results were as favourable as elsewhere. He dwelt on the necessity of consulting the individuality of patients both in the matter of exposure and food.

Dr. BERNARD O'CONNOR (London) spoke of 16 years' experience of the open-air method at the Hampstead Hospital, where the patients wore no head-covering.

The PRESIDENT (Dr. W. G. SMITH of Dublin) referred to the method as one of organised common-sense.

Dr. WOODCOCK also read a paper on the Transplantation of Phthisical Patients to the Country, in which he said that the onset of phthisis was largely a matter of income, occupation, and exposure to infection. It was two and a half times as common among the industrial classes as among other classes. The remedy he advocated was the establishment of consumption colonies where out-door occupations, such as gardening, forestry, stock-tending, and harvesting, could be followed by the patients. Judging by the German sanatoria, which were in close apposition to towns, there was no fear of local infection.

Dr. WILLIAM EWART (London) read a paper on the Subcutaneous Administration of Oxygen, either as free gas or solution of hydrogen peroxide. He described his method and also gave an account of some cases so treated. They were desperate from the outset and none actually recovered, though no harm was done and temporary improvement occurred in some.

LARYNGOLOGY AND OTOLOGY.

THURSDAY, AUGUST 2ND.

Dr. HERBERT TILLEY (London) described

Two Cases of Chronic Frontal Sinus Empyema presenting Features of Unusual Interest,

to illustrate some of the difficulties in the diagnosis and successful treatment of the disease.

CASE 1.—A girl, aged 19 years, sought relief on account of left nasal obstruction and severe frontal headache of 12 months' duration. Examination showed the left nasal cavity to be full of large polypi bathed in pus. The post-nasal space was occupied by a large adenoid mass and the faucial tonsils were hypertrophied. The anterior wall of the left frontal sinus was distended over an area of the size of a five-shilling piece. The right nasal cavity was in all respects normal. The polypi, adenoids, and tonsils were removed. Exploration showed the left antrum of Highmore to be free from pus, while irrigation proved that pus was present in the left frontal sinus in considerable quantity. The anterior half of the left middle turbinal was removed and the ethmoidal region was cleared as far as possible of all pathological products. In the course of a few days the left sinus was freely opened from the outside and its cavity, which was a very extensive one, was curetted free from all degenerate mucous membrane, a free opening was made into the nose, and the sinus cavity was packed with a strip of iodoform gauze two inches wide and three feet 10 inches long. It was noted during the operation that a curette could be passed well beyond the middle line towards the right sinus; it was thought that the extension was a diverticulum of the left sinus, and this surmise was strengthened by the sensation of a blind end given by the curette during the operation. The continuance of free suppuration from the left sinus showed, however, that some suppurating focus remained, and a week after the first operation the right sinus was opened and found to be as much diseased as the left. Both cavities were packed and irrigated every day for three weeks until covered with a healthy mucous membrane when the external wounds were allowed to close. The patient completely recovered and two months after the operation was perfectly free from any nasal discharge. The case illustrated that although both sinuses might be equally diseased and might communicate with one another through a pathological opening in the sinus septum, yet the pus might escape from only one nostril. In this case it was impossible to pass a probe into the right frontal sinus from the nose and hence the diagnosis of pus in that sinus could scarcely be made without an external operation. It would be interesting, Dr. Tilley said, to know the course of events in this case. If the left sinus was first diseased, he asked whether the ethmoiditis on the left side ought to be attributed to the irritation of pus flowing from the sinus above? Since there was no disease in the right ethmoid but advanced disease in the corresponding frontal sinus the view that pus might set up chronic disease of the ethmoid with its associated polypi, he considered, was not an impossible one.

The second case illustrated a difficulty met with in the successful treatment of the disease—namely, when all had been done to remove intra-nasal disease as a preliminary to the external operation, and when by the latter the diseased products had been carefully removed from the sinus, and a free passage into the nose ensued and careful after-treatment had been carried out, yet a small quantity of pus sometimes continued to flow from the sinus.

CASE 2.—A woman, aged 30 years, applied for relief from offensive nasal discharge of two years' duration. The frontal sinuses were both found to be diseased as was also the left antrum which was drained by the alveolar method. The external radical operation was performed on the left frontal sinus, a free passage was made into the nose, and a healthy granulation surface covered the walls of the sinus cavity before the external wound was allowed to close. The patient did fairly well, but there was always a slight discharge of pus into the nose, and a month after the operation an external fistula formed leading into the sinus. Three months later the sinus was again explored and the cause was found to be an extension of suppurating anterior ethmoidal cells outwards between the floor of the sinus and the orbit. These cells communicated with the sinus proper by a small aperture and thus this cavity was infected, although the greater part of it was obliterated by cicatricial tissue. By free removal of the partition walls these ethmoidal cells and the frontal sinus were thrown into one cavity; this was skin-grafted a week later by Thiersch's method. The plan adopted was the same as was carried out in the mastoid operation. Dr. Tilley said that it was too early to speak of the result of the skin-grafting, but so far as he could see it would be eminently satisfactory and in future he would adopt this method of dealing with frontal sinuses in the hope that by its means the same successful and ideal results would be gained together with the great saving of time to the patient that had been secured by skin-grafting in the operation for chronic suppuration of the mastoid antrum.

FRIDAY, AUGUST 3RD.

Some Points bearing on the Pathology and Prevention of Loss of Voice in Singers.

Dr. JOBSON HORNE (London) made a communication on this subject and illustrated it with lantern photographs. He alluded to the often heard lament of the present age over its poverty in fine voices and the want of lasting power in singing voices generally. Various explanations had been offered. Some had attributed the decline in singing to the rise in pitch which had been gradual, yet very considerable, during the past century; others had held composers responsible for not having sufficiently considered the voice with the result that the vocalist had had to disregard his capabilities and put his vocal cords at everything—singable or unsingable. It was not the purpose of the paper to consider whether these explanations were or were not sufficient; it was to discuss the pathological processes that would take place in the vocal cords from excessive or unnatural use, processes which represented in modern language the result of "strain" and the cause of "loss of voice." The excessive use of the so-called "chest" register and the disregard for the so-called "falsetto" and "head" register were taken as instances of unnatural use of the voice. Reference was particularly made to the work of Dr. Musehold of Berlin which had advanced the photography of the living larynx to a point that had not been surpassed, and photographs by Dr. Musehold were shown on the screen demonstrating the condition of the vocal cords during the production of the middle "C" in the "falsetto" and "chest" registers respectively. Dr. Musehold had shown that in the falsetto register the glottis was only widened and narrowed, whereas in the "chest" register the glottis was opened and closed, and the cords themselves became more rounded or sausage-shaped in

contrast with their condition in the "falsetto" register. This, Dr. Horne pointed out, entailed greater muscular tension and a greater flow of blood to the submucous and superficial vessels. It was possible to verify this by transillumination of the larynx; if in a darkened room the electric lamp used for transilluminating the frontal sinus was placed against the thyroid cartilage and the image of the cords was observed in a mirror in the pharynx it would be noticed that during the production of a "chest" note the cords became more opaque. This increased opacity was partly due, perhaps, to increased muscular tension, but it was mainly due to increased congestion of the vessels of the vocal cords. Dr. Horne did not wish it to be thought that he was arguing against the use of the "chest" register; he only desired to draw attention to the condition of the cords during its use—or rather excessive or unnatural use—with a view to considering the pathological changes that might result. The superficial vessels, owing to the determination of blood to the surface of the cords, might become tortuous to a degree almost amounting to varicosity. The increased vascularity if often repeated acted as an irritant and the minute capillaries and vascular elements proliferated. This was illustrated by sections through cords the subjects of "chronic laryngitis," which was not necessarily the outcome of an inflammatory process. Hyperplasia of the connective tissue elements and of the glandular structure ensued. Increased functional activity accompanied the latter and was evidenced by a greater flow of mucus on to the surface of the cords and more frequent efforts to clear the voice. The formation of new connective tissue was progressive and the strands of fibrous tissue finding their way in amongst the glandular structure compressed and gradually obliterated it. The glands degenerated and were replaced by fibrous tissue. It was further shown that the muscle fibres themselves become surrounded by connective tissue, isolated areas were cut off and degenerated and the degenerated muscle fibres eventually being replaced by fibrous tissue, the progressive nature of the morbid process was renewed. With this progressive fibrosis the newly-formed vessels were also compressed and gradually disappeared; their disappearance might be partly accounted for by the cords becoming less active in proportion to the loss of muscle tissue. The epithelium undergoes, *pari passu*, a hyperplasia, in time followed by a metaplasia, with, perhaps, the development of warty excrescences about the vocal processes and a diffuse pachydermia laryngis. The terms "chronic laryngitis" and "chronic inflammation," Dr. Horne considered, were not applicable to the morbid process that had been described. The process was not essentially an inflammatory one; moreover, "chronic inflammation," like negative pressure, was non-existent. It would be better for the present to refer to the whole process by its prominent feature as a *fibrosis*. In even quite the earlier stages of this fibrosis the singing function must become seriously impaired. The intrinsic muscles, highly differentiated and specially trained, only too readily forget their office. The changes in the epithelium must materially affect the vibratory power of the cords and the quality of the notes produced. The treatment indicated by a study of the pathogenesis was rest—absolute rest; local applications, local remedies of all kinds, could only aggravate and irritate the process it was sought to arrest. As regards prevention it was of first importance to ascertain the capabilities of any individual vocal organ and then develop rather than train them, and above all things to let the voice be natural.

Dr. STCLAIR THOMSON (London) inquired whether Dr. Jobson Horne from his researches into the pathology of the vocal cords was able to offer a satisfactory explanation for the constant site of singers' nodules on the vocal cords.

Mr. E. WAGGETT (London) asked, if the use of the "chest register" was a cause of loss of voice, why baritones and basses did not lose their voices more readily than tenors.

Dr. W. A. AIKIN (London) asked what meaning Dr. Horne attached to the terms "falsetto," "chest," and "head" registers. He considered that these terms occasioned a good deal of confusion and it would be better to give them up for more scientific ones.

Dr. LAMBERT LACK (London) said that after looking into books on the subject he had found himself in the same difficulty as the last speaker.

Dr. HORNE, in reply to Dr. StClair Thomson, regretted that he was not at present prepared to usefully answer the question. He considered that an explanation not based upon histological evidence would be premature. In reply to Mr. Waggett he said it was rather the abuse than the use of the "chest register" to be considered a cause in "loss of voice" and for that reason it was more often a cause amongst tenors than baritones. He fully agreed with Dr. Aikin and Dr. Lack that the time had come when the terms referred to might be given up for others denoting the physical appearances of the cords during the use of these registers observed and described by laryngologists.

Mr. ERNEST WAGGETT read a paper on

Bezold's Complication of Suppurative Mastoiditis.

Escape of pus, he said, from the mastoid cells into the digastric groove was not extremely rare, but the following instance was worthy of attention on account of certain diagnostic features which were unusual, while points in the history of the case raised questions of practical value. The patient was a man, aged 30 years, with muco-purulent otorrhœa of three months' duration. A minute perforation of the anterior inferior region of the drumhead was enlarged by linear incision, and antiseptic treatment was prescribed coupled with repeated Politzerisation. Three weeks later the patient returned with true pus issuing from the perforation which had assumed its former minute dimensions. Occipital pain was present, but no local tenderness. Incision of the drumhead was repeated. Within 24 hours an area of œdema developed over the site of the exit of the mastoid vein from the posterior aspect of the mastoid process. Sinus phlebitis was therefore suspected, but within a few hours swelling and œdema appeared in the situation of the infra-auricular gland behind the maxillary articulation and a diagnosis of suppurative adenitis was made. Positive evidence either of mastoid suppuration or sinus phlebitis was completely wanting. An attempt was made to exclude Bezold's complication just before operating, firm pressure being exercised over the external swelling while the perforation was observed through the speculum. After such pressure had been exerted for about 20 seconds pus was seen to spurt from the perforation, establishing the diagnosis of Bezold's complication. The mastoid operation was performed and the greater part of the mastoid process was removed. A small fistula piercing the roof of the digastric groove was found leading to an abscess cavity which extended forwards from under cover of the digastric muscle. The mastoid cells were filled with inodorous pus and evidence of caries or necrosis was wholly wanting. Recovery was rapid, uneventful, and complete. The points of interest raised by this case might be enumerated as follows. 1. Repeated Politzerisation coupled with the untimely re-union of the incision in the drumhead evidently served to inject the muco-pus into the antrum and to convert a case of simple tympanic disease into a serious mastoid suppuration. Politzerisation should never be practised in these cases unless the tympanic cavity was observed to be in very free communication with the meatus. 2. In some individuals the outer walls of the mastoid cells were sufficiently thin to be ruptured by the pressure of retained pus without the aid of caries or necrosis. In this instance repeated inflation of a valvular system of cavities might have accelerated the rupture into the digastric groove. 3. Tenderness and œdema as observed in this case at the posterior end of the digastric groove (simulating phlebitis of the mastoid vein) should prove a valuable sign of the commencement of the complication. Statistics as to its occurrence were desired. As a rule Bezold's complication was only diagnosed when a large abscess in the neck had developed. 4. The simulation of infra-auricular adenitis was very unusual, the pus as a rule tracking downwards along the course of the great vessels. In testing an infra-auricular abscess by Bezold's experiment it was essential for the surgeon to keep his eye upon the tympanum whilst he exerted digital pressure, for collections of pus in this situation sometimes communicated directly with the lumen of the meatus and the experiment might lead to an erroneous conclusion unless the above-mentioned precaution was taken. 5. In this case the pus did not spurt through the perforation until pressure had been exerted for some 20 seconds. A case was cited in which prolonged pressure would probably have produced intra-cranial mischief. Momentary pressure will be of no value where pus had to be propelled along a narrow tortuous passage; nevertheless, the question of safety imposed a limit to the duration and degree of digital pressure to be employed.

TROPICAL DISEASES.

FRIDAY, AUGUST 3RD.

Liver Abscess.

The discussion on this subject, adjourned from Thursday, August 2nd, was continued.

Dr. P. MANSON (London) referred to the difficulty of finding pus by exploration and to the necessity for some means of diagnosing the presence of a liver abscess. He stated that the amœba coli was not met with in the sputum unless the liver abscess opened directly into a bronchus, and therefore that the presence of this parasite was diagnosed at too late a stage to be of much value. Leucocytosis was of some value as an aid in diagnosis. Dr. Manson considered that the methods of treating liver abscess in England were more severe than appeared to him necessary. He had practised and taught the benefits of using the trocar and cannula in the treatment of liver abscess, and found that by the insertion of a large drainage-tube afterwards excellent results were obtained. This practice, he found, had been successful in the hands of others. He could not see the necessity for removal of a portion of a rib and the extensive stitching together of parts which such a means of approaching a liver abscess entailed. He was at a loss to understand the cause of the extensive hæmorrhage which had occurred in the Bombay hospitals as the result of exploration by the needle of an aspirator.

Major RONALD ROSS, I.M.S. (Liverpool), stated that in a case of liver abscess which he had lately seen in Liverpool there was no evidence of malarial infection, but leucocythæmia was marked.

Mr. JAMES CANTLIE (London) agreed with Dr. Manson in his remarks concerning the advantages of using the trocar and cannula and condemned the heroic measures in vogue in England. He had long practised the method taught him by Dr. Manson and had every cause to be satisfied with the results. The treatment by the trocar and cannula was one which a tropical practitioner far away from skilled assistance could readily use when single-handed; but the transthoracic or laparotomy methods of reaching pus in the liver involved skilled help in surgical details which, in the great majority of instances in the colonies, was not at hand. The more simple the means of treatment the earlier would investigation of the liver for pus be attempted, and in consequence the more lives would be saved. He could see but little advantage in exposing the liver by laparotomy, as after exposure the liver had to be punctured to reach the abscess.

The PRESIDENT (Colonel K. MACLEOD, I.M.S., of Netley) agreed with all Dr. Manson had said about the unnecessary severity which was practised in operations for liver abscess by surgeons in England. He had seen a laparotomy performed in a case of suspected pus in the liver and the liver exposed by a free incision; the pus was not found, yet after three days the abscess found exit by way of the bowel. When pus from a liver abscess reached the lungs or the pleuræ, the operation practically became one for empyema and the removal of a piece of rib was necessary; or, again, should biliary calculi be present in the pus and the intercostal space prove too small for extraction a piece of rib might require to be cut away. Colonel MacLeod referred to intercostal fluctuation as a sign of pus, noticed most readily on gentle coughing.

The Cyprus Sphalangi and its Connexion with Anthrax.

Dr. G. A. WILLIAMSON (Cyprus) sent a communication on this subject. What was known locally in Cyprus as "Sphalangi bite" seemed to be connected with an insect resembling an ant and belonging to the order Hymenoptera, genus Mutilla, a sting-bearing insect. In a case related by Dr. Williamson a woman was awakened in the night by a sharp bite on the temple; in the morning a dark indurated patch had formed there and an alarming œdema of the face and features ensued. The discharge from the puncture was found to be loaded with anthrax bacilli. Anthrax was common in Cyprus, and the carcass of a dead sheep near by seemed to be the source whence the Mutilla insect had obtained the anthrax bacillus. The treatment consisted of local application of the thermo-cautery and hypodermic injection of a mixture of mercuric chloride and iodide of potassium.

Major RONALD ROSS read a paper on

Some Suggestions for the Improvement of Sanitary and Medical Practice in the Tropics.

Major Ross pointed out the urgent necessity for equipping medical practitioners in the tropics with instruction in such subjects as parasitology as distinct from bacteriology. There were few specialists in this subject and still fewer authorities on comparative parasitology. In London and Liverpool schools for tropical medicine were established, but it was necessary that medical men other than those entering the services, such as private practitioners and ship surgeons, should be trained previously to taking up their duties. He advocated a supply of microscopes, by hire if necessary, to assistant surgeons in India, so that at least the dejecta could be examined. A want of reference libraries even in the large Indian cities was a great drawback to investigations and Major Ross hoped soon to see small modern medical libraries in all the larger towns of our tropical possessions. Specialists in research, organised on a proper footing, were much wanted, and if this country hoped to maintain its scientific position and to do its duty to the natives under its rule provision ought to be made for their support. There was much need, according to Major Ross, of a central scientific authority, and although the Royal College of Physicians of London and the Royal Society were moving in this direction the attainment of such an authority seemed a long way off being consummated.

Dr. S. K. MULLICK (London) stated that for the Indian medical chairs specialists were sorely needed; in the meantime an officer was told off for duty to a chair who was thoroughly untrained for the post. There could be no enthusiasm imported into Indian schools until they had teachers they could respect for their scientific attainments.

The PRESIDENT held that the custom of appointing scientific investigators to a teaching chair was not always a happy one. It frequently happened that a good investigator was a bad teacher, and *vice versâ*, and the primary function of a lecturer in their schools was to be a good teacher.

Yaws.

A discussion on this subject was opened by Mr. JONATHAN HUTCHINSON, F.R.S. (London). A case of yaws was shown by Mr. Hutchinson. The patient, a young man (European), had resided on the West Coast of Africa and had been sent home in consequence of the disease. The lower extremities were covered by an eruption, evidently of a chronic nature, and there were scars on the wrists and palmar and plantar psoriasis. Mr. Hutchinson declared his belief to be that yaws was the source whence syphilis was introduced into Europe. He quoted historical data in favour of the supposition and by a number of photographs and illustrations upheld his belief. He related an instance of a surgeon who pricked his finger whilst operating on a patient suffering from yaws and subsequently developed all the symptoms of syphilis. On the authority of Dr. Daniels he stated that yaws was prevalent in Fiji and that syphilis was unknown, and he maintained that it was because the population was already infected that inoculation by the syphilitic virus was impossible. The photographs sent him by several medical men in different parts of the world seemed to prove the identity of the diseases, although the contributors held opposite beliefs to himself. The slight differences in the diseases he attributed to climate, and the fact that yaws was not met with in this country was because sailors and others becoming infected by yaws abroad developed true syphilis when they came home. Mr. Hutchinson held that the prevalent belief that there was no primary sore in yaws was a mistake and were the cases carefully investigated a local primary sore would always be found. He illustrated the modified sore met with on the skin in yaws by analogy with the slight local signs manifested when syphilis was communicated by, say, an accidental wound on the finger.

Dr. DAVIES (Samoa) stated that in Fiji he had never seen yaws except in children; adults did not seem to acquire it, but so prevalent was it amongst children that parents looked upon it as a healthy thing to have. The Fijians introduced the disease into Samoa and from Samoa it had been carried by the Samoans to other islands of Polynesia.

Dr. P. MANSON opposed Mr. Hutchinson's theory. He believed that Mr. Hutchinson had been misled by untrustworthy diagnosis and by taking too credulously the statements of others. Dr. Manson maintained that inoculation

with yaws did not prevent the inoculated person subsequently contracting syphilis and *vice versâ*. Yaws, like several parasitic affections, died out on reaching a temperate climate, as a high temperature was the one necessity for its continuance and development.

Mr. D. C. REES (London) stated that he had seen yaws and syphilis in the West Africa Coast Hospital side by side, but that in the hinterland he had met with yaws only. The natives in West Africa looked upon syphilis as a newly introduced disease.

The PRESIDENT gave it as his belief that the case shown by Mr. Hutchinson was a case of syphilis, and all present declared that such was their opinion.

Dr. PHINEAS ABRAHAM (London) brought a well-marked case of Leprosy for demonstration. The peculiarity of the case was that in the centre of the pale anæsthetic patches a deep, dark, pigmentary deposit was present. Dr. Abraham also showed a case of Lichen Scrofulosum in a Young Girl.

At the close of the meeting a vote of thanks to the President was proposed by Dr. P. MANSON and seconded by Mr. CANTLIE and unanimously carried.

NAVY, ARMY, AND AMBULANCE.

FRIDAY, AUGUST 3RD.

The proceedings of this section were opened by the reading of a paper by Surgeon-General J. B. HAMILTON, A.M.S. (ret.), entitled

On the Past, Present, and Future of the Royal Army Medical Corps.

The difficulties and tribulations of the service in the past were briefly sketched and the various stages of progress and evolution of the service were step by step gone into till the present time. For the amelioration of the present difficulties the following propositions were put forward for consideration: that there should be an increase of pay and allowances to equal those of the combatant rank, especially in India; increase of the *personnel* both at home and abroad, so as to insure a fair amount of leave for private affairs and "study leave," full pay and allowances being granted during the "study leave," such as travelling, cost of courses, &c.; and general increase of pay, as the lack of men coming forward was due to the poor pay. He discussed the position of the principal medical officer on the staff of general officers, and the want of local and executive rank was dealt with, especially in the South African war. The position of Surgeon-General was anomalous; he should have the title of Major-General either in the Royal Army Medical Corps or on the staff of the army, the Colonel of the Royal Army Medical Corps being also on the staff of the army in the latter case. A commission should be appointed to take evidence and report on the causes of the dearth of men for the Army Medical Staff. The Secretary of State for War should state clearly what steps he proposed to take as regards increase of the service. Militia medical officers should be re-appointed, and, being well trained, would be a valuable reserve. Military titles should be granted to Volunteer medical officers. The Secretary of State for War should issue definite orders that warrants should not be tampered with but should be carried out as promulgated and not carried out in the letter and broken in the spirit.

Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, said that the position of the principal medical officer was on the lines of communication. If the lines of communication were at all long then he was as likely as not to be at some distance from the staff of the general officer commanding. If he was actually on that staff he would be near headquarters, where he would be able to elicit what was going to happen beforehand and thus be able to make necessary arrangements. They could and ought to adopt those measures used in the German army. The principal medical officer ought to know in advance what was going forward so as to make arrangements to meet any results of military movements. The principal medical officer on the staff of all general officers should have a certain amount of executive power. Discipline, engineering, and supply were dealt with by special officers having executive powers, but in sanitary matters the principal medical officer had no such power.

Surgeon-Major T. F. S. CAVERHILL (Edinburgh) said that owing to the ruling of the General Medical Council on the matter of unqualified assistants there was a great demand for qualified men for the post of assistant and *locum tenent*. Unfortunately, the demand was greater than the supply, consequently it would become increasingly difficult to get men in future years for the army. The Government would have to deal with the matter as it was becoming a very pressing one. As regards leave it was a great necessity that ordinary as well as "study leave" should be got, for under present conditions at home and in India sufficient leave and rest were not obtainable. There ought to be formed a specially skilled sanitary body in the Royal Army Medical Corps as a sort of sanitary consultant department.

Surgeon-Captain J. HARPER, V.M.S.C., said that if the Volunteer Bill now before Parliament passed in its present form he would certainly resign his commission.

Surgeon-General HAMILTON, in reply, remarked that the Engineers on whom at present devolved many of the sanitary undertakings were miserably equipped as far as sanitary knowledge was concerned. The principal medical officer ought, as Surgeon-General O'Dwyer had said, to be at the elbow of the general officer commanding. The present system of separation was absurd, as the principal medical officer's opinion had to filter up to the general officer commanding through his staff officers. No volunteer surgeon making £1200 a year would leave his practice and income and go off to an isolated post or fort on a small salary. Reserve medical men would not come out if called upon for the same reason. Many of the reserve medical men kept on the War Office lists were mere physical cripples, some actually deaf or almost blind. He would have all reserve medical men examined every year in order to ascertain their physical efficiency. As regards sanitary matters he thought that the Medical Department did not have an adequate knowledge and training. The cheese-paring of the Treasury was the cause of the present difficulties.

Mr. CLINTON DENT (London), who has recently returned from South Africa, read a paper entitled

On Modern Small-bore Rifle Wounds,

a short abstract being as follows. So much had been written during the last few months on this subject that it was well-nigh impossible to break new ground. It might be of some service, however, if he endeavoured to summarise some of the conclusions that appeared to be justified by the evidence already collected. Broadly speaking, bullet-wounds of all kinds in the South African campaign had done well. Recoveries from very severe wounds had been numerous and many of these recoveries had been most remarkable. The percentage of wounded men who had been found fit to return to duty had been unusually high. Wounds inflicted causing permanent disability had been less frequent. Injuries the consequences and results of which necessitated amputation had been in proportion fewer than in previous wars. Conservative surgery had most properly been carried farther and with more successful results than in former campaigns. These satisfactory results had been ascribed mainly to the "humanity" of the modern small-bore bullets. He believed that the surgical healthiness of the climate of South Africa and the widespread employment of the "open-air" method of treatment had had quite as much to do in bringing about this most satisfactory state of affairs. Septic complications attacking either bullet or operation wounds had been very rare. The idea that the heating of the bullet had any influence was probably universally discarded. The heating effect was never seen even when bone was struck, for arrest of motion was possibly the mode of transformation of motor energy into heat, yet heat effects were not seen. Again, the bullet even if made white-hot by aerial friction passed far too rapidly through the tissues to have any cauterising effect. The "hydrodynamic" theory, as explaining the destructive effect of certain bullet wounds, had now few adherents. As instances of cases in which military surgery was now much more conservative than formerly might be cited perforating abdominal wounds, compound fractures, wounds of joints, and nerve injuries. All wounds did well, even shell wounds; the only joint wound which did not do well was that of the ankle. As instances of injuries in which surgery was now much more active were those of the head, which nearly all had to be and were operated on and with success.

Surgeon-General O'DWYER said that an important point settled by this campaign was that abdominal wounds made by small-bore high velocity bullets should not be operated

upon. Men wounded through the lung were subsequently to recovery liable to dyspnœa on exertion.

Surgeon-Major CAVERHILL called attention to the fact that Pirogoff in the Russo-Turkish war found that wounds of the ankle-joint did very badly and that in the American war all ankle-joint injuries were invariably fatal.

Surgeon-General H. S. MUIR, C.B., made a few remarks.

Surgeon-General HAMILTON related some experiments with Rifle-bullets on Mechanical Objects. He found that a long plank box filled with sawdust, at which an express bullet was fired was variously affected under different conditions. If the bullet was propelled by two drachms of powder the bullet went right through the box from end to end, sawdust and all; if, on the other hand, it was propelled by five drachms of powder it did not pass far into the sawdust. This was strange and he could only explain it by the fact that the larger charge of powder caused higher velocity and as velocity "set up" or deformed the bullet; the larger charge giving greater velocity, could not therefore cause such penetration as the smaller charge which did not deform the bullet so much. He also took a long iron-bound box, cut out a square at one end and replaced it by thick india-rubber, filled it with water and then fired a high velocity bullet through the rubber right through the box lengthwise. The result was that although the bullet was small the box was burst open in all directions. This probably would explain the fact that nerves were injured by Mauser bullets which had not gone near the injured nerve, the nerve being really damaged by the tensile rending strain of lateral centrifugal force. Spherical ball was more destructive than were conical small-bore bullets.

Mr. CLINTON DENT, in replying, stated that the only cases in which clothing was carried into bullet wounds was in the case of kilts worn by Scotch regiments. This was interesting, as perhaps the plication of the kilting tended to cause this. Nerves which were thought to be severed were found on operation to be intact, yet there were present symptoms of injury, as intense pain, paralysis of groups of muscles supplied, &c. There was no doubt that the bullet had not touched the nerve, for the pencil-tract of the bullet could be seen quite straight and away from the nerve. He related a case where the knee-joint was traversed by a bullet which also cut the popliteal artery. The man could not put on his field dressing, as every time he moved to do so he was made a target of, so he let matters take their course. The blood clotted in the sun, as the man believed; he was taken to the field hospital, moved down country in the train, over a long distance, to Wynberg Hospital, and it was not till he was there and had his wound dressed and his first dressing removed that the artery spurted, was promply cut down upon, and tied with success and recovery. Asked as to shell-wounds he stated that at Paardeberg there were not so many casualties amongst the Boers as expected from shell-fire, owing to Lord Roberts's humanity which caused the wagons only to be fired at, for the sake of the women and children, otherwise the results would have been different. At Modder River the Boer trenches were full of shrapnel bullets and they must have suffered there. He stated that at Paardeberg many dead Boers must have been cast into the river, for in a pool there the soldiers continued to drink the water till the pool ran dry and then they found two dead Boers at the bottom.

In the absence of Staff-Surgeon W. J. COLBORNE his paper entitled

On Infectious Disease on Board Ship

was read by one of the secretaries. The space allotted to sick on board ships of war was limited. Though limited, it was sufficient for all ordinary purposes, yet provision should be made for infectious disease, for observation, and for isolation. On visiting a port the medical officer should make inquiries as to the prevalence or absence of infectious diseases, the extent, and the district infected, in order to warn the men against visiting that district. The ship should remain in that port only according to circumstances and no longer. Persons visiting the ship, such as washerwomen, &c., should be carefully supervised. All minor ailments in that port occurring on board ship should be carefully watched and isolation practised when a case was doubtful; messmates as well as the sick man should be watched. A proper place for isolation must be found either below or above decks. The ventilation was important, as it should lead directly out above decks and not lend itself to the dissemination of infection between decks. All such ventilators should be stopped up. The patient and the attendant should not leave the apartments. Where no apartment could be found a portion of the deck should be totally screened off from deck to deck and the screen kept moist with perchloride of mercury solution, 1 in 1000. No intercourse of any sort should be allowed with the outside, not even for food. If the patient were landed to hospital the attendants, the boat, and the crew should be disinfected by appropriate means. When disinfecting after recovery or removal at least three pounds of sulphur to 1000 cubic feet of space must be burned. The screen should be soaked in 1 in 1000 perchloride solution. During an outbreak all men should be warned to report any slight ailment at once. In small-pox every man should be revaccinated. If feasible every infectious case, or even cases under observation, should be landed. By the above means epidemics on board ship could be easily limited and stamped out.

In connexion with this section was a loan collection of military medical equipment. In the lecture hall were a St. John Ambulance Association litter on wheels; an Ashford litter on wheels; a Furley stretcher; a Derham carrying sheet-stretcher specially designed to go through narrow doorways and into railway-trains, and to carry a patient sitting as well as lying; and a Bedford invalid jacket and ice-cradle. In the side recess there were a model mission hospital tent, as used in the United States Army; Mackenzie Davidson's x ray localiser and an x ray localising couch; a patent pneumatic ambulance hammock and camp bed; a set of surgical saddle-bags fitted up; a Burroughs and Wellcome Congo medicine chest; a Maw, Son, and Thompson medical valise; No. 1 and No. 2 field service equipment chests of wicker covered with hide for lightness; a St. John Ambulance service equipment; a Mauser and Lee-Metford rifle, with bandoliers and ammunition; fragments of shells and a one-pound shell from a Vickers-Maxim (Pom-Pom), which appeared insignificant in comparison with its terrible nerve-shaking effects in action. In the grounds was erected a "Tortoise" tent hospital. There was also an exhibit, with careful drawings, of soldiers' boots, their defects and remedies, by Mr. Noble Smith.

THE ANNUAL MUSEUM.

(*Continued from p. 519.*)

V.—MINERAL WATERS, BEVERAGES, &c.

The most interesting exhibits in this section were undoubtedly those connected with the natural mineral waters of our home health resorts. Foremost amongst these were the interesting collection of specimens of salts and models of baths from Harrogate, exhibited by the Harrogate Corporation. The feature of the Harrogate Spa is, of course, the sulphuretted hydrogen water which, we believe, holds its own in regard to its uniformity of composition, and especially in regard to the constant quantity of sulphuretted hydrogen gas which it contains. Specimen cases were shown containing the salts obtained by evaporation of several of the Harrogate waters. The efficacy of the Harrogate wells is well known. The Harrogate Corporation bottle their mineral waters both aerated and plain. The saline waters of the Royal Leamington Spa were also brought to the notice of the visitors. These natural mineral waters may be obtained plain, aerated, or concentrated. Special attention has been paid at Leamington in the direction of acquiring all the latest apparatus indicated in successful balneological practice. This includes rooms heated by electricity and radiant heat and light baths and hot-air baths. Many well-known continental natural mineral waters were exhibited by Messrs. Ingram and Royle of East Paul's Wharf, 26, Upper Thames-street, London, E.C. These included bottled specimens of the Vichy springs and of the waters of Carlsbad. This firm also are agents for the supply of the water, plain and aerated, of the remarkable barium spring at Llangammarch. The important constituent of this spring is chloride of barium, but associated with it also is chloride of calcium. These waters have come prominently forward recently as of value in rheumatic disorders. The waters are powerfully diuretic. The well-known natural aperient water which occurs abundantly in the wells near Budapest was shown on the stall of Andreas Saxlehner, London Agency, Trafalgar-buildings, Charing-cross, London, W.C. Hunyadi Janos, as it is called, exhibits an interesting and, it should be remarked, constant composition, the magnesium sulphates and sodium sulphates being in equal proportion. One of the

largest exhibits was that by the Apollinaris Co. of 4, Stratford-place, Oxford-street, London, W. Besides Apollinaris water this company also showed Johannis water, as well as specimens of the latter water with lithia and potash added. The exhibit included the bitter aperient waters of Friedrichshall and Apenta water. Several very interesting applications of "sparklets" to the instantaneous aeration of all liquids were shown by Aerators, Limited, of Broad-street-avenue, London, E.C. Amongst the novelties worthy of note were the tablets for the extemporaneous production of soda, potash, and other mineralised waters. Fruit powders are also prepared for the easy production of sparkling summer drinks. This neat little apparatus is most convenient in use and is an excellent travelling companion and offers the undoubted advantage that the consumer can select for himself the liquid he wishes to have aerated. In this section Condal water is worthy of mention, since it is distinguished from other aperient waters by containing as its mineral laxative almost exclusively sulphate of sodium. Magnesium sulphate also occurs, but not in important quantity, and common salt also is present to the extent of nearly one grain per ounce. Specimens of the bottled water were shown by the Condal Water, Limited, 38, Walbrook, London, E.C.

There were very few exhibits coming under the class of beverages. The exceptions were the lime-juice cordial and clarified lemon squash (Stowers's) exhibited by Alexander Riddle and Co. of 36 and 38, Commercial-street, London, E.; medicated wines, including coca wine, beef wine, and a special ferruginous burgundy, by Stephen Smith and Co., Limited, Malmesbury-road, Bow, London, E.; samples of Norfolk cider, the excellence of which we have already pointed out in our analytical columns, exhibited by Messrs. W. Gaymer and Sons, Attleborough, Norfolk; and the lime and lemon preparations and lemon squash and ginger-beer crystals of Messrs. Feltoe and Smith of 25, Augustus-street, Regent's Park, London, N.W. This section, as will be seen, shows a distinct falling off in the number of exhibits as compared with last year.

VI.—PUBLICATIONS, &c.

There was but a small representation of publishers this year. Messrs. Macmillan and Co. had a special selection of their publications dealing with medicine and surgery, foremost amongst them being the "System of Medicine" by Professor T. C. Allbutt, which is now completed by the publication of the eighth volume, and the "System of Gynæcology" edited by Professor Allbutt and Dr. W. S. Playfair. There were several typewriters shown, amongst them being the Blickensderfer machine (London Depot, 9, Cheapside, London, E.C.), and the "Oliver" typewriter (42, Poultry, London, E.C.). Lastly, Mr. B. Allsop of Shipley, Yorks, explained his A B C system of medical book-keeping which is well worth the attention of our readers.

In previous years we have generally devoted a final paragraph to the description of exhibits which we have classified as more or less of a miscellaneous character. On this occasion there were, practically speaking, no exhibits of this class to describe.

LONDON MISSION HOSPITAL, CHUNG-KING.—A medical branch of the London Missionary Society was started in Chung-King in West China on the Yangtse river in 1892, Chinese buildings being utilised for the purpose. A new building of three storeys to accommodate 80 patients was opened on Dec. 23rd, 1899, by Mr. F. A. Fraser, the British consul, the company including the consuls of France and the United States of America, Chinese officials, both civil and military, and many others. Mr. Fraser delivered an eloquent address in the course of which he remarked that the hospital was said to be the largest in China west of Shanghai. A general meeting was afterwards held in one of the wards, with the Rev. J. Wallace Wilson, chairman of the London Missionary District Committee, in the chair. The Rev. A. E. Claxton, secretary of the district committee, in a sketch of the operations of the society in Chung-King, spoke most highly of the work accomplished by Mr. Richard Wolfendale, the medical officer of the hospital, who came to the town in 1897, and to whose energy the erection of the new buildings was mainly due. The Rev. O. F. Hall, M.D., and Dr. Laville of the French army medical department also spoke.

THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

THE day following the official close of the labours of the Congress showed little abatement either in the numbers of medical men remaining in Paris to visit the various picture-galleries and churches or in the numbers of those staying over to continue their professional labours at the different hospitals. In the Boulevard Diderot at the Hôpital Saint-Antoine from 60 to 70 members thronged the small wards and overflowed into the passages of the building set apart for the demonstration by Dr. Lermoyez to the Otological and Laryngological sections. So little was to be seen or heard by reason of the many members present in such a confined space that not a few betook themselves across the spacious grounds of the hospital to a large amphitheatre in the main building where over 100 medical men had assembled to hear Professor Hayem explain his work on the blood and detail his researches on diseases of the abdomen. Professor Hayem's teaching was rendered extremely interesting to those of his hearers who followed French with difficulty by reason of the excellent lantern slides exhibited in explanation of the lecture. Most of the clinics at the various hospitals in Paris were attended by large numbers of members, and especially was this the case at the clinic held by Professor Raymond at the Salpêtrière. To those unaccustomed to the more serious cases of hysteria the uncontrollable attacks exhibited by the patients in the small ward immediately adjoining Charcot's Museum must have been a revelation, for they surpassed in violence and extravagance any of the illustrations usually found in medical text-books. Dr. Pierre Marie's clinic at Bicêtre also attracted a large attendance, though it necessitated a short journey in order to be present—a disadvantage, however, which was amply compensated for, judging by the numbers of those who found their way to this centre for neurological work.

Mr. F. B. TURCK of Chicago gave a demonstration before a numerous audience of his methods for preventing the occurrence of shock and infection in the course of operative procedures. On this occasion the almost entire absence of any practical knowledge of the English language by the members of the Congress was rectified by the kindness of Dr. W. Ewart (London) and of Dr. Waters, who performed very efficiently the duties of interpreters for the Chicago surgeon, and it was due to their efforts that Mr. Turck's work received such an enthusiastic and appreciative reception in Pavillon No. 7 of the École Pratique.

It has been decided, as already stated in our columns, to hold the next International Congress of Medicine at Madrid in three years' time.

(FROM OUR SPECIAL CORRESPONDENT.)

To all inquiries concerning medical and surgical exhibits the officials of the International Medical Congress replied by referring members to the Paris Exhibition. Scattered over an immense area, and very often difficult to discover, even when some particular portion of an enormous building has with much labour successfully been found, the medical exhibits as a whole are completely lost in the huge show on the banks of the Seine. On the ground floor of the "Palais de la Ville de Paris" an old four-poster bed from the Hôtel de Dieu Hospital is displayed. It contains the effigies of four patients depicted as suffering from different maladies and looks as insanitary and repulsive as the splendid specimens of x-ray photographs of simple and compound fractures

shown in the same building look modern and scientific. The next building containing medical exhibits on the right bank of the Seine is the Palais des Congrès immediately before reaching the Pont de l'Alma, and here the section for Switzerland attracts notice, especially the specimens shown by Surgeon-Colonel Bircher demonstrating the effects of hand weapons of ancient times as contrasted with the results on the human body of modern fire-arms. According to this exhibit, which is extensive and well divided, prognosis in cases of severe wounds from shrapnel is far more serious than in cases of similar wounds inflicted by modern rifle fire. Before leaving the Palais des Congrès one notices in the part reserved for Italy the records of the successful work inaugurated by the assassinated King of Italy in providing night refuges for the sick and others in the streets of Rome. A dusty walk behind "Old Paris" and then beside the river past some curious weird-looking craft anchored under the pleasing legend of "Navigation de Plaisance" leads to the Trocadèro palace where Cuba shows a collection of sera from the laboratory of that colony. Further inquiry into this up-to-date exhibit is prevented by the absence of any card explaining where the laboratory is in Cuba that sends the sera. Passing across the Seine by the Pont d'Iéna and taking first the galleries on the right hand side of the Champ de Mars there is to be seen in the Austrian portion of the Palais des Sciences on the ground floor some excellent examples of boxes of instruments for laryngological examinations and for laryngological operations. Belgium is well to the fore with an interesting museum demonstrating Professor Politzer's work and containing wax models and anatomical preparations. In this part of the building are found numberless exhibits of instruments of all kinds without any order or scheme, the only reasonably arranged group being one to be seen in the American section where instruments and apparatus are classed together according to different operative procedures. Among the French sections is an excellent x-ray photograph of the skeleton of a female suffering from scoliosis taken on a single plate. Of the exhibits sent by Great Britain the French public seem to give most attention to the model of a naval hospital. The work of Jenner receives recognition in the Russian section, where a room is entirely devoted to vaccination and the bust of the great apostle of vaccine is placed in the centre. It is difficult to go through this building carefully without being struck with a very remarkable series of instantaneous photographs in the exhibit from the University of Nancy under the name of Professor Guilloz illustrating normal and pathological conditions of the retina. The section devoted to Hungary affords some noteworthy object lessons in the case of the blind and the best means of affording State aid to the poor thus afflicted. There is more information on the same and similar subjects to be gained in the portion of the building assigned to "l'Assistance publique et privée" on the first floor above the gallery for machinery. For anyone not well acquainted with the Exhibition it is advisable, in order to arrive at the next building where medical exhibits are shown, to ask the way to the Palais des Armées de Terre et de Mer. Here is a perfect storehouse of military and naval medical equipment, mostly, however, of well-known types. Norway sends a light, useful two-wheeled cart for the transport of wounded men which seems superior to most similar vehicles shown. A series of Russian photographs of the manufacture of military bandages claims some attention from the representation of the operators' headgear worn as a protection against noxious fumes. Among the objects in the French section in this building is a serviceable ambulance haversack containing compressed drugs representing 15,000 separate doses, some surgical instruments, and some antiseptic dressings. On the first floor in the Palais de l'Hygiène just before the Mexican exhibit is reached there are some forms of spectacles and other apparatus for the preservation of the eyesight in dangerous trades; these appear excellent in their object, but in some not enough attention has been paid to securing an ample field of vision. Below this section, on the ground floor, are a series of galleries which terminate in a fairly large room built in the form of an octagon, the centre of which is occupied by a piece of statuary representing Humanity placing with one hand a crown of laurels on the head of Pasteur and bearing aloft with the other hand a small palm leaf emblematic of glory. This production is the result of the conjoined effort of three artists, Dubois, Enderlin, and Blach, and fully merits the unstinted praise it receives. From four sides of this octagonal room, appropriately named "Salon Pasteur," access is obtained to chambers containing exhibits indicative of the results of Pasteur's influence among other nations than the French, and especial notice is given by the artistic observer to the allegorical figure of a Sphinx personifying the enigma of Science surmounting each of the four doorways. Near the bust of Pasteur are grouped the instruments with which he prosecuted his researches. This room with its four annexes is devoted to exhibits demonstrating the culture of microbes and the applications of the results of Pasteur's teaching. Passing on to the Rue des Nations in the Roumanian Pavilion there is to be seen an interesting album depicting bone lesions from military weapons collected by Professor Démosthène, and close by in the Monaco Pavilion is a very complete surgical exhibit named "l'instrumentation de Doyen." From a medical point of view the exhibits are of very unequal value and by reason of the utter want of any method or plan in the grouping of the subjects the attempt to make a satisfactory inspection is hopeless.

A VISIT TO SOME OF THE PARIS MUSEUMS.

(FROM A CORRESPONDENT.)

The Dupuytren Museum is situated in a courtyard off the the rue de l'École de Médecine, being the next building to that of the École Pratique. The fine front to this museum is quite spoilt by the narrowness of the somewhat mean yard by which entrance is effected, and the statue of Ambroise Paré by the museum doorway is thrown into greater prominence than is required artistically. The collection consists of over 8000 specimens bearing on pathological anatomy, all displayed in one large hall. The floor space is occupied by five immense glass partitions inconveniently crowded with preparations. Round the walls high glass cupboards are ranged, also filled to overflowing with specimens. The only available catalogue at the time of visiting this celebrated museum was a voluminous work in many volumes by Dr. Houel, but on attempting to form some idea of how the specimens were arranged it was found difficult to make the method detailed in the catalogue conform to the actual arrangement of the collection. From what could be understood of the courteous but extremely voluble explanation of the attendant in charge a new catalogue is in process of formation. It would be a great improvement if the more interesting specimens were arranged at such a height that they could be examined without having to look too high or too low for ordinary comfort. Passing through a door at the extreme end of this ancient hall the way can be found to a small room lined with pictures of medical subjects and from the floor of this chamber a rough staircase leads directly to a small upper room furnished with a couple of tables, a chair or two, and some cupboards. Many members of the Congress had inquired for this chamber because it contained over 10,000 microscopical sections by the late Professor Pilliet on histological subjects illustrating normal and comparative anatomy and pathological anatomy. These have been arranged by Dr. Legry, the present conservator, but unfortunately the collection was not ready for view till the last day of the Congress and only about 20 members had the privilege of seeing the exhibit. Passing through the Dupuytren Museum on the way out the attendant, in answer to inquiries, said that the museum was continually in receipt of fresh acquisitions, and he showed the last, which had arrived eight days before, namely, a large x ray photograph of a double-headed fœtus.

On the opposite side of the court of the Dupuytren Museum on the second floor of the École Pratique the Museum of Hygiene is to be found. The management of this collection seem stricken with want of funds, for it was evident that the exhibits were not quite up-to-date and that there were several gaps in the different departments of the science of hygiene.

In the Ecole Pratique there was also to be seen a collection of over 3000 surgical instruments, both ancient and modern. These were formerly part of the celebrated Orfila Museum. The many inquirers concerning the famous Orfila Museum were generally referred to the École Pratique, and at that place the information gained was that the collection was in process of transference and was not on view.

At the Saint Louis Hospital much interest attached to the museum which has been there formed. The collection consists of over 2000 wax specimens comprising instances of parasitic and cutaneous diseases; most of the wax exhibits

have been modelled by Baretta. Besides the above there are on view more than 300 coloured photographs and diagrams which make the collection at this museum very valuable and instructive.

A small but exceedingly well-arranged museum at the Necker Hospital scarcely received the attention which it so well deserved. It is known at the Necker Hospital as Professor Guyon's museum, but the attendant in the room where the specimens are arranged denies that that is the name of the collection. Be that as it may, the specimens are from Professor Guyon's clinic and they number 680. In the right-hand corner of the room on entering are shown some very curious "foreign bodies" found in the bladders of various patients. The value of the exhibits from an educational point of view is much enhanced by an excellent and easily accessible catalogue where against a full description of each specimen is placed a full-sized photograph. The method of displaying the exhibits is very convenient and good examples are to be seen of the various diseases affecting the ureter, the prostate, the bladder, and the kidney.

Many members of the Congress accepted the invitation of Professor H. Filhol to visit the Museum of Natural History. By following the directions contained in the intimation the way was easily found to the Place Valhubert, the address given for the museum. The building is a handsome edifice of recent construction, and is specially seen to advantage because of the ample space in front and around securing a reasonable view of the institution as a whole. Passing up some steps the main floor of the museum is reached, and from the entrance hall access is gained to the different galleries by a well proportioned stairway. Professor Filhol found many attentive listeners on making his round of the museum, but to make more than a mere visit under the circumstances to such an extensive museum of natural history was impossible. Sixteen professors are engaged in teaching at this museum on comparative anatomy, zoology, physiology, anthropology, botany, and other subjects. On the right hand side on entering the vestibule to the museum, opposite the main staircase, most of the members of Congress who accepted Professor Filhol's invitation noticed a striking piece of statuary. An enormous orang-outang is shown in the act of strangling a man who has evidently endeavoured to carry off the young orang-outang by the side of its parent. The handling of the subject is most effective and is by Professor Frèmiet, one of the staff of the Museum. Visitors are shown the skin of the orang-outang, which was subsequently shot after a search party had found the man lying strangled in the animal's lair, from which he had attempted to secure the young orang-outang as a specimen. Considerable notice was attracted by the way in which the lecture-room at the side of the vestibule is adorned with paintings. The walls and the entire ceiling are covered with studies of the evolution of life and the progress of man. In one of those on the walls the subject depicted is a savage making acquaintance with a crab as an article of diet, and the artist has quite entered into the spirit of the occasion. At the Ricord Hospital there is a small collection of about 250 specimens of various venereal conditions. This museum was founded originally by Horteloup and is well worth a visit. Members of the Congress visiting the Trousseau Hospital had an opportunity of seeing a very valuable museum known as the Lannelongue Museum. The specimens exemplify various stages in osteo-myelitis, tuberculous disease of bone, tumours, and fractures. At the Salpêtrière Hospital there is a small museum in one of the buildings of this huge establishment and the many specimens prepared by Charcot rendered it a place of more than usual interest to many of the members of the Congress. The museum itself is a room of modest proportions on the first floor of a building that certainly cannot be termed new or recent. There is no ceiling, but the beams supporting the floor above are covered with various scenes and figures painted by some artist who has succeeded in giving to the chamber a very pleasant effect. There is no catalogue of the contents of the museum and the cards placed near the specimens require more than an ordinary knowledge of French caligraphy. In the centre of the apartment under a glass case is a wax model of a tabetic patient showing very plainly the condition known as Charcot's joint. Around the walls, arranged on shelves, are various specimens illustrating the effects of nervous disorders. A very interesting series of sketches and drawings by Charcot is displayed and it shows well what an appreciative eye for the picturesque and humorous the famous master had and how great a traveller he was, his rough drawings of the vagabond children in Dublin being especially spirited and lifelike.

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

THE BANQUET.

AT the Auberge des Nations, in the Old Paris Street of the Exhibition, the subscription banquet of the Congress was held on August 14th. It was a brilliant and enjoyable gathering, but there is not much to relate as the speeches were few in number and brief. The cards for the dinner gave free admittance to the neighbouring theatre and the banquet concluded earlier than usual so as not to lose all the performance. As President of the Congress Dr. BROUARDEL took the chair and proposed the health of the President of the Republic as the first toast, coupling with it the sovereigns and chiefs of all the foreign States represented at the Congress. He recalled the fact that as Minister in a former Cabinet M. Loubet rendered great service in helping to pass the recent law on the exercise of medicine. M. Loubet also was very desirous of presiding over the Congress of Hygiene and had said that sanitary reformers were the greatest benefactors of humanity. In this the President of the Republic agreed with Mr. Disraeli who, as Prime Minister of Great Britain, had urged that the preservation of the health of the people should be the first duty of the Government. Professor GABRIEL spoke next. He alluded to the union of civilised nations in their efforts against the barbarism of China; but in defining the Chinese as barbarians the speaker was met with cries of "Oh! oh!". A German delegate drank to the sanitary reformers of France, saying that each civilised man had two countries, his own and France. This the Germans felt and the memory of the reception they had received in Paris would never be effaced from their hearts. M. DUPUY, on behalf of the Central Society of French Architects, drank to all foreign architects who had done such good work in adding sanitation as a constituent part of the art of building. This new doctrine would be taught to the young generation of architects and would constitute the ethics of building. Dr. LAURENT read out some verses which he had composed in honour of sanitary reform, mentioning the names of well-known hygienists and concluding with "the ladies." Dr. ANDREAS MAYER remarked that though war was not hygiene, the services rendered under the Red Cross could justly be considered as such and he drank to the ambulances on the field—"not omitting," interrupted Dr. HUIZINGA, "the members of the Red Cross Society who are prisoners at Ceylon." Dr. GREGOROWITCH, from the Canary Islands, drank to the prosperity of the town of Paris, and the members then adjourned to the Théâtre du Palais where they had a good laugh at a satirical review of some of the principal events of the year.

EXCURSION TO A MODEL FACTORY.

On Thursday afternoon, August 16th, more than 300 members of the Congress were conveyed by a special train to Noisiel. By a branch line the train was driven right up to the great Ménier chocolate factory. Here some 800 women and 1200 men produce annually 64,000,000 kilogrammes of chocolate. This is considered a model establishment from the sanitary and social point of view. The factory is carefully ventilated throughout, there is ample space, there is no crowding together of the workpeople, and the machinery is well protected to prevent accidents. The only part which is not up-to-date is an outbuilding where the wood is sawn and prepared for the making of packing-cases; here there is too much wood-dust in the atmosphere. The village of Noisiel consists of 300 semi-detached cottages with 300 square metres of space to each cottage; of this the building occupies 64 square metres and the rest is a garden. Each cottage, not counting the land, cost £165 and is let to the workpeople for £6 a year. Further, there are coöperative stores and a restaurant. At the latter hot meals are provided at cost price and a good portion of meat can

be obtained for 2*d*., and a complete meal, including wine for 8*d*. Then there are schools where the children of the workpeople obtain their primary education free from all cost. There are also a free library and a hall for concerts and entertainments. The workpeople have constituted a band and choir of 100 musicians. The services of a medical practitioner, of a midwife, and of a dispensing chemist are paid for by the firm and rendered gratuitously to the workpeople. The firm also make sick allowances in money and in kind. The men who have been in their service for six years receive annual gratuities of £2 8*s*. After 10 years' service this is augmented to £4, after 15 years to £6, and after 20 years to £8. The women receive half this amount and there is a free home for the aged and infirm. Messieurs Ménier have also created a fire brigade of 45 men, provided with uniforms, horses, hand and steam fire pumps, and all that is necessary. This brigade is at the service of all the neighbourhood and not only of those who are connected with the chocolate works. The drainage of the village is organised on the English water-carriage system. There are no cesspools. The sewage is delivered into a large hermetically closed tank, from which it is pumped in sealed pipes to a distance of one and a half miles away from habitations and here it is utilised for agricultural purposes. The workpeople, needless to say, are exceptionally contented; there is never any question of a strike. At the last general election, of the 349 electors in the village of Noisiel 343 voted for M. Ménier. After visiting the factory, the village, and all its institutions, the members of the Congress were conducted over the park and mansion of Noisiel, where they admired the splendid trees, the view of the Marne, and the antique furniture within the mansion. Finally, an excellent meal was served in a large hall, followed by a few short and complimentary speeches. M. MÉNIER then explained that hygiene had always been studied at Noisiel. They commenced with the hygiene of the school, then of the artisans' dwellings, and finally of the factory. They hoped by this means to bring up a healthy and contented population of good citizens. While the meal proceeded the band and chorus of the village gave selections, concluding with the "Marseillaise." This served as the signal of departure. The special train was in waiting and the members of the Congress were brought back to Paris punctually at the hour indicated. The organisation throughout had been perfect: there was no hitch, no discomfort. The members on arriving had been divided into bands of 50, a member of the firm conducting each band and giving all the information required. There were also arrows at all the turnings, so that those who strayed from their guide were yet able to find their way, and no collision could occur between people endeavouring to go in different directions. It is a pity that M. Ménier was not consulted on the organisation of the great fête given to the Medical Congress at the Palace of the Luxembourg, where several hundred guests were unable to gain admittance.

THE LAST GENERAL MEETING.

On Friday morning, August 17th, there was a long adjournment after the meetings of the sections. These concluded their labours between 11 and 12 o'clock, the section on Microbiology dying hard, for they continued to discuss ardently when the members of the other sections were already enjoying cigarettes in the yard. The International Committee was to meet at two o'clock, but the Congress as a whole was to assemble only at five o'clock for the closing ceremony. The International Committee had a great deal of work to do. Not only had they to decide where the next Congress should meet, but they had to take into consideration the resolutions passed in all the sections and select those which might be submitted to the Congress as a whole. Thus, while the members took matters leisurely, the committee had to work very hard. At five o'clock the great amphitheatre of the École de Médecine was entirely filled by the members of the Congress. The President, Dr. BROUARDEL, explained that the motions which would be read out had been fully discussed in the sections and that it would be quite impossible to discuss them over again. All that the present general assembly of the entire Congress could do was to vote for or against the motions. The general secretary, Dr. A. J. MARTIN, then read out the motions. There was no discussion or dissension and they were all unanimously approved.

THE RESOLUTIONS ADOPTED.

Commencing with the First Section and concluding with the Division of Demography the principal resolutions were briefly to the following effect. The Congress was of opinion—

That it was absolutely necessary for the authorities in all countries to establish bacteriological laboratories where bacteriological examinations could be made gratuitously.

That no children who had suffered from diphtheria should be allowed to return to school till it was shown, by bacteriological examination, that there was no longer any risk of their spreading the disease.

That there should be an international commission to study the question of serums and to endeavour to establish uniformity in the activity of serums.

This latter resolution was taken only as a recommendation so as not to tie the hands of the next Congress.

That the progress accomplished in the methods of vaccination was so great that no objection was justifiable and therefore that vaccination should be rendered obligatory in all countries.

That all tins containing preserved meat, fish, &c., should bear the date of their manufacture; and that rules for the preservation of food in tins should be published and distributed among all persons engaged in the trade.

That no chemical should be employed for the preservation of food.

That better laws or laws better applied are needed for the preservation of rivers from industrial and other pollution, and also for the preservation of the intakes of potable water.

That a commission should be appointed for the purpose of endeavouring to assimilate the methods employed in the bacteriological examination of water used for drinking purposes.

This latter resolution again was taken as a recommendation to the organisers of the next Congress.

That the inspection of meat should be enforced and the methods of control assimilated in all countries. It was recommended that an international conference of veterinary surgeons and others should meet for this purpose and also so as to establish a basis for uniform teaching in all countries as to the methods of controlling the meat-supply.

That there should be public slaughter-houses in all large centres. That small centres should federate so as to have one public slaughter-house between them.

That where it was absolutely impossible to have a public slaughter-house the killing in private slaughter-houses should only take place at fixed hours and should be under the control of the local authorities.

That inferior but wholesome meat might only be sold in especially indicated localities; and inspectors should have the right to visit all such places both day and night.

That lead be replaced by antimony in the proportion of from two to five per cent. and that the soldering of tins containing preserves with lead could only be sanctioned when done in such a manner as to prevent the lead entering the tin.

That domestic hygiene necessitated the immediate removal of all soil, slop water, &c., and the trapping of all pipes. That such pipes should be fully ventilated throughout, but that it should be impossible for sewer air to enter the houses.

That plumbers' work should be carefully supervised and so placed as to be free from the danger of frost.

That the overcrowding of dwellings should be illegal and the law should sanction police measures against this offence.

That municipalities should, by reducing taxation and other means, encourage the building of model artisan dwellings.

That gratuitous bathing establishments should be constructed.

That streets and back yards should be widened on all possible occasions.

That professional diplomas should be delivered to plumbers who had passed test examinations.

That smoke, especially black smoke, should be prevented by enforcing the use of smoke-consuming processes.

That hygiene should be taught in primary and secondary schools and special care be taken to educate young girls in matters affecting domestic hygiene.

That the Congress approved and encouraged the practice of cremation.

That statistics on the effect of various industries on the health of workers should be collected in all countries.

That the laws restricting the employment of toxic substances for industrial purposes should be strengthened and better measures taken to prevent dust in mills and factories, and this even when such dust did not contain poisonous particles. Where, however, efficient ventilation was not possible the work-people should be made to wear masks, spectacles, &c. In all cases notices should be put up clearly indicating the dangers and the precautions that should be taken.

That the Congress approved of all laws that enforced the providing of seats for the use of shop assistants.

That there should be schools for the teaching of colonial hygiene.

That sanatoriums should be established in the colonies.

That there should be available means for the gratuitous treatment of syphilis.

That ships trading with countries where plague prevailed should be provided with the anti-plague serum.

That ships' surgeons should be independent of ship-owners.

That the number of ships' surgeons should be increased and more care taken to insure good sanitation on board ship.

That no person suffering from an infectious disease should be allowed to travel in a train. Such persons should warn the station-master and special trains should be provided.

That railway carriages should be more suitably furnished and more easy to disinfect.

That all possible means should be taken to prevent spitting in carriages or at railway stations. Any railway servant suffering from tuberculosis must not be allowed to expectorate in the offices or stations.

That severe measures should be taken against railway servants who are convicted of drunkenness.

That better and brighter lights are required for the railway services.

That water and steam are the best mediums for heating railway carriages.

That conductors of omnibuses, tramways, &c., have not the power to prevent expectoration within these vehicles but that some means should be found to stop such practices.

That an international committee should strive to agree upon a uniform method of disinfecting cattle vans.

That passenger ships should be better ventilated.

The Division of Demography sent up a resolution to the effect that all countries should collect statistics setting forth the numbers of the population in proportion to the house accommodation. An international committee should agree on the same definitions when describing the quality or the category of a dwelling or lodging. Inhabitants of barracks, convents, schools, hospitals, and such places should not be included in the statistics of the population of dwelling houses but should be given in separate tables.

As this concluded the list of resolutions M. VAILLANT, member of the National Assembly, rose and remarked that the resolutions carried in the Fifth Section on Industrial Hygiene had not been presented to the Congress. These resolutions, it could not be denied, had a political and economic bearing, but they had not been discussed from such points of view. They had only sought to indicate the hygienic reasons which rendered labour legislation necessary. It had been said that they would excite discussion. Perhaps future Congresses would be less timid and the present Congress would have honoured itself by taking in hand a subject which was of undoubted importance and urgency. The section in any case had been unanimous and M. Vaillant was anxious that what it had done should not be concealed and that future Congresses should have full opportunity of continuing the work of the fifth section. These words were loudly applauded. Dr. BROUARDEL rose to explain that the International Committee had every sympathy with the work done by the Fifth Section, but that the resolutions carried touched too much upon the constitutions of other nations. All the resolutions carried by the Fifth Section would be printed and transmitted to the next Congress.

THE CLOSURE AND NEXT PLACE OF MEETING.

Dr. PUTZEYS, delegate of the Belgian Government, now stood forward with an official invitation that the next International Congress should be held at Brussels in three years time. A quarter of a century would then have elapsed since the first of the present series of International Congresses of Hygiene met in Brussels; and 50 years previously the first international congress on health questions that was ever held likewise met at Brussels. The Belgians were proud of these dates and would spare no effort to receive the Congress in a hearty and worthy manner. The Congress without discussion unanimously accepted the invitation.

Dr. BROUARDEL then pronounced a short and concluding address. He said that he thought the Congress was remarkable for the number of questions which had been very systematically discussed and the precision of the resolutions adopted. So thorough had been the discussions that the resolutions were generally carried unanimously. The French sanitary reformers would be much strengthened in being able to point to the approval of foreign hygienists when claiming reforms. But what was true for a nation was often true for all nations and he hoped that the resolutions carried at the Paris Congress would help on the cause of sanitary reform in many other countries.

Instead of allowing a delegate from each nationality to express his thanks for the reception accorded a collective declaration from the official delegates of all the foreign countries was read out. In suitable terms it expressed regret at parting after having been so graciously received in the splendid capital which was now rendered illustrious by the presence of the works of genius of the whole world. In leaving, the foreign delegates tendered their best wishes for the prosperity of the French nation.

After these words the PRESIDENT declared the Congress closed and with much shaking of hands and friendly leave-taking the members slowly dispersed. The Academy of Medicine, which for some weeks had been the scene of so much animation and the gathering ground of a numerous cosmopolitan crowd, lapsed into mournful silence.

THE WORK OF THE SECTIONS.

RIVER POLLUTION.

A full account of the papers read and the discussions held in the eight sections would constitute a weighty volume, which, indeed, we are promised will shortly be published. All I can now attempt is to give an account of the discussions which I was personally able to attend and a brief description of some of the more interesting papers communicated to the other sections. Nor was it an easy matter to select which of the sections to attend. They all had attractive programmes. Still, it seemed to me necessary to make a clear line of demarcation between the new science of hygiene and the old well-established sciences, and to take up those subjects which do not form part (as a rule) of the ordinary medical education. In England we speak of sanitation rather than of hygiene, and the third section was entitled in French *Salubrité*. This term comprises the greater number of questions that would come under the British term sanitation. Here we find illustrations of the new science, which is a combination of medicine, bacteriology, chemistry, engineering, and architecture, with a little agriculture and geology thrown in, not to mention that form of politics which, independently of party politics, strives to obtain legislative and administrative reforms bearing on the preservation of public health. To be proficient in all these departments of technical knowledge is, it may be said, beyond the powers of any one individual, and, as a matter of fact, the speeches often displayed ignorance in one direction and knowledge in another. Thus there was a constant give and take which must prove advantageous to all concerned. It was on Saturday, August 11th, that shortly after nine in the morning the work of the sections began. The first report taken in the Third Section dealt with the treatment of sewage and the pollution of rivers. It was written by M. FELIX LAUNAY, chief engineer of the Sanitary Department of the Paris municipality. Of course, the reporter did not fail to quote the English Rivers Pollution Prevention Act, but he seemed to think that this law was much more strictly applied than is really the case. Nevertheless, he was right in saying that more had been done in England in this respect than in France. Considerable evil had resulted from the belief that rivers were capable of purifying the sewage they received. Pettenkofer had shown that the sewage of Munich was purified by the river Isar; but, as Duclaux observes, a river must be in proportion to the discharge of sewage, and that was rarely the case. Pettenkofer had laid down as a principle that crude sewage could be thrown into a river when at low water there was a dilution of 1 in 15; when the velocity of the water in the river was not more rapid than the current of the river and when there was no agglomeration of dwellings between the sewage outfall and the point of the river where the purification of the sewage was accomplished. But the Sanitary Bureau of the State of Massachusetts put the proportion of dilution down at from 1 in 40 to 1 in 130. The real fact was that the nature of sewage and of rivers differed so extensively that no general rule could be established; and the rule which was the safest and applied to most cases was that which forbids the discharging of any crude sewage into the rivers. French legislation sought especially to preserve the fish in the rivers and the town of Paris had been fined some £4000 for the destruction of fish. This, however, was but a trifle out of an annual expenditure amounting to some £12,000,000; and if some £1,600,000 had now been spent to put an end to such pollution this had not been done through fear of small fines. These great works were undertaken because the utilisation of sewage for agricultural purposes was recognised as the best process of purification. This principle was proclaimed at the International Congresses of Hygiene held in Vienna in 1887, in Paris in 1889, in London in 1891, and in Budapest in 1894. It was also admitted at the International Congress of Agriculture which met at Lausanne in 1898 and confirmed by the same agricultural congress when it came together again in Paris last month. Where, however, there was no suitable soil artificial means must be employed and the Dibdin process or the Cameron process seemed to give the best promise of success. In one way or another it was now possible to prevent the pollution of rivers. The report then proceeded to deal with the protection of gathering grounds for the supply of potable waters and concluded that on this also more stringent laws were required.

WATER FROM THE CHALK.

On the discussion being thrown open Dr. HENROT, Mayor of Rheims, stated that the sewage farms of that town now extended over 600 hectares; for ten years the irrigation had never stopped, there had been no complaint, and the soil was never clogged up. It was regrettable that after the success achieved with this process, both at Paris and Rheims, no

other town had followed this example. This he thought was due to political considerations. Persons in power were afraid of compromising their political popularity, therefore the law should compel them to act. Dr. Henrot urged that there ought to be a Bureau d'Hygiene for each county to exercise pressure on the smaller local authorities and to depute technicians to advise the latter. At Rheims the most satisfactory results were attained by the cultivation of beet-roots with which they manufactured a large quantity of alcohol.

M. BERENGER, a Belgian delegate, now gave the discussion a turn in quite a different direction. He seemed to denounce the general incompetence of everybody. He said that engineers who had distinguished themselves in building an iron bridge or a railway line were employed to supply water to a town. Local authorities did not seem to understand that there were totally distinct branches of engineering. He maintained that no one should touch the question of water-supply who had not a profound knowledge of geology. He did not believe that water derived from the chalk was always safe. If there were fine soil and gravel on the surface of the chalk then the water might be sufficiently filtered; otherwise fissures were likely to occur in the chalk which would let unfiltered water through. He looked upon sanitary engineering as a science in itself for which there should be special examinations and diplomas.

M. BECHMANN, chief engineer of the town of Paris and President of the Section, replied that if water taken from the chalk was to be condemned, then many countries would be absolutely deprived of water. On the contrary, sewage used to irrigate land had, after filtering through calcareous soil, been perfectly purified. The microbes in such sewage, which amounted to 20,000,000 per cubic centimetre, had been reduced to 1200 per cubic centimetre.

M. LAUNAY inquired whether Brussels did not derive its water-supply from the chalk and if there had been any epidemic?

The answer given by M. BECHMANN to the former question was in the affirmative, and he said that there had not yet been any epidemic. Medical men and others had visited the gathering grounds and found them magnificent, but they had no geologists with them and the Brussels Geological Society had condemned the present intake.

M. DE MONTRICHET, whose great work in cultivating the arid, rocky plain of La Crau with the contents of the Marseilles dust-bins was subsequently described to the section, remarked that the report before the section advocated certain doctrines and methods which, however excellent, could not be accepted as infallible dogmas.

Dr. LANDE of Bordeaux supported this objection, for the throwing of sewage on the soil was not always practicable.

M. BECHMANN promptly explained that there was no desire whatsoever to impose a hard and fast rule. The utilisation of sewage on the land was considered preferable where it was practicable, and of course there were many places where this was not possible.

Referring, again, to the question of the pollution of rivers a Russian and a Belgian delegate both declared that laws existed in their countries against such pollution but that they were totally disregarded. The PRESIDENT thought the section should avoid details in its resolutions. The reports were historical records of what had been done and if the conclusions or resolutions at the end of such reports were adopted it did not mean that the section endorsed the entire report. In the present case it would suffice to affirm that the section thought it the duty of all Governments to enact laws and apply efficacious measures to prevent the pollution of rivers and to protect from contamination the gathering grounds or intakes for potable waters. This proposal was unanimously approved.

SANITARY LABOUR LEGISLATION.

Satisfied with this solution I then went over to the Fifth Section, which I found had been discussing M. EDOUARD VAILLANT'S paper on Labour Legislation from the Sanitary Point of View. M. Vaillant is a member of the French Parliament and also a Member of the Royal College of Surgeons of England. In his lengthy report he strove to explain how the working classes had by organisation obtained better sanitary conditions, that hygiene touched almost every phase of human activity, and that the object of the sanitary reformer was to see that such activity did not degrade and ruin the human race. When the constitution of a healthy man broke down at the age of 40 or 45 years there the sanitary conditions must be bad and the law should interfere. Such premature decadence was a modern evil; it was due to modern industrialism; it commenced by separating the infant from the mothers, who went to work in a mill or factory, and continued through various phases of the worker's existence. Historians, novelists, travellers, and hygienists all agreed that there was a marked physical degeneration among the populations of many industrial centres. This had been noticed since the commencement of the century and the first efforts of legislature had been directed to the protection of childhood. So far back as 1802 an English law made it illegal for children to work at night and limited their day's work to 12 hours. M. Vaillant then reviewed the subsequent labour legislation of England and other countries. He also quoted statistics as to the number of recruits in different countries who were found physically unfit for military service, all tending to show that the factory and the mill, and, generally speaking, modern methods of work, tended to degrade the physique of the nations concerned. Physiological researches, M. Vaillant insisted, indicated that over-exhaustion could not be compensated by the normal food and rest. When the muscles were tired further work was only accomplished by nerve energy; and after the borrowing of nerve force for muscular effort the reaction was far more destructive of vitality. The hygienist should seek to determine for each trade or industry the physiological limit of effort beyond which it was detrimental to go. This seemed difficult because the powers of individuals varied extensively. But it was not difficult to distinguish between the healthy and unhealthy, the normal and abnormal, and exceptions to the rule must be made for the latter. The robust worker harnessed to the wheel of Pettenkofer and Voit showed how much, in spite of rest and food, he had in nine hours exceeded the limit of his strength. Many instances were given and authorities quoted in M. Vaillant's paper to prove that it was possible to ascertain when a person had worked beyond his strength. Such excess of work produced an auto-intoxication by carbonic acid accumulated through excessive muscular endeavour and was more than the lungs had the power to eliminate. Practically the ideal was that rest should be sufficient to ensure that the work done should be done without producing any marked, distinct symptom of fatigue. Therefore it did not in all cases suffice to reduce the hours of labour. If the strain was to be augmented and the same amount of exhaustion produced but in a shorter time the evil consequences might be as great. The healthy and normal day's work was that which did not upset the equilibrium of the organism and which did not necessitate any borrowing on the reserves of strength, heat, oxygen, &c. The quantity of energy disposable would decrease where the sanitation was bad, where the factory and home were dirty and insufficiently ventilated, and where the food, clothing, and rest were insufficient. The better the general sanitary condition the greater the amount of work that could be done without injury to the worker. A human being should be treated with at least the same consideration as was shown towards an engine or other machine and not worked to the point of self-destruction. Unfortunately it was easier to replace a workman than to purchase a new machine. The records of the sweating system showed that machinery had never been so badly treated as human beings had been. To protect human life there were laws limiting the hours of labour, but this was of little use if overtime was allowed. Nor was this legislation effective where the sweating system was carried on in private dwellings that escaped all control. The French Decrees of March 2nd and 24th, 1848, the resolution of the English House of Commons of Feb. 13th, 1891, were endeavours to abolish the sweating system; but till domestic and family industry were placed under control sweating would continue. The more advanced legislatures already excluded women from dangerous industries, and all hygienists agreed that women about to become mothers should not work. Progress had already been accomplished in raising the age at which children might be employed, and it was very generally felt that the organs were not sufficiently formed to permit hard work till the child had reached the age of 16 years. Even at 16 years the organs of the thorax, especially the heart, were not fully developed, and no exhausting work should be allowed at that age. The object should be to prepare the mind and body by technical and physical education. After

reviewing the laws of different countries that restricted the work of women and children M. Vaillant proceeded to explain that even these partial reforms had greatly reduced the sick-rate and the death-rate, and concluded by recalling the fact that after discussing the interesting report written by Dr. Félix, Dr. Roth, and Dr. Singer, the Nineteenth Section of the Eighth International Congress of Hygiene, which met at Budapest in 1894, unanimously adopted a resolution in favour of the eight hours' day. He therefore proposed that the present Congress should confirm this resolution and this was approved by the section.

Then followed no less than 15 other resolutions. Certainly these could only be considered as mere enunciations of principles. For the moment many of them were beyond the domain of practical politics. The second one certainly went to the very root of the whole question, for it stated that labour should not only be limited in its intensity and duration, but that it should be remunerated in such a manner as to ensure sufficient well-being. How this was to be done was not stated, but as a matter of logic the resolution was absolutely correct, for good sanitation and short hours would not compensate for the want of food. The section also voted in favour of an uninterrupted rest of 36 hours per week.

To the resolution that night labour for women and children should be abolished the section added the words "without exception," for such laws did exist in several countries, but so many exceptions were made that they were of little use. The seventh resolution was to the effect that night labour for men should only be tolerated in those industries where its suppression was economically not yet possible. The eighth proposal that women should not work for six weeks before and six weeks after their confinement was amended to two months. The ninth motion, raising the age of children working in factories, &c., to 16 years of age, met with some opposition. In France the boys left school at 13 years of age—they had better work than get into mischief playing in the streets. To this the reply came that there would be reforms in the education system and that these boys might go from the primary school to the technical schools. This was carried, as also the next proposal stating that the work of children or young persons should not last longer than half the time worked by adults. Again, the question was asked whether they were to have the children six hours in the workshop and then six hours in the street. The fact, however, that children might get into mischief when playing in the streets did not prove that it was wholesome for them to work all day in a factory. The section proceeded to recommend that every possible legal measure should be adopted to prevent overwork by means of the sweating system, home work, or overtime. Therefore, medical men, hygienists, engineers, and working-men delegates should be appointed as inspectors with right of entry not only in all mills and factories but in private houses and rooms where work was done. Medical surveillance should be especially strict in regard to children, young persons, and women. The fourteenth resolution recommended the teaching of hygiene in primary schools and the fifteenth urged that physiological laboratories should be established in the universities of all countries to investigate the physiological conditions of the creation, and the expenditure and the regeneration, of energy in animated motors and more especially in man. By the institution of an international bureau dealing with labour, sanitary, and statistical questions, and by periodical international congresses, the Governments would facilitate the solution of the problems at issue, and by international legislature ensure the loyal observation of the principles and rules adopted.

Such, in rather briefer terms than the actual text, were the formidable array of resolutions which this section adopted. It has been seen that these resolutions were not submitted to the Congress as a whole when it assembled for the closing ceremony and that M. Vaillant protested against this exclusion; but the resolutions will be printed in the official records and transmitted to the next congress. The weak side of this discussion rests in the fact that a sectional meeting is attended, in the main, by sympathisers who are partisans of the object held in view. Therefore, there is little or no opposition. It would have been more effective and convincing to have carried propositions such as the above in face of a strenuous and able opposition. It could not then be said that both sides of the question had not been heard. This would undoubtedly have occurred had the Congress as a whole been able to discuss the resolutions which the Fifth Section had carried, and it was very frankly admitted that it was just because such discussion would have arisen that the resolutions were not presented to the general assembly. Perhaps at Brussels in three years' time these topics will have further ripened and there will be less timidity shown in handling them.

(To be continued.)

Correspondence.

"Audi alteram partem."

PROFESSIONAL ORGANISATIONS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 18th, p. 475, prominence is given to the question of professional organisations by the insertion in a place of honour of an address on that subject by Dr. W. G. Dickinson. Dr. Dickinson quotes with evident approval an article on the British Medical Association by an unnamed author to this effect: "No member of the profession has a right to say that he takes no interest in what are called 'medical politics,' by which we understand the maintenance of the honour and interests of the medical profession and the consolidation and extension of its influence on public opinion," &c. The *propriety* of such objects will be conceded by most of us, but it is worthy of inquiry whether the methods we adopt are not sometimes more calculated to defeat than to achieve them. Small local organisations form (and act upon) sweeping rules affecting many persons both in and out of the profession, but at the same time, rules which might be much modified and improved if subjected to a tribunal above mere local, and possibly very narrow, considerations.

There is, in my opinion, a real need that some central authoritative body, representative of the profession, should have an opportunity of considering the rules of local organisations and approving them—if worthy of approval—before they become, to all intents and purposes, laws. I will illustrate these remarks by a description of our methods in Great Yarmouth, methods I am ashamed to state I have, up to the present, acquiesced in. Five years ago we formed a branch of the Incorporated Medical Practitioners' Association on the occasion of a rupture between ourselves and certain working men's clubs. We had proposed fresh rules to the clubs. The clubs very ungraciously refused even to discuss them with us, dismissed us from our appointments (as indeed they were entitled to), and proceeded to form an Institute. By advertisement in lay papers they obtained two qualified men, one of whom is in office with them still. We then—by way, I suppose, "of upholding the honour and dignity of the profession and consolidating and extending its influence upon public opinion"—proceeded to boycott the Institute and its medical officers—the latter by social and professional ostracism, the former (and this is by far the most serious aspect of the case) by refusing to see them in consultation with their Institute medical officers, however ill they might be. Practically our attitude to the Institute patient was this: "You may suffer or die before we will come to your help so long as you are attended by your Institute doctor." We went still further, for when the friends of Institute patients, failing to get help in Yarmouth, appealed to Norwich consultants we brought pressure to bear upon these consultants, and stopped them. I will provide names and particulars of both patients and medical officers if required. And at our last meeting our secretary avowed his intention of preventing any London consultant meeting an Institute medical officer in consultation over an Institute patient if he could. It would be interesting to ascertain the view the London consultants take of the matter.

Surely, Sirs, our methods require revision. The public ridicule them, the interests of the profession are not served, bad blood is created between the Institute patient and the general practitioner, and the breach is widened. It is true that our society contemplates taking the club patient from his Institute medical officer altogether and treating him for

nothing when he is dissatisfied with his club medical officer, but I fail to see the advantage of either pauperising or bribing him. So far as boycotting is concerned let us leave it to trade unions. We profess to be an honourable learned profession, let us not plant our dig so low as we do when we condescend to such vulgar methods as boycotting. Let us have a central representative body; if it endorses our methods loyalty to our profession will ensure general adhesion to them. But when a mere handful of medical men in a provincial town make punitive regulations without supervision by a superior authority there must be a serious danger of injuring the honour and interests of the profession and the respect we aspire to in the eyes of the general public. I am, Sirs, yours faithfully,

JAMES RYLEY, M.D. Lond.

Great Yarmouth, August 20th, 1900.

"THE COVENTRY DISPENSARY."

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of August 18th Dr. Saundby challenges the veracity of your special correspondent, Mr. Adolphe Smith, and as far as Coventry is concerned I should like to call Dr. Saundby's attention to Mr. Smith's investigations into the abuses of the Coventry Dispensary which were printed in THE LANCET some three or four years ago. If Dr. Saundby had taken the trouble to have read these reports, culled from the local press and the practitioners in Coventry, those on the dispensary staff included, he would have recognised that the statements bore the imprint of truth and that the reports in question were masterly *résumés* of the whole situation.

Dr. Saundby says "that he had never been asked to support the profession in Coventry," and "no request had been brought before any of the medical societies for assistance." In reply to this I would remind him that some five years ago I called upon him and laid the whole question of the Coventry Dispensary before him, and he promised to help in whatever way he could. I would also remind him that within a few weeks of this interview Mr. Faulder White and Dr. Callaghan of Coventry called upon him and again explained the situation and asked for his assistance. Of course, these are very small matters and perhaps do not affect the points at issue, but I thought it better to refresh Dr. Saundby's mind upon them. Then again, as regards the request to the medical societies, Dr. Saundby has again forgotten that this question has been referred to the Ethical Branch of the Birmingham District, which condemned the dispensary in the strongest terms. Surely this fact should not be lost sight of. Then as to whether these dispensary medical officers are ostracised in Coventry I can only tell you that some of us will not meet them in consultation at all, and others only upon exceptional cases. I might state here that a rule exists at this dispensary that if a consultation be required one of the members of the staff must be called in or a practitioner from another town, but not a practitioner in Coventry.

In 1892 this dispensary, according to published reports, had 25,000 people on its books out of a population of 52,000. I mention this because I have always maintained that if these medical men refused to meet us in consultation upon dispensary cases—i.e., half the population of the town—we should in like manner refuse to meet them in consultation upon the other half, and to this understanding many of us have adhered. I have instances, and can mention names, where dispensary patients from this town have paid 10, 15, and 25 guineas to Birmingham consultants. Surely it is time that a wage-limit at this institution should be insisted upon.

Your readers no doubt will understand from these remarks that this Coventry Dispensary question is far too wide for the intelligence of men who receive consultation fees from the medical men upon its staff, but it should be sufficient for these consultants to understand that an institution should not be countenanced which had been condemned at two annual meetings of the British Medical Association, by the Ethical Branch, and more perhaps by the condemnation of the medical press (THE LANCET, the *British Medical Journal*, and the *General Practitioner*), all of which refuse advertisements for vacancies upon its staff. If after these condemnations men in neighbouring towns would have sufficient *esprit de corps* to refuse to meet these medical men in consultation the reforms asked for at the dispensary would follow as a natural sequence.

I am, Sirs, yours faithfully,

Coventry, August 21st, 1900. EDWARD PHILLIPS.

To the Editors of THE LANCET.

SIRS,—I regret very much that you have replied to my letter by such a harsh note. It is as easy as it is futile to seek to evade responsibility for the statements made by your Commissioner by complaining that the protest is not made in courteous terms. I must remind you that three years ago in reply to my letter you did me the honour of devoting a whole article to abusing me, but utterly failed to substantiate the injurious and inaccurate statements which your Special Commissioner had made respecting the medical profession in Birmingham, and against which I had protested somewhat hotly. This was replied to not only by myself but by Dr. Carter, who wrote under date August 10th, 1897, "I venture to think that you will do well to repudiate and withdraw without delay the statements of which Dr. Saundby and I complain," and I should also like to quote the final passage of my own letter, under date August 9th, 1897, where I say, "With respect to your accusation of want of courtesy, I have only to add that if in rebutting accusations which are false and injurious I have been wanting in the courtesy due to those who make such accusations I apologise, but I leave it to the judgment of the profession to say whether such charges should ever have been published and defended in the editorial columns of THE LANCET." To those letters you vouchsafed no reply, and it is wholly inadequate to say now that you did not reply because the challenge was "rude." I do not think it can fairly be said that my present request to have the statements made by Mr. Adolphe Smith in Paris either substantiated or withdrawn is rude or unfair, and I think I was fully justified in referring to the events of three years ago, where his accuracy was most distinctly challenged and he failed to adduce any facts in support of such injurious allegations as that "a spirit of selfish money-grabbing" animated the medical profession in Birmingham, and that it had been "particularly difficult to group the medical men together and get them to put their personal interest in the background so as to defend the position of the profession as a whole"; or that "instead of inquiring what good cause is to be promoted they (the medical profession in Birmingham) will strive to find out that some personal interest is to be served." Now, we are told on the authority of Mr. Adolphe Smith that owing to the conduct of Birmingham consultants combinations of the local profession in the towns of Coventry and Wolverhampton against certain ostracised practitioners have failed, and I ask whether he has been correctly reported and if so for the ground upon which this statement is based, or for any evidence that the assistance or coöperation of the medical profession in Birmingham has ever been officially sought to help such a movement in either Wolverhampton or Coventry. If you refuse to substantiate these charges or to withdraw them I leave the profession to judge of their value.

I am, Sirs, yours faithfully,

Birmingham, August 21st, 1900. ROBERT SAUNDBY.

*** Our readers will find the article "abusing" Dr. Saundby on page 317 of our issue of August 7th, 1897; and on page 331 of the same issue they will find the letter in which Dr. Saundby "protested somewhat hotly." We have no desire to be harsh or to evade any responsibilities. Our aims are to obtain a decrease in hospital abuse and a cessation of the sweating tactics employed in the management of many medical aid associations. Our Special Commissioner's work in carrying out our aims commands our complete confidence.—ED. L.

A BIRTH BY THE ROADSIDE.

To the Editors of THE LANCET.

SIRS,—Perhaps such a case as the following is sufficiently rare to deserve a record. I was called late in the evening of Saturday last to the young mother of two children born after natural labours. She was returning from the village to her home a mile or two distant when she was suddenly taken in labour (which she had not expected for several weeks). After "about two pains" she was delivered

by the roadside of a fine, strong boy who was crying lustily on my arrival.

I found my bicycle lamp of much use in enabling me to pay the needful attention to the hasty newcomer. Mother and child are doing as well as if the event had occurred in more conventional surroundings.

I am, Sirs, yours faithfully,

St. Mary Bourne, Hants., August 13th, 1900. WM. A. S. ROYDS.

"THE CAUSE OF CARIES OF THE TEETH."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 14th (p. 134), to hand by this last mail, I notice a letter from Dr. Harry Campbell in which he supports the theory of Dr. J. Sim Wallace that "the great prevalence of dental caries among civilised people is due to their eating soft and pappy foods requiring little mastication." Would either of these gentlemen kindly explain how they reconcile this theory with the following fact. The great majority of South African natives live on nothing but soft pappy food, which consists of a very soft porridge made from ground mealies or Indian corn; their only method of cleansing their teeth is to fill the mouth with water and rub the teeth with the finger—and yet carious teeth among natives are the exception rather than the rule; on the contrary, they possess beautiful, sound, strong, milky white teeth, of perfect shape and formation, absolutely free from any taint of tartar or other discolouration, and seldom if ever malformed or irregular. I am, Sirs, yours faithfully,

A. BERLYN, L.D.S. F.P.S. Glasg.

Cape Town, August 1st, 1900.

A RIDE FROM LONDON TO EDINBURGH AND BACK ON A TRICYCLE BY A VEGETARIAN IN HIS SEVENTY-EIGHTH YEAR.

To the Editors of THE LANCET.

SIRS,—I am much interested in advancing the cause of total abstinence from meat, alcohol, and tobacco, and I have practised it on myself for more than four years. I have just returned from riding to Edinburgh and back on my tricycle and I am desirous of ascertaining whether anyone of my age—78 years next April—has accomplished a similar journey either on flesh or vegetarian diet. If you can kindly help me in this matter I shall esteem it a favour.

I left London on July 11th and my sleeping places during my ride were—July 11th, Dunstable; 12th, Northampton; 13th, Leicester; 14th and 15th, Matlock Bath; 16th, Buxton; 17th, Altrincham; 18th, Preston; 19th, Milnthorpe; 20th, Grasmere; 21st and 22nd, Keswick; 23rd, Longtown; 24th, Hawick; 25th, Edinburgh; 26th, Dunbar; 27th, Belford; 28th and 29th, Alnwick; 30th, Durham; 31st, Northallerton; August 1st, Ferrybridge; 2nd, Retford; 3rd, 4th, 5th, 6th, and 7th, Newark, detained by the rain; 8th, Stamford; 9th, Normon Cross; 10th, Hitchin; 11th, home in London.

During the 31 days I was away I slept in 24 beds. I experienced the greatest kindness everywhere and I had little or no trouble with my tricycle. My weight on my return was the same as when I started—116 lb. net. My tricycle weighed 45 lb. without luggage, and with what I carried about 60 lb. It was geared up to 72 and my cranks were seven inches in length. I am open to be examined by any medical man as to my bodily health.

I am, Sirs, yours faithfully,

Kilburn Priory, N.W. C. J. HARRIS, M.R.C.S. Eng., &c.

THE PREVENTION OF INSANITY.

To the Editors of THE LANCET.

SIRS,—In the leading article in THE LANCET of August 11th, entitled "The Prevention of Insanity at its Sources," it is remarked: "It would appear that in the province of psychiatric medicine the importance of the principle [of prevention] has not yet been sufficiently realised." And again: "With his hands filled [in ways described] he [the alienist] has not had as much leisure as is desirable for considering the prevention of insanity." The writer of the article does not surely suggest that it is the alienist who fails sufficiently to realise the importance of the prevention of insanity and to consider the methods of prevention? If any alienist so fails he must be unaccountably incapable of learning the chief lesson of his daily work, and he may with propriety be advised to employ his abilities in some more appropriate sphere. I venture to suggest that the average alienist is fully aware that prevention "is the first and most practical aim of medicine" in all its branches. He is ready with his message anent prevention what time public opinion and the legislature are prepared to listen to him, albeit his task is harder and his facilities for inculcating knowledge less than in the case of the general physician, who has to enlighten the public upon matters, such as the prevention of tuberculosis and of specific fevers, as to which it is largely anxious to receive information.

It appears from Dr. Percy Smith's remarks that in Finland and in Norway (to these countries I believe one, at least, of the States of the American Union may be added; there, according to a leading American organ on insanity, the marriage of "epileptics, imbeciles, and feeble-minded" was in 1895 made illegal, under certain conditions) public opinion is riper for legislation on some of the vital points in question than it is here. So much the better for the people of those countries and the worse for the British taxpayer. His foreign compeers make probably a humbler, a less ambitious effort to house and provide for their insane, but they and those authorised to act for them are, on the other hand, blessed with a greater receptivity towards the teachings of the experts in the matter of prevention.

I am, Sirs, yours faithfully,

EDWIN GOODALL.

Joint Counties Asylum, Carmarthen, August 13th, 1900.

THE SOUND VALUE OF LETTERS IN READING.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 26th, p. 1506, Professor James Hinshelwood of Glasgow in the course of a paper on Congenital Word-blindness, says: "The memory of words is first registered in our auditory memory—i.e., we are able to spell a word before we are able to recognise the word by sight alone. When the individual has acquired in his visual memory a knowledge of the individual letters he is able to read words by spelling out aloud each letter, and thus by appealing to his auditory memory he gets the proper word." Professor Hinshelwood does not exactly say so, but I infer that he means that by spelling a word such as "cat" the pupil judges from the *sound value* of each letter that combined they produce the sound *cat*. I do not doubt that this is generally so and as exceptions may be of interest I send you the following case.

Over ten years ago I saw a Borneo Dyak woman, about 17 years of age, who had begun to learn to read English, although she could only speak a few sentences. She had no previous education but could speak Dyak and Malay, in which latter language the instruction in English was conveyed to her. She had lived partly in her Dyak village and partly with her aunt who was employed in a European family. She had also on two occasions spent several months in hospital for tuberculous ulcers on the legs and arms. So she was not entirely ignorant of European ways and ideas and she was very intelligent, though the perceptive faculties were in advance of the reasoning ones. She learned her alphabet without any difficulty and went on from small words to those of eight or more letters quite readily. Her visual memory was excellent. But it was found that she had no idea of the *sound value* of a letter nor could she be got to understand it. The length of a word within reasonable bounds gave her no extra difficulty. "Elephant" gave her no more trouble to remember than "rat" when once she had mastered its form. She read "dog" because she had been taught to give those letters that sound, but substitute a "t" for the "g" and she knew absolutely nothing about "*dot*." She recognised the change and learned the new word, but could not see that the difference was caused by the *sound value* of the changed letter. To try her she was told that "c a s e" spelled *horse* and saw nothing unusual about it. Those letters spelled horse, that was all. But such experiments were not tried often lest it should destroy her confidence in her teacher. No doubt in time she

would have read well, as her stock of words increased, but I do not think she would ever have been able to read a new word, however simple, without its being first pronounced for her.—I am, Sirs, yours faithfully,

J. W. ROLPH, M.D. Univ. Vic. Col., Canada, L.R.C.P. Lond.,
Medical Officer, Pahang Corporation, Lt.
Malay Peninsular, July 2nd, 1900.

THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION AND THE CASE OF MR. H. M. O'HARA.

To the Editors of THE LANCET.

SIRS,—In the last number of THE LANCET [1] there appears what purports to be an account of the O'Hara case from your Melbourne correspondent. This account, being written by a prominent member of the late council, is purely an attempted justification of their action and is not a proper or full statement of the case. In justice to the present council and branch, might I ask you to make known the following facts through the medium of your widely-circulated journal?

The members of the present council, much against their inclinations, have taken up the work of the branch in order to prevent the branch from breaking up and to protect the interests of those members who were opposed to the extreme action of the late council. The members of the present council are decidedly of opinion that it is the duty of every member of the profession to protect, as far as he can, a brother professional's reputation, and only convict him of either a crime or a breach of ethics, after an impartial hearing, and upon the clearest evidence. When a decision is come to in the proper and constitutional way it should be loyally accepted by his brother professionals. We wish to strongly emphasise the fact that no body of men are more keen and zealous in upholding the dignity and honour of the profession than the council and members of the Victorian branch. We greatly resent the suggested imputation to the contrary. We take this opportunity of expressing the opinion which we have formed, and to which we submit any fair and right-minded man must come to, that the conduct of the case by the late council was inconsistent with all ideas of British fair play and abhorrent to every right-minded man.

Before pointing out a few respects in which the late council acted in a way opposed to the principles of natural justice it is necessary for us to make it clear that Mr. O'Hara is no longer a member of the Association, having resigned on March 29th last.

We now lay before you a few facts which clearly show to the fair-minded men that the conduct of the case was a travesty of justice. The late council was sitting purely in a judicial capacity; as such, every one of them should have been above any suspicion of bias and no one of them should have acted as accuser and one of the judges. Dr. Springthorpe, who proposed the resolution of expulsion at the council meeting, directly acted as the accuser and outside the council sought to gather evidence to substantiate his charge; in addition to which he acted as one of the judges. Further, Mr. O'Hara asked for the name of the member who made complaints against him. This was refused him. He afterwards asked for the name of the member who was proposing the resolution for his expulsion. This was refused him. When the charge was conveyed to him in the vague terms "for your connexion with the Silenette Company, Limited," he asked for better information of what the charge was so that he might be prepared to meet it, pointing out that his connexion might be either proper or improper. The council refused to give him any further particulars. On the conclusion of the taking of evidence the meeting of the council was adjourned. Mr. O'Hara was not invited to attend such adjourned meeting nor was he informed when the same was to be held, as he was entitled to under By-law 4 of our rules. He was thereafter informed that the council had passed a resolution expelling him and when he wrote three times for a copy of the evidence upon which his expulsion had taken place this was also refused him. The explanation of this, afterwards given by the President (Mr. G. A. Syme) to the general meeting on March 21st, being that they (the Council) thought it might get into the hands of the members of the Association and improperly prejudice them and that they might pre-judge the case. My council is at a loss to know what this explanation means. It clearly shows the length the council were prepared to go to get the branch to support their resolution of expulsion.

At least one of the members of the late council, whilst so acting as judge, personally canvassed and sought to improperly influence members of the branch before the meeting on March 21st, whilst another the night before the meeting sent out his private cards to certain members urging them to attend the meeting. After the evidence had been closed Dr. Springthorpe looked about for further evidence and at the last moment improperly submitted what he declared to be additional evidence to the general meeting. In addition to this some of the council threatened that unless the members of the branch supported their verdict they would resign from the branch and "smash it up." Each member of the branch at the general meeting was called upon to exercise the same judicial function as the members of the council, and, in fact, acted as a court of appeal. Notwithstanding that the council was sitting purely as a judicial body, and that they were trying a brother professional—although perhaps not for a criminal offence, still, for an alleged breach of medical ethics, which they regarded as sufficient to professionally and socially destroy him—they acted in the way I have pointed out. To the large number of members who voted against Mr. O'Hara's expulsion these proceedings and tactics were abhorrent, as they must be to all right-minded men.

These facts alone are more than sufficient to vindicate the action which the branch took, and hence has the support of the present council. Since taking office the council have very carefully considered Mr. O'Hara's case and they are more than ever confirmed in opinion that the charge against this gentleman was not proved. Further, since assuming office we have ascertained that important correspondence which took place between Mr. O'Hara and the late council was not even placed before the general meeting on March 21st. Nor was the very important fact that Dr. Springthorpe and, we understand, some other members of the council desired to compromise the matter with Mr. O'Hara between the passing of the resolution by the council and the holding of the general meeting placed before the meeting. Of such suggested compromise we have written evidence. We are decidedly of opinion that, instead of the case being heard on its merits, there were many influences at work which prevented the accused from having a fair and impartial hearing before the late council.

I am, Sirs, yours faithfully,

W. B. VANCE,
Honorary Secretary, Victorian Branch, British Medical Association.
High-street, St. Kilda, July 4th, 1900.

[1] THE LANCET, May 26th, 1900.

"THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE."

To the Editors of THE LANCET.

SIRS,—I was present at the meeting of the governors and subscribers urgently summoned on the 11th inst. under circumstances so well known to your readers as to require no explanation from me. At this meeting the governors and subscribers were represented by 16 persons, while there were six or seven members of the board of management, certain of whom had formed the committee of inquiry into the condition of the hospital recently undertaken in response to the representations of the medical staff. No member of the medical staff was present. Whether the result of such a meeting can be accepted as final is a matter upon which I do not wish to enter, but there were certain points brought into prominence at the meeting which should, in my opinion, receive publicity.

The chairman, Mr. George W. E. Russell, spoke for an hour with his accustomed eloquence on the two questions before the meeting—that is to say, (1) whether the demand of the medical and surgical staff for direct representation upon the board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital—and then called upon a gentleman—a member of the Board of Trade I understood—to second his resolution:

That it is undesirable that the medical staff should be represented on the board.

The seconder proceeded to dilate upon the impossibility of any institution being successful in its working unless its affairs were conducted upon sound business principles, adding that it would be as reasonable for the servants of, say, the London and North-Western Railway or the cabinet-makers in Sir John Maple's establishment to ask for direct representation on their respective boards of directors as for the medical staff of the National Hospital for the Paralysed and Epileptic to demand seats on the board of management of that hospital. Is it not astounding that the board should allow without protest the brilliant work of a staff of world-wide renown thus to be ranked with the labour of cabinet-makers and railway servants?

The second point to which I wish to draw attention is the fact that the chairman was satisfied to explain to the meeting that the secretary-director was not the only medium of communication between the medical staff and the board of management; because, when any practical grievances were brought forward by the staff, the slightest hint to the sisters in charge of the ward or to the lady superintendent would produce the desired effect. Such a complete misunderstanding of the proper relation of the honorary medical staff of a hospital towards the nurses of a hospital has surely never been recorded publicly before.

The position is a very grave one. I trust that wiser counsels may prevail with the board of management before irreparable harm is done to the hospital.

I am, Sirs, yours faithfully,

August 13th. A LIFE GOVERNOR.

Obituary.

SIR WILLIAM STOKES, M.D., M.CH. DUB., F.R.C.S. IREL.,

SURGEON-IN-ORDINARY TO HER MAJESTY THE QUEEN IN IRELAND.

THE unexpected death from pneumonia of Sir William Stokes, one of the most eminent and well known of the senior consulting surgeons of Dublin, has caused widely spread grief and disappointment among the members of the medical profession and the public in Ireland. His death took place on August 18th at Pietermaritzburg, the sad news reaching Dublin through a telegraphic message from Lord Lansdowne from the War Office, received in Dublin at three o'clock in the afternoon of the 19th. The event was entirely unexpected, inasmuch as the distinguished surgeon was timed to reach home on Sept. 20th, while the only intimation that he was ill was contained in a telegram received by Major-General Preston on the evening of the 18th. He was suffering from chronic bronchitis when he left Southampton for the Cape, but his health improved greatly during the voyage, and he wrote from the Cape that he was very well.



SIR WILLIAM STOKES, M.D., M.CH. DUB., F.R.C.S. IREL.

Sir William Stokes was the son of William Stokes, the celebrated physician who did such admirable work on the subject of diseases of the chest, while his grandfather was the well-known Whitley Stokes. His family is one which has produced many pre-eminent in medicine, surgery, and literature. Thus besides Whitley Stokes the grandfather, and William Stokes, his eldest brother Whitley Stokes, C.S.I., C.I.E., is a distinguished Indian administrator, a well-known Celtic scholar, and formerly legal member of Council to the Viceroy of India. A cousin, Sir H. E. Stokes, is also an Indian administrator and was formerly a member of Council of the Government of Madras, while another cousin, Sir George Gabriel Stokes, is Lucasian Professor of Mathematics in the University of Cambridge, is M.P. for the University, and is a past President of the Royal Society.

Sir William Stokes was educated at the Royal School, Armagh, and at Trinity College, Dublin. He received his medical training at the Carmichael School of Physic and the Richmond and Meath Hospitals. He also studied in Berlin, Paris, Vienna, and Dublin. In 1863 he graduated at the University of Dublin as M.D. and M.Ch., becoming a Fellow of the Royal College of Surgeons in Ireland in 1874. He was for many years surgeon to the Richmond Hospital, but left this institution to take a similar post at the Meath Hospital, partly because his father had been physician there.

The late Sir William Stokes filled the position of Professor of Surgery to the Royal College of Surgeons in Ireland since 1872, that is for nearly 30 years. His operation for amputation at the knee-joint—a modification of Gritti's procedure—is well known to surgeons now as "Stokes's operation." Many other operative procedures of importance have during the last 20 years emanated from him. As to his position and eminence as a surgeon there is much to be said. He commenced his surgical career as lecturer on surgery in the old Carmichael School. He was an examiner in surgery to the Queen's University, and was President of the Royal College of Surgeons in Ireland in the years 1886 and 1887 and examiner in surgery to the University of Oxford. He filled the presidential chairs of the Pathological Society of Ireland and of the Irish Graduates' Association, while he was also intimately connected with many British and foreign medical societies. He delivered the address in surgery of the British Medical Association at the jubilee meeting in Worcester in 1882. Referring to that occasion Sir Charles Cameron quotes THE LANCET in his "History of the Royal College of Surgeons in Ireland" as follows: "The event of greatest interest to the surgeons assembled at Worcester was undeniably Professor Stokes's address. The occasion, the honoured name inherited, and the high reputation borne by the orator demanded a contribution to surgical literature of more than passing value in substance, in form, and in delivery. The address was fully equal to all expectations and hopes, and to his character as a skilful and wise surgeon Professor Stokes has now added the reputation of an orator worthy of his country." In the same work will be found the laudatory report in the *Boston Medical and Surgical Journal*, which said: "There was an unmixed expression of admiration and delight at the address in surgery, in the delivery of which Professor Stokes proved a medical orator scarcely if at all second to Sir James Paget." Sir William Stokes was born on March 10th, 1839, and was therefore in his sixty-first year. He had filled the position of Surgeon-in-Ordinary to the Queen in Ireland since the year 1892, and was at different times honorary president of international medical congresses in Berlin, Rome, and Moscow. It will thus be seen that his position in surgery is almost as highly distinguished as that once occupied in medicine by his illustrious father. The sentiment expressed by Sir William MacCormac finds many echoes in Ireland when speaking of our losses in the war, he said "the medical profession has had its victims, and all connected with it, and many more besides, will hear with grief unfeigned of the untimely end of one of its foremost and most highly respected representatives, Sir William Stokes, who has died at the post of duty."

Sir William Stokes's publications included an admirable Life of his father, William Stokes. This book, which was entitled "William Stokes, his Life and Work," was published in 1898 as one of the series of Masters of Medicine. Besides the address in surgery mentioned above he delivered the Cavendish Lecture in 1888 upon "The Altered Relations between Surgery and Medicine," and contributed many papers upon operative and clinical surgery to the journals. He married, in 1869, Elizabeth, daughter of the Rev. J. L. Moore, D.D. She survives him, as do their two children, a son, Alleyne, who is at Woolwich, and a daughter.

CHARLES JAMES HISLOP WARDEN, M.D. BRUSSELS, M.R.C.S. ENG., L.R.C.P. LOND.

LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL WARDEN, who died very suddenly on July 18th at his residence, 26, Highbury-grove, London, held for many years in India a prominent position as a chemist and pharmacologist. He was born in 1851 and was the only son of Captain Charles William Warden of St. Heliers, Jersey. He studied medicine at St. George's Hospital and took the diplomas of M.R.C.S. Eng. in 1872 and L.R.C.P. Lond. in 1873. While a student he interested himself in chemistry and gained a silver medal for pharmaceutical chemistry and materia medica given by the Society of Apothecaries; in 1873 he also obtained certificates of proficiency in chemistry from the Royal College of Chemistry and the Royal School of Mines. In 1874 he joined the Bengal Medical Service, and in 1876 was appointed officiating civil surgeon of Bhagulpur. A few months later he was deputed by the Board of Revenue on special duty to inquire into the cause of repeated failure of the system of taxing materials used in the distillation of spirits, and in 1878 he acted for six months as principal assistant to the opium agent, Behar. In 1879 he was appointed professor of chemistry at the Calcutta Medical College and chemical and opium examiner to the Government of Bengal, appointments which he held until 1892. In the course of these 13 years he was repeatedly thanked by the Government for the excellence of his work in various capacities. During that time, also, he examined most of the indigenous drugs and was largely instrumental in placing before the profession the "Pharmacographia Indica," a standard work in the preparation of which he was associated with Brigade-Surgeon W. Dymock of the Bombay Service and Mr. David Hooper, quinologist to the Madras Government. At the instance of the Government he made investigations on the packing of opium, on the testing of petroleum, on the manufacture of country spirits and the presence of fusel oil therein, and on the determination of the alcoholic strength of imported spirits. In 1884, while on 18 months' furlough in Europe, he took the degree of M.D. Brussels, and in 1886 was associated with Sir Frederick Abel and Mr. Boverton Redwood in drawing up the "Rules for Testing Petroleum" which were afterwards incorporated in the Petroleum Act of 1886. In 1892 he was appointed officiating medical storekeeper, Bengal. In 1893 the Pharmaceutical Society of Great Britain elected him a Corresponding Member. In 1893 he was a member of the Indian Hemp Drugs Commission and in 1895 a member of the Indigenous Drugs Committee. In 1886 he was elected a Fellow of Calcutta University. Of Lieutenant-Colonel Warden's communications to scientific journals 28 were his own and nine were written in association with others. He came to England on furlough in 1898, and in 1899 he succeeded the late Dr. F. N. Macnamara as examiner of medical stores at the India Office. Of a somewhat retiring disposition and not caring for the current pleasures of society, his chief delights lay in his laboratory and his garden. To those who had the privilege of his friendship he always extended a warm welcome, and there must be very many who mourn the early loss of a true and warm-hearted friend and brother officer.

JOHN ANDERSON, M.D., LL.D. EDIN., F.R.S., F.R.S. EDIN.

DR. JOHN ANDERSON of 71, Harrington-gardens, South Kensington, who died on August 15th at Buxton after a very short illness, was born in Edinburgh in 1833, studied medicine at the University there, and graduated as M.D. in 1861, his thesis, for which he received a gold medal, being entitled, "Observations in Zoology." Soon afterwards he was appointed professor of natural science in the Free Church College, Edinburgh, and filled the chair till 1864, when he proceeded to India and became superintendent of the Indian Museum, to which appointment that of professor of comparative anatomy in the Medical College, Calcutta, was added in the course of two or three years. In 1868 and 1874 he was selected by the Government of India to accompany expeditions to Western China *viâ* British and Independent Burmah in the capacity of scientific adviser. In 1881 he was sent by the trustees of the Indian Museum to investigate the marine zoology of the Mergui archipelago, off the coast of Tenasserim. In 1887 he retired from the service of the Government of India. Dr. Anderson was a Fellow of Calcutta University, a member of many learned societies, and the author of numerous papers on zoology and of several books, among which may be mentioned his "Report on the Expedition to Western China *viâ* Bhamô," published by the Government of India in 1871, and "Mandalay to Momien," published in 1875. In 1885 the University of Edinburgh conferred on him the honorary degree of LL.D. In 1896 he published a small treatise on the "Herpetology of Arabia."

PIERCE ADOLPHUS SIMPSON, M.D. ST. AND., M.A. CANTAB.

DR. PIERCE ADOLPHUS SIMPSON, Emeritus Regius Professor of Forensic Medicine in Glasgow University, who died at Auchengrange, Lochwinnoch, at the age of 63 years, was the younger son of Mr. Robert Simpson of Cloncorick Castle, Garrigallen, county Leitrim. He was educated at Rugby School and at the Universities of Edinburgh, St. Andrews, and Cambridge, and professionally at the medical schools of Cambridge and Edinburgh. He received the M.D. degree from St. Andrews in 1861, and took the M.A. with mathematical honours at Cambridge in the following year. He had been lecturer on medical jurisprudence at Anderson's College, Glasgow, physician to the Glasgow Royal Infirmary, editor of the *Glasgow Medical Journal*, and professor of forensic medicine in the University of Glasgow.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—Dr. F. Michl, professor of surgery in the Bohemian University of Prague, has died at the age of 50 years.—Dr. Johann Kjeldahl, Director of the Chemical and Physiological Institute at Alt-Karlsberg, near Copenhagen, whose name is universally known as the inventor of the much-used "Kjeldahl process for estimating nitrogen" in organic substances, has unfortunately been drowned at Hillerød when endeavouring to save a boy who was in danger while bathing.—Dr. G. Yankoloff, a Bulgarian physician, who was formerly president of the National Assembly.—Dr. Falconi, formerly professor of anatomy in the Cagliari Medical School.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending July 14th are as follows: remaining at the beginning of the week, 57; admitted, three; discharged, nine; died, none; remaining at the end of the week, 51. The totals up to the end of the week are as follows: cases, 300; discharges, 148; deaths, 101; "contacts" isolated, 1693; "contacts" remaining, 24; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

Of the three cases admitted during the week just ended only one was new, and reported in the acute stage. The other two were those of men who presented themselves as out-patients, desiring advice for inguinal buboes. One, who was attacked about five weeks ago, had shortly before had gonorrhœa and is known to have presented no other sign of illness on July 2nd than an inguinal gland considerably enlarged and then in course of suppuration. The other man, attacked about four weeks ago, could assign no reason for the occurrence of his bubo except injury received at his occupation of quarryman—histories of injury are quite commonly given by plague patients—while, on the other hand, he is known to have had a temperature of 101·6° F. when he first consulted a medical man some three weeks since. The probability appears to be that the latter had had the plague, the former not, but at all events both belonged to a much earlier date. Both, however, were sent to isolation and were placed in the convalescent wards. No case having occurred since July 1st the Government was advised that in accordance with the Venice Convention clean bills of health might once more be issued to shipping on and after July 12th, the bills to be endorsed with such statement as to subsequent occurrence of scattered cases as might become necessary.

July 17th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Inebriate Homes.

RECLAIMING the habitual drunkard has always been a difficult, and often a hopeless, task. The report of the first year's experience at the Brentry Homes near Bristol has just been issued. The board of management, after giving some interesting details, express themselves as being hopeful of success. They call attention to the difficulties met with owing to the violent character of some of the persons committed to the homes and appeal for them not to be sent. The subject was brought before a meeting of the Birmingham Justices held on August 13th, when it was stated that in the absence of any State reformatory it was not possible to send these cases elsewhere. An opinion was expressed that the violent drunkard might be sent to prison, but it was shown that a short term of imprisonment had no curative effect upon the habitual drunkard, who resumed his evil ways as soon as he was released from custody. One cannot but sympathise with the managers of the homes in their praiseworthy endeavours and recognise how important it must be for the proper conduct of such homes that the obstreperous and vicious should not be mixed with those who may be amenable to milder influences. Time, no doubt, will aid the promoters of this valuable institution in finding means most suitable to the object in view. Meanwhile the management of the sheep and the goats will tax the resources of those who find it impossible to divide them and to deal with them advantageously on separate lines.

Marston Green Homes.

Turning to a more attractive form of homes I record with satisfaction the progress made in the above-named institutions. These homes were established about 21 years ago by the guardians of the parish of Birmingham in the hope of raising to good citizenship those who had sunk by no fault of their own. They had the merit of being the first homes of the kind established in the kingdom. About an average of 300 children are in residence, with from 20 to 30 boys or girls in each cottage. For the boys a foster father and mother are provided, and for the girls a foster mother. The training is conducted by experienced masters and mistresses and the work is carried out with much zeal and interest. The good result of the management is shown by the fact that there has been only one death, and that there are at present only six patients, among some 400 children who had gone through the homes during the past year. The Lord Mayor (Alderman Beale) who presided at the annual meeting, paid a high tribute of praise to the management, and expressed an interest in the valuable results which had been obtained in the past year by the teaching of trades and occupations to the children.

Drug Adulteration.

A Birmingham chemist was fined at Tamworth Police-court, on August 14th, £10 and costs for selling milk of sulphur adulterated with 49 per cent. of sulphate of lime, and £5 and costs for selling camphorated oil which contained 25 per cent. of mineral oil instead of olive oil and 10 per cent. instead of 20 per cent. of camphor. Truly this kind of fraud is expensive when found out.

Handsome Hospital Gift.

Mr. John Corbett of Droitwich has given a further sum of £10,000 to the Corbett Hospital at Stourbridge, thus making his benefactions to that institution over £25,000. This is irrespectively of the value of the house he is erecting in the hospital grounds—a handsome building intended for the dwelling of a medical officer.

Death under Chloroform.

A young man, aged 23 years, died at the General Hospital on August 15th while under the administration of chloroform. The patient was suffering from a disease of the chest in which operation was necessary. Syncope was said to be the cause of death.

August 21st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Inebriate Reformatories in Lancashire.

A STEP forward has at last been taken towards the establishment of inebriate reformatories in Lancashire. On August 19th a meeting was held in Preston of representatives of contributory boroughs and of the county council to consider the question. This board to carry out the Inebriates Acts in Lancashire consists of 18 representatives of the County Council and 25 members of the county boroughs. All the county boroughs have joined the board except Oldham. Borrowing power is given to the board up to £20,000 without the need for obtaining the sanction of the Local Government Board. Sir John Hibbert was unanimously appointed chairman. He described what was being done in other parts of the country and stated that there were now 133 inmates under detention, 126 women and seven men. The small number of the men is due, not to greater male sobriety, but to the want of accommodation. His own feeling was for provision being made for 100 men and 100 women in separate buildings, not too near each other, but near enough to be under the care of one medical superintendent who would reside at the men's reformatory, but who would have under his care and be responsible for the women's reformatory, where there would be a lady superintendent. He suggested that the site for the men should not be less than 50 acres and that for the women from 20 to 25, and that the reformatory should be within 10 miles of Preston, where the meetings of the board will be held. A committee was appointed to inquire as to sites and the cost of one reformatory for men and one for women, or of two reformatories for women.

Non-Notification of Scarlet Fever.

A nominal penalty of one shilling and costs seems a light punishment for failing to notify four cases of scarlet fever and sending a child out to a neighbouring shop while "peeling." But the Bench inflicted this penalty the other day at Eccles for an offence committed in April last. A woman had four children going through the various stages of scarlet fever, but did not notify them, nor did she call in a medical man, though she admitted that she isolated them—incompletely, however, as stated above, one having been sent to do some shopping. The mother pleaded ignorance as to notifying the disease at the Town Hall and the nominal penalty inflicted shows that the magistrates were touched by the plea, although they expressed the hope that the public would take the prosecution as a warning. On the other hand, it must be hoped that they will not take it as an encouragement to propagate scarlet fever at a cost within the reach of all. It is, however, significant that yesterday, August 20th, three additional cases under the Notification Act were heard at the Eccles Police-court. One of the patients was a boy, aged 15 years, whose case was notified but who was out again without his recovery having been certified. The costs (5*s.* 6*d.*) were ordered to be paid "as the town clerk did not press for a heavy penalty." Why not? He cannot wish for the spread of scarlet fever and if he will ask Lord Roberts he will probably hear that leniency is sometimes disappointing. The next case was that of a labourer suffering from scarlet fever who, though repeatedly warned that he must isolate himself, refused to do so. He set the law at defiance and wilfully endangered other people, so he was fined 5*s.* and costs. The law seems to be feebly administered at Eccles, but perhaps the people rather like scarlet fever. The last case was that of a woman who failed to notify a case of scarlet fever. She, also, though apparently less guilty than the defiant labourer, was also fined 5*s.* and costs. Those of the inhabitants of Eccles who object to scarlet fever will think they deserve better protection than the town clerk and the magistrates seem disposed to give.

A Hospital for Hyde.

At the meeting of the Town Council of Hyde held on August 14th it was reported that the death-rate of the previous month (14 per 1000) was the lowest on record, while the birth-rate was amongst the highest. Plans of a site for a new infectious hospital had been submitted to the Sanitary Committee who advised the council to approve the site and to instruct the borough surveyor to prepare plans for a new infectious hospital to contain "not fewer than 50 beds." One of the councillors explained that the Local Government Board "required that there should be a place for small-pox and a separate place a considerable distance away for scarlet fever. The brick portion of the present hospital might be used for small-pox cases. As to the new building there was no natural drainage, but that would have to be got over as they got over it with the present hospital." This seems rather a confused statement, and it is to be hoped that no blunders will be made, which does not seem impossible. Another member of

the council said that "a portion of the present hospital was in a shocking state and was a disgrace to the town." One wonders if this is the part to be used for small-pox cases. The committee's recommendation was adopted by the council.

Manchester Licences.

At a meeting of the Manchester city justices held on August 17th for the purpose of electing a Licensing Committee some interesting facts were mentioned. The chairman of the committee, Mr. T. T. Shann, said it seemed to him that there were too many licensed houses in Manchester. Referring to a recent article which touched on the question of drinking among women in Manchester he said that the committee could not interfere with confectioners' shops and similar places where the liquor was obtained; and with regard to singing-rooms, which had been designated drinking-dens, as judges, not prosecutors, they could not interfere, but it was a matter for the chief constable and the Watch Committee. The granting of spirit-dealers' and bottled-beer licences had been responsible for a great deal of drinking, and "it was a significant fact that out of 60 applications for new licences 46 were for spirit-dealers' licences, over which the magistrates had no real control." It is probably new to many people that Manchester affords more facilities for drinking than Liverpool. In the latter town there are 2090 licences and in Manchester there are 3014. Manchester has 518 fully-licensed premises and Liverpool has 1906, but of beerhouses the latter has only 256 against 1843 in the former, no less than 1728 of that number (1843) dating back to 1869 or earlier, and with these the magistrates have no power to deal unless something can be proved against the house or the tenant. In Liverpool there were only 143 "off" or spirit-dealers' licences, while in Manchester there were 633, "and these figures proved that on account of the number of fully licensed houses Liverpool did not require so many spirit-dealers' licences." In Manchester they have increased from 231 in 1871 to 709 at the present time. In Ireland the magistrates have more power in dealing with such licences than their brethren in England and it was said that "it was generally held that the new powers which had been conferred upon the magistrates of Ireland should also be applied to England," but any interference with the privileges of the drink producers and drink distributers will be fiercely contested by that powerful body which is more interested in increasing their own wealth than in promoting the true interest and well-being of their countrymen.

August 21st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Excessive Supply of Licensed Houses in Congested Areas of the City: Citizens' Protest.

A MEMORIAL was recently addressed to the licensing bench of magistrates, signed by the Lord Bishop of the diocese and other influential citizens, praying the magistrates to receive a deputation from their number, in view of the approaching annual licensing sessions, to protest against the excessive supply of public-houses in the city. Through an informality in the mode of request the deputation could not be received. The memorialists have, however, forwarded to the individual members of the licensing bench a copy of their prayer, in which they recognised the beneficent results which had followed upon the example set by the magistrates in discouraging the sale of intoxicating liquors to young children, and in prohibiting the use for trade purposes of doors opening otherwise than into public thoroughfares, and many other efforts for the benefit of sobriety. The prayer of the memorialists is considerably strengthened by the recent annual report of the medical officer of health, which devotes many pages to the evil effects of intemperance. Dr. Hope deplored a further increase in the number of deaths certified by the coroners' juries as the result of excessive drinking. "The misery and degradation, and destruction of human life consequent upon excessive and uncontrolled indulgence in alcohol are the saddest features which sanitation has to contend against and the most hopeless, since, notwithstanding that the source of this mischief is plain, the sanitary authority is powerless to control it." Inquests were held during the year on the bodies of 216 persons whose deaths were due to the effects of excessive drinking. Of these several were fatally injured by accident whilst under the influence of drink. The memorialists point out that Dr. Hope lays stress upon the fact that deaths from excessive drinking are localised, and in the district where they are most numerous the general death-rate is highest. He illustrates this fact by comparing the rate of mortality in the Exchange and West Derby (East) wards, which have each a population of about 42,000. In the Exchange ward the general death-rate was 38·7 per 1000 compared with 16·5 per 1000 in West Derby, whilst the proportion of deaths due to excessive drinking in the Exchange ward was 3·4 per cent. as against 0·5 in West Derby. The memorialists also urge that the time has come for the refusal of music and singing licences to public-houses. The representations of the memorialists will, no doubt, have great weight with the licensing bench at the approaching sessions.

The David Lewis Northern Hospital.

The completed portion of the David Lewis Northern Hospital, which has been erected to replace the old institution at the cost of the David Lewis Trust, was opened on July 30th for the reception of patients without any formality. All the patients have been removed from the old building into the new quarters, which are in every way well adapted to their purpose. There are 150 beds in the portion of the hospital just opened and it affords far greater facilities for the treatment of the sick than were experienced under the former *régime*. The south pavilion and the administration blocks are still in the builder's hands and will not be completed until next spring. The foundation-stone of the new hospital, it will be remembered, was laid in 1896 by the Countess of Derby, the Earl of Derby being at that time the Lord Mayor of Liverpool.

Corporate Baths and Washhouses.

A salient point in the corporate administration is the ample provision of free baths and washhouses in different parts of the city for use by the poor of both sexes. Further provision in the same direction is about to be made in Beacon-street in the city, and in Lister Drive in the West Derby district, plans for which have been submitted to the Baths Committee for approval, together with estimates of the cost. The baths in Lister Drive will contain three plunge baths, including one for females, and numerous vapour and other private baths. No fewer than 455,575 bathers availed themselves during the past 12 months of the facilities offered by the free bathing establishments provided by the corporation. A large proportion of the bathers were children of both sexes and a satisfactory feature of the vigilance exercised by the officials lies in the fact that throughout the period named no accident occurred in any of the baths.

Major Ronald Ross, late I.M.S., and the International Medical Congress.

Major Ronald Ross, the lecturer on tropical medicine at University College, is to be congratulated upon the compliment paid to him by the International Medical Congress recently held at Paris. Professor Blanchard, in the name of the section of Bacteriology, wired to Major Ross expressing appreciation of his valuable investigations of the causes of malarial fever. The telegram was in the following terms: "Section de Bactériologie vous adresse chaleureuses félicitations pour découvertes sur paludisme."

A New Epileptic Home in Cheshire.

A material advancement is about to be made with the proposed scheme of the Lewis Trustees to erect a home for 500 epileptic patients out of the bequest of £50,000 devoted to that purpose. An extensive estate, formerly the property of Lord Knutsford, at Great Warford, near Alderley Edge, Cheshire, has been secured, and the plans have been laid before the Bucklow rural district council for their formal sanction. The colony when finished will be one of the best equipped institutions of its kind. It will be known as the Lewis Epileptic Colony.

August 21st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The New Veterinary College for Ireland.

THE new veterinary college has at last become an accomplished fact. The premises, which are now undergoing external alterations, are situated near Ball's Bridge, the site

of the annual Dublin Horse Show. The first session of the college will commence on Oct. 3rd next and terminate in July, 1901. In addition to the Government grant of £15,000 for the institution a guarantee fund of £2000 is being provided, while the Royal Dublin Society is contributing £200 a year for five years to meet the expenses of the college until it is able to become self-supporting. The President of the Board of Governors is Sir Christopher Nixon, M.D. R.U.I., LL.D.; and the Vice-Presidents are Professor D. J. Cunningham, M.D. Edin., D.Sc, Dub., LL.D. St. And., F.R.S., William Field, M.P., the Right Rev. Monsignor Molloy, D.D., Sc.D., Sir William Thornley Stoker, M.D. R.U.I., Sir Charles A. Cameron, C.B., M.D. R.U.I., and T. D. Lambert, F.R.C.V.S. The treasurer is Professor George Francis FitzGerald, M.A., F.R.S., and the principal is an accomplished member of the Royal College of Veterinary Surgeons, Professor A. E. Mottam, B.Sc.

The Union Hospital, Belfast.

A report presented to the Belfast Board of Guardians on August 7th by Dr. E. C. Bigger, the senior visiting medical officer, on the number of patients and class of diseases treated in the Union Hospital for the six months ending June 30th, 1900, shows that there were 686 patients, made up as follows: typhoid fever, 332; scarlet fever, 87; measles, 54; whooping-cough, 55; small-pox, 1; chicken-pox, 49; erysipelas, 17; diphtheria, 26; mumps, 17; quarantine, 2; and medical cases, 46. Out of the 332 typhoid fever cases—an unusual number treated in the first half of the year—there were only 27 deaths. The admissions during the last three years to the Belfast Union Hospital are larger than the admissions into any hospital in the United Kingdom during the same period. There were no deaths in the 87 scarlet fever cases. All the cases of diphtheria—26 in number—were treated with antitoxin; two needed tracheotomy, and one of these, a boy, two and a half years of age, recovered. The chairman, in commenting on this report, said the Union Hospital was the best managed portion of their institution. Two years ago there were 420 cases of typhoid fever in the institution but the present epidemic was not so serious. The new ambulance for conveying patients to the hospital was one of the best in the three kingdoms.

The Pollution of Belfast Lough.

Dr. E. C. Bigger, medical superintendent officer of health, Belfast Union, has reported to the Castlereagh Rural District Council that, in company with Dr. A. Dunlop of Holywood, he inspected the foreshore of Belfast Lough from Holywood to Cultra on July 26th. They found the foreshore to a large extent covered with seaweed, which is mixed with sewage, and is in many places decaying, thus giving rise to a very disagreeable odour. They propose as a remedy to remove the seaweed from about the high-water mark furthest out, say, for half-tide level. Outward there is practically no decaying weed and they did not think it necessary to remove the weed from that portion of the shore. They also inspected the military barracks where there are over 1000 occupants, the sewage from which flows on to the foreshore on the Belfast side of Holywood, and this sewage as well as the sewage from the town of Holywood contributes considerably to the nuisance along the foreshore on both sides of Holywood. They recommend that the military authorities should carry their outfall sewer further out and that they should flush their sewers as far as possible with the outgoing tide. The town commissioners of Holywood, it is also suggested, should carry their sewer further out. These recommendations, it is advised, should be carried out at once, but they are only to be considered as preparatory to the establishment of some system of sewage purification, such as the bacterial, if this should be found to be desirable in the near future.

A Vaccination Case.

Dr. James Fulton, a dispensary medical officer in Belfast, was summoned by a man at the police-court, on August 11th, for vaccinating his child, a boy, aged five months, without being authorised to do so by his parents. It would appear from the evidence that Dr. Fulton, finding that the child, who lived in his district, had not been vaccinated, called upon the mother on July 7th and explained that she would be liable to a penalty if the boy were not vaccinated that week. The mother said that the child had diarrhœa and that he had not been vaccinated owing to his ill-health, and that Dr. Clokey, whom she had consulted, said he was not fit to be vaccinated. Dr. Fulton asked to see the child and the mother lifted him out of his cradle, and Dr. Fulton then said that the child was fit to be done and proceeded to vaccinate him. It would appear that, quite unknown to Dr. Fulton, Dr. Clokey, who had been with the mother when the child was born, had been his attendant since, and he gave evidence that the child had been suffering from indigestion and diarrhœa. He declined when the child was three months old to vaccinate him, owing to his delicate state of health, and he thought the vaccination had kept up the temperature. No certificate to the effect that the child was unfit for vaccination had been sent to Dr. Fulton, and when he heard that Dr. Clokey had been in attendance he at once wrote him a note in which he said: "I apologise for interfering with your patient and I am sorry if I have in any way done anything to injure the child." The whole matter seems to have originated in a mistake. The mother of the child had been a patient of Dr. Fulton's, and, purely through kindness, to prevent her being fined, he had, perhaps with excess of zeal, vaccinated her child. The magistrate said the matter amounted to an assault of a very simple technical character. He suggested that, having regard to the circumstances and to the fact that Dr. Fulton had sent a letter to Dr. Clokey expressing his regret for interfering with the child, that the summons be withdrawn, the doctor paying to the parents £1 and the costs, a course which was adopted.

The Belfast District Lunatic Asylum.

Dr. William Graham, medical superintendent of the Belfast District Lunatic Asylum, has just issued a very interesting report covering the year ending Dec. 31st, 1899, and containing financial tables for the year ended March 31st, 1900. The total number of patients under treatment in the asylum were—males 701, females 614, a total of 1315; 143 were discharged and 79 died. 334 patients were admitted during the year, the highest number since the opening of the asylum and 53 more than in the preceding 12 months. But this is really only an apparent increase of insanity, because (1) the area of Belfast has increased with a corresponding increase of admissions; (2) the procedure of admissions to the asylum is less cumbrous, so that friends of patients may take more advantage of early treatment, and as a result patients are now sent who formerly would have been detained at home; and (3) 30 per cent. of the total admissions have come from the Union Workhouse, where a proportion of chronic cases of insanity were formerly housed. Dr. Graham thinks, at worst, if there is really any increase of insanity it is slight. He emphasises as the three most prominent causes of insanity hereditary influence, intemperance in drink, and bodily disease. Dr. Graham very wisely dwells on the fact—so important for the public to know—that insanity is a purely physical disorder and that prophylactic measures and early treatment are the true means of restoration, instead of trusting to time and chance and trying to hide the existence of the affection as if it were a disgrace. The ratio of recoveries to the total number of admissions is 29·9 per cent., and to the number under treatment during the year 7·6 per cent. Of the deaths, 13 were due to general paralysis of the insane, a disease becoming more frequent, Dr. Graham says, in the district. 12 deaths were due to phthisis and it is hoped that a sanatorium for the treatment of such cases will be erected in the new asylum. The gross expenditure for the financial year ending March 31st, 1900, amounted to £23,462 2*s.* 10*d.*, being a capitation cost of £24 3*s.* 4*d.*, or £2 16*s.* 3*d.* less than the preceding year. Owing to legislative changes in connexion with the Local Government (Ireland) Act a committee of management takes now the place of the old board of governors. The report is both interesting and suggestive and not, as is so often in such documents, a mere *résumé* of dry details and statistics.

Portadown Nursing Society.

Colonel Saunderson, M.P., and his wife have generously provided for the Portadown Nursing Society a new ambulance, the choice of which was left to Dr. W. E. Hadden and Mr. J. L. Rowlett, and they selected an ambulance litter of the "Viaduct" pattern. It will be of great service to the town and district.

Asylum Accommodation in Londonderry.

At the usual monthly meeting of the committee of management of the Londonderry Asylum, held on August 17th, it was decided to adopt the recommendation of the committee regarding overcrowding in the asylum. They suggested that the ground floor of the north block of the present asylum be

given over to the female patients. In this way the accommodation of the female patients will be increased by 34 beds and that fresh accommodation be provided for 60 male patients at Gransha. This will necessitate the employment at that place of a resident assistant medical officer and some extra attendants.

Dispensary Medical Officers' Holidays.

There is a standing rule in connexion with Irish dispensary medical work that one medical officer cannot act as locumtenent for another. At a meeting of the Coleraine Board of Guardians on August 18th Dr. H. S. Morrison, medical dispensary officer of Aghadowey, and Mr. A. M. Adams, medical officer of Garvagh, asked for leave of absence, each to act for the other in turn, and the guardians wisely consented to rescind the rule against such a practice as neither of these medical men could find a substitute although last season Mr. Adams had offered £6 per week for one.

The Belfast Lough Disaster.

The result of the Board of Trade inquiry into the cause of the terrible disaster in Belfast Lough on July 21st last by which upwards of 10 persons lost their lives is that while the officers of the *Alligator* (the steamship coming from Scotland) are exonerated from all blame the certificate of the captain of the *Dromedary* (the boat going from Belfast to Glasgow) is suspended for a year and the chief officer is censured for not clearing or reporting the congested state of the forecastle.

Cork Queen's College School of Medicine.

Dr. George Ross, B.A., obtained first place at the recent examination for admission to the Royal Navy Medical Service. A total of 29 candidates presented themselves for the examination. Dr. Ross obtained his medical education at the Cork Queen's College, where he had a very distinguished career.

August 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Action of Various Organs upon Certain Poisons.

AT the meeting of the Hospitals Medical Society held on July 20th M. Thoinot and M. G. Brouardel communicated a paper upon the above subject. The action of the liver upon certain poisons is well known from the work of M. Roger, that of the brain from the researches of M. Widal and M. Nobecourt, while the experiments of Wassermann, Metchnikoff, Marie, Roger, and Jossué as well as those of M. Thoinot and M. G. Brouardel have contributed to throw light upon the rôle played by certain organs when brought into relation with poisons. M. Thoinot and M. Brouardel employed a common method which is very simple if somewhat rough and which consists in taking out the organ from a recently killed animal, triturating a definite quantity of it—namely three grammes, or in the case of the kidney two grammes—with a given dose of the poison to be tested, which poison is always used in the same strength. The mixture is then filtered under pressure in a sterilised compressor and the filtrate is then injected into guinea-pigs. The controls are injected with a dose of the poisonous solution which has been merely filtered. The dose of poison is calculated at so much per 100 grammes of the animal's body weight. The poisons employed were sulphate of strychnia, hydrochlorate of morphine, arsenious acid, and sulphate of atropine. The results of the experiments went to show that certain organs affect different poisons, either by inhibiting their action, or exalting their virulence, or by leaving it intact. Two of the tissues employed neutralised all the poisons experimented with, but in different proportions—firstly the liver, and secondly the kidney. This neutralising action was specially marked in the case of strychnia. Muscular tissue neutralised a fair proportion of strychnia and a less quantity of morphine and of atropine, while it exalted the virulence of arsenic. Pulmonary tissue arrested the action of atropine altogether, acted more feebly upon strychnia and morphine, and had no effect upon arsenic. Cerebral tissue neutralised strychnia and morphine, had no effect upon atropine, but greatly exalted the action of arsenic. Without seeking to explain the power of exaltation observed in certain cases M. Thoinot and M. Brouardel think that it may well be compared with that which M. J. Teissier of Lyons has recorded as existing in the liver for certain poisonous substances.

Homœopathic Activity.

A monument has just been erected in the cemetery of Père-la-Chaise over the remains of Hahnemann, which were brought for the purpose from Germany. The cost of the monument and of the transportation of the remains was defrayed by subscriptions from all parts of the world. The monument consists of a large block of red granite, on which stands a pedestal bearing a bronze bust of the founder of homœopathy and the titles of his works and the well-known formula, "Similia similibus curantur," are graven on the granite. About 40 persons, mostly Germans, were present at the unveiling ceremony. A Homœopathic Congress was held at about the same time and was officially recognised among the various Exhibition Congresses, a fact which the homœopaths consider as a decisive victory over the opposing forces of the orthodox medical men.

A Tax for the Tuberculous.

At the Congress of Hygiene Dr. Phicque, physician in charge of the sanatorium of Angicourt, proposed the establishment of an additional tax upon alcohol of which the profits should be applied to the expenses of the fight against tuberculosis. An additional penny (*décime*) to the present tax of 156 francs per hectolitre would bring in 25,000,000 francs per annum. The French duties are at present much lower than the American, 245 francs; the Dutch, 252 francs; and above all the British, 477 francs per hectolitre. The creation of this "tubercle duty" upon alcohol would, according to Dr. Phicque, be perfectly justifiable, for alcoholism is the principal cause of pulmonary phthisis. With the 25,000,000 francs which the duty would bring in sanatoria could be built and all the expenses, which are very high, of disinfecting unwholesome houses could be defrayed.

Strike of Medical Students at Marseilles.

There has recently been in progress at Marseilles a strike of a peculiar nature—that is to say, all the students, both resident and non-resident, in the hospitals. Frequently in Paris and other large towns students discontented with the chief of a hospital have threatened to give up looking after the patients until they should obtain satisfaction. In the face of the dissatisfaction manifested by the public towards this kind of strike, so contrary to the laws of humanity, they have never yet dared to carry it out to its bitter end. Now, however, the thing has actually occurred at Marseilles. The students of the hospital, who were angry with Dr. Isoard, demanded that he should be removed from his post and threatened to cease to give their service to the hospital unless that request were granted. The authorities of the hospital having refused this request the students carried out their threat and left the patients who were confided to their care without any medical attention. The authorities of the hospital managed to get the dressing done for a while by porters and nurses. Then they threatened the resident medical officers to dismiss them altogether unless they went back to work by a certain fixed date. The "strikers," however, continued in their attitude. Provision was then made for the patients to be looked after by the medical men in the town. This went on for 15 days, when the students finally gave in under the threat of having the term of study which they had already carried out annulled altogether. A general amnesty has been declared, which it is hoped will efface the recollections of these unfortunate days, the events of which do not give a very satisfactory idea of the manners and ways of thinking of the new generation of medical men.

August 21st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

THE epidemic of plague seems to be gradually declining in all the colonies, being still most prevalent in Sydney, though no cases have occurred there for a week, while several cases have occurred in Queensland, a very few in Western and South Australia, and only one in Victoria. Concerning the case in Victoria which ended fatally some doubt has been expressed and the authorities have been blamed for cremating the body without a post-mortem

examination. Preventive measures are still carried out with undiminished vigour, the cost of exterminating the disease in Sydney already amounting to £85,000. The Board of Health in Victoria has commissioned Dr. Cherry, lecturer on bacteriology at the Melbourne University, to lecture throughout the various centres in the colony on the subject of the plague and its prevention, and the municipalities are spending money in sanitary works and destruction of rats.

Health of Sydney.

The quarterly report of the medical officer to the Sydney Sewerage Board has just been issued. He stated that the mortality was higher than in the corresponding quarter of last year, especially from preventable disease, notably typhoid fever, the number being in 1899 306 and in 1900 533. The increase was attributed to neglect on the part of the municipal authorities. Owing to an omission in the Act the Board of Sewerage had not sufficient powers to deal with faulty sanitary systems, but had control only of the sewers. Faulty fittings and connexions and bad ventilation abounded, and in many cases drains poured their contents not into the sewers but into the soil. These things had been repeatedly pointed out by the medical officer to the board, but it was not till the plague came that the municipal authorities and individual householders were roused from their apathy and the public realised the extent of the filth of Sydney. According to the report of the city health officer, Mr. Gwynne-Hughes, who has just resigned, the epidemic of typhoid fever was declining. He stated in his report for May that a systematic house-to-house inspection had been carried on and a great many houses condemned.

The Australian Natives Association.

In all the Australian colonies an association exists called the Australian Natives Association, membership of which is restricted to native-born Australians. Its main or ostensible object is to forward the interests of the native-born and "mutually improve the minds of members by discussing subjects connected with the common weal." In New South Wales the association confined itself to this object, but in Victoria and South Australia the association is registered under the Friendly Societies Act as a benefit society, affording medical attendance, medicine, sick pay, &c., to members. In Victoria the association has flourished, having 17,500 members and assets of about £100,000. In New South Wales it has languished to the extent of barely existing. With a view of improving its position at a meeting held at the Sydney Town Hall on June 18th the following resolution was carried:—

That this meeting forms itself into an Australian Natives Association to be registered under the provisions of the Friendly Societies Act.

In Victoria the A.N.A., as it is called, is the most objectionable of all friendly societies from the point of view of the medical officers. It gives the least remuneration to its lodge surgeons and it admits the largest proportion of well-to-do members who join on the plea that they do not want the medical benefits but are joining a political organisation. Once members, however, they always take the fullest advantage of their privileges and are the most exacting of lodge patients. The comparison between the membership of the association in the two colonies and the decision of the New South Wales body to become a benefit society show very clearly the real reasons why members join.

The Children's Hospital, Sydney.

A deputation recently waited on the Colonial Secretary to ask the New South Wales Government to provide a site for a new hospital which it is proposed to build for sick children. It was pointed out that the present building at Glebe was utterly inadequate. The site asked for was near the Centennial Park and had been recommended by Dr. Manning as exceptionally suitable. Objection had been raised to granting the site on the ground that it was proposed to attach to the hospital a diphtheria ward, but that proposal was now practically abandoned. The Minister in reply said that he was quite in sympathy with the deputation. He was not sure that the Government could legally bestow the land, but if it were possible they could reckon on having the site.

The Melbourne Hospital.

Twelve months ago the committee of the Melbourne Hospital instituted a system of asking patients to contribute to the funds of the hospital according to their means. Every person applying for admission had to sign a declaration stating whether or not he was able to pay and what amount if able, and strict inquiries were made as to applicants' position. The secretary reports that the system has worked well. The greater number of patients are unable to pay anything, and in no case is a patient refused admission because of poverty or treated differently to those who contribute. Still, the funds have been augmented to the extent of nearly £3000 during the past year by donations from patients. The contributions have varied from a few shillings to 30*s.* per week. The special effort made to extinguish the debt on the hospital is progressing steadily if slowly and a total of £16,330 has been received, the amount of the debt being £17,500.

A Dental Departure.

A valuable ram, the property of a grazier in New South Wales, lost some front teeth and being unable to nibble satisfactorily was slowly dying from semi-starvation. The services of a dentist were secured and artificial teeth were inserted so successfully that the ram is thriving as well as ever.

Intra-cranial Echinococcus.

At the June meeting of the Medical Society of Victoria Mr. Frederick D. Bird read an interesting paper on Intra-cranial Echinococcus, a condition which is rare. Mr. Bird observes that the classification of intracranial hydatids is difficult, as different conditions may be associated together, and some cases apparently intra-cranial may have originated in the calvarium. In the case reported several cysts were aggregated in a cavity with a coarsely granular surface between the dura mater and the cerebral hemisphere, and he is of opinion that the original mother cyst enclosing these cysts had disappeared as the result of pressure. The symptoms are too indefinite to allow of a diagnosis as to whether the cyst is intra- or extra-cerebral. The case recorded was that of a lad, aged 18 years, who dated his symptoms from a fall. His head was very large, 24½ inches round, and on the left side was an irregular depression which at times became tense and filled up. Vomiting had been a prominent symptom, headache with misty vision and increasing mental dulness and slight epileptiform seizures were the other symptoms, which became suddenly worse, requiring operation urgently. The operation was simple—turning down the scalp, exposing a perforation in the skull, incising the dura mater, and removing the cysts. The cavity was filled with iodoform gauze and the scalp sutured over it. On recovering from the anæsthetic the patient had a series of violent general convulsions and the temperature rose to 104·6°F. After the third day it fell to normal. On the sixth day the scalp was incised and the gauze removed. For some time his right side remained paralysed. This symptom gradually improved, and seven weeks after operation he could walk and he eventually recovered completely.

July 8th.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In August the following candidates passed in the subjects indicated:—

Surgery.—A. St. J. Bateman (Section II.), King's College Hospital; H. N. Horton (Section II.), Middlesex Hospital; E. R. Risien (Section I.) and E. F. Rose (Section II.), St. Bartholomew's Hospital; and W. C. Spooner (Sections I. and II.), Edinburgh.

Medicine.—W. A. C. Cox (Sections I. and II.), St. Mary's Hospital; F. R. Featherstone (Section II.), Guy's Hospital; J. C. Furness, Charing-cross Hospital; J. I. Halstead (Section I.), Manchester; A. H. L. Newstead, Cambridge and St. Mary's Hospital; E. F. Rose (Sections I. and II.), St. Bartholomew's Hospital; and A. Y. St. Leger (Sections I. and II.), Cambridge and St. Mary's Hospital.

Forensic Medicine.—W. A. C. Cox, St. Mary's Hospital; J. C. Furness, Charing-cross Hospital; J. I. Halstead, Manchester; A. H. L. Newstead, Cambridge and St. Mary's Hospital; E. F. Rose and M. J. Ryan, St. Bartholomew's Hospital; A. T. Spanton, Cambridge and St. George's Hospital; and A. Y. St. Leger, Cambridge and St. Mary's Hospital.

Midwifery.—R. R. P. S. Bowker, Middlesex Hospital; E. Osborne, Birmingham; E. F. Rose, St. Bartholomew's Hospital; and W. C. Spooner, Edinburgh.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—A. St. J. Bateman, R. R. P. S. Bowker, W. A. C. Cox, F. R. Featherstone, H. N. Horton, A. Y. St. Leger, A. H. L. Newstead, and E. F. Rose.

UNIVERSITY OF LONDON: BEDFORD COLLEGE FOR WOMEN.—The following students passed the recent Intermediate Examinations of the University of London. *Intermediate in Science.*—Honours: Zoology, second class, Z.

Scrutz: pass, first division, E. Canter, M. C. H. D. Skinner, I. Slater, L. M. Warwick, J. S. Young; second division, E. Cyriax, N. S. Helm. Exempted at preliminary scientific examination from examination in chemistry and physics, C. E. L. Masche. *Preliminary Scientific.*—Second division, V. A. Turkhud, S. C. E. Sommer, also R. Western of Bedford and Westfield Colleges, first division. Students should attend on Wednesday, Oct. 3rd, from 2 to 4, to interview the principal and lecturers. The courses in Arts and Science, Training Department, Hygiene Department, and Art School will open on Thursday, Oct. 4th, at 10 A.M.

MORTUARY FOR CARDIFF.—At the meeting of the Cardiff Borough Corporation held on August 13th it was decided to erect a mortuary at an estimated cost of £2000.

VACCINATION GRANT. — Mr. James Forster, M.B., C.M. Glasg., public vaccinator for the Conisbro' district of the Doncaster Union, has obtained the special grant for successful vaccination.

VACCINATION FEES.—At the meeting of the Bristol Board of Guardians held on August 17th it was decided to write to the Local Government Board expressing the view of the guardians that the minimum fees fixed in the Vaccination Order of 1898 for public vaccinators are too high, especially in urban districts.

THE SHORTHAND EXAMINATION FOR MEDICAL STUDENTS.—With reference to the shorthand examination announced by the Society of Medical Phonographers in THE LANCET of July 7th (page 65), the executive committee announces that unless a minimum total of 12 candidates send in their names to the examination secretary (Dr. E. B. Gray, Oxford) by Sept. 30th, the examination will not be held.

LUNACY FEES.—At the meeting of the Devonport Board of Guardians held on August 17th several of the guardians protested very strongly against what they considered an excessive charge for lunacy examinations. The discussion arose upon the account of a medical practitioner who had charged the usual fee of two guineas for the examination of two workhouse inmates. After a long and heated discussion a committee was appointed to approach the bench of magistrates with the view that on all future occasions the fee should be reduced to half a guinea per case.

DEPUTIES OF MEDICAL OFFICERS OF HEALTH.—At the meeting of the Stonehouse (Plymouth) District Council held on August 14th a recommendation of the sanitary committee that Mr. T. N. Leah be accepted to act as deputy during the temporary absence at any time of his father, the medical officer of health, was defeated by six votes to four. One of the speakers thought that if the suggestion was carried out the council was under an obligation to appoint Mr. Leah as medical officer if the office became vacant and he objected to the principle that because a father held an office his son must follow him.

VACCINATION STATISTICS.—At the meeting of the Barton Regis (Bristol) Board of Guardians held on August 17th it was reported that 193 births had been registered during the first six months of 1900 and that of these children 115 had been successfully vaccinated.—The Thornbury (Gloucestershire) Guardians report that out of 180 children whose births were registered during the first half year of 1900 there had been 156 successfully vaccinated.—The Wells (Somerset) Board of Guardians report 226 births in their district for the first six months of 1900 and 154 successful vaccinations.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
The Principles and Practice of Hydro-therapy: a Guide to the Application of Water in Disease. By S. Baruch, M.D. Illustrated. 1900. Price 16s. net.
The Permanganate Treatment of Opium and Morphine Poisoning. By Dr. Wm. O. Moor, New York City. 1899. Price 1s. 6d. net.

BLUE LANGUAGE, 147, Avenue Malakoff, Paris.
Abridged Grammar of the Blue Language. Bolak. International Practical Language. English version. By Professor Fischer. 1900.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Goulstonian Lectures on the Typhoid Bacillus and Typhoid Fever. 1900. By P. Horton-Smith, M.A., M.D. Cantab., F.R.C.P. Lond. 1900. Price 2s. 6d.
Lepra Bibliotheca Internationalis. Vol. I. Fasc. 3. Price 20s. per volume, of four fasciculi. 1900.

CORNISH, J. E., St. Ann's-square, Manchester.
Elements of Qualitative Analysis. By G. H. Bailey, D.Sc., Ph.D., and G. J. Fowler, M.Sc. Vict. 1900. Price 2s.

GLAISHER, H. J., Wigmore-street, London.
La Constipation Habituelle, son Traitement. Par G. Herschell, M.D. Traduit de la Seconde Edition Anglaise, par M. Cohendy. Préface de Albert Mathieu. 1900.

GOVERNMENT PRINTING OFFICE, Washington.
United States Bureau of Education: Experimental Study of Children, including Anthropometrical and Psycho-physical Measurements of Washington School Children, and a Bibliography. By A. MacDonald. 1899.

HOLMES, R. L., Dunlop-street, Glasgow.
The Pathogenesis and Treatment of Cancer without Operation. By R. Bell, M.D., F.F.P.S. 1900.

KIMPTON, H., High Holborn, London.
A Practical Treatise on Sexual Disorders of the Male and Female. By R. W. Taylor, A.M., M.D. Second Edition. Illustrated. 1900.
Progressive Medicine. By H. A. Hare, M.D., assisted by C. A. Holder, M.D. Vol. II. June, 1900.

LAYTON, CHARLES AND E., 61, Farringdon-street, London.
Handy Newspaper List. 1900. Price 6d.

PUTNAM'S, G. P., SONS, London.
Duality of Voice: An Outline of Original Research. By Emil Sutro. 1899.

PEREIRA BRAGA AND CO., Rio de Janeiro.
Etude sur la Lèpre au Brésil. 1900.

SCOTTISH MEDICAL AND SURGICAL JOURNAL, Edinburgh.
The Scottish Medical and Surgical Journal. Edited by Wm. Russell, M.D., F.R.C.P. Edin. Sub-editor, N. Walker, M.D., F.R.C.P. Edin. Vol. VI.—January to June. 1900.

SIMPKIN, MARSHALL, HAMILTON AND CO., London.
Love is in the Stomach not the Heart. By John M. Dagnall. 1900. Price 2s. 6d.

SPOTTISWOODE AND CO., New-street-square, London.
La Porte d'Entrée pour le Bacille de la Tuberculose. Par Dr. A. B. Taylor. 1900.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London.
Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England. Vol. I. Second edition. 1900.

UNWIN, T. F., Paternoster-square, London.
Over the Alps on a Bicycle. By Elizabeth R. Pennell. Illustrated. 1898. Price 1s.

Register of Experiments in Roentgen Rays. Price of books of 50 leaves, 6s., and 100 leaves, 7s. 6d. (Geo. Sadler. 207A, Borough High-street, London, S.E.). Anglo-Saxon Guide to the Paris Exhibition. 1900. With Map of Paris. Edited by B. Bernard (Boot and Son, Old Bailey, London). Price 1s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADYE, W. J. A., M.R.C.S. Eng., L.S.A., has been appointed Medical Officer of Health for the Bradford-on-Avon Urban and Rural Districts, vice J. A. M. Thomson.

BLAND, M. H., M.B., M.S., M.D. Glasg., has been appointed Medical Officer of Health for the Guisborough District of the Guisborough Union, vice J. Merryweather.

CALDWELL, M., L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Brotton District of the Guisborough Union, vice F. McGachen.

CONNOLLY, T. J., B.A. R.U.I., M.B., B.C. & B.A.O., has been appointed Medical Officer for the Kinvara District of the Gort Union.

COURTENAY, F. W. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon on board the Allan mail steamer *Numidian* for Canada.

FRAZER-TOOVEY, THOS. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.M. Rotunda, has been appointed House Surgeon to the Teignmouth Hospital, South Devon.

FORSYTH, C. E. P., M.B., Ch.B., has been appointed Assistant Medical Officer, Metropolitan Asylums Board, to the Eastern Hospital, The Grove, Homerton, N.E.

JAQUET, J. L., M.D., R.U.I., has been appointed Surgeon, M Division, Metropolitan Police, vice T. Evans, resigned.

KENNEDY, W. W., M.R.C.S. Eng., L.R.C.P. Lond., M.B. Lond., has been appointed Medical Officer of Health for the Beaconsfield District of the Amersham Union.

MANSON, R. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of the Darlington District of the Darlington Union, vice R. T. Manson.

RALY L., M.D. Durh., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Second District of the Devizes Union.

RATTRAY, A. M., M.B., C.M. Edin., has been appointed Senior Assistant Medical Officer to the Newcastle City Asylum, Gosforth, vice D. Hunter, resigned.

RICHARDS, J., has been appointed Medical Officer of Health for the Conwil District of the Carmarthen Union.

SUTHERLAND, E. A., has been appointed by the board of management Honorary Physician to the City Orthopædic Hospital.

THORNEY, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Skelton District of the Guisborough Union, vice S. Merryweather.

WATTS, E. C., M.D. Edin., C.M., has been appointed Medical Officer to the Guisborough Union Workhouse, vice J. Merryweather.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board).

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals for the Treatment of Cases of Infectious Diseases. Salary £150 per annum, with board, lodging, and attendance Applications to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—In-door Dispenser and Assistant to the House Surgeon. Honorarium 20 guineas per annum, with board, lodging, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon. Board, residence, &c., are provided and an honorarium of £25 will be granted at the completion of six months' approved service. Also Resident Medical Officer. Salary £80 per annum for the first year and £100 for the second, with board, residence, and laundry. Also Medical Officer for the Casualty Department. Salary at the rate of £100 per annum, and luncheon is provided at the Hospital.

GESTO HOSPITAL, Isle of Skye, N.B.—Resident Medical Officer. Salary £200 per annum, with free furnished house, garden, coals, light, and taxes. Apply to Mr. J. Simpson, Portree.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, and board, lodging, and washing provided in the hospital. Also Anæsthetist for twelve months. Honorarium 10 guineas per annum. Applications to Mr. L. H. Glenton-Kerr, Secretary.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon. Appointments tenable for six months. The House Physician and House Surgeon receive a salary at the rate of £40 a year. The Assistant House Physician and Assistant House Surgeon receive a salary at the rate of £20 a year.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per annum, with board and washing.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road. — Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon to take sole charge of the Hyson Green Branch. Salary £200 per annum, all found except board for himself, housekeeper, and servant. Also Assistant Resident Surgeon for the chief dispensary, unmarried. Salary £140 per annum, all found except board.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing, &c.

ROCHDALE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ST. PETER'S HOSPITAL FOR STONE, Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon. Salary at the rate of £24 per annum, with board, residence, and washing.

STOKE-UPON-TRENT UNION.—Resident Medical Officer. Salary £130 for for the first year, with an increase of £15 per annum to a maximum of £175, with board, washing, and furnished apartments at the hospital.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Salary £150 per annum, with furnished apartments, coals, gas, and attendance.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Ballachulish, in the county of Argyll; at Scarborough, in the county of York; for the Helensburgh District, comprising the civil parishes of Arrocher, Luss, Roseneath, and Row; and for the Watton District of Norfolk.

TOWNSHIP OF MANCHESTER.—Assistant Medical Officer. Salary £100, with furnished apartments, fire, light, washing, and attendance.

UNIVERSITY COLLEGE, CARDIFF.—Demonstrator and Assistant Lecturer in Anatomy and Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120.

WEST AFRICAN RAILWAYS EXTENSIONS.—Qualified Medical Officers required to accompany an important Special Survey Party leaving London early in October. Salary £40 to £50 per month.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and also House Surgeon for six months from Oct. 1st. Board and lodging provided.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £100 per annum. with board, residence, and washing.

WEST RIDING ASYLUM, Wadsley near Sheffield.—Temporary Fifth Assistant Medical Officer for six months. Salary at the rate of £140 per annum, with apartments, board, and attendance.

WOOLWICH UNION.—Assistant Resident Medical Officer. Salary £120 per annum, rising £10 yearly to a maximum of £150, with apartments, rations, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BRAINE-HARTNELL.—On August 18th, at Powick, Worcester, the wife of G. M. P. Braine-Hartnell, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

CLARKE.—On August 18th, at Windsor House, Morley, the wife of Travers Clarke, L.R.C.P. Lond., M.R.C.S., of a daughter.

KIRBY.—On August 16th, at Sutton Court-road, Chiswick, the wife of W. Egmont Kirby, M.D. Brux., L.S.A., of a son.

MACKINTOSH.—On August 19th, at St. Ives, Platts-lane, Hampstead, the wife of John Stewart Mackintosh, M.R.C.S., L.R.C.P., of a son.

MOFFAT.—On August 16th, at Knockholt, Sevencaks, the wife of R. U. Moffat, C.M.G., M.B., C.M., Principal Medical Officer, Uganda Protectorate, prematurely of a son, who survived his birth only one hour.

MUSSON.—On August 14th, at King-street, Clitheroe, the wife of A. W. Musson, M.B., B.C. Cantab., of a son.

PILCHER.—On August 14th, at Boston, Lincs., the wife of Cecil W. Pilcher, M.R.C.S., L.R.C.P. Lond., of a daughter.

ROBERTSON.—On August 14th, at Disraeli-gardens, East Putney, the wife of F. W. Robertson, M.A. Glasg., M.B. Lond., of a son.

ROWELL.—On August 20th, at York House, Huddersfield, the wife of J. G. Rowell, M.R.C.S., L.R.C.P. Lond., of a son.

RYLE.—On August 19th, at German-place, Brighton, the wife of R. J. Ryle, B.A. Oxon., M.A., M.D., M.R.C.S. Eng., of twins (girl and boy).

SYRETT.—On August 18th, at Naylands, Colchester, the wife of E. F. Syrett, M.D., of a daughter.

WAIT.—On the 11th inst., at Tynemouth, Northumberland, the wife of J. Alfred Wait, B.A., M.B. Cantab., of a daughter.

WILLIAMS.—On the 18th inst., at Rotorua, Harrow-on-the-Hill, the wife of Dr. A. H. Williams, of a son.

WILSON.—On August 17th, at Trafford House, Liscard, Cheshire, the wife of Andrew Robertson Wilson, M.A., M.B., C.M. Edin., of a son

MARRIAGES.

LYTH—MAGUIRE.—On August 9th, at the Methodist Church, Knock, Belfast, Edgar Roe Lyth, M.B. Durh., M.R.C.S. Eng., of Shepherd's-bush, to Lucy, daughter of the late Rev. T. Maguire, of Belfast.

PRIOR—CLARKE.—On July 2nd, at Christ Church, Kapunda, Guy Percival Underdown Prior, L.R.C.P., M.R.C.S. Eng., eldest surviving son of the late Richard Henry Prior, M.D., J.P., St. Albans, to Anna Blanche, eldest daughter of — Clarke, Esq., of Kapunda, South Australia.

TURNER—DALBY.—On August 23rd, at St. Matthew's, Ealing, by the Rev. F. Dalby, Vicar of Holy Trinity, Gainsborough, cousin of the bride, assisted by the Rev. H. C. Douglas, vicar, Frank Douglas Turner, M.B., of New North-road, Huddersfield, to Louisa Caroline (Midgie), youngest daughter of Major Dalby, R.M.L.I., of Fregoe, Ealing.

DEATHS.

ANDERSON.—On August 15th, at Buxton, John Anderson, M.D., LL.D., F.R.S. Lond. and Edin., of Harrington-gardens, S.W., aged 66.

ORTON.—On August 19th, 1900, at Beeston, Notts, John Orton, M.D., after a long and painful illness met with unflinching fortitude.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE ETHICS OF CONSULTING PRACTICE.

To the Editors of THE LANCET.

SIRS,—I venture to draw attention to the following circumstances and to ask if any action should be taken, because it seems to me that such incidents ought not to be passed over unnoticed. About the middle of January of this year I was called to a member of a large family I have attended during the past 14 years. The trouble was severe pain in the loins. Early in March as the pain was no better I suggested a consultation and, as is my custom, asked if any particular consultant was preferred. A name being given me I could take no exception to I at once wrote to the gentleman designated giving particulars of the case, and asked for an appointment. I heard from the consultant that he would write again after the examination of some specimen taken from the patient. I have not since heard from him or from my patient, who was taken into a nursing home for a time and then sent on a voyage. At the end of this the consultant visits my patient, ten miles or more from his house, and advises an operation in a nursing home near his house. The operation revealed the nature of the case and soon after, as was inevitable, the patient died. So far I did not feel particularly hurt. I thought that perhaps the consultant in his zeal to effect a cure had forgotten all about me, but when I saw that he attended the funeral of one he knew nothing of five months ago and whom he could not have seen on 30 different days I must conclude I have not received that treatment at his hands which I think I had a right to expect. This consultant is not old and not young; he holds hospital appointments and is a lecturer at one; he is well known, a member of learned societies, and the author of articles and a large work on a speciality. If I send my watch to the watchmaker and he keeps it I have my remedy and need not let him have the chain too, but in a case of this sort I know of no remedy and have a good chance of losing still more. I am, Sirs, yours faithfully,

August 20th, 1900. McD.

HYSTERICAL JOURNALISM.

To the Editors of THE LANCET.

SIRS,—I am unwilling to think that any radical change is taking place in the English character, but certainly there have been many articles in English newspapers and even in the magazines and reviews during the past six or eight months which would justify such an opinion. I think there can be no doubt that hysterical journalism has taken root in England. It is a serious disease. The thirst for publicity, the crazy rush for the latest bulletin, careless whether it be fact or fiction, is a symptom of a general paralysis. I have always thought that if English newspapers were not conspicuous for enterprise they were cool-headed and reliable. Must this characteristic go? To my amazement I read in the *Times* which has just come obituary notices of members of our Legation in Peking. What proof have we that these men are dead? However melancholy the outlook may be, it appears to me to be very bad form to publish a man's obituary before reasonable proof of his death has been obtained.

I am, Sirs, yours faithfully,

Halifax, N.S., August 2nd, 1900. J. S.

"A DISGUSTING THREAT."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 18th, p. 560, I read what is termed a "disgusting threat." No terms can be too strong for the threat. Assuming that the statement of "Nemo" is correct and can be proved—as it would appear from his letter that it can be—the only course, apart from legal or criminal proceedings, is to apply to the General Medical Council and have the threatener's name struck off the roll of registered medical students. "Nemo" "does not wish to harm the fellow for the sake of his father and mother"; but for humanity's sake this unfortunate creature who proposes to create, or rather propagate, a most loathsome disease by methods which he has learned during his medical education should be debarred from ever entering the medical profession. Our aims are to combat disease and to save life. No man who has expressed the intention of communicating one of the most terrible diseases known should be allowed to enter our ranks. I am, Sirs, yours faithfully,

August 18th, 1900. M.D.

"FRUIT SALT."

To the Editors of THE LANCET.

SIRS,—The attention of our clients, Messrs. J. C. Eno, Ltd., has been drawn to THE LANCET of the 11th inst. where, under the head of "Analytical Records" you give on page 405 a report on various preparations of Coombs Eureka Aerated Flour Co., Ltd., including their so-called "Fruit Salt." You are probably not aware that on Messrs. Coombs recently putting a saline preparation on the market under the title of "Fruit Salt," we at once drew their attention to the fact that they were thereby infringing our clients' rights and, after taking counsel's opinion on the matter, they on the 12th July ult., entered into an agreement with our clients whereby (*inter alia*) they agreed to discontinue the use of the title "Fruit Salt" for their preparation and to call in all outstanding stock and to destroy or alter all printed matter bearing that title. Although our clients' right to the exclusive use of the title "Fruit Salt" as applied to any medicinal preparation has been clearly established, the appearance in your widely-read journal of the notice in question is calculated to induce the belief that anyone may, to our clients' injury, put on the market saline preparations under that title, and we shall therefore feel obliged if you will insert in your next issue a paragraph to correct such an impression.

We are, Sirs, yours faithfully,

GARRARD, JAMES, AND WOLFE.

Suffolk-street, S.W., August 14th, 1900.

*** The specimen of Eureka Aerated Flour reported upon in our issue of August 11th was sent to us before the Coombs "Eureka" Aerated Flour Company, Limited, had received the letter of protest from Messrs. Garrard, James, and Wolfe, acting for Messrs. J. C. Eno, Limited.—ED. L.

SUMMER DIARRHŒA.

THE following notice has been issued to all parents by Mr. C. M. Fegen, medical officer of health of the Croydon Rural District Council:—

During the hot months young children are especially liable to very severe attacks of diarrhœa which, in a very large number of cases, have a fatal ending.

It is probable that most cases arise from the use of tainted milk or other food and want of care.

Every article used for the storing or preparation of food must be kept perfectly clean, having been well scalded and then rinsed with clean cold water before use. All milk should be boiled as soon as taken in, and kept in a cool and well-ventilated place. No meat, fish, or cheese should be kept in the same place as the milk. No milk should be kept overnight.

If condensed milk is employed none but the best brands should be used and the tins kept in a cool, ventilated place while in use.

Fruit ought not to be given to infants, but if ripe and untainted it may be given to elder children.

Great care should be exercised in keeping the house, and especially the backyard, clean, and in not allowing waste vegetable matter or food to lie about rotting in the sun.

The w.c. should be well flushed down and the seat and pan kept thoroughly clean.

KOPLIK'S SPOTS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 18th, on p. 481, there are two articles *re* "Measles." In each of these "Koplik's spots" are mentioned. What are these? I cannot find them described in Allbutt or Fagge. Please inform OLD MORBILLI.

August 20th, 1900.

*** Koplik's spots are eruptions on the buccal mucous membrane seen in measles. They appear one or two days before the skin eruption. At first they are discrete rose red spots with a minute bluish-white centre. Later they coalesce. There is an excellent illustration in Gould's Year-book of Medicine for 1900, p. 274.—ED. L.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of a medical man practising in Scotland—and preferably a small seaside place—who would be willing to receive into his house a paying guest? The guest in question is a lady between 50 and 60 years of age, and the terms offered are £1 15*s.* per week. Further details, &c., would be furnished by me to any likely one applying. I am, Sirs, yours faithfully,

J. ROSS MACMAHON.

49, Earl's-court-road, Kensington, W., August 17th, 1900.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College

(2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (29th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

THURSDAY (30th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (27th).—WEST LONDON POST GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Chest Casss.

THURSDAY (30th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Spinal Cord Cases.

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It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 23rd, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation. Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 17	29·96	N.E.	...	117	84	63	63	64	Overcast
,, 18	29·95	E.	...	117	88	63	68	72	Hazy
,, 19	30·00	S.W.	...	120	82	61	63	70	Fine
,, 20	29·80	N.W.	...	110	77	60	61	62	Overcast
,, 21	29·65	S.W.	0·02	117	75	61	62	64	Cloudy
,, 22	29·44	S.W.	...	121	73	61	61	64	Cloudy
,, 23	29·60	S.W.	0·06	73	57	55	55	57	Cloudy

During the week marked copies of the following newspapers have been received: *Nottingham Daily Express, Liverpool Daily Post, Times of India, Builder, Architect, Leeds Mercury, Glasgow Herald, Birmingham Daily Post, Yorkshire Post, North Devon Herald, Bristol Mercury, Reading Mercury, Oxford Gazette, Surrey Advertiser, &c., &c.*

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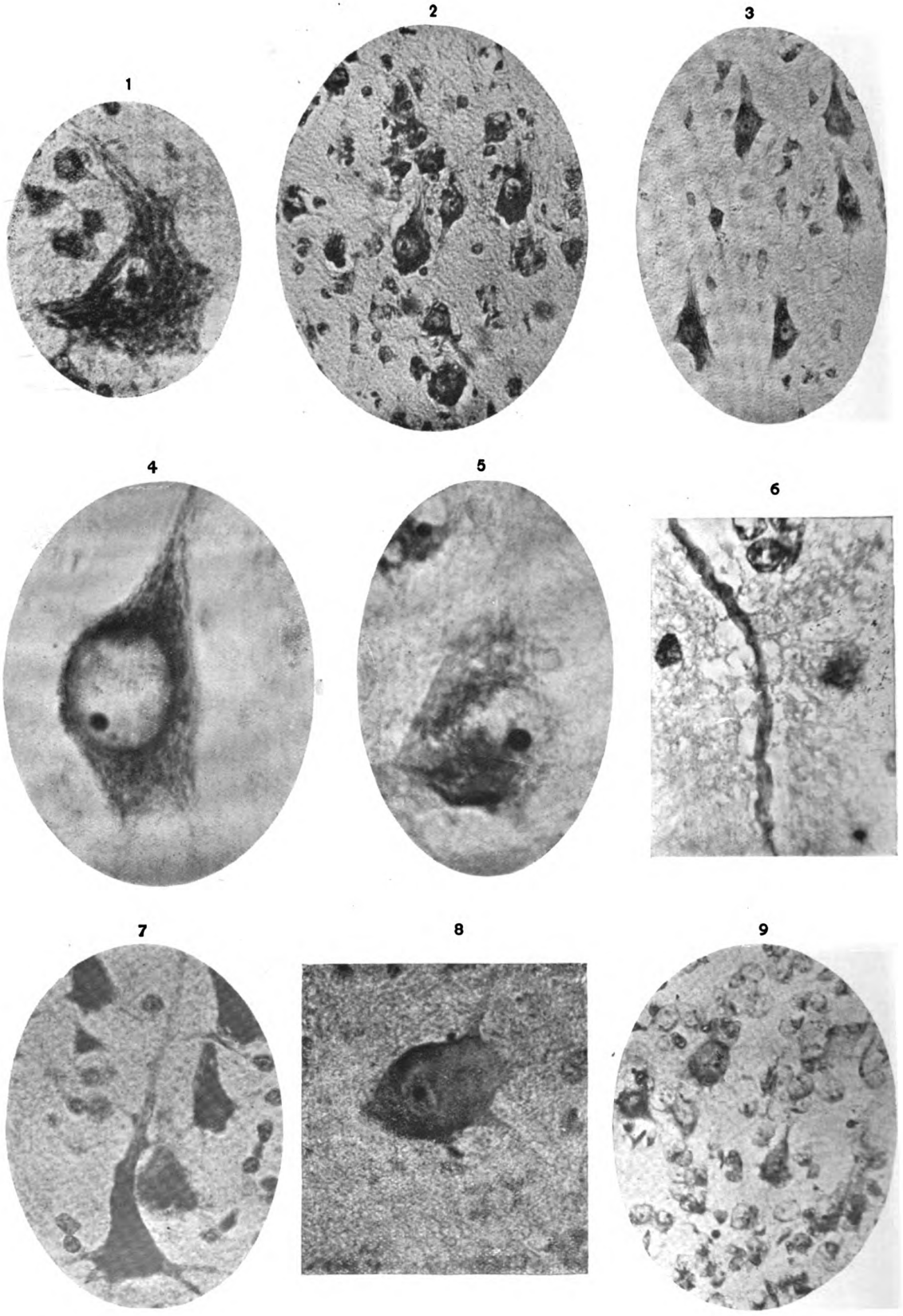
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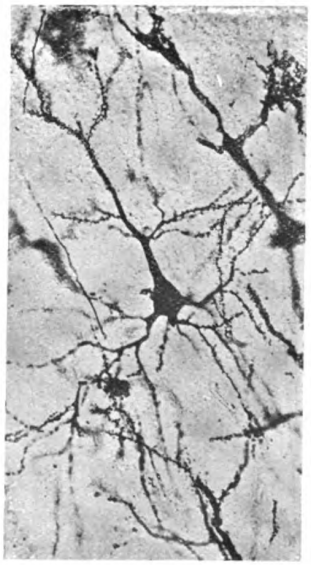


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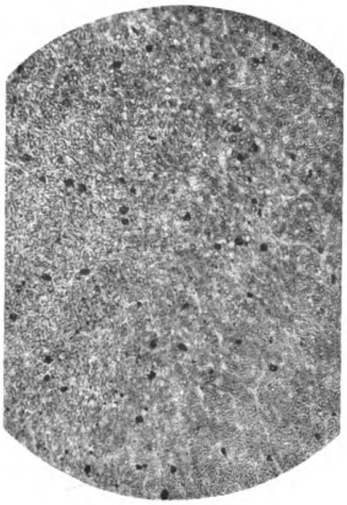
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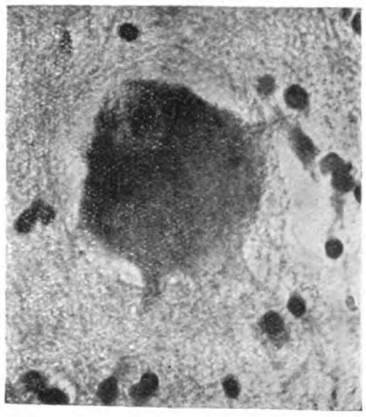
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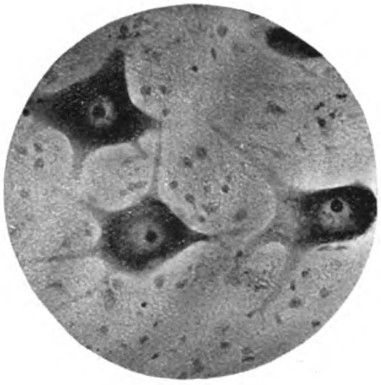
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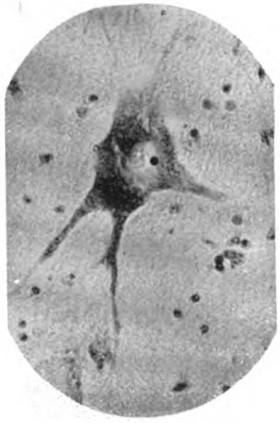
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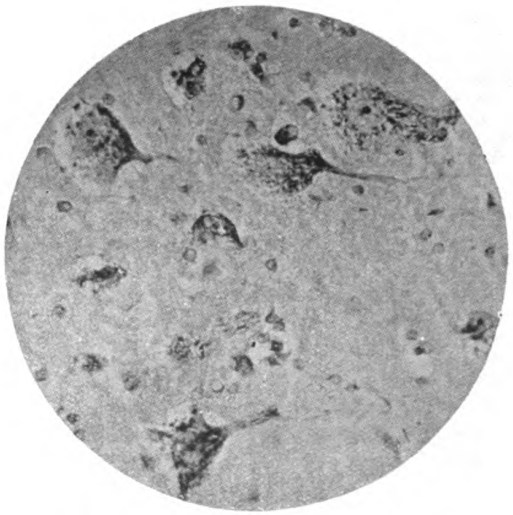
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